OPEN ACCESS

Scholars International Journal of Law, Crime and Justice

Abbreviated Key Title: Sch Int J Law Crime Justice
ISSN 2616-7956 (Print) |ISSN 2617-3484 (Online)
Scholars Middle East Publishers, Dubai, United Arab Emirates
Journal homepage: https://saudijournals.com

Review Article

The Adaptability of Roman Law in the Integration of New Subjects and Objects of Law: A Cross-Sectional Analysis of History and Technological Innovation

Oleg V. Pavlov[1]*

[1]Independent Researcher / Entrepreneur

DOI: https://doi.org/10.36348/sijlcj.2026.v09i02.005 | **Received:** 11.12.2025 | **Accepted:** 09.02.2026 | **Published:** 11.02.2026

***Corresponding author:** Oleg V. Pavlov
Independent Researcher / Entrepreneur

Abstract

The article examines the concept of the adaptability of Roman law as a potential foundation for shaping the legal framework of a future civilization. Historically, Roman law demonstrated a high degree of flexibility in integrating new legal subjects for example, the mass inclusion of freedmen into the civil and economic circulation of Ancient Rome and in systematizing their legal status. The author draws parallels between these historical precedents and contemporary challenges associated with the emergence of new participants in legal relations, namely artificial intelligence (AI) and robots. The philosophical foundations of Roman law are analyzed, including the influence of Stoicism and Cicero's concept of natural law, and it is shown how these ideas may serve as a basis for regulating relations between humans, AI, and robotic systems. In the futurist section of the article, drawing on R. Kurzweil's ideas on technological singularity and the philosophical concepts of F. Nietzsche (The Übermensch), the possibility of a symbiosis between humans, artificial intelligence, and robotics is discussed. The article proposes a doctrine of "technological neo-Roman law," grounded in the principles of humanism, meritocracy, and inclusivity, capable of providing a normative foundation for an era in which AI becomes an equal participant in social, economic, and legal processes. The article is written in the genre of scholarly research with elements of futurist analysis and is accompanied by references to the works of jurists, Stoic philosophers, Roman emperors, and contemporary futurists.

Keywords: Roman law; adaptability of law; freedmen; artificial intelligence; robotics; legal personhood; Stoicism; Übermensch; technological singularity; space and law; natural law; inclusive institutions.

INTRODUCTION

Technological development poses unprecedented challenges to law, requiring a fundamental rethinking of core legal concepts. The emergence of humanoid robots and advanced artificial intelligence raises a crucial question: are non-biological "intelligent agents" capable of becoming full legal subjects, or should responsibility for their actions always be borne by their developers (natural persons or corporations)? This question has not only a technical dimension but also a profound historical and legal one. Precedents for the inclusion of new categories of persons into humanity's legal systems already exist. In Ancient Rome, the mass manumission of slaves led to the emergence of a distinct class of freedmen, compelling Roman law to adapt in order to define their legal status, capacity, and place within society.

In a similar manner, today we are witnessing the formation of a new class of "intelligent" technological agents artificial intelligence systems and robotic entities whose participation in economic, social, and legal processes is becoming increasingly visible.

One contemporary example illustrating these transformations is the decision of the innovative company Tesla to focus on the production of the AI-based humanoid robot Optimus rather than on a range of traditional electric vehicle models. The company's founder, Elon Musk, has effectively declared that an AI-powered robot will become the company's central product, while manufacturing lines previously dedicated to automobiles will be reconfigured for the production of humanoid robots. This move signals the inevitability of robots entering everyday life, much as the mass emancipation of slaves in Roman society once led to the emergence of a new social estate. Society and the state are thus confronted with a critical question: does such a robot possess rights, legal capacity, and independent legal personality, or must the consequences of its actions

always generate liability for its creators or owners? The need to answer these questions necessitates the development of new legislative approaches and flexible, "cross-cutting" regulatory frameworks grounded in fundamental legal principles and informed by historical experience.

The purpose of this article is to substantiate the argument that the philosophy and doctrine of Roman law distinguished by a high degree of adaptability and universalism can serve as a robust methodological framework for constructing the legal system of the future, capable of integrating artificial intelligence and robotics. The study draws upon the achievements of classical jurisprudence, the ideas of Roman Stoics concerning natural law, as well as futurist projections regarding technological singularity (Ray Kurzweil) and philosophical concepts of the "Übermensch" (Friedrich Nietzsche), in order to formulate principles for a legal doctrine adequate to emerging realities.

The focus of the research lies in comparing historical precedents such as the inclusion of freedmen and provincials into Roman citizenship with contemporary processes involving the integration of AI and robotic systems into the socio-legal order, and in extracting lessons on how law can channel technological innovation for the benefit of civilization.

In the first part of the article, examples of the flexibility of Roman law and its capacity for renewal in response to socio-economic transformations are examined. The analysis then turns to the influence of Stoic philosophy on Roman legal thought particularly ideas of natural law, universal human brotherhood, and the rational limitation of emotions and their relevance to contemporary techno-legal discourse. The article subsequently addresses current challenges: the legal status of AI and robots (including debates on granting them the status of electronic "persons"), issues of liability and ethics (such as the potential need for an "AI constitution" inspired by Isaac Asimov's Three Laws of Robotics), and the prospects for employing AI itself in judicial and legislative processes.

Special attention is devoted to futurist dimensions, including transhumanist ideas, human–machine integration, and the manner in which legal systems may prevent the risks of dehumanization or, conversely, civilizational stagnation in the context of a robot-driven "economy of abundance." Finally, the conclusion articulates the principles of "technological neo-Roman law" a novel synthesis of ancient wisdom and modern innovation designed to ensure sustainable and humane development of civilization both on Earth and beyond.

The Adaptability of Roman Law: Historical Lessons of Inclusivity

Roman law earned its reputation as the most sophisticated legal system of antiquity not only due to its carefully elaborated normative structure, but also owing to its exceptional flexibility and capacity to respond to the challenges of its time. From the early Republic to the Late Empire, Roman society repeatedly encountered situations demanding creative legal adaptation. A particularly illustrative example is the institution of freedmen former slaves who obtained freedom. During the first century BCE and the first century CE, the number of manumitted slaves increased significantly, resulting in the formation of a substantial segment of the free population that did not belong by birth to traditional Roman estates. The state objectively encouraged manumission for instance, Roman citizenship could be granted to a freed slave upon compliance with legally prescribed procedures while simultaneously seeking to integrate these new citizens into society on stable foundations.

Roman jurists responded promptly to this social transformation by developing norms that defined the legal capacity and obligations of freedmen. A manumitted slave became a Roman citizen (provided that the patron possessed citizenship and that the procedure of manumission complied with formal requirements), yet this status was accompanied by specific conditions. Patron–client relationships were established: the former slave (client) retained certain obligations toward the former master (patron), including duties of moral assistance and a prohibition on hostile actions. Law also restricted freedmen from occupying certain public offices in the first generation; however, the children of freedmen were born as full citizens without such limitations. This compromise helped to prevent social disintegration: on the one hand, it avoided the creation of a rigid "caste" barrier for new citizens; on the other, it preserved order and continuity. The adaptability of Roman law manifested itself in its ability to formalize the status of a vast new social group without undermining the legal system, instead enriching it institutionally.

Another example of Roman legal inclusivity was the gradual integration of provincials and even elites of conquered peoples into the ruling class. Historical sources record that in 48 CE Emperor Claudius proposed granting noble Gauls access to the Roman Senate, justifying this initiative by recalling that the ancestors of the Romans themselves (Etruscans, Sabines, and others) had once been incorporated into the Roman civic body. Although such measures met resistance from conservative segments of Roman society, they contributed to elite renewal and the strengthening of imperial unity. Earlier, Julius Caesar had granted civic rights to certain Gallic communities after conquest, while under Emperor Antoninus Pius and especially Caracalla (through the Constitutio Antoniniana of 212 CE), Roman citizenship was extended to nearly all free inhabitants of

the Empire. By the third century CE, Rome had ceased to be a "city-state" in a narrow ethnic sense and had transformed into a multinational civilization unified by a common legal order.

From the perspective of contemporary state theory, these measures may be interpreted through the lens of the concept of "inclusive and extractive institutions" proposed by economists Daron Acemoglu and James A. Robinson. Inclusive institutions enable broad participation of diverse social groups in political and economic life, whereas extractive institutions concentrate benefits in the hands of narrow elites. The Roman state, particularly during the Imperial period, undertook a series of consciously inclusive actions: the expansion of citizenship, the involvement of new social strata in governance, and the legal recognition of "new Romans." These steps prevented institutional ossification and reduced the risk of provincial separatism, effectively prolonging the life of Roman civilization. Had Roman law remained rigid and exclusionary, refusing to acknowledge change, the Empire would likely have collapsed much earlier under the pressure of internal contradictions.

It is noteworthy that Roman law evolved not only through the enactment of new statutes, but also through the creative activity of jurists who adapted traditional norms to new circumstances through interpretation and praetorian edicts. The law of nations (jus gentium) emerged as a body of rules applicable to all free inhabitants of the Empire regardless of citizenship initially to regulate commerce with foreigners and later as a universal civil law for a multiethnic society. The Romans understood that imperial success required legal universalization and accordingly endowed many institutions with flexibility. Contracts, marriage, and inheritance, for example, acquired general legal formulas applicable to diverse peoples within the Roman state. This legal evolution ensured the system's viability over centuries.

The historical analysis leads to the conclusion that legal adaptability is not a sign of weakness, but rather a source of institutional strength and longevity. Roman law, incorporating the Stoic idea of universal reason and natural justice, demonstrated how conservatism in foundational principles can coexist with regulatory flexibility. It is precisely for this reason that Roman legal ideas have endured for millennia, forming the basis of continental legal systems in the modern era and continuing to be regarded as a model of rational law. In the context of the present study, the Roman experience suggests that when confronted with new subjects and realities whether emancipated slaves in antiquity or intelligent machines today the legal system must evolve while preserving its humanistic core and ensuring integration rather than alienation of new participants.

Stoicism and the Universalism of Law: From Cicero to an AI "Constitution"

One of the fundamental sources of the intellectual strength of Roman law was the philosophy of Stoicism. Roman Stoicism represented by thinkers such as Seneca, Epictetus, and the Emperor Marcus Aurelius promoted ideals of universal brotherhood, natural law, and the primacy of reason over passions. These ideas penetrated legal doctrine, forming an understanding of law as a reflection of a higher rational order common to all human beings. In his treatise *On the Republic*, Marcus Tullius Cicero perhaps inspired by Stoic views offered his famous definition of true law (*verus lex*): "True law is right reason in agreement with nature; it is of universal application, unchanging and everlasting; it summons to duty by its commands, and averts from wrongdoing by its prohibitions… There will not be different laws at Rome and at Athens, or different laws now and in the future, but one eternal and unchangeable law will be valid for all nations and all times." This remarkable proclamation implies that genuine standards of justice do not depend on place or era, are not established by the whims of rulers, but follow from the nature of things and from the rational nature of the human being.

For Roman jurists, the principle of natural law (*jus naturale*) meant that there exist certain basic norms and values inherent to human society at all times (for example, good faith in agreements and the inadmissibility of harming one's neighbor without punishment). The Stoics argued that every person is a bearer of the *logos* (reason), and therefore all people are equal in the moral sense. Seneca the Younger, advising his pupil Lucilius, emphasized the common origin of slaves and masters: "A slave is the same human being; it is only fate that has placed him lower. The same sky is above all of us, the same air sustains us all" thereby calling for humane treatment of slaves. Such views morally blurred rigid estate boundaries. And although Roman society remained hierarchical, the idea of a single human dignity gradually undermined the foundations of slavery. (Later Christian authors developed these motifs, yet secular Stoics also made a significant contribution; it is notable that the Stoic emperor Marcus Aurelius softened attitudes toward slaves and granted them certain rights, including the ability to lodge complaints against cruel masters.)

Stoicism also taught the control of emotions and adherence to reason (to live in accordance with nature, that is, rationally). This found reflection in Roman adjudication as well: the ideal of an impartial judge who resolves disputes on the basis of law and logical argument rather than anger or pity traces back to the Stoic ideal of the sage, free of extreme passions. In the modern context, this principle acquires renewed relevance. In discussions about creating "robot-judges" or using AI in judicial decision-making, it is often argued that an algorithm lacks the emotions inherent to humans and therefore may be more objective and unbiased. Of

course, the absence of emotions does not guarantee justice a machine can be biased due to the data embedded in it but the very framing of the question returns us to an ancient dispute about the role of rationality in law. The Stoics would likely welcome the idea that decisions are made by impartial reason. Ideally, a human–AI symbiosis in the judiciary could combine human mercy with the analytical power of machine reason.

Another Stoic contribution is the concept of meritocracy: the value of personal virtue and wisdom above nobility by birth. Emperor Octavian Augustus, although he established the Principate, engaged eminent jurists in governance (e.g., Salvius Julianus, and at a later time Mucius Scaevola), whose opinions were treated as equivalent to law (the schools of the Proculians and Sabinians). Under Augustus, the rule of *ius respondendi ex auctoritate principis* was introduced: authorized jurists were permitted to give official responses in the name of the emperor, and such responses carried the force of law. Competent expert opinion became a source of legislation. This is a clear example of a meritocratic approach: not origin, but knowledge and wisdom confer the right to shape norms.

A parallel suggests itself today. As technologies grow more complex, regulatory decisions may need to be made with the participation of high-level AI and robotics systems. If authoritative Roman jurists two millennia ago became "living laws," it is conceivable that in the near future authoritative AIs surpassing humans in the volume of knowledge and speed of analysis will be invited as a kind of "advisers" to lawmakers or even receive limited powers for the direct development of norms. Even now, there is discussion of using algorithms for regulatory impact assessment, for detecting internal contradictions in legislation, and even for generating draft laws. Following the Roman example, one can imagine that in an updated legal doctrine the opinion of an advanced AI on a narrowly specialized issue could acquire de facto normative status subject to subsequent verification by a human parliament. In this way, the meritocracy of legal experts transforms into an AI meritocracy, where the intellectual power of a system determines the weight of its opinion. Naturally, this raises many questions (control, accountability, algorithmic transparency), yet the historical precedent shows that law is a living dialogue of the wise (in antiquity, human; in the future, possibly artificial as well).

Finally, ethical constraints must be mentioned without them, any highly intelligent being, human or AI, can become a destructive force. Cicero and Seneca discussed the concept of *humanitas* humaneness combining benevolence with respect for the person. These principles manifested, for example, in the Roman maxim *summum ius, summa injuria* ("the strictest law may become the greatest injustice"), calling for moderation and mercy in applying harsh rules. In contemporary debates on AI, similar motifs are heard: AI must be ethically "programmed" to avoid extreme formalism that could harm people. In science fiction, Isaac Asimov illustrated this idea by formulating the Three Laws of Robotics, a kind of canon of "robo-ethics": (1) a robot may not harm a human being or, through inaction, allow a human being to come to harm; (2) a robot must obey human orders unless they conflict with the First Law; (3) a robot must protect its own existence as long as such protection does not conflict with the First and Second Laws. These well-known principles though fictional serve in practice as a prototype of what is now being discussed seriously: embedding "fundamental rules of safety and ethics" into AI code.

In the European Union, in 2017, the possibility of creating a "robotics charter" a set of ethical rules for AI developers was considered, along with ideas about a kind of "electronic personhood" for the most advanced AI, which would imply not only rights but also duties. One may say that the Stoic concept of a universal *logos* and natural law is today refracted in efforts to ensure AI's friendliness and predictability, to give it a "humanistic core." By analogy with the way Christianity integrated ancient Stoicism transforming it into a rule of love and mercy in law (the Byzantine Empire, for instance, softened Roman norms on slavery, introducing elements of compassion) our society must integrate the principle of "do no harm" into the very essence of new intelligent technologies. This principle, originally medical, is now demanded on a planetary scale: our planet is a fragile home, and the primary imperative of any legal innovation is not to damage the foundations of life. In the context of AI regulation, this means providing mechanisms to prevent a "machine revolt" and undesirable AI behavior, while preserving the supremacy of human values.

In sum, the Roman–Stoic tradition has left us three important orientations that remain relevant in the twenty-first century: (1) the conviction that there exist higher general principles of law valid always and everywhere (natural law), which must be taken into account even when creating new, unprecedented norms; (2) faith in rationality and meritocracy law should be shaped by the wisest and most knowledgeable (whether human jurists or, potentially, artificial superintelligences), yet their power must be balanced by morality; (3) the requirement of humaneness even an ideally rational law, if civilization is to retain a human face, must be imbued with the spirit of mercy and justice, otherwise cold logic will turn into tyranny. These precepts will be applied below to an analysis of what a legal order capable of accommodating the joint evolution of humans and technology might look like.

Futurology and Transhumanism: The "Übermensch" in the Age of AI

Before discussing specific legal mechanisms, it is necessary to outline the philosophical and futurist horizon: what might the future interaction between

humans and artificial agents look like? The idea that the human being in its current form is not the final point of evolution but a transitional state was articulated with particular clarity by Friedrich Nietzsche through the image of the *Übermensch* ("overman" / "superhuman"). Nietzsche wrote:

> "Man is a rope, stretched between the animal and the overman a rope over an abyss… What is great in man is that he is a bridge and not a goal."

In Nietzsche's understanding, the *Übermensch* is a new type of being that surpasses contemporary humanity both intellectually and morally, creating its own values.

In the twentieth century, the motif of the "superhuman" firmly entered mass culture one need only recall the popular image of Superman in comics, which emerged amid the technological progress of the 1930s. Yet now, in the twenty-first century, when people speak of the "superhuman," they increasingly mean not simply a hero with muscles of steel, but a synthesis of biology and technology what futurists call transhumanism. Transhumanism предполагает the use of science and technology to radically enhance human physical and cognitive capacities, up to and including overcoming biological limitations (aging, mortality, limited cognitive bandwidth).

Contemporary technologists directly link this idea to the development of artificial intelligence. For example, the inventor and futurist Ray Kurzweil predicts that AI will reach a level surpassing human intelligence. According to his forecasts, by 2029 computers will be able to match the human brain in intelligence, and around 2045 a technological singularity will occur an explosive growth in AI capabilities, effectively creating an intelligence that exceeds the combined intelligence of all humanity. At that point, Kurzweil argues, the merger of humans and machines will take place: we will integrate neural computer implants, connect the brain to cloud systems ("neuro-nanobots" in the bloodstream that amplify our cognitive abilities by orders of magnitude), and thereby become to contemporary humans roughly what contemporary humans are to apes. Kurzweil confidently states that "by 2045 we will expand our intelligence a millionfold." This is a scientific-technological version of the *Übermensch* a human–machine superintelligence.

Similar ideas though less optimistic have been voiced by Elon Musk as well. At the World Economic Forum (Davos, 2026), in conversation with Larry Fink, Musk noted that, in his view, AI would surpass the best human intellect by the end of 2026, and within only a few years would become smarter than all humans combined. He also suggested that by the turn of the decade the number of robots would exceed the number of humans on the planet, and that these robots would be capable of satisfying all basic human needs, producing unprecedented abundance. Musk described the combination of advanced AI and ubiquitous robotics as the only realistic path to providing every inhabitant of Earth with a high standard of living and ending poverty. Yet he also emphasized the risk: if AI's friendliness is not ensured, humanity could end up in a dystopian scenario reminiscent of the film *Terminator*. Musk often speaks of the need for symbiosis with AI precisely so that humans do not lose their place; one of his projects, Neuralink, develops neuro-interfaces enabling the brain to exchange data directly with computers. The idea is simple: "if you can't beat them, join them" to combine human consciousness with artificial intelligence by becoming a cyborg. In this strategy one can discern a practical response to the challenge of the *Übermensch*: we will not create a new biological species, but we will enhance ourselves through technology.

Of course, such a prospect raises many philosophical questions: will fusion with machines lead to the loss of human identity? What will remain of "us" when our thoughts are instantly connected to the cloud of data? Here the law enters the picture, for it will likely have to delineate the boundaries of what is permissible and protect basic personal rights even under conditions of cybernetic enhancement. Futurists already speak of a "right to cognitive integrity" protecting the brain from unauthorized access or modification. If memory and connectivity implants become part of the brain, hacking such a system would become the equivalent of a grave crime. New domains thus emerge: neurolaw, cyberpsychology. Roman law, of course, did not know such scenarios, yet it laid down a logic of universality. As Cicero observed, true law does not change from age to age only its applications do. The principle "do not do to another what you would not want done to yourself" remains valid even for a "cyborg": one must not break another's will, even if it is digitized.

It is also notable that in popular culture and business rhetoric the image of the superhuman through technology is increasingly perceived in positive terms. At the beginning of the twentieth century, Nietzsche's "superhuman" was received ambiguously; his name was exploited by totalitarian ideologies (the Nazis abused the concept by declaring Aryans to be "supermen," with tragic consequences). Contemporary discourse seeks to neutralize these dark connotations. Today, the "new human" a frequently invoked ideal is associated rather with a highly educated, morally mature, technologically supported personality free from disease and deprivation. Mass culture, through superheroes, cyberpunk, and films (from *Blade Runner* to *The Matrix*), explores the benefits and dangers of transhumanism. One may say that humanity is subconsciously preparing for a leap into the unknown and law must be prepared as well.

From the standpoint of the philosophy of law, a paradoxical situation arises: the object of legal regulation

may become the transformation of human nature itself. Previously, law regulated relations among relatively stable subjects humans whose forms of legal capacity were more or less constant (citizen, minor, foreigner, etc.). Now, the agenda is to regulate processes by which new subjects come into being: when AI reaches self-awareness, at what moment (and on what grounds) does it cease to be treated as a thing and acquire personhood? If a human modifies themselves beyond recognition (for example, by transferring consciousness into digital form a hypothetical "mind uploading"), do they remain a human being in legal terms? A legal order oriented toward Stoic universalism would likely answer as follows: the value of reason and personality must be protected in any substrate, whether carbon-based or silicon-based. That is, if an entity demonstrates rationality, self-awareness, and the capacity for moral judgment, it deserves certain rights (at a minimum, not to be destroyed or enslaved without cause). This position is supported by a number of contemporary philosophers within theories of "machine rights" or AI rights. They argue that we must be prepared to expand the moral community by including sentient and thinking non-humans (analogously to the gradual extension of certain limited rights to animals). Such ideas were recently regarded as exotic, yet in the early 2020s an "active conversation" on this topic began among lawmakers and experts. A 2017 European Parliament resolution explicitly recommended examining the possibility of a special legal status for intelligent robots in the future. This indicates that policymakers seriously contemplated the prospect of recognizing them as electronic persons neither fully equal to humans, nor merely property.

Of course, not everyone shares techno-optimism. There is also an alternative view: any merger with machines amounts to the "death of the human" (in the spirit of Heidegger or contemporary dystopias). The writer Yuval Noah Harari warns about the emergence of a class of "useless people" displaced by AI. Elon Musk and a number of scientists have also signed open letters calling for moratoria on superintelligent AI, fearing that uncontrolled progress could lead to loss of control. One may recall *2001: A Space Odyssey*, where the onboard AI HAL rebels, regarding humans as an obstacle to the mission. Law must serve as the framework that restrains negative scenarios. In this context, the Stoic ideas of self-discipline, moderation, and the subordination of passions to reason essentially, the governance of potential can be applied to AI: humans should act as "Stoics" in relation to a new powerful intellect, that is, not follow impulses of profit or fear, but rationally and calmly introduce rules that exclude extremes (AI tyranny or, conversely, a Luddite prohibition on AI).

Thus, the futurist analysis shows that we stand on the threshold of an era in which the boundaries between humans and their creations are blurred. The concept of the *Übermensch* may be realized either as the enhancement of each human being through technology, or as the emergence, alongside humans, of another intelligent species (AI). In either case, a new social contract is required one that encompasses all rational participants. It may be necessary to redefine the very concept of "human" in legal terms so that it includes cyborgized individuals, or to introduce a new notion of subjectivity not rigidly tied to *Homo sapiens*. These tasks seem unprecedented, yet history teaches that humanity has already passed through expansions of the circle of legal personhood. Slaves were once not considered subjects of law, but the world came to recognize them as full human beings. Women were once deprived of many rights, but the situation changed. The logic of legal development is the logic of expanding the sphere of justice and recognizing the dignity of an ever-greater number of beings. The coming step however strange it may appear may consist in extending the principles of legal order to artificial intelligence if it achieves traits of personhood. The Stoic "seed" of a universal law, planted two thousand years ago, may sprout into the most unexpected forms in the decades ahead.

Artificial Intelligence and Legal Personhood: Roman Analogies and Contemporary Solutions

The emergence of highly autonomous AI systems and robots sharply raises the question of who should be regarded as a subject of law and who as an object (a thing). Roman law drew a strict distinction between *personae* (persons) and *res* (things). Persons included freeborn citizens, Latins, and freedmen subject to certain limitations in short, all those who possessed legal personality to one degree or another. Things, alongside items of property, also included slaves, whom the law classified as "speaking tools" (*instrumentum vocale*). Yet practical reality required acknowledgment of the human nature of slaves. Roman jurists developed a range of legal institutions that softened the absolute boundary between "person" and "thing" as applied to slavery.

For example, a slave could possess a *peculium* a special pool of property that the slave effectively controlled, even though in legal terms it belonged to the master. A slave could also act as the master's representative in transactions (what today would be called an agent), acquiring rights for the master. When a slave committed a delict, special liability mechanisms applied: noxal liability (*actio noxalis*) allowed the master either to compensate the damage caused by the slave or to surrender the slave to the injured party as compensation. Importantly, the amount of liability was limited by the slave's value, so that the master would not suffer disproportionate losses due to the acts of his "thing." This measure is a characteristic Roman compromise between strict legal classification (the slave as a thing) and practical legal rationality (recognizing that the slave acts with a certain degree of autonomy). In effect, Roman law developed a concept of the owner's delictual liability for acts of an autonomous agent under his control an idea strikingly consonant with modern

debates about liability for harm caused by AI. Jurists of the time justified this through the master's dominical power (*dominica potestas*) over the slave: since the master derives benefit from the slave's labor, he should also bear responsibility for the harm yet only within reasonable bounds.

Modern law has already encountered analogous problems. If an autonomous AI-driven vehicle causes an accident, who is liable the owner of the vehicle, the software manufacturer, or someone else? The program itself cannot be "punished." In the EU, models of insurance-based liability or strict (objective) liability of the owner of an AI device have been discussed, analogous to how an owner may be liable for harm caused by an animal. The idea of limiting liability (analogous to the "value of the slave") also reappears: proposals have been advanced to create compensation funds or mandatory insurance to cover harm caused by robots, rather than bankrupting the operator. In essence, the world is returning to solutions already found by the Romans: the master answers for his "servant" within a certain measure, but not beyond it. As researchers note, "the complex relationship between autonomy and control present in Roman slavery is again becoming relevant in the context of AI." Roman jurists recognized that, although the slave was not a legal subject, his rationality and situational independence required legal recognition. Similarly, modern intelligent systems sometimes display unforeseen behavior, and the law must provide a special regime for such cases potentially a *sui generis* form of liability in which neither the AI (lacking personhood) nor the owner (lacking fault) is "guilty" in the traditional sense, yet harm is compensated through dedicated instruments (insurance, compensation funds).

Notably, contemporary doctrines increasingly discuss a "risk management approach": whoever benefits from the use of a risky technology should bear the burden of harm arising from its failures. This principle directly echoes a Roman maxim: *commodum eius esse debet, cuius periculum est* (the benefit should belong to the one who bears the risk).

At the same time, a more radical view also exists: in the future, some forms of AI might be recognized as subjects with limited legal capacity. If an AI concludes a transaction without a formal human representative, one may consider granting it the status of an electronic person so that it becomes the bearer of rights and duties (with segregated assets, insurance, and other safeguards). The European Parliament, as noted above, pointed to such a possibility "in the long term." Many scholars object: AI lacks consciousness and feelings, and law traditionally protects subjects capable of suffering harm (pain, distress). If AI is merely a complex automaton, it does not need "rights." Proponents respond that legal personality is needed not to protect AI's feelings but to facilitate legal operations for example, so that an AI agent can be a party to a contract and bear responsibility on its own, relieving humans of excessive burdens. This resembles the legal fiction of the corporation: a legal person that feels no pain yet nevertheless holds rights and duties distinct from those of shareholders. In this sense, an electronic person would be a continuation of the evolution of legal fictions. While the Romans did not know corporations in the modern sense, they did recognize collegia and municipalities as collective subjects. The move from natural persons to corporate persons was revolutionary in its time; the next step may be the recognition of artificial persons.

From a Roman-law perspective, one could imagine an "electronic slave" (*servus automatus*) gradually "purchasing" its freedom and becoming a *libertus automatus* a "freed AI." In Rome, a freedman obtained liberty but remained bound to a patron; analogously, an AI might acquire autonomy yet remain under some form of "guardianship" by a developer or agency tasked with supervising its compliance. One could even envisage institutions of electronic patronage. This may sound fanciful, yet partial analogues already exist in the sphere of autonomous programs: for example, blockchain smart contracts execute transactions automatically, and there are proposals that such agents might hold assets and act under pre-set algorithms (decentralized autonomous organizations, DAOs, being in effect prototypes of legally autonomous digital subjects).

A further dimension concerns criminal responsibility. The Romans did not impose criminal punishment on a slave as a subject in the full sense, yet a master could suffer consequences for the slave's crimes (through fines or by surrendering the slave for execution). In modern law the analogy is direct: one cannot imprison AI, but one can sanction an owner. The difficulty arises where harm occurs without the owner's fault. The options then are either strict liability (sanctions regardless of fault) or treatment as an accident covered by insurance. Again, proposals to create compensation funds for harm caused by AI are being discussed. Reinterpreting Roman experience, one might propose mandatory civil liability insurance for operators of high-risk AI (autonomous cars, robots), analogous to how a slave had an appraised value that limited potential losses. Such insurance would become, in effect, the "price" of potential harm distributed among all users of the technology. When an incident occurs, victims receive compensation without the need to identify a "guilty AI."

However, if AI were to acquire elements of free will (still hypothetical, yet not inconceivable in principle under strong AI), jurists would face a new puzzle: can a machine be said to have *fault*? Roman law treated *culpa* (fault) as a mental attitude toward an act something inapplicable to an automaton. Likewise today, an algorithm does not have "intention" in the human sense. Some scholars propose replacing subjective fault with an

assessment of risk and causation (a trend already visible: in emerging regulation of autonomous systems and AI, requirements of safety are specified, and "fault" transforms into non-compliance with a benchmark of safe conduct). Others argue that as AI grows more complex, the very notion of *mens rea* (criminal intent) may become obsolete, and law will move toward objective criteria what matters is not what the AI "thought" or "wanted," but what occurred and who was positioned to prevent it.

In any case, the nearest practical path appears to be strengthening the responsibility of developers and operators while limiting exposure, alongside the creation of state-backed funds and insurance systems for large-scale incidents. This resembles how societies addressed harm from industrial activity: rather than bankrupting the tortfeasor each time, they introduced liability insurance and compensation caps supported by public reserves for extraordinary cases (nuclear risks, for instance, are insured with state participation because losses may exceed the capital of any private firm). A similar framework may emerge for AI: as technologies evolve, "technological insurance law" must evolve as well.

Finally, the most sensitive question: do robots have rights? Not "citizens' rights," but at least elementary protections such as a right to continued existence or protection from cruelty. At present this may sound exotic: why grant rights to a soulless machine? Yet imagine that in a few decades a robot exhibits behavior indistinguishable from a human and pleads, "Don't switch me off, I'm afraid." The public destruction of such a robot might provoke social outrage or at least empathy. Even now, research suggests that humans tend to empathize with social robots (for example, experiments where a small dinosaur-like robot was "tormented" in front of observers elicited protest, even though participants knew it was not alive in a full sense). Over time, an ethical norm supported by law may develop, prohibiting unjustifiably cruel treatment of highly intelligent robots. The analogy is animal-protection law: animals are not legal subjects in the full sense, yet protective statutes exist in the interest of public morality. In the same way, robots might be protected "for the sake of humanity within ourselves." This is a striking turn: law would be used to cultivate humane attitudes even toward artificial creations, because otherwise we risk the atrophy of moral sentiment a process that may ultimately result in cruelty toward humans as well.

The Romans, incidentally, recognized the concept of *crudelitas* (cruelty) and considered excessively cruel masters worthy of condemnation; certain emperors (such as Antoninus Pius) introduced sanctions for killing a slave without sufficient cause. In other words, even in relation to a "thing," the law demanded a measure of humanity. The law of the future may likewise require humane treatment of "intelligent things," lest humans degrade morally. These are, admittedly, partly philosophical reflections, yet even today one encounters discussions about "ethical treatment of companion robots and robotic toys" (for example, that children should not be encouraged to break robot-toys so as not to cultivate cruelty).

To conclude this section: Roman law offers rich material for analogies in the context of AI. One can discern parallels such as "master–slave" = "human operator–AI," analogies to noxal actions, and even an analogy to *personae* (manumission as a metaphor for "emancipating" AI). History does not repeat itself literally, but the general principles remain operative: responsibility aligned with benefit; gradual granting of legal autonomy to those deemed worthy; risk limitation through liability caps. Combined with modern instruments (insurance, standardization of AI, and related tools), these principles may help construct a legal regime in which AI and robots become part of the legal order without destroying it. The key is to maintain a balance between control and autonomy. As Ulpian wrote, law is "the art of the good and the just"; applied to AI, this art consists in giving new rational agents space to realize their potential (for human benefit) while preventing them from causing harm.

Law and Technology: Symbiosis on the Threshold of a New Era

In the previous sections, we examined the philosophical and historical preconditions for the rapprochement between law and technology. We now turn to the practical aspects of the coming symbiosis between jurisprudence and high technology. This involves a dual process: (1) the use of AI and automation in performing legal functions themselves (adjudication, lawmaking, compliance oversight), and (2) the diffusion of new technologies in society, which requires corresponding legal structuring. These processes must proceed together; otherwise, either the law will lag behind and lose effectiveness, or technologies will be artificially constrained, risking the loss of social benefits.

1. The administration of justice in the future

In a number of jurisdictions, algorithms are already being tested to assist judges from predicting outcomes to checking draft judgments for errors. In Estonia, a "robot-judge" project for small claims was discussed some years ago. In China, internet courts operate in which certain procedures are automated. The prospect of fully replacing a judge with AI understandably provokes concern: machine "reason" lacks intuition, contextual understanding, and empathy. Yet for narrow tasks such as verifying consistency with precedents or calculating damages under prescribed formulas AI can clearly increase efficiency and reduce subjectivity.

The most promising model may be "human–AI symbiosis" on the bench: the AI proposes a solution, and the human confirms it while taking into account non-

machine factors. Interestingly, a loose analogue existed in Roman practice: during the Empire, factual investigation was often delegated to officials or administrative slaves, while a magistrate delivered the final decision. Here too, a form of symbiosis operated human, of course (for example, imperial procurators prepared cases, while the emperor could mitigate or alter outcomes as an act of clemency). In the future, the "rough work" of evidence analysis may be performed by a neural network, while the human judge contributes an element of *aequitas* (equity) that goes beyond the dry letter.

2. AI in lawmaking

AI will also find applications in legislation. Large language models can already generate texts under defined parameters. Of course, few would entrust them with drafting laws "from start to finish," but as instruments for comparative analysis, anti-corruption review, and the detection of normative collisions, AI is uniquely effective. Moreover, as data accumulates about how particular norms function in practice, it will become possible to forecast the consequences of new legislation. AI modeling of the economy and society could allow lawmakers to "test" a bill on a virtual polity and see whether it produces negative side effects much as engineering software tests an aircraft design before construction. Law may become more technocratic in this sense: less populism, more rationality. Yet it is crucial that value-guidance not be lost; AI cannot supply values on its own humans must set them (or they must be derived from higher principles, as Cicero insisted).

If AI participates in norm-production, the question of legitimacy arises. In democracies, the source of law is the will of the people expressed through elected representatives; AI is not elected. This can be resolved by treating AI as an adviser or expert. In any case, legislative texts are often drafted by invited legal specialists whose technical competence legislators rely on; similarly, a neural network may serve as a "legislative expert," while the final word remains with a human parliament.

3. Regulating technology

States must rapidly create legal frameworks for drones, cryptocurrencies, and biotechnologies. Often innovation outpaces law to such an extent that it operates in a grey zone. The long absence of clear rules for cryptocurrencies, for instance, facilitated various abuses. States are now catching up. But how can the process be accelerated? One answer is international cooperation. At the level of international law, agreements exist for example, on the non-aggressive use of outer space (the 1967 Outer Space Treaty) yet many are outdated (in the 1960s, few anticipated private companies launching thousands of satellites). New international norms are needed to regulate: resource extraction in space, liability for space debris, jurisdiction over lunar or Martian colonies, and similar issues. Some experts even propose "interplanetary law" a set of principles that could function as a constitution for human civilization beyond Earth. Here, parallels with the Roman idea of *ius gentium* and natural law are particularly apt.

If (or when) a settlement on Mars emerges, it will likely begin under the law of the mission-organizing state or under a corporate charter (for instance, a private company might propose its own governance document). But as a colony grows, autonomy and its own legislation will become an issue. Just as Rome gradually granted provinces increasing inclusion while the empire maintained general rules in core matters, an interplanetary order may also have to combine local self-government with overarching principles centered on Earth unless conflict intervenes. In this context, the natural-law universals Cicero described could serve as a bridge: one can imagine a declaration of interplanetary principles respect for life, peace, and cooperation forming the basis of legal order anywhere, whether on Earth or on Mars.

4. Code as law, and law as code

The expansion of human presence will require law to move beyond national frameworks and become genuinely universal. Rome once succeeded in unifying a vast empire under a common legal logic (extending the timeline to Justinian's *Corpus Juris Civilis*). Today, the task would be to develop a *Corpus Juris Humani* applicable both on Earth and beyond its orbit. Program code and smart contracts may play a decisive role: some futurists speak of "crypto-law," where many relations are regulated automatically by blockchain-based programs (e.g., distributing resources in a colony, recording contributions and consumption). Such systems do not depend on terrestrial courts; they execute sanctions through code. More soberly, blockchain can provide legal-transaction autonomy where conventional state institutions are absent (for example, early settlers might use a blockchain registry for ownership of habitats or agricultural plots). With satellite internet and constant connectivity, "supranational" legal infrastructures become more plausible. Already today, certain transactions can be executed entirely within digital environments with minimal state intervention provided there is code and agreement among participants. Law thus begins to take on the character of a global information system, not merely a statutory text.

This may sound radical, but recall that Roman law too became "global" for its era: it partially detached from local city realities and evolved into an abstract system of concepts (property, contract, inheritance) applicable in Gaul no less than in Syria. Our task is to elevate that abstraction to a new level: through digital technologies, to make it programmable. Perhaps future laws will be written as algorithms and verified for internal consistency. This could reduce corruption and loopholes (code executes as written, without informal deals). Yet, as Aristotle noted, law is too general and can be harsh; discretion is sometimes needed. Therefore, a

human (or a "superhuman") will remain necessary to introduce *ex aequo et bono* (equitable) corrections in particular cases.

5. Automated enforcement and constitutional safeguards

One branch of technological legal governance is the automatic execution of punishments and coercive measures. This is no longer science fiction: smart contracts can freeze a debtor's accounts; drones can monitor curfew violations; a "digital Leviathan" can issue instantaneous fines for any camera-recorded infraction. Such a "coded" order (from *code* both law and program) may be hyper-efficient, but it carries the risk of total surveillance. To avoid dystopia, safeguards of freedom must be built in. This is a constitutional-level task: determining which decisions cannot be delegated to machines and where a human must remain decisive. For example, capital punishment (where it exists) must never be imposed by an algorithm; arrest should be approved by a human judge even if the AI prepares the file. AI lacks moral responsibility and therefore should not assume functions that inherently require it.

At the same time, there are areas where the robotization of governance could be beneficial for example, administration. Imagine an integrated AI system through which filing tax returns, registering a business, and obtaining permits are performed without officials, bribery, or bureaucratic delay. Code delivers decisions under defined rules. Estonia's e-government trajectory is often cited as approaching this ideal. Again, Roman law was famous for the clarity of its formulas: the formulary procedure replaced cumbersome archaic actions. In this sense, we can become heirs to the Romans by transforming bureaucratic procedures into simplified digital forms.

6. Who regulates the developers?

Finally, one cannot ignore the question: who sets the rules for AI itself? Today, the largest AI systems are developed by private corporations. These models increasingly influence public discourse through advice, content generation, and information mediation. The risk arises that private interests will manipulate societies via AI. Hence the growing call for regulation of AI developers, up to and including licensing requirements, ethical audits, and data transparency. In the EU, the AI Act seeks to impose rules for "high-risk systems." Here, the principle of subordinating technology to law is practical: the development of such a powerful force cannot be left entirely to self-regulation. The Romans would likely agree: although their technology was modest, they understood that powerful forces (religion, the army) must be subject to law. Today's "legions" are code and servers; they too cannot remain outside the legal order.

Conclusion: toward a humane symbiosis

In sum, the symbiosis of law and technology is an unavoidable condition of progress. Law, while remaining the guardian of values, also becomes the architect of new algorithmic orders. Technologies, gaining increasingly autonomous functions, must "marry" law so that their union is productive and safe. If such a symbiosis can be realized, humanity may gain remarkable prospects: more impartial justice, an economy of abundance, security in cyberspace, and even expansion into space with clearly defined "rules of the game." If not, the future may bring either technocratic dictatorship or chaos in the face of new powers. This is why thinkers, jurists, and entrepreneurs already debate a "social contract for AI."

In this context, concerns are voiced about the concentration of AI's gains in the hands of a narrow group and the need to include all members of society in the new economy for example, through broad participation in AI infrastructure investment. Other commentators stress that if robots perform most labor and generate abundance, humans must still retain purpose and meaning. That is a task not of technology but of culture and law: to build institutions that encourage self-realization, creativity, and lifelong learning so that a society of abundance does not become a society of moral stagnation. It is possible that the law of the future will go beyond prohibitions and permissions and become a kind of "developmental contract," stimulating individuals and communities toward socially valuable activity even when it is not economically necessary for instance, guaranteeing funding for basic science and the arts through taxes on robotic productivity as a condition for sustaining the human spirit.

Roman Stoics taught that hardships temper the soul *per aspera ad astra*. In a world where hardships are removed by robots, societies may need consciously to create challenges, otherwise humanity risks losing creative energy. Law, as a regulator, can embed mechanisms that support productive tension: education systems, competitions, voluntary service, and research potentially framed as state obligations (for example, a constitutional duty to support personal development and opportunities for self-realization even when markets are indifferent). Such norms exist already (rights to education and cultural participation), but their weight may increase: humans must be more than consumers in an abundant society, otherwise they degrade. The paradox is that robots may provide everything, yet law must prevent us from "falling asleep" on our achievements lest we cease to be authors of our fate (and eventually allow machines to decide everything for us). The required solution is balance: relieve exhausting labor without removing the possibility of striving toward higher aims.

Thus, the goal of the law–technology symbiosis is sustainable abundance while preserving the human

within the human. The legal order is precisely the instrument capable of directing the technological flow toward the common good using the tested "dams" of principle and creating new channels of rule.

The Economy of Abundance: Legal Challenges and Responses

One of the key consequences of the rapid development of AI and robotics is the transformation of the economy itself. The large-scale deployment of autonomous systems promises a dramatic increase in productivity. If one accepts Elon Musk's forecasts, an abundance of inexpensive AI and robots will lead to an "explosion of the global economy without precedent." In Musk's simplified model (mentioned above), economic output equals average robot productivity multiplied by the number of robots. If productivity does not decline while the number of robots can expand almost without bound (in a "favorable scenario," robots manufacture new robots), then the theoretical volume of goods and services becomes astronomical. Under such conditions, meeting the basic material needs of all people appears achievable. This is what futurists describe as a "post-scarcity economy" or an abundance society.

Yet, as Larry Fink rightly observed in a Davos discussion, the central question becomes: "Will this abundance be broad or narrow?" Put differently, will the gains from growth be distributed across the entire population, or will they accrue primarily to the owners of the technologies? The experience of previous technological revolutions is ambiguous. Globalization and automation over recent decades have generated unprecedented wealth, yet distribution has been extremely uneven: the top 1 percent has captured a disproportionate share of the gains. Fink warned that if the same mistake is repeated with AI, social upheavals will be unavoidable. His proposed remedy is to make everyone an "owner" of growth, in particular through investments by pension and social funds in AI and robotics. In essence, this is a proposal to institutionalize meritocracy not only for those who build AI but for all citizens so that they, too, receive a share of the returns.

Legal mechanisms could include incentives for shared ownership of technologies, AI cooperatives, or tax regimes that redistribute the profits of the robot economy toward education, healthcare, and income guarantees. One of the most widely discussed instruments is a universal basic income (UBI). If robots can cover basic needs, it appears logical that every citizen should receive dividends from "robotized production." Several countries have run UBI experiments (Finland, Canada, and others), though at a modest scale. The Roman-law perspective is instructive here: when Romans leased public land or collected taxes, they often allocated part of the revenue to the needs of the plebs (for example, grain distributions, and *alimenta* a system of child support under Trajan). One may also recall the reforms of the Gracchi, who sought land redistribution an early prototype of social justice policy. A modern analogue would be "digital rent" or a share of a national wealth fund generated by technology. Related proposals include taxing the use of robot labor, as Bill Gates suggested, and directing the proceeds toward retraining. Musk himself has stated that "we may need universal basic income, because there will not be enough jobs." The law must provide instruments to soften the transition to a new economic regime; otherwise inequality may destabilize society contrary to the core legal aim of sustaining order and justice.

At the same time, critics of UBI point to a risk: if people have no necessity to work, they may lose motivation and fall into apathy. Nietzsche warned of the "last man" a self-satisfied conformist without aspiration. This is not the *Übermensch* but a form of degeneration. To prevent such an outcome, law must encourage self-realization and civic "passionarity" even in the absence of material compulsion. How might this be done? For instance, a guaranteed basic income could be coupled with extensive programs providing access to education, cultural goods, and scientific activity. Once the necessity of "earning bread" disappears, law may need to enable a new normative orientation: the pursuit of meaning through socially valuable activity (voluntary, yet supported). New forms of labor relations may emerge not out of economic necessity, but out of intrinsic challenge.

This is partly a matter of social design, yet the law can create frameworks: for example, formal recognition of volunteer status, "credits" or public recognition for participation in projects that are non-commercial yet socially significant. Roman legal culture valued the institution of *honores* honorary public service (magistracies in Rome were not paid; they were a distinction). Reviving the logic of *honores*, one can imagine a society where the highest reward is contribution to the common good rather than material accumulation (since material security is already ensured). This is, admittedly, a distant and partly utopian prospect; yet under conditions of abundance, non-material incentives will move to the foreground, and a legal system must be able to work with them cultivating and channeling them rather than suppressing them.

A further challenge concerns the international plane: competition among states for resources may shift into a new register. Today one speaks of an "AI race" whoever first creates strong AI will gain geopolitical advantage (analogous to nuclear weapons in the twentieth century). Contemporary international law remains weak in this area: there are no binding treaties restricting AI development (only scientists' calls and non-binding initiatives). A new global regime may be needed, analogous to non-proliferation frameworks, but for AI: mutual inspections, restrictions on autonomous weapons (discussed at the UN, yet without agreement), and enforceable standards of safety. If such a treaty were adopted, it would represent a major step toward

conscious governance of humanity's future something like a "General Act of Reason."

Rome, having unified the world under its authority, established the *Pax Romana* a long peace under which economy and culture flourished. Must today's world likewise coordinate globally to prevent destructive competition among AI systems (cyberwar, algorithmic destabilization)? Increasingly, the answer appears to be yes: common rules of the game are necessary. Efforts already exist UN working groups develop ethical principles; UNESCO issued its AI recommendations in 2021 but recommendations are not law. It is plausible that after a major AI incident (just as Hiroshima catalyzed arms-control frameworks) the world will move toward legally binding norms. Here, once again, the Stoic vision of a worldwide republic of reason one law for the whole globe returns to the foreground.

A particularly important direction concerns energy the foundation of abundance. Robots and AI data centers require immense amounts of electricity. Musk emphasized at the same forum that a key bottleneck is power generation: grid capacity expands by only about 4–5 percent per year, lagging behind the exponential growth in chips and compute. He sees the solution in accelerated solar development and even space-based energy (solar satellites). He offered a rough calculation: a 160 km × 160 km area of solar panels could supply the entire United States, and for Europe it would be sufficient to use relatively limited underutilized areas in Spain and Sicily. This is a technical argument, but it immediately triggers legal questions: whose land will host the panels; how can investors be incentivized; how can bureaucracy and tariff barriers be reduced? Musk complained that high tariffs on solar modules in the United States impede the transition in other words, laws themselves can slow progress. After such interventions, regulators may reconsider policy; within the European Union, debates on deregulating renewable installations are also ongoing. The broader conclusion is that progressive law must be capable of removing unnecessary constraints in time when a technological leap demands it.

The Roman experience is again relevant: Romans did not shy away from legal revision and partial deregulation old rules inconsistent with changing realities were modified or abandoned (for example, debt bondage was curtailed; the power of the *pater familias* was gradually limited over time). When we speak of a new industrialization solar, hydrogen, robotic legal space must be "cleared": outdated norms generating unjustified transaction costs must be removed. Naturally, this must be done prudently so as not to sacrifice ecology or safety. Yet bureaucratic delay can be costly. Musk, for example, claims that China rapidly expands electric capacity and outpaces the West partly because of centralized fast planning. Democracies must respond by accelerating procedures in critical areas or risk strategic defeat. Law can enable this through regulatory sandboxes, temporary simplified regimes for pilot projects, "silent consent" or automatic approval when agencies fail to respond within deadlines, and related instruments. Such administrative innovations are already used (in fintech, in autonomous vehicle testing). This is legal adaptability in practice: giving new technologies room to grow while continuously monitoring and correcting as needed.

One must also account for ecology. Robots and AI must serve sustainable development; otherwise, victory in one domain (material abundance) will produce catastrophe in another (degraded nature). Romans, to be sure, were not ecologically cautious deforestation and mining were extensive but contemporary scientific knowledge makes clear that ecological constraints are indispensable. Law will therefore have to integrate nature into the new system. One might even treat the planet and its ecosystems as a participant in the "social contract." In New Zealand, for instance, the Whanganui River was granted legal personhood to protect its interests. It is plausible that future global law will more formally recognize "rights of nature," requiring AI strategies to incorporate ecological metrics so that a superintelligence optimizes not only profit but, for example, CO_2 levels. Such constraints must be embedded into objectives through law and, potentially, through the design of the goal functions themselves.

In sum, an economy of abundance is a blessing for which legal systems must prepare. Otherwise, it may undermine the very foundations of society (inequality, loss of meaning, ecological imbalance). In preparing for it, legal scholars should recall the lessons of history: major transitions require wise laws. Rome endured the crisis of the Republic and found an institutional solution through Augustan reforms, laying down principles that lasted for centuries. Our transition from an economy of scarcity to an economy of surplus is even more radical. It may require a new "Augustan settlement" on a global scale, redistributing roles and benefits across all strata and, perhaps, across all forms of agency (bio and non-bio). Here the Stoic perspective is again useful: the world is a single community in which all parts are interconnected. The law of the future must view humanity (and its creations) as one family navigating a vast cosmic ocean. If some are overfed while others drown, the ship will not arrive. Laws must therefore balance burdens and provide lifelines. Technologies may furnish unprecedented engines but the course and the rules of navigation are set by the captain (ideally, a collective reason anchored in moral constraint).

CONCLUSION

At the dawn of a new era, humanity turns to the legacy of its ancient past Roman law in search of wisdom and orientation. Having examined the adaptability of the Roman legal system, its philosophical foundations, and its capacity to integrate new participants into society, we

arrive at the following conclusion: Roman law can indeed serve as a kind of "building material" for the legal architecture of a future civilization. Not in a literal sense (not as a manual of *mancipatio* or servitudes), but as a set of principles, a methodology, and a legal ethos.

First, the principle of universalism and inclusivity. Roman law taught that, despite differences, there are rules of justice that apply to all. In a world where humans, AI, and cyborgs interact, we will critically need shared "rules of the game" extending to all rational participants. This implies the development of supranational possibly even interplanetary law grounded in respect for rational life in any form. Cicero's idea of a single, eternal law sounds almost prophetic today: "there will not be different laws at Rome and at Athens… but one law for all peoples and all times." Rephrased for our context: there should not be different foundational norms for Earth and Mars, or for humans and AI basic values (for example, the value of conscious life, the prohibition of unjustified harm, and a duty to assist those in need) must be universal.

Second, legal flexibility and evolutionary development. Roman law was not afraid to change while remaining itself. A new doctrine let us provisionally call it "neo-Roman techno-law" must be a living system. Law is no longer carved in marble; it is encoded in updatable software and must respond quickly to feedback. Just as praetors annually issued new edicts, adjusting the application of law, so regulators of the future must be capable of releasing rapid updates normative "firmware patches" for a digital society. Here we see a significant alliance between lawyers and programmers: ideas of "Law as Code" are already emerging, where legal rules are drafted from the outset in a form executable by computers. Future jurists may be half coders. Yet Roman jurists, too, were "coders" in their own way: they translated complex life situations into precise verbal formulas of actions and interdicts. The essence remains the same; only the medium changes.

Third, the priority of the human (and humane) element. Even the most rational legal system must serve the human being this is the legacy of Stoicism and humanism. We have shown that without an ethical framework, technologies may become dangerous. Law is, in a sense, ethics supported by coercive force. In designing regulation for AI and robotics, we must "hard-code" humanism into their operation through mandatory ethical modules (an analogue of Asimov's laws), or at least through strict oversight of deployment (a ban on lethal autonomous weapons, and a requirement of "human-in-the-loop" decision-making where life and death are at stake). If robots cannot write laws (yet), humans who write laws about robots must remember the human. Efficiency can never justify a system that is flagrantly unjust. Questions of wealth distribution, access to technology, and protection of the vulnerable therefore remain central now in new forms (digital inequality, algorithmic discrimination, and related risks).

Fourth, antifragility and resilience. We referenced Nassim Nicholas Taleb and his concept of antifragility the capacity of a system to strengthen under stress. Roman legal civilization withstood multiple crises (wars, economic downturns, regime changes), and it did so in part thanks to its legal culture: clear rules combined with equitable exceptions; institutions of inheritance and contract that facilitated recovery after shocks; and mechanisms that preserved continuity. The world of the future may face technological "failures" from global cyberattacks to an unsuccessful experiment with advanced AI. To endure, we will need legal safeguards: international AI safety treaties, emergency protocols (analogous to those used at nuclear plants), and chain-of-responsibility regimes that align incentives so stakeholders take risk seriously. Each such incident becomes a lesson, and law must absorb it through updates. In that sense, law can become antifragile: with each new challenge it grows stronger and more refined, provided society learns consistently.

In summary, the adaptability of Roman law is not merely a historical phenomenon but a source of contemporary inspiration. Translating it into modern conditions, we propose viewing legal development as a continuous project that integrates the best ideas of the past (the rule of law, equality of subjects before the law, and the combination of strict norms with flexible adjudication) with the bold innovations of the present (automation, AI, and global cooperation). Figuratively speaking, this enables a bridge between the Roman *pons* the road along which Roman law advanced for centuries and the cosmic highway of the future along which both humans and intelligent machines may travel.

Perhaps within a few decades, legal treatises will be written in co-authorship by human professors and highly intelligent programs; courts on Earth will adjudicate cases involving parties such as a human, an AI, and a colonist from Mars; and appeals will be heard by some "Supreme Interplanetary Tribunal." It sounds amusing yet a Roman of Caesar's age would have been equally astonished to learn that Roman legal ideas would become the foundation of codes across the ocean two thousand years later. And yet it happened: Roman law outlived its creators. That fact suggests it contained something universal. We believe that a legal culture capable of absorbing new peoples and new relationships can also serve in an era when new "peoples" may include rational technologies.

Just as, at the transition from Republic to Empire, Roman jurists consolidated around Octavian Augustus to shape a new legal reality, so today a coalition of jurists, engineers, and philosophers is required to shape a reality in which humans and artificial intelligence coexist and cooperate. This may become a

Pax Technologica a "peace of technology," analogous to the *Pax Romana* based not on domination but on harmonization. The image mentioned in the text a T-shirt of Elon Musk featuring a Vitruvian human-robot symbolizes the fusion of engineering and humanism. Leonardo da Vinci, who united science and art, would likely have appreciated such an interpretation: the ideal Vitruvian human transforms by embracing a new nature while retaining the same proportions of harmony.

In light of the foregoing, we conclude that the legacy of Roman law is not underestimated; it is simply awaiting a new application. The future, however futuristic it may seem, needs roots and foundations. Roman law part of our civilizational roots can lend the future coherence and structural strength. Ultimately, law is an "artificial synthesis" (to use a philosopher's phrase) of human experience designed to order life. Life is changing rapidly; the synthesis must deepen accordingly. But with the accumulated wisdom of centuries including the Roman tradition we have a genuine chance to make this transition as painless and effective as possible.

As Seneca is often paraphrased as saying, "law is the king of all, mortal and immortal." Applied to our theme: let law become sovereign over silicon "minds," over the genome, and over cosmic settlements if we endow it with sufficient flexibility and justice. Then the "light of consciousness," of which Musk speaks, will not merely avoid extinction but may burn brighter, illuminating a path into still unknown spaces. Along that path, walking side by side, will be the human being, the faithful helper robot, and the pervasive intelligence of AI bound together by a legal order born from the spirit of Rome and renewed for the centuries to come.

BIBLIOGRAPHY

- Talya Deibel. "Back to (for) the Future: AI and the Dualism of *Persona* and *Res* in Roman Law." *European Journal of Law and Technology* 12, no. 2 (2021).
- Elon Musk & Larry Fink at WEF Davos – Interview Transcript (Jan 2026).
- Investopedia. "Larry Fink: What Happens to Everyone Else if AI Fuels Inequality?" (Jan 22, 2026).
- *TheStreet*. "Musk just dropped a wild AI warning at Davos" (Jan 23, 2026).
- Cicero, *De Re Publica*, Book III – via Bradley J. Birzer, *The Imaginative Conservative* (2019).
- European Parliament Resolution, "Civil Law Rules on Robotics" (2017) – summary via CMS Law-Now.
- *Fortune* Magazine. Nick Lichtenberg, "AI creates new superhuman, as Nietzsche predicted" (Aug 13, 2023).
- *The Guardian*. Zoë Corbyn, interview with Ray Kurzweil (June 29, 2024).
- *pv magazine* (USA). Eckhart Gouras, "Elon Musk at WEF: SpaceX and Tesla to produce 100 GW of PV per year…" (Jan 26, 2026).
- Isaac Asimov. "Runaround" (1942) – Three Laws of Robotics.