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"A presente obra, Inteligência artificial, administração da justiça, crise energética global e direitos fundamentais, reúne estudos interdisciplinares e internacionais dedicados a alguns dos mais relevantes desafios jurídicos, éticos, sociais e ambientais da contemporaneidade. Ao articular inteligência artificial, transformação da justiça, democracia, responsabilidade civil, governança digital, transição energética e sustentabilidade, a coletânea contribui para a compreensão das profundas mudanças que redefinem as instituições e as relações humanas no século XXI.

A obra constitui leitura relevante para juristas, pesquisadores, magistrados, advogados, legisladores, gestores públicos e profissionais da tecnologia. Seus capítulos abordam a ética no uso da inteligência artificial na pesquisa científica, a aplicação de ferramentas algorítmicas no sistema judicial, a autenticidade da prova digital, a transparência e a responsabilização das plataformas, a Justiça 5.0, a modernização da administração pública, os contratos digitais e os impactos ambientais dos sistemas de IA.

A coletânea também amplia o debate sobre uma transição energética democrática, inclusiva e ambientalmente responsável, examinando o hidrogênio verde, o federalismo energético e a participação social na construção de novos modelos de governança. A energia é compreendida não apenas como recurso econômico, mas como elemento indispensável à dignidade humana, à justiça social e à concretização dos direitos fundamentais.

Em sintonia com a Encíclica Magnifica Humanitas, do Papa Leão XIV, a obra reafirma que o progresso tecnológico deve permanecer subordinado à dignidade da pessoa humana, ao bem comum, à solidariedade, à justiça social e ao cuidado da Casa comum. A inteligência artificial pode ampliar a eficiência, a inclusão e o acesso à justiça, mas também pode aprofundar desigualdades, reproduzir discriminações, comprometer a privacidade e concentrar novas formas de poder. Por isso, sua governança deve ser preventiva, transparente, responsável e submetida à supervisão humana.

Em um tempo no qual a inovação avança mais rapidamente do que a capacidade regulatória dos Estados, esta obra oferece fundamentos para repensar o Direito, a administração da justiça e as políticas energéticas, conciliando desenvolvimento tecnológico, democracia, sustentabilidade e proteção integral dos direitos fundamentais."

DEILTON RIBEIRO BRASIL

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PRÓLOGO

A humanidade atravessa uma transformação histórica cuja profundidade ainda não pode ser inteiramente mensurada. A digitalização, a inteligência artificial, a automação das atividades humanas, a reorganização das relações econômicas e sociais, a crise climática e a transição energética estão modificando não apenas os instrumentos utilizados pelas pessoas, pelas empresas e pelos Estados, mas também os critérios por meio dos quais se compreendem a justiça, a liberdade, a responsabilidade, o trabalho, a democracia e o desenvolvimento.

É nesse horizonte que se situa a obra *Inteligência artificial, administração da justiça, crise energética global e direitos fundamentais*. Ao reunir pesquisadores de diferentes países e tradições jurídicas, a coletânea enfrenta algumas das mais importantes *res novae* do século XXI, examinando os benefícios proporcionados pela inovação tecnológica, mas também os riscos de concentração de poder, desumanização, discriminação algorítmica, opacidade decisória, degradação ambiental e aprofundamento das desigualdades.

A reflexão proposta nesta obra encontra significativa correspondência com a Carta Encíclica *Magnifica Humanitas*, do Papa Leão XIV, dedicada à salvaguarda da pessoa humana na era da inteligência artificial[1]. A Encíclica parte da compreensão de que a técnica constitui expressão da inteligência e da criatividade humanas, podendo contribuir para curar, educar, conectar pessoas, organizar instituições e cuidar da Casa comum. Contudo, ela não é inteiramente neutra, pois incorpora os valores, os interesses e as finalidades daqueles que a concebem, financiam, desenvolvem, regulam e utilizam.

A questão fundamental, portanto, não consiste simplesmente em aceitar ou rejeitar a tecnologia, mas em discernir a serviço de quem e de quais finalidades ela será colocada. A *Magnifica Humanitas* representa essa escolha mediante duas imagens bíblicas: a torre de Babel, símbolo de um poder técnico orientado pela autossuficiência, pela uniformização e pelo domínio; e a reconstrução das muralhas de Jerusalém, narrada no Livro de Neemias, expressão da responsabilidade compartilhada, da cooperação, do diálogo e da edificação de uma comunidade orientada para o bem.

Essa alternativa ilumina toda a presente obra. A inteligência artificial pode contribuir para construir instituições mais eficientes, inclusivas e transparentes, mas também pode transformar-se em instrumento de vigilância, exclusão e dominação.

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[1] LEÃO XIV, Papa. Carta Encíclica *Magnifica Humanitas*: sobre a salvaguarda da pessoa humana na era da inteligência artificial. Cidade do Vaticano, 15 maio 2026. Disponível em: https://www.vatican.va/content/leo-xiv/pt/encyclicals/documents/20260515-magnifica-humanitas.html. Acesso em: 18 jul. 2026.

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A administração da justiça pode beneficiar-se da automação e da análise de dados, desde que a busca pela eficiência não substitua o discernimento humano, o devido processo e a imparcialidade. A transição energética pode favorecer a descarbonização e a proteção ambiental, mas somente será legítima quando respeitar a dignidade das comunidades, promover a justiça social e distribuir equitativamente seus benefícios e encargos.

A Encíclica reafirma que a dignidade da pessoa humana não depende de sua produtividade, de seu desempenho, de suas capacidades econômicas ou de sua adaptação às novas tecnologias. Trata-se de uma dignidade inerente e inalienável, que precede qualquer avaliação baseada em dados, classificações ou previsões algorítmicas. Por isso, o progresso tecnológico deve ser apreciado a partir de uma pergunta essencial: ele torna a vida humana mais digna, mais livre, mais solidária e verdadeiramente mais humana?

Essa perspectiva antropológica constitui um importante critério para a leitura dos capítulos da obra.

O Capítulo I, de autoria de Abdulwahab Abdullah Al-Maamari, analisa as questões éticas relacionadas ao uso da inteligência artificial na pesquisa científica. A Inteligência Artificial pode facilitar a organização do conhecimento, acelerar a análise de informações e auxiliar o pesquisador em determinadas etapas de sua atividade. Entretanto, sua utilização sem critérios pode comprometer a originalidade científica, favorecer o plágio, produzir informações inexatas e enfraquecer a responsabilidade pessoal do autor. A contribuição evidencia que a tecnologia deve permanecer como instrumento de apoio ao pensamento humano, e não como substituta da consciência crítica, da integridade acadêmica e da autoria responsável. Essa compreensão aproxima-se do apelo da *Magnifica Humanitas* para que a inteligência artificial seja inserida em uma cultura de responsabilidade, transparência e discernimento.

No Capítulo II, Azim Uddin Gazi examina as ferramentas de inteligência artificial que podem contribuir para a melhoria do sistema judicial. São consideradas suas possibilidades de aplicação na gestão de processos, na análise de documentos, na pesquisa jurídica, na avaliação de riscos e no apoio às decisões. O emprego dessas tecnologias pode reduzir atrasos e ampliar o acesso à justiça, mas também pode reproduzir preconceitos contidos nos dados, gerar decisões pouco explicáveis e comprometer direitos processuais fundamentais. A eficiência judicial não pode ser alcançada mediante a redução das pessoas a padrões estatísticos. A inovação deve permanecer subordinada ao devido processo legal, à igualdade, à não discriminação e à supervisão humana.

O Capítulo III, elaborado por Pedro Luis Bracho-Fuenmayor, enfrenta a crise probatória na era algorítmica. A inteligência artificial generativa tornou possível a produção de textos, imagens, áudios e vídeos que podem simular acontecimentos e

manifestações humanas com elevado grau de realismo. Essa capacidade desafia os critérios tradicionais de autenticidade e integridade das provas. O capítulo demonstra que a defesa da verdade processual exige novos instrumentos técnicos e jurídicos capazes de verificar a origem, a integridade e a cadeia de custódia dos conteúdos digitais. A preocupação relaciona-se diretamente com a compreensão da verdade como bem comum, desenvolvida pela *Magnifica Humanitas*. Quando a distinção entre o verdadeiro e o artificialmente fabricado se torna incerta, não apenas o processo judicial, mas a própria confiança social e democrática são colocados em risco.

No Capítulo IV, Deilton Ribeiro Brasil e Elena E. Gulyaeva analisam a transparência, a segurança e a responsabilização dos sistemas de inteligência artificial a partir dos artigos 2.027-U a 2.027-Z do Projeto de Lei brasileiro nº 4/2025. O estudo destaca deveres de prevenção de riscos, transparência, segurança, auditoria e prestação de contas. A análise revela a necessidade de superar uma regulamentação meramente reativa, baseada apenas na reparação posterior do dano, para consolidar um modelo de governança preventiva e orientado pelos direitos fundamentais. A *Magnifica Humanitas* oferece importante fundamento para essa construção ao advertir que os instrumentos normativos devem conter os efeitos nocivos do poder tecnológico e orientar a inovação para o bem comum.

O Capítulo V, de Faiz Ayat Ansari e Jorge Isaac Torres Manrique, aborda a inteligência artificial e sua aplicação na pesquisa científica do Direito. As ferramentas algorítmicas podem ampliar o acesso à jurisprudência, facilitar a análise de grandes conjuntos documentais e permitir novas formas de investigação jurídica. Contudo, a pesquisa não pode ser reduzida à coleta automatizada de informações ou à reprodução de respostas fornecidas por sistemas computacionais. A construção do conhecimento jurídico exige interpretação, contextualização, argumentação e responsabilidade intelectual. A tecnologia poderá colaborar com o pesquisador, desde que não elimine a dimensão humana do conhecimento, formada pela capacidade de formular problemas, avaliar consequências e assumir responsabilidade pelas conclusões apresentadas.

No Capítulo VI, Rubens Beçak, Luciano Henrique Caixeta Viana e Simone Tavares de Andrade examinam a relação entre inteligência artificial, democracia e responsabilidade das grandes empresas tecnológicas. Os algoritmos das plataformas digitais influenciam a visibilidade das informações, a formação da opinião pública e as condições do debate político. Quando orientados exclusivamente pela maximização do engajamento e do lucro, podem favorecer a polarização, a desinformação e a manipulação social. A abordagem converge com a preocupação da Encíclica em proteger a verdade, a democracia e a liberdade contra formas de dependência e controle digital. A responsabilização das plataformas deve, portanto, assegurar transparência, proteção dos usuários, pluralismo e preservação do espaço democrático.

O Capítulo VII, de Vivek Kumar, desenvolve a noção de Justiça 5.0 e analisa os impactos da inteligência artificial sobre a administração global da justiça, a advocacia e as entidades profissionais. A transformação digital exige novas competências dos profissionais do Direito e novas formas de organização institucional. Entretanto, a justiça não pode ser completamente automatizada, pois envolve interpretação, prudência, empatia e consideração das circunstâncias particulares de cada pessoa. Os advogados e as instituições representativas da advocacia passam a desempenhar também a função de supervisores críticos e éticos dos sistemas automatizados. A Justiça 5.0 somente será compatível com os direitos fundamentais quando combinar inovação, inclusão digital, responsabilidade profissional e centralidade da pessoa humana.

No Capítulo VIII, Irmann Regina Genari, Marilene Gonçalves Rios Melo, Daniela de Castro Melo e Ariane Fernandes da Conceição estudam os desafios e as oportunidades da aplicação da inteligência artificial na administração pública municipal. As tecnologias digitais podem melhorar o atendimento ao cidadão, simplificar procedimentos administrativos, aperfeiçoar a gestão de recursos públicos e apoiar políticas baseadas em dados. Todavia, municípios com reduzida capacidade financeira e institucional podem enfrentar dificuldades de infraestrutura, capacitação e proteção de dados. O princípio da subsidiariedade, reafirmado na *Magnifica Humanitas*, oferece importante orientação para esse debate: as instâncias locais devem ser valorizadas e fortalecidas, evitando que o poder tecnológico permaneça concentrado em estruturas distantes das comunidades afetadas.

O Capítulo IX, de Eduardo Caetano de Carvalho, Maria Fernanda Pereira Lima e Victor Hugo Gimenez Gonçalves, repensa a responsabilidade civil diante da soberania das redes e do neocolonialismo digital. Os danos produzidos por sistemas algorítmicos podem ser difusos, cumulativos, transnacionais e de difícil comprovação. Além disso, grandes plataformas privadas exercem poder sobre dados, comunicações, relações econômicas e comportamentos sociais, frequentemente superando a capacidade regulatória de muitos Estados. A responsabilidade civil deve assumir função não apenas reparatória, mas também preventiva, impondo deveres de diligência, governança e gestão de riscos. Essa abordagem responde ao alerta da Encíclica sobre a concentração privada do poder tecnológico e sobre a necessidade de submetê-lo aos direitos humanos, à justiça social e ao bem comum.

No Capítulo X, Lenin Navarro Moreno examina o conceito de contrato em uma realidade marcada pela digitalização e pela internacionalização das relações jurídicas. Contratos eletrônicos, contratos inteligentes e operações automatizadas desafiam categorias tradicionais relacionadas à manifestação da vontade, ao lugar da contratação, à jurisdição e à lei aplicável. A autonomia privada, embora essencial, não pode ser convertida em instrumento de imposição unilateral por atores tecnologicamente dominantes. A liberdade contratual deve ser acompanhada de transparência, consentimento efetivo, equilíbrio e proteção das partes vulneráveis.

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A reflexão relaciona-se com o esforço da *Magnifica Humanitas* para salvaguardar a liberdade humana contra a dependência, a mercantilização e as novas formas de subordinação digital.

O Capítulo XI, de Pablo Rafael Banchio, analisa os impactos ambientais dos sistemas de inteligência artificial e seu tratamento jurídico. A infraestrutura digital depende de centros de dados, consumo energético, uso de água, extração de minerais e produção de equipamentos eletrônicos. A aparente imaterialidade dos sistemas de Inteligência Artificial oculta uma extensa cadeia material e ambiental. A inovação tecnológica não pode ser avaliada apenas pelos resultados computacionais que produz, devendo considerar os custos ecológicos e sociais de todo o seu ciclo de vida. A proteção da Casa comum, a justiça intergeracional e a destinação universal dos bens exigem mecanismos de avaliação ambiental, transparência sobre o consumo de recursos, prevenção de danos e responsabilização dos agentes econômicos.

O Capítulo XII, de Deilton Ribeiro Brasil e Maurício da Cunha Savino Filó, aborda o marco jurídico e regulatório do hidrogênio verde, relacionando inovação e desenvolvimento de baixo carbono no Brasil. O hidrogênio produzido mediante fontes renováveis apresenta relevante potencial para a descarbonização de atividades econômicas e para a diversificação da matriz energética. Entretanto, sua expansão deve ser acompanhada de segurança jurídica, certificação ambiental, gestão de riscos e distribuição equitativa dos benefícios. O desenvolvimento tecnológico, segundo os princípios da *Magnifica Humanitas*, não pode deixar povos e comunidades à margem. Uma economia de baixo carbono somente representará desenvolvimento humano integral quando estiver orientada à dignidade, à solidariedade e à justiça social.

O Capítulo XIII, elaborado por Faiz Ayat Ansari e Anasua Das, investiga o federalismo e as leis energéticas na Índia, considerando a construção de sistemas sustentáveis de governança. A repartição de competências entre o governo central e os Estados permite respostas adaptadas às diferentes realidades territoriais, mas também exige coordenação, cooperação e coerência institucional. O tema demonstra que a transição energética não depende unicamente de soluções técnicas. Ela requer instituições capazes de promover participação, distribuir responsabilidades e atender às necessidades concretas das comunidades. Os princípios de subsidiariedade e solidariedade oferecem, nesse contexto, fundamentos para uma governança energética simultaneamente descentralizada, coordenada e orientada ao interesse coletivo.

O Capítulo XIV, de Rubens Beçak, Luciano Henrique Caixeta Viana e Simone Tavares de Andrade, encerra a coletânea com uma reflexão sobre democracia energética, participação popular e justiça social na transição energética. O acesso à energia condiciona o exercício de inúmeros direitos fundamentais e não pode ser tratado exclusivamente como relação de mercado. A transição para fontes renováveis

deve incluir as populações afetadas, combater a pobreza energética e impedir que os custos ambientais e econômicos sejam desproporcionalmente impostos aos grupos mais vulneráveis. Essa concepção aproxima-se dos princípios da justiça social, da solidariedade, da destinação universal dos bens e do desenvolvimento humano integral reafirmados pela Encíclica.

A leitura conjunta dos capítulos demonstra que inteligência artificial, administração da justiça, crise energética e direitos fundamentais não constituem temas isolados. A infraestrutura necessária ao funcionamento da inteligência artificial produz impactos energéticos e ambientais; os algoritmos interferem na pesquisa, na justiça, na administração pública, nos contratos e na democracia; as plataformas digitais exercem formas inéditas de poder; e a transição energética redefine relações econômicas, territoriais e sociais.

A unidade da presente obra encontra-se na convicção de que toda inovação deve ser avaliada à luz da dignidade humana. Essa centralidade não representa obstáculo ao desenvolvimento científico. Ao contrário, oferece-lhe uma finalidade legítima e um critério de orientação. A ciência e a tecnologia alcançam seu sentido mais elevado quando contribuem para diminuir sofrimentos, ampliar direitos, proteger a criação e fortalecer relações sociais justas e solidárias.

A *Magnifica Humanitas* adverte que a humanidade pode erguer uma nova Babel ou reconstruir Jerusalém. A nova Babel manifesta-se quando a eficiência se transforma em valor absoluto, os seres humanos são reduzidos a dados, as desigualdades são consideradas inevitáveis e a natureza é tratada como recurso ilimitadamente disponível. A reconstrução de Jerusalém, por sua vez, ocorre quando cientistas, juristas, legisladores, trabalhadores, empresas, universidades, instituições públicas e comunidades assumem responsabilidades compartilhadas na construção do bem comum.

Esta obra coletiva participa desse esforço de reconstrução. Seus capítulos não rejeitam a tecnologia nem ignoram as possibilidades da inovação. Eles procuram identificar condições jurídicas, éticas e institucionais para que o progresso não se converta em instrumento de exclusão e dominação. A defesa da transparência, da supervisão humana, da responsabilidade, da integridade científica, da verdade, da participação democrática, da justiça energética e da sustentabilidade constitui expressão concreta da escolha por uma tecnologia a serviço da pessoa e dos povos.

Ao relacionar inteligência artificial, justiça, energia e direitos fundamentais, a coletânea recorda que o verdadeiro desenvolvimento não pode ser medido exclusivamente pela velocidade dos sistemas, pelo volume dos dados processados ou pelo crescimento econômico produzido. O progresso deve ser apreciado por sua capacidade de proteger os vulneráveis, preservar a liberdade, ampliar o acesso à justiça, assegurar trabalho digno, cuidar da Casa comum e possibilitar que todas as pessoas participem dos benefícios da inovação.

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Trata-se, portanto, de uma obra necessária e oportuna, destinada a estimular o diálogo entre o Direito, a ciência, a ética, a política e a sociedade. Seus estudos oferecem instrumentos para compreender os desafios contemporâneos e, ao mesmo tempo, convidam o leitor a assumir responsabilidade diante das escolhas que determinarão o futuro da humanidade.

Que a leitura destes capítulos contribua para que a inteligência artificial permaneça subordinada à dignidade humana; para que a administração da justiça combine inovação e sensibilidade; para que a transição energética seja democrática, inclusiva e ambientalmente responsável; e para que os direitos fundamentais constituam o limite e a finalidade de toda forma de poder tecnológico.

Como ensina a Encíclica *Magnifica Humanitas*, não devemos ser arquitetos de torres destinadas a ruir, mas construtores de comunhão, justiça e esperança. A tarefa de nosso tempo consiste em orientar o conhecimento, a técnica e as instituições para a edificação de uma sociedade na qual a magnífica humanidade de cada pessoa seja reconhecida, respeitada e integralmente protegida.

Barbacena, Minas Gerais 18 de julho de 2026.

Deilton Ribeiro Brasil

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PROLOGUE

Humanity is undergoing a historical transformation whose full depth cannot yet be measured. Digitalization, artificial intelligence, the automation of human activities, the reorganization of economic and social relations, the climate crisis, and the energy transition are changing not only the tools used by individuals, businesses, and States, but also the criteria through which justice, freedom, responsibility, work, democracy, and development are understood.

It is within this context that the book *Artificial Intelligence, the Administration of Justice, the Global Energy Crisis, and Fundamental Rights* is situated. Bringing together researchers from different countries and legal traditions, this collection addresses some of the most significant *res novae* of the twenty-first century, examining the benefits of technological innovation alongside the risks of concentrated power, dehumanization, algorithmic discrimination, opaque decision-making, environmental degradation, and widening inequalities.

The reflections presented in this book find significant resonance in Pope Leo XIV's Encyclical Letter *Magnifica Humanitas*, devoted to safeguarding the human person in the age of artificial intelligence[1]. The Encyclical proceeds from the understanding that technology is an expression of human intelligence and creativity, capable of contributing to healing, education, connecting people, organizing institutions, and caring for our common home. Yet it is not entirely neutral, as it embodies the values, interests, and purposes of those who conceive, finance, develop, regulate, and use it.

The fundamental question, therefore, is not simply whether to accept or reject technology, but to discern whom and what purposes it will serve. *Magnifica Humanitas* illustrates this choice through two biblical images: the tower of Babel, symbolizing technological power directed toward self-sufficiency, uniformity, and domination; and the rebuilding of the walls of Jerusalem, recounted in the Book of Nehemiah, expressing shared responsibility, cooperation, dialogue, and the building of a community oriented toward the good.

This alternative illuminates the entire book. Artificial intelligence can help build more efficient, inclusive, and transparent institutions, but it can also become an instrument of surveillance, exclusion, and domination. The administration of justice can benefit from automation and data analysis, provided that the pursuit of efficiency does not replace human discernment, due process, and impartiality. The energy transition can advance decarbonization and environmental protection, but

[1] LEO XIV, Pope. Encyclical Letter *Magnifica Humanitas*: On Safeguarding the Human Person in the Age of Artificial Intelligence. Vatican City, May 15, 2026. Available at: https://www.vatican.va/content/leo-xiv/pt/encyclicals/documents/20260515-magnifica-humanitas.html. Accessed July 18, 2026.

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it will be legitimate only if it respects the dignity of communities, promotes social justice, and distributes its benefits and burdens equitably.

The Encyclical letter reaffirms that the dignity of the human person does not depend on productivity, performance, economic capabilities, or adaptation to new technologies. This dignity is inherent and inalienable, preceding any assessment based on data, classifications, or algorithmic predictions. Technological progress must therefore be assessed taking into account an essential question: does it make human life more dignified, freer, more grounded in solidarity, and truly more human?

This anthropological perspective provides an important criterion for reading the chapters in this book.

Chapter I, authored by Abdulwahab Abdullah Al-Maamari, analyzes the ethical issues surrounding the use of artificial intelligence in scientific research. Artificial intelligence can facilitate the organization of knowledge, accelerate information analysis, and assist researchers at certain stages of their work. However, its use without appropriate criteria can compromise scientific originality, facilitate plagiarism, produce inaccurate information, and weaken the author's personal responsibility. This contribution demonstrates that technology must remain a tool supporting human thought, rather than a substitute for critical awareness, academic integrity, and responsible authorship. This understanding aligns with the call in *Magnifica Humanitas* for artificial intelligence to be embedded in a culture of responsibility, transparency, and discernment.

In Chapter II, Azim Uddin Gazi examines artificial intelligence tools that can help improve the judicial system. Their potential applications in case management, document analysis, legal research, risk assessment, and decision support are considered. The use of these technologies can reduce delays and expand access to justice, but it can also reproduce biases embedded in data, generate decisions that are difficult to explain, and undermine fundamental procedural rights. Judicial efficiency cannot be achieved by reducing people to statistical patterns. Innovation must remain subject to due process of law, equality, non-discrimination, and human oversight.

Chapter III, written by Pedro Luis Bracho-Fuenmayor, addresses the evidentiary crisis in the algorithmic age. Generative artificial intelligence has made it possible to produce texts, images, audio recordings, and videos that can simulate events and human expressions with a high degree of realism. This capability challenges traditional criteria for the authenticity and integrity of evidence. The chapter demonstrates that safeguarding truth in judicial proceedings requires new technical and legal tools capable of verifying the origin, integrity, and chain of custody of digital content. This concern is directly related to the understanding of truth as a common good developed in *Magnifica Humanitas*. When the distinction between what is true

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and what is artificially fabricated becomes uncertain, both judicial proceedings and social and democratic trust itself are placed at risk.

In Chapter IV, Deilton Ribeiro Brasil and Elena E. Gulyaeva analyze the transparency, safety, and accountability of artificial intelligence systems in light of Articles 2.027-U to 2.027-Z of Brazilian Draft Bill No. 4/2025. The study highlights duties relating to risk prevention, transparency, safety, auditing, and accountability. The analysis reveals the need to move beyond a merely reactive regulatory approach, based solely on redress after harm has occurred, in order to establish a model of preventive governance guided by fundamental rights. *Magnifica Humanitas* provides an important foundation for this approach by warning that regulatory instruments must curb the harmful effects of technological power and direct innovation toward the common good.

Chapter V, by Faiz Ayat Ansari and Jorge Isaac Torres Manrique, addresses artificial intelligence and its application in scholarly legal research. Algorithmic tools can broaden access to case law, facilitate the analysis of large collections of documents, and enable new forms of legal inquiry. However, research cannot be reduced to the automated collection of information or the reproduction of answers provided by computer systems. The construction of legal knowledge requires interpretation, contextualization, argumentation, and intellectual responsibility. Technology can assist researchers, provided that it does not eliminate the human dimension of knowledge, which consists in the ability to formulate problems, assess consequences, and take responsibility for the conclusions presented.

In Chapter VI, Rubens Beçak, Luciano Henrique Caixeta Viana, and Simone Tavares de Andrade examine the relationship between artificial intelligence, democracy, and the responsibility of major technology companies. Digital platform algorithms influence the visibility of information, the formation of public opinion, and the conditions of political debate. When directed exclusively toward maximizing engagement and profit, they can foster polarization, disinformation, and social manipulation. This approach converges with the Encyclical's concern to protect truth, democracy, and freedom against forms of digital dependence and control. Platform accountability must therefore ensure transparency, user protection, pluralism, and the preservation of the democratic sphere.

Chapter VII, by Vivek Kumar, develops the notion of Justice 5.0 and analyzes the impacts of artificial intelligence on the administration of justice worldwide, legal practice, and professional bodies. Digital transformation requires new competencies among legal professionals and new forms of institutional organization. Yet justice cannot be fully automated, as it involves interpretation, prudence, empathy, and consideration of each person's particular circumstances. Lawyers and the institutions representing the legal profession also come to serve as critical and ethical overseers of automated systems. Justice 5.0 will be compatible with fundamental rights only

when it combines innovation, digital inclusion, professional responsibility, and the centrality of the human person.

In Chapter VIII, Irmann Regina Genari, Marilene Gonçalves Rios Melo, Daniela de Castro Melo, and Ariane Fernandes da Conceição examine the challenges and opportunities associated with the application of artificial intelligence in municipal public administration. Digital technologies can improve services to citizens, simplify administrative procedures, enhance the management of public resources, and support data-driven policies. However, municipalities with limited financial and institutional capacity may face difficulties involving infrastructure, training, and data protection. The principle of subsidiarity, reaffirmed in *Magnifica Humanitas*, offers important guidance for this debate: local authorities must be valued and strengthened, preventing technological power from remaining concentrated in structures distant from the communities affected.

Chapter IX, by Eduardo Caetano de Carvalho, Maria Fernanda Pereira Lima, and Victor Hugo Gimenez Gonçalves, rethinks civil liability in the face of network sovereignty and digital neocolonialism. Harm caused by algorithmic systems can be diffuse, cumulative, transnational, and difficult to prove. Moreover, large private platforms exercise power over data, communications, economic relations, and social behavior, frequently exceeding the regulatory capacity of many States. Civil liability must perform not only a compensatory function but also a preventive one, imposing duties of diligence, governance, and risk management. This approach responds to the Encyclical's warning about the private concentration of technological power and the need to subject it to human rights, social justice, and the common good.

In Chapter X, Lenin Navarro Moreno examines the concept of contract in a reality shaped by the digitalization and internationalization of legal relations. Electronic contracts, smart contracts, and automated transactions challenge traditional categories concerning the expression of intent, the place of contracting, jurisdiction, and the applicable law. Private autonomy, although essential, cannot be turned into an instrument of unilateral imposition by technologically dominant actors. Freedom of contract must be accompanied by transparency, effective consent, balance, and protection for vulnerable parties. This reflection relates to the effort in *Magnifica Humanitas* to safeguard human freedom against dependence, commodification, and new forms of digital subordination.

Chapter XI, by Pablo Rafael Banchio, analyzes the environmental impacts of artificial intelligence systems and their legal treatment. Digital infrastructure depends on data centers, energy consumption, water use, mineral extraction, and the production of electronic equipment. The apparent immateriality of artificial intelligence systems conceals an extensive material and environmental chain. Technological innovation cannot be assessed solely on the basis of its

computational outputs; the ecological and social costs of its entire life cycle must also be considered. The protection of our common home, intergenerational justice, and the universal destination of goods require mechanisms for environmental assessment, transparency regarding resource consumption, harm prevention, and the accountability of economic actors.

Chapter XII, by Deilton Ribeiro Brasil and Maurício da Cunha Savino Filó, addresses the legal and regulatory framework for green hydrogen, connecting innovation with low-carbon development in Brazil. Hydrogen produced from renewable sources offers significant potential for decarbonizing economic activities and diversifying the energy mix. However, its expansion must be accompanied by legal certainty, environmental certification, risk management, and the equitable distribution of benefits. According to the principles of *Magnifica Humanitas*, technological development must not leave peoples and communities on the margins. A low-carbon economy will represent integral human development only when it is oriented toward dignity, solidarity, and social justice.

Chapter XIII, written by Faiz Ayat Ansari and Anasua Das, investigates federalism and energy laws in India, considering the development of sustainable governance systems. The division of powers between the central government and the States allows for responses adapted to different territorial realities, but also requires coordination, cooperation, and institutional coherence. This topic demonstrates that the energy transition does not depend solely on technical solutions. It requires institutions capable of promoting participation, distributing responsibilities, and addressing the concrete needs of communities. In this context, the principles of subsidiarity and solidarity provide foundations for energy governance that is simultaneously decentralized, coordinated, and oriented toward the collective interest.

Chapter XIV, by Rubens Beçak, Luciano Henrique Caixeta Viana, and Simone Tavares de Andrade, concludes the collection with a reflection on energy democracy, public participation, and social justice in the energy transition. Access to energy is a prerequisite for the exercise of numerous fundamental rights and cannot be treated exclusively as a market relationship. The transition to renewable sources must include affected populations, combat energy poverty, and prevent environmental and economic costs from being disproportionately imposed on the most vulnerable groups. This conception aligns with the principles of social justice, solidarity, the universal destination of goods, and integral human development reaffirmed by the Encyclical letter.

Considered jointly, the chapters demonstrate that artificial intelligence, the administration of justice, the energy crisis, and fundamental rights are not isolated subjects. The infrastructure required for artificial intelligence to function has energy and environmental impacts; algorithms affect research, justice, public administration,

contracts, and democracy; digital platforms exercise unprecedented forms of power; and the energy transition redefines economic, territorial, and social relations.

The unity of this book lies in the conviction that every innovation must be evaluated bearing in mind human dignity. This centrality does not constitute an obstacle to scientific development. On the contrary, it provides development with a legitimate purpose and a guiding criterion. Science and technology attain their highest meaning when they help alleviate suffering, expand rights, protect creation, and strengthen social relations founded on justice and solidarity.

Magnifica Humanitas warns that humanity can erect a new Babel or rebuild Jerusalem. The new Babel emerges when efficiency becomes an absolute value, human beings are reduced to data, inequalities are regarded as inevitable, and nature is treated as an inexhaustible resource. The rebuilding of Jerusalem, in turn, occurs when scientists, jurists, legislators, workers, businesses, universities, public institutions, and communities assume shared responsibilities in building the common good.

This collective work participates in that effort of reconstruction. Its chapters neither reject technology nor disregard the possibilities of innovation. They seek to identify the legal, ethical, and institutional conditions necessary to prevent progress from becoming an instrument of exclusion and domination. The defense of transparency, human oversight, responsibility, scientific integrity, truth, democratic participation, energy justice, and sustainability gives concrete expression to the choice of technology that serves persons and peoples.

By connecting artificial intelligence, justice, energy, and fundamental rights, the chapter's book reminds us that true development cannot be measured exclusively by the speed of systems, the volume of data processed, or the economic growth generated. Progress must be assessed by its capacity to protect the vulnerable, preserve freedom, expand access to justice, ensure decent work, care for our common home, and enable everyone to share in the benefits of innovation.

This is, therefore, a necessary and timely book, intended to stimulate dialogue among law, science, ethics, politics, and society. Its studies offer tools for understanding contemporary challenges while inviting readers to assume responsibility for the choices that will determine humanity's future.

May the reading of these chapters help ensure that artificial intelligence remains subordinate to human dignity; that the administration of justice combines innovation with sensitivity; that the energy transition is democratic, inclusive, and environmentally responsible; and that fundamental rights constitute both the limit and the purpose of every form of technological power.

As the Encyclical *Magnifica Humanitas* teaches, we should not be architects of towers destined to collapse, but builders of communion, justice, and hope. The task

of our time is to direct knowledge, technology, and institutions toward building a society in which the magnificent humanity of every person is recognized, respected, and fully protected.

Barbacena, Minas Gerais, July 18, 2026.

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INTRODUCCIÓN

En el siglo XXI, la administración de justicia se encuentra en un proceso de transformación sin precedentes, impulsado por la convergencia de la inteligencia artificial (IA) y la creciente conciencia sobre la importancia de los derechos fundamentales. Esta intersección entre tecnología, derecho y ética plantea desafíos y oportunidades que requieren un análisis exhaustivo y una reflexión profunda. La administración de justicia, entendida como el conjunto de instituciones, normas y procedimientos encargados de garantizar el cumplimiento de la ley, resolver conflictos y proteger los derechos de los ciudadanos, se enfrenta a la necesidad de adaptarse a un mundo cada vez más complejo, interconectado y digitalizado.

Luego, la IA, con su capacidad para procesar grandes volúmenes de datos, automatizar tareas, realizar predicciones y ofrecer soluciones innovadoras, ofrece la promesa de mejorar la eficiencia, la transparencia, la accesibilidad y la equidad en la administración de justicia. Sin embargo, su implementación también plantea interrogantes fundamentales sobre la imparcialidad, la privacidad, la responsabilidad, la transparencia y el control: ¿Cómo podemos garantizar que los algoritmos utilizados en la justicia sean justos y no discriminatorios?, ¿Cómo protegemos los datos personales de los ciudadanos en un entorno judicial cada vez más digitalizado?, ¿Quién es responsable cuando un sistema de IA toma una decisión errónea con consecuencias graves?, ¿Cómo garantizamos la transparencia y la explicabilidad de los algoritmos utilizados en la justicia?, ¿Cómo evitamos que la IA profundice las desigualdades existentes en el acceso a la justicia y en el ejercicio de los derechos fundamentales?.

La presente obra explora en profundidad las diversas aristas de esta compleja relación entre la administración de justicia, la inteligencia artificial y los derechos fundamentales, analizando tanto las oportunidades como los riesgos que plantea esta convergencia. Se examinan las aplicaciones actuales y potenciales de la IA en el ámbito judicial, desde la automatización de tareas administrativas hasta la predicción de la probabilidad de reincidencia, pasando por la asistencia virtual a los usuarios, la resolución alternativa de disputas, la detección de fraudes y la mejora de la seguridad. Se analizan los desafíos éticos y legales que surgen de la implementación de la IA, prestando especial atención a los derechos a la igualdad, el debido proceso, la privacidad, la protección de datos, la libertad de expresión y la no discriminación. Se estudiarán casos prácticos de implementación de la IA en la justicia en diferentes países, analizando sus éxitos y fracasos, así como las lecciones aprendidas. Finalmente, se esbozan sesudos análisis, conclusiones y recomendaciones, para un uso ético y legal de la IA en la justicia, con el objetivo de promover una administración de justicia más eficiente, transparente, accesible, equitativa y respetuosa de los derechos fundamentales.

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Y es que, la administración de justicia, la inteligencia artificial y los derechos fundamentales se encuentra en un estado de desarrollo y debate constante. Los académicos, los juristas, los filósofos y los expertos en tecnología se encuentran explorando las implicaciones éticas, legales y sociales de la IA en el ámbito judicial, así como las posibles soluciones para garantizar que su uso sea compatible con los principios del estado de derecho y el respeto de los derechos fundamentales.

Algunas de las principales líneas de debate incluyen: i) La Naturaleza de la Justicia Algorítmica: ¿Es posible lograr una justicia verdaderamente algorítmica, basada en datos y algoritmos, o la justicia siempre requerirá la intervención humana y el juicio moral?, ¿Cuáles son los límites de la automatización en la administración de justicia?, ii) La Imparcialidad y la No Discriminación: ¿Cómo podemos garantizar que los algoritmos utilizados en la justicia sean imparciales y no discriminatorios?, ¿Qué medidas deben tomarse para mitigar los sesgos algorítmicos, que pueden reflejar los prejuicios de los programadores o los datos utilizados para entrenarlos?, ¿Cómo podemos evitar que la IA perpetúe o amplíe las desigualdades existentes en el sistema judicial?, iii) La Transparencia y la Explicabilidad: ¿Cómo podemos hacer que los algoritmos utilizados en la justicia sean transparentes y explicables?, ¿Qué información debe proporcionarse a los ciudadanos sobre cómo funcionan estos algoritmos, cómo se utilizan sus datos y cómo se toman las decisiones?, ¿Cómo podemos garantizar que los ciudadanos puedan comprender y cuestionar las decisiones tomadas por sistemas de IA?, iv) La Responsabilidad y la Rendición de Cuentas: ¿Quién es responsable cuando un sistema de IA toma una decisión errónea con consecuencias graves?, ¿Deberían los programadores, los usuarios, los proveedores de tecnología o los propios sistemas de IA ser considerados responsables?, ¿Cómo podemos establecer mecanismos de rendición de cuentas para garantizar que los sistemas de IA se utilicen de manera responsable y ética?, v) La Privacidad y la Protección de Datos: ¿Cómo podemos proteger los datos personales de los ciudadanos en un entorno judicial cada vez más digitalizado? ¿Qué medidas deben tomarse para garantizar que los datos se utilicen de manera segura, confidencial y de acuerdo con las leyes de protección de datos? ¿Cómo podemos equilibrar la necesidad de utilizar datos para mejorar la eficiencia y la eficacia de la justicia con el derecho a la privacidad y la protección de datos personales?.

En un tercer momento, tenemos que la crisis energética global es un fenómeno complejo y multifacético que se encuentra en un estado de evolución constante, marcado por una convergencia de factores geopolíticos, económicos y medioambientales. En su núcleo, la crisis se manifiesta como una creciente disparidad entre la demanda de energía, impulsada por el crecimiento económico y poblacional, y la oferta, cada vez más constreñida por diversos factores.

Uno de los pilares de la crisis actual es la volatilidad de los mercados de combustibles fósiles. La guerra en Ucrania ha exacerbado las tensiones existentes, provocando

interrupciones en el suministro de gas natural y petróleo, y disparando los precios a niveles sin precedentes. Esto no solo ha afectado a los consumidores finales, sino que también ha repercutido en la industria, aumentando los costos de producción y generando presiones inflacionarias a nivel global. La dependencia de ciertas regiones de fuentes de energía específicas ha quedado al descubierto, subrayando la necesidad de diversificación y seguridad energética.

Paralelamente, la transición hacia fuentes de energía renovable, si bien es crucial para abordar el cambio climático, presenta sus propios desafíos. La inversión en infraestructuras de energía limpia, como la eólica y la solar, requiere un capital significativo y un desarrollo tecnológico continuo. La intermitencia de estas fuentes, es decir, su dependencia de las condiciones climáticas, exige soluciones de almacenamiento de energía eficientes y redes eléctricas inteligentes que puedan gestionar la variabilidad. La falta de inversión suficiente y la lentitud en la adopción de estas tecnologías han limitado su capacidad para mitigar completamente la dependencia de los combustibles fósiles.

Además, la crisis energética está intrínsecamente ligada a la crisis climática. Los fenómenos meteorológicos extremos, cada vez más frecuentes e intensos debido al calentamiento global, afectan la producción y distribución de energía. Sequías prolongadas pueden reducir la capacidad hidroeléctrica, mientras que olas de calor extremas aumentan la demanda de refrigeración, poniendo a prueba la resiliencia de las redes eléctricas. La urgencia de descarbonizar la economía se hace más palpable, pero la velocidad y la escala de la transición necesarias para cumplir con los objetivos climáticos son un desafío monumental.

En este contexto, la seguridad energética se ha convertido en una prioridad para las naciones. Los gobiernos están buscando un equilibrio delicado entre la necesidad de garantizar un suministro energético estable y asequible, y el imperativo de reducir las emisiones de gases de efecto invernadero. Esto ha llevado a un replanteamiento de las estrategias energéticas, con un renovado interés en la energía nuclear en algunos países, y un impulso para acelerar la investigación y el desarrollo en tecnologías de captura de carbono y de hidrógeno verde.

La crisis energética global, por lo tanto, no es solo un problema de oferta y demanda, sino un complejo entramado de interdependencias que exige soluciones holísticas y coordinadas a nivel internacional. La resiliencia, la innovación y la cooperación global serán fundamentales para navegar esta crisis y construir un futuro energético más sostenible y seguro.

Finalmente, amerita traer a colación, la relación indisoluble existente entre: i) Los derechos fundamentales, y ii) La inteligencia artificial, administración de justicia y crisis energética global.

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Así tenemos, que la inteligencia artificial (IA) redefine la relación entre derechos fundamentales, justicia y la crisis energética. La IA, al procesar datos masivos, amenaza la privacidad y la no discriminación, perpetuando sesgos si no se controla. En la administración de justicia, su uso en predicción de delitos o análisis de casos plantea dilemas sobre equidad y transparencia, pudiendo erosionar el derecho a un juicio justo. La opacidad de los algoritmos dificulta la rendición de cuentas.

Paralelamente, la crisis energética global, exacerbada por la demanda y el cambio climático, impulsa la adopción de IA para optimizar energías renovables. Sin embargo, la propia IA y su infraestructura (centros de datos) consumen ingentes cantidades de energía, creando una paradoja: la solución a una crisis podría agravarla. La transición energética, si bien necesaria, debe ser justa y no dejar a nadie atrás, un principio fundamental.

La interconexión es clara: la IA puede ser una herramienta para abordar la crisis energética y mejorar la justicia, pero su implementación debe salvaguardar derechos como la privacidad, la igualdad y la dignidad humana. La falta de regulación y la velocidad de adopción de la IA sin considerar sus implicaciones éticas y energéticas son riesgos latentes. Se necesita una gobernanza global que asegure que la IA sirva al bienestar humano y planetario, no al revés, garantizando que la administración de justicia sea equitativa y que la transición energética sea sostenible y respetuosa con los derechos fundamentales. La urgencia de equilibrar innovación, derechos y sostenibilidad es máxima.

Por lo cual, en la presente entrega y en ese orden de ideas, no podemos ser ajenos a la realidad expectante y de muy aguda atención que acontece en sede global.

Por ello, ponemos a la consideración de la comunidad jurídica (y no jurídica) global, la presente importante obra: "Inteligencia artificial, Administración de justicia, crisis energética global y derechos fundamentales"; que reúne a destacados profesores referentes del orbe, que abordan de manera rigurosa, profunda, reflexiva, interdisciplinar.

Agradecemos de sobremanera y quedamos muy honrados, por la muy valiosa participación de la reconocida jurista y amiga india, Dra. Shampa Dev, por haber elaborado el prólogo, de manera tan magnífica.

Nuestro indeleble agradecimiento a la prestigiosa firma brasiliana Conhecimento Editora, por la confianza, pues, sin la misma la presente obra no hubiera podido ver la luz.

Finalmente, esperamos que esta entrega tenga la importante acogida, que tuvieron nuestros anteriores proyectos.

LA PRESIDENCIA DE LA DIRECCIÓN CIENTÍFICA

CAPÍTULO IV

TRANSPARENCIA, SEGURIDAD Y RESPONSABILIDAD EN SISTEMAS DE INTELIGENCIA ARTIFICIAL (IA): ANÁLISIS DE LOS ARTÍCULOS 2.027 U A 2.027-Z DEL PROYECTO DE LEY BRASILEÑO N.º 4/2025

TRANSPARENCY, SECURITY, AND ACCOUNTABILITY IN ARTIFICIAL INTELLIGENCE (AI) SYSTEMS: AN ANALYSIS OF ARTICLES 2.027-U TO 2.027-Z OF BRAZILIAN DRAFT BILL NO. 4/2025[1]

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I. INTRODUCTION.

The rapid digital transformation of contemporary society has reshaped social interactions, patterns of communication, and even the exercise of fundamental rights. Within this new reality, digital platforms have assumed a central role as intermediaries of public discourse, economic transactions, and access to information. However, this growing dependence on digital infrastructures has also created new risks for individuals and societies, including the proliferation of unlawful content, the manipulation of information flows, threats to privacy and personality rights, and the

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emergence of systemic risks that transcend traditional legal categories. Against this background, Brazilian Draft Bill No. 4/2025 - which proposes the incorporation of Book VI, entitled "Digital Civil Law," into the Brazilian Civil Code - seeks to establish a comprehensive legal framework for the governance of digital environments, centred on the protection of fundamental rights and the promotion of transparency, security, and accountability in the digital sphere.

The primary objective of this research is to examine the normative content of Articles 2.027-U to 2.027-Z of Draft Bill No. 4/2025, which specifically address the right to a transparent and secure digital environment. These provisions introduce a series of obligations for digital platforms, including the duties to conduct periodic assessments of systemic risks, implement effective content-moderation procedures, ensure accessible and transparent terms of service, and undergo independent audits to verify compliance with applicable legal standards. Their purpose is not merely to strengthen user protection and mitigate potential harm, but also to align the digital ecosystem with constitutional guarantees, including personality rights, freedom of expression, and access to information.

The research is guided by the following central question: do the mechanisms proposed by Draft Bill No. 4/2025 provide an adequate normative framework for ensuring an artificial intelligence-based digital environment that is simultaneously transparent, secure, and respectful of fundamental rights? This research problem arises from the recognition that the existing legal instruments - such as Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, and Law No. 13.709/2018, the Brazilian General Data Protection Law - although essential, have demonstrated limitations in addressing the complex dynamics of digital platforms, particularly with regard to algorithmic decision-making, systemic disinformation, and the opacity of content-governance processes.

The hypothesis underlying this research is that Draft Bill No. 4/2025 represents a qualitative advancement in the Brazilian legal framework by imposing more stringent transparency requirements on platforms, requiring the assessment and mitigation of systemic risks, and establishing clear mechanisms of accountability for harm arising from third-party content. These innovations - including the duty to disclose automated decision-making processes, the obligation to notify users of content-moderation decisions, and the possibility of civil and administrative liability in cases of repeated non-compliance - indicate a shift towards a more robust model of digital regulation. Nevertheless, the effectiveness of these measures will depend on the capacity of public authorities to supervise compliance, the coordination of regulatory standards, and the development of institutional mechanisms capable of adapting to technological change.

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The study adopts the hypothetical-deductive method, beginning with the assumption that the proposed legal regime provides effective instruments for protecting fundamental rights in the digital sphere. On the basis of this premise, a normative and doctrinal analysis of the legislative text is undertaken, supported by scholarly approaches and comparative legal reasoning. The methodological procedures include a detailed textual analysis of the provisions of the Draft Bill, an examination of their consistency with the existing Brazilian legal framework -particularly Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, and Law No. 13.709/2018, the Brazilian General Data Protection Law - as well as an assessment of the potential interpretative and enforcement challenges that may arise during their implementation.

The preliminary results of this research suggest that Draft Bill No. 4/2025 introduces significant innovations in the governance of digital environments, particularly by linking transparency obligations to the management of systemic risks and by requiring periodic independent audits to verify compliance with the law. The establishment of user-notification mechanisms, the nullity of unlawful contractual clauses, and the express recognition of the right to a safe and trustworthy digital environment contribute to consolidating a rights-based approach to platform regulation. However, the research also indicates that the success of these provisions will require regulatory precision, interinstitutional coordination, and continuous adaptation to technological developments. These findings reinforce the conclusion that Draft Bill No. 4/2025 constitutes an essential step towards a more transparent, accountable, and rights-oriented digital order, while also highlighting the challenges that must still be addressed to ensure its full and effective implementation.

II. COMMENTS ON ARTICLES 2.027-U TO 2.027-Z OF DRAFT BILL NO. 4/2025 IN LIGHT OF THE BRAZILIAN CIVIL RIGHTS FRAMEWORK FOR THE INTERNET (LAW NO. 12.965/2014) AND THE BRAZILIAN GENERAL DATA PROTECTION LAW (LAW NO. 13.709/2018).-

Firstly, Article 2.027-U establishes the right of every person to a safe and trustworthy digital environment, grounded in principles such as transparency, good faith, social function, and harm prevention. This provision is directly connected to Article 3, items I and II, of Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, which recognises freedom of expression, privacy, and the protection of personal data as fundamental principles of digital governance. Likewise, it complements Article 7, items I and X, which guarantee the inviolability of intimacy and private life, as well as the right to receive clear and complete information concerning the collection, use, storage, and processing of personal data. Furthermore, the duty imposed on platforms to adopt due-diligence measures and conduct systemic risk assessments

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is consistent with Articles 46 and 50 of Law No. 13.709/2018, the Brazilian General Data Protection Law, which require controllers and processors to implement technical and administrative security measures to protect personal data against unauthorised access, destruction, loss, alteration, or disclosure.

According to Modenesi (2025, p. 494), the constitutional foundation is composed of the fundamental rights to privacy, confidentiality of communications, access to information, and habeas data, all of which are enshrined in Article 5 of the Federal Constitution of 1988. The particular importance of Section I of Chapter VII of the Brazilian General Data Protection Law is evident, since security and confidentiality are indispensable to the effective protection of data. A security breach is defined as any event that accidentally or unlawfully causes the destruction, loss, alteration, disclosure of, or unauthorised access to personal data. In this respect, Article 2.027-U extends the scope of protection beyond individual data to encompass the structural security and reliability of the digital ecosystem as a whole.

On this basis, Article 2.027-V deepens the legal debate concerning content moderation by requiring platforms to comply with the principles of non-discrimination, equality, freedom of expression, and pluralism of ideas, while also facilitating the prevention and mitigation of harm. This provision is closely related to Article 8 of Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, which protects the exercise of fundamental rights in the digital environment, and to Article 19, which establishes a limited liability regime for application providers only after judicial notice concerning unlawful content. Nevertheless, Draft Bill No. 4/2025 innovates by requiring the creation of effective reporting and redress mechanisms, obliging platforms to provide users with accessible reporting channels in their local language and to inform them of the outcome of their complaints. From the perspective of Law No. 13.709/2018, the Brazilian General Data Protection Law, this article reinforces the principles of transparency under Article 6, item VI, and accountability under Article 6, item X, requiring platforms not only to disclose their moderation practices but also to act proactively in mitigating harm arising from the dissemination of unlawful content.

In this regard, Basan (2025, pp. 75-76) emphasises that the legal framework itself requires processing agents to demonstrate continuous and effective compliance with data protection legislation. This reflects the principles of accountability and the rendering of accounts, whose more precise development is found in Articles 42 and 43 of the Brazilian General Data Protection Law. This is supplemented by the guarantee of effective remedies, which is consistent with Article 42 of Law No. 13.709/2018, establishing the obligation of controllers or processors to compensate for damage resulting from violations of data protection rules.

Closely connected with these obligations, Article 2.027-W of Draft Bill No. 4/2025 focuses on the transparency and accessibility of digital platforms' terms of service,

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imposing on them the duty to draft such documents in a clear, comprehensible, and accessible manner for all users. The provision also requires detailed information concerning the tools, systems, and processes employed in content moderation and curation, including automated decision-making, profiling, and monetisation practices. This provision is linked to Article 7, item VI, of Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, which guarantees users the right to receive clear and complete information in service agreements, particularly regarding the processing and protection of their data, connection records, and management practices capable of affecting the quality of the services provided.

Accordingly, by requiring transparency in terms of service, Draft Bill No. 4/2025 broadens user protection and reduces information asymmetry, which constitutes one of the principal imbalances in the relationship between platforms and users. Article 9 of Law No. 12.965/2014 likewise complements this approach, although it does not regulate consent for the collection or use of personal data. Instead, it establishes the duty of providers to act transparently, proportionately, and equally in traffic-management practices and to inform users in advance, in a clear, detailed, and accessible manner, of the measures adopted. This obligation, in turn, strengthens predictability and trust in digital relationships, principles that directly converge with the objectives of Article 2.027-W, which requires platforms to disclose their algorithmic processes, operational policies, and technical criteria.

Law No. 13.709/2018, the Brazilian General Data Protection Law, further reinforces these principles. Article 6, item VI, establishes the principle of transparency, guaranteeing data subjects the right to receive clear, accurate, and easily accessible information concerning the processing carried out and the processing agents responsible. Basan (2025, p. 71) further notes that the principle of transparency acquires greater relevance when it is recognised that the vast majority of legal relationships involving the processing of personal data are also consumer relationships. This reveals a situation of hypervulnerability that requires enhanced attention and, consequently, a more intensive level of legal protection. The purpose of transparency, therefore, is to enable the data subject to identify clearly the lawfulness, legitimacy, and security of personal data processing, ensuring trust in and understanding of the procedures employed and, consequently, enabling the effective exercise of data subjects' rights.

Article 20, in turn, recognises the right to request the review of automated decisions that affect the interests of data subjects, a provision directly related to the obligation imposed on platforms to disclose the criteria, mechanisms, and consequences of such decisions. According to Goulart (2025, p. 310), this article is particularly relevant to the protection of data subjects because of the predominant use of profiling for advertising purposes, involving the capacity to process multiple demands simultaneously and the use of large volumes of data to enhance decision-making.

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Another relevant aspect of Article 2.027-W is the provision declaring null and void any terms of service that contravene mandatory legal rules, thereby reflecting the logic of Article 51 of Law No. 8.078/1990, the Brazilian Consumer Protection Code. This article establishes the nullity of unfair contractual clauses that place consumers at an excessive disadvantage, entail a waiver of rights, or are incompatible with the consumer protection system. Consequently, by extending this logic to the digital environment, the Draft Bill reinforces the principle of protection of the vulnerable party and ensures that electronic contracts comply with fundamental rights and mandatory rules of public policy.

In general terms, Article 2.027-W represents a significant advancement in strengthening algorithmic accountability and consolidating a more transparent digital ecosystem. By requiring disclosure of technological processes, clarity in contractual terms, and transparency concerning moderation and monetisation practices, the provision reduces information asymmetries, promotes users' informational autonomy, and consolidates a digital environment in which freedom, predictability, and the protection of fundamental rights become effective and operational principles.

Continuing along these lines, Article 2.027-X of Draft Bill No. 4/2025 establishes an advanced regulatory framework for the management of systemic risks by large-scale digital platforms, requiring them to identify, analyse, and periodically assess - at least once a year - the effects arising from the design or operation of their services. This approach represents a structural shift in the regulation of the Brazilian digital environment, moving from a model focused on ex post liability towards a paradigm based on risk prevention, anticipation, and mitigation. Likewise, the obligation to assess impacts related to the dissemination of unlawful content, personality rights, electoral processes, and public security reflects a more comprehensive understanding of the digital ecosystem. This approach is connected with Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, particularly Articles 3 and 8, which establish the protection of privacy, freedom of expression, net neutrality, and the preservation of human rights in the digital environment as fundamental principles. Furthermore, Article 19 of Law No. 12.965/2014 introduces a limited liability regime for application providers, which is triggered only after judicial notice concerning unlawful content. Similarly, Article 2.027-X broadens this logic by imposing proactive responsibility on platforms: it is not sufficient merely to respond to harm after it has occurred; platforms must also implement preventive mechanisms aimed at reducing the likelihood of its occurrence.

This preventive dimension, in turn, is closely connected with the principles and obligations established by Law No. 13.709/2018, the Brazilian General Data Protection Law. In particular, Article 6 enshrines the principles of prevention, security, and accountability, which require processing agents to adopt effective technical and administrative measures to protect personal data and minimise the risks of breaches.

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Article 46 also imposes the duty to ensure data security against unauthorised access or security incidents, while Article 50 encourages the implementation of internal risk-management policies. Peroli and Faleiros Júnior (2025, p. 527) further observe that paragraph 1 of Article 50 sets out the factors that must be considered when implementing good-practice rules: the nature, scope, and purpose of the processing, as well as the likelihood and severity of the risks and benefits arising from the processing of the data subject's personal data.

Against this background, Article 2.027-X deepens and complements these requirements by extending the scope of prevention beyond the protection of personal data to encompass structural risks related to fundamental rights, democratic integrity, and collective security. Another point of convergence between Article 2.027-X and these two fundamental statutes lies in the requirement of algorithmic transparency. Paragraph 2 of the article requires platforms to consider, in their assessments, the architecture of their automated systems, content-moderation processes, terms-of-use policies, and advertising mechanisms. This approach is consistent with the principle of transparency established in Article 7, item VI, of Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, and Article 6, item VI, of Law No. 13.709/2018, the Brazilian General Data Protection Law, which guarantee users the right to clear, accurate, and accessible information concerning the processing of their data and the practices adopted by platforms. Article 20 of Law No. 13.709/2018 further reinforces this duty by recognising the right of data subjects to request the review of automated decisions that significantly affect their interests.

Thus, the obligation to adopt corrective measures to mitigate the identified risks, as provided for in paragraphs 3 and 4, also relates to the principle of accountability under Law No. 13.709/2018 and to the duty of cooperation established in Article 7 of Law No. 12.965/2014, according to which service providers must contribute to the creation of a digital environment that is safe and consistent with fundamental rights. Consequently, Article 2.027-X not only strengthens the existing legal framework but also establishes a normative bridge between Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, and Law No. 13.709/2018, the Brazilian General Data Protection Law, thereby consolidating a coherent, comprehensive, and rights-oriented regulatory model. By requiring platforms to anticipate, assess, and mitigate systemic risks, the provision promotes a safer and more transparent digital environment compatible with constitutional principles and with the international obligations undertaken by the Brazilian State concerning human rights and data protection.

Along the same lines, Article 2.027-Y of Brazilian Draft Bill No. 4/2025 introduces an important regulatory instrument for strengthening the governance of digital platforms: the obligation to undergo annual and independent audits, financed by the platforms themselves, for the purpose of verifying compliance with the duties

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established in the chapter concerning the right to a transparent and secure digital environment. This measure represents a decisive step towards consolidating a regulatory model based not merely on corporate self-regulation, but also on external and verifiable oversight capable of promoting transparency, accountability, and the continuous supervision of technological risks.

The audit requirement responds to the need to balance the informational and economic power of large platforms through effective mechanisms of institutional control. Pursuant to paragraph 1, platforms must actively cooperate with the auditing entities by granting access to relevant data and responding to all requests for information necessary to ensure that the process is conducted efficiently and comprehensively. Paragraph 2 reinforces the credibility of the process by requiring audits to be conducted by independent organisations that are free from conflicts of interest and possess proven technical expertise in risk management. These requirements are essential to prevent regulatory capture and to ensure that the conclusions arising from the process possess legitimacy and legal value.

In particular, paragraph 3 sets out in detail the minimum content of audit reports, which must include information concerning the identity of the audited platform and the auditing entity, the methodology employed, the conclusions reached, any consultations conducted with third parties, and an opinion assessing compliance with the applicable legal obligations. Furthermore, where the results are unfavourable, the audit must contain specific operational recommendations and establish a deadline for achieving compliance. This corrective component is supplemented by paragraphs 4 and 5, which require platforms to adopt the measures necessary to implement those recommendations and, within one month, to publish a report describing the actions undertaken or, where implementation is not possible, to provide a reasoned justification. These provisions strengthen the principle of accountability, which constitutes a central pillar of both Law No. 13.709/2018, the Brazilian General Data Protection Law, and international legal standards concerning the protection of digital rights.

The connection between this article and Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, is primarily evident in the promotion of transparency and the protection of fundamental rights. Article 7, item X, guarantees users the right to receive clear and complete information concerning the use of their data and the practices adopted by service providers. The mandatory audits established by Article 2.027-Y further develop this principle by enabling impartial third parties to verify platforms' compliance with the applicable legal framework and publicly disclose the measures adopted to remedy any instances of non-compliance. Moreover, the requirement to publish non-confidential versions of the audit reports strengthens the right to information and contributes to the development of a culture of active transparency within the digital ecosystem.

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Law No. 13.709/2018, the Brazilian General Data Protection Law, is also directly reflected in this provision. Article 46 requires processing agents to adopt appropriate security measures to protect personal data, while Article 50 encourages the implementation of good practices and oversight mechanisms. Article 2.027-Y supplements these obligations by requiring external assessments capable of confirming whether platforms effectively comply with such duties, thereby promoting a coherent and verifiable regulatory framework. Likewise, the duty of confidentiality imposed on auditing entities is consistent with the principle of security established in Article 6, item VII, ensuring that transparency does not compromise the protection of sensitive information.

In the other hand, Article 2.027-Y constitutes a central element of the new regulatory paradigm proposed by Draft Bill No. 4/2025, as it transforms independent auditing into a legal instrument of oversight and accountability. Its connection with Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, and Law No. 13.709/2018, the Brazilian General Data Protection Law, reinforces the understanding that the protection of fundamental rights in the digital environment requires not only substantive rules but also effective procedural mechanisms capable of ensuring compliance. In this way, the provision contributes to the development of a more transparent and trustworthy digital ecosystem aligned with democratic values and international standards concerning digital rights and data protection.

Besides, Article 2.027-Z introduces a key element into the liability regime applicable to large-scale digital platforms by expressly providing for administrative and civil liability in two specific situations. The first arises when harm is caused by third-party content disseminated through the platform's own advertising mechanisms. The second arises where there is systematic non-compliance with the duties and obligations established in the Brazilian Civil Code of 2002, in which case the general Brazilian civil liability regime applies.

This provision represents a significant expansion beyond the traditional model established by Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet. Pursuant to Article 19, application providers are civilly liable for harm arising from third-party content only after receiving a specific judicial order requiring its removal. Article 2.027-Z, by contrast, introduces circumstances in which platform liability is triggered not solely by failure to comply with a judicial order, but also by the platform's active participation in the dissemination of content through advertising or by its repeated failure to comply with legal duties. In this respect, Draft Bill No. 4/2025 reinforces the proactive nature of platform accountability by requiring greater diligence in the management of services and the prevention of harm.

The connection with Law No. 13.709/2018, the Brazilian General Data Protection Law, is likewise clear. Article 42 establishes that data controllers and processors

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must compensate for material and non-material harm caused by violations of data protection legislation. Article 2.027-Z supplements this regime by extending liability beyond the strictly informational dimension and encompassing circumstances in which the platform's conduct - such as the commercial exploitation of unlawful content through advertising - creates risks and directly harms users' personality rights, security, or dignity. Furthermore, by imposing sanctions for systematic non-compliance with legal duties, the provision reinforces the principles of accountability and prevention established in Article 6 of Law No. 13.709/2018, thereby requiring platforms to adopt an active approach to regulatory compliance.

In this regard, Article 2.027-Z constitutes a mechanism for balancing platforms' freedom of action with the protection of users' fundamental rights. Whereas Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, adopted a more limited liability model, this provision of Draft Bill No. 4/2025 moves towards a strengthened liability regime that recognises platforms' capacity to influence the dissemination of content and requires greater diligence in their role as intermediaries. In conjunction with Law No. 13.709/2018, the Brazilian General Data Protection Law, it establishes a more robust and coherent legal framework aimed at ensuring a safe and accountable digital environment that respects personality rights and data protection.

III. THE NECESSARY INTERACTION BETWEEN THE DIGITAL ENVIRONMENT OF AI SYSTEMS AND FUNDAMENTAL RIGHTS.

The First Industrial Revolution began in the mid-eighteenth century and was characterised by the use of steam as a source of energy. The Second Industrial Revolution, which occurred in the late nineteenth and early twentieth centuries, was marked by electricity and the internal combustion engine. The Third Industrial Revolution unfolded during the final decades of the twentieth century and culminated in the replacement of analogue technology with digital technology. Known as the Technological or Digital Revolution, it enabled the widespread adoption of personal computers and smartphones and is symbolised by the Internet, which connects billions of people worldwide (Barroso, 2019, p. 1,262). The Fourth Industrial Revolution is driven by the combination of Artificial Intelligence, Biotechnology, and the expanded use of the Internet, creating an interconnected ecosystem encompassing people, objects, and even pets, and thereby forming an Internet of Things and Senses (Barroso & Mello, 2024, p. 19).

Historical precedents demonstrate that every significant technological advancement possesses the dual capacity to benefit and harm society. The current information revolution, exemplified by the development and implementation of AI systems, clearly illustrates this duality. AI's capacity to process and analyse vast

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volumes of data may contribute significantly to addressing numerous global problems across different fields. However, these same technologies also entail substantial risks, particularly for vulnerable groups. One of the principal concerns arising from the accelerated proliferation of AI systems is their adverse impact on a wide range of fundamental rights.

In this context, the business model of AI-driven platforms is based on collecting the largest possible amount of individuals' personal data, thereby transforming privacy into a commodity (Morozov, 2018, p. 36). On the basis of these data, complex algorithms and multiple neural-network layers establish deep correlations, enabling access to genetic data, psychological profiles, vulnerabilities, and patterns of consumer, political, financial, sexual, and religious behaviour (Huq, 2020).

It is therefore important to emphasise that the concept of dignity - which may constitute the indisputable core of a legally operative and generalisable principle of human dignity, transcending the natural and persistent disagreements surrounding different conceptions of what is good, just, or constitutive of a good life - translates, for each individual as a rights-bearing subject, into a sphere of autonomy, personal freedom, and well-being that State power must respect, protect, and promote (Novais, 2017, p. 51).

Based on this, human dignity also serves as a criterion for determining the minimum standards that must be guaranteed across the different dimensions in which fundamental rights exercise their normative force within the rule of law. This minimum level of protection required by human dignity may be understood both as constituting an essential core of protection within each of the fundamental rights enshrined in the Brazilian Federal Constitution of 1988 and as acquiring autonomous relevance through distinct and specific dignity-based rights (Novais, 2018, p. 190). A principal concern among fundamental-rights advocates and the scientific community is the potential violation of the right to information arising from the use of AI technologies.

Within this framework, every person who interacts with AI systems - whether directly through interfaces or indirectly by being affected by automated decisions -must have the right to be informed about those interactions. This includes information concerning the general functioning of the systems and the criteria guiding automated decisions, particularly where such decisions directly influence access to rights or significantly affect economic interests. According to Sarmento (2016, p. 141), this right encompasses the individual's freedom to make decisions on the basis of any motivation, including moral judgements, instrumental calculations, feelings, desires, and even idiosyncrasies that may be incomprehensible to third parties.

Transparency, security, and accountability in cognitive computing processes are fundamental. Individuals have the right to know when they are interacting with an AI system and to understand, at least in general terms, how these technologies

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operate, what data they use, and which criteria guide automated decisions. This fundamental right to information is essential to enable individuals to exercise control over their interactions with AI, challenge automated decisions that may be unfair or discriminatory, and ensure that their fundamental rights are respected.

Furthermore, to establishing basic and cross-cutting rights applicable to any context involving interaction between machines and human beings, such as the rights to information and transparency, this obligation becomes more stringent when an AI system produces significant legal effects or substantially affects individuals. Accordingly, the intensity of regulation is calibrated according to the potential risks associated with the context in which the technology is applied. Correspondingly, both general and specific governance measures have been established, symmetrically aligned with fundamental rights, for AI systems presenting any level of risk and for those classified as high-risk systems.

This set of rules proposed in Draft Bill No. 4/2025 reflects a concern with balancing technological progress and the protection of fundamental rights. The regulation of AI is presented as necessary to ensure that the development and application of these technologies are carried out ethically and responsibly, while securing the broad distribution of their benefits and preventing significant risks to the rights and dignity of individuals.

An additional aspect concerns the interaction between citizens and digital systems. Brazilian Draft Bill No. 4/2025 recognises that, as AI becomes increasingly integrated into everyday activities, it is essential to protect the fundamental rights of those who interact with these technologies. In this regard, individuals have the right to be informed about their interactions with digital systems, particularly where such interactions may significantly affect their rights or economic interests. This includes the rights to transparency, security, and accountability regarding the manner in which automated decisions are made, as well as the possibility of understanding the criteria that guide such decisions.

IV. CONCLUSIONS.

This research was structured around the central research problem of determining whether the normative mechanisms introduced by Articles 2.027-U to 2.027-Z of Brazilian Draft Bill No. 4/2025 are capable of providing an adequate legal architecture for ensuring a digital environment based on Artificial Intelligence systems that is transparent, secure, and respectful of fundamental rights. This inquiry began with the recognition that the currently applicable legal framework—particularly Law No. 12.965/2014, the Brazilian Civil Rights Framework for the Internet, and Law No. 13.709/2018, the Brazilian General Data Protection Law—although normatively robust,

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remains insufficient to address the structural challenges arising from automated decision-making, algorithmic opacity, and the systemic risks inherent in AI systems.

The hypothesis maintained that Brazilian Draft Bill No. 4/2025 introduces a qualitative leap in the civil regulation of digital environments by shifting the normative focus from an essentially reactive model towards a preventive, structural, and fundamental-rights-oriented paradigm. In light of the analysis undertaken, this hypothesis may be confirmed, insofar as the examined provisions establish legal obligations that are not limited to the ex post reparation of harm but are intended to anticipate, mitigate, and govern it through the normative design of AI systems.

A particularly relevant feature of Article 2.027-U lies in the express recognition of the right to a safe and trustworthy digital environment as an autonomous and cross-cutting right that integrates the principles of transparency, good faith, social function, and harm prevention. This provision broadens the traditional scope of legal protection by moving beyond the merely individual protection of personal data to encompass the structural security of the digital ecosystem, particularly when mediated by automated decision-making systems.

Article 2.027-V, in turn, introduces a significant advancement by redefining the logic of content moderation in the context of AI. It requires moderation processes to comply with the principles of non-discrimination, pluralism, and respect for freedom of expression, without relinquishing the duty to prevent harm. The requirement for effective reporting mechanisms, reasoned responses, and redress gives procedural substance to the protection of fundamental rights, strengthening the rights-based dimension of the right to information and due process in algorithmic environments.

Article 2.027-W consolidates one of the Draft Bill's most important innovations: qualified transparency regarding terms of service and algorithmic processes, including information concerning automated decisions, profiling, monetisation criteria, and moderation practices. The provision declaring clauses that contravene mandatory legal rules null and void reinforces the protection of the vulnerable party and extends to the digital environment a rationale already established in consumer law, thereby contributing to the reduction of the structural information asymmetries inherent in AI systems.

Article 2.027-X constitutes the preventive core of the proposed legal regime by imposing the obligation to conduct periodic systemic risk assessments that consider impacts on fundamental rights, democratic processes, and collective security. The distinctive feature of this provision lies in its departure from the classical conception of liability exclusively conditioned upon the occurrence of actual harm. Instead, it establishes a proactive and anticipatory form of responsibility aligned with the principles of accountability, prevention, and algorithmic governance.

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Complementing this rationale, Article 2.027-Y transforms independent auditing into a structural legal instrument of oversight rather than merely a voluntary good practice. By requiring technical reports, specific recommendations linked to compliance measures, and the disclosure of non-confidential results, the Draft Bill introduces an institutional mechanism of continuous supervision that strengthens public transparency and accountability in AI systems with a significant social impact.

At last, Article 2.027-Z redefines the civil and administrative liability regime by extending it to encompass situations involving active participation in the dissemination of content through advertising mechanisms and systematic non-compliance with legal duties. This provision constitutes a turning point in relation to the model established by the Brazilian Civil Rights Framework for the Internet, as it recognises the structural capacity of AI systems to amplify risks and harm and consequently requires greater legal diligence from those who develop and operate them.

The analysis confirms that Articles 2.027-U to 2.027-Z of Brazilian Draft Bill No. 4/2025 constitute a relevant normative foundation for reconstructing the relationship between fundamental rights and AI systems. They introduce a regulatory model that recognises the structural dimension of technological risk and the need for anticipatory legal protection. Although interpretative and implementation challenges remain, the Draft Bill advances towards a model in which technological innovation is not placed in opposition to fundamental rights but must instead develop in accordance with human dignity, transparency, and accountability, thereby reaffirming the central values of the rule of law in the digital age.

From a methodological perspective, the use of the hypothetical-deductive method was fundamental to the coherence and depth of the analysis. Starting from a clearly defined hypothesis, it was possible to subject the provisions of Brazilian Draft Bill No. 4/2025 to critical examination by comparing them with the legal framework currently in force and with the structural principles of fundamental rights. This method made it possible to identify not only normative advances but also the limits and conditions affecting their effectiveness, thereby avoiding a merely celebratory interpretation of the legislative text.

From a legal and constitutional perspective, the interaction between fundamental rights and AI systems demonstrates the need to reinterpret classical categories of the safeguarding and protection of rights in technologically mediated contexts. AI systems do not operate merely as auxiliary decision-making tools but as de facto normative infrastructures capable of structurally influencing access to information, the formation of individual will, and the effective enjoyment of rights such as human dignity, equality, and freedom. In this context, fundamental rights no longer operate exclusively as ex post limits against specific abuses. Instead, they assume an ex ante normative function by guiding the design, operation, and governance of algorithmic systems so that technology remains compatible with the values of the rule of law.

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The analysis also supports the conclusion that protecting fundamental rights in relation to AI requires a regulatory approach that combines substantive guarantees with procedural mechanisms of oversight. Rights such as the rights to information, non-discrimination, and personal autonomy can be fully realised in algorithmic environments only where effective conditions of transparency, explainability, and accountability exist. Accordingly, AI regulation should not be understood as an obstacle to innovation but as an instrument for the democratic legitimation of technology, capable of ensuring that technological progress develops consistently with human dignity and the comprehensive protection of fundamental rights in increasingly automated societies.

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