

Promethean Ambition, Zeusian Order: Why Information Systems Innovation Requires Structural Ethics

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Introduction

Information Systems scholarship has increasingly recognized that technological success cannot be evaluated solely through performance, scalability, or efficiency. Recent work has instead emphasized the contextual, social, and civic dimensions of technological development, drawing attention to participation, explainability, legitimacy, and lived experience in use (Sarker et al., 2019). Drawing on insights from the social sciences and humanities, this shift has broadened how designers and institutions understand technology in practice, including its effects on organizational routines, participation, and vulnerability. Yet the dominant benchmarks shaping technological progress remain heavily oriented toward speed, efficiency, and scalability, often at the expense of accountability, social development, and collective well-being (Scott et al., 2025).

The result is a widening gap between technical capability and the societal conditions – structural, institutional, and cultural – within which systems shape participation, governance, and human agency. The consequences are increasingly visible across contemporary digital systems. Biometric identification schemes may exclude eligible beneficiaries where documentation or network quality is uneven. Risk scoring in welfare and credit can shift the burden of error onto those least able to absorb it. Workplace monitoring may intensify surveillance while limiting recourse, while content moderation systems can centralise discretionary power without meaningful mechanisms for contestation. These outcomes reflect an innovation culture that frequently subordinates ethical reasoning to the imperatives of speed, scale, and deployment, treating moral reflection as peripheral rather than foundational to design (Chatterjee et al., 2009).

The persistence of systemic harms reveals a deeper mismatch between technological capability and the ethical frameworks commonly used to evaluate it within Information Systems research and practice. While the field increasingly engages with insights from the humanities, social sciences, and design studies, ethical reasoning often remains peripheral to how technologies are conceived, evaluated, and deployed, particularly within large-scale digital infrastructures and data-driven governance systems. Although the ethical vocabulary

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surrounding digital systems has expanded to include concepts such as privacy, autonomy, dignity, equity and values, the underlying theoretical assumptions often remain unchanged. Traditional ethical frameworks – particularly utilitarianism, deontology, and, more recently, virtue ethics - continue to shape how justified action is understood, how obligations are assigned, and how rights and harms are interpreted. Their limitations become especially visible when Information Systems operate within contested social contexts shaped by cultural diversity, and by gendered, class-based and racialised hierarchies (Forattini, 2025).

In line with calls to move beyond incremental improvement toward genuinely transformative innovation in Information Systems, often described as “Promethean leaps” (Conboy, 2019), this editorial argues that transformative innovation requires equally transformative approaches to ethics. Ethical frameworks are not merely ancillary to transformation, but central to the conditions under which technological change becomes legitimate, sustainable and socially meaningful. A Promethean leap that ignores the Zeusian order - the institutional, political and economic structures that govern how technologies are designed, deployed and appropriated - risks reproducing existing forms of domination rather than enabling genuinely emancipatory change. In the myth, Prometheus brings fire to humanity, but Zeus reasserts control, ensuring its emancipatory potential remains constrained by the systems that define its use. Likewise, innovation without structural awareness risks collapsing into forms of technical novelty that reproduce the hierarchies they claim to disrupt. We therefore call for approaches to Information Systems design and governance that are institutionally aware, attentive to the distribution of power and risk, and genuinely participatory in how legitimacy and accountability are established.

Why Structural Ethics Is the Missing Condition for Promethean Innovation

Digital technologies increasingly shape the conditions under which collective, organisational and civic life unfolds. They influence governance, economies, and cultural practices, reconfiguring how people communicate, organize, and understand their place within society. In this context, technology functions not merely as an operational tool, but as a constitutive agent of power (Hui, 2019; Hilbert, 2014) through which authority is exercised, legitimacy conferred, and participation rendered possible. Technological development is therefore deeply embedded within social, institutional and economic structures, shaping how dependency, coordination, and even moral expectation are produced and maintained (Alfaraz & Tully, 2025).

Despite this centrality, Information Systems research and practice often approach technology as though it operates independently of the institutional, political, and cultural environments that shape its development and use (Stahl, 2012). This separation can produce a persistent ethical blind spot, limiting the field’s capacity to address the broader structural conditions within which digital systems operate. Throughout history, technical advances, whether in automation, communication, or data management, have rarely escaped the gravitational pull of entrenched institutions; artifacts may embody political arrangements, organizational technologies are enacted through institutional structures, and digitalization can generate less visible but consequential displacements in institutional values, norms, and rules

(Winner, 2007; Orlikowski, 1992; Orlikowski & Scott, 2023). Technologies initially intended to decentralize power or expand participation may ultimately reinforce hierarchy, surveillance, or market concentration. Even well-intentioned systems are often shaped by pressures towards administrative efficiency, optimisation, or commercial gain. As a result, technological trajectories are influenced not only by technical possibility but also by prevailing configurations of institutional and economic power.

These dynamics are increasingly evident across contemporary digital systems. Digital identity schemes designed to promote inclusion may also become instruments of surveillance, exclusion, and intensified administrative control (Dinev et al. 2008; Masiero & Arvidsson, 2021; Masiero, 2023). Open-data initiatives intended to enhance transparency may also facilitate new forms of commercial extraction and asymmetric value capture (Santoro et al., 2025). Civic platforms that promise participatory governance may nonetheless reproduce or amplify existing inequalities in access, visibility, and voice (Mellon et al., 2025). Such examples illustrate why innovation alone cannot redress structural asymmetries: technologies are frequently absorbed into the institutional and economic logics they were initially meant to challenge.

As technologies are rearticulated within such configurations of power, the harms they produce may become structural rather than merely incidental. What begins as optimization may harden into forms of exclusion: eligibility algorithms can disqualify vulnerable citizens, credit and welfare models may recode deprivation as risk, and moderation systems can marginalise dissenting voices or limit opportunities for contestation. These outcomes often reflect institutional and technical logics that privilege efficiency, quantification, and control over deliberation, participation, and care. Within such systems, harm may be normalised as a by-product of maintaining administrative or organisational order. Under these conditions, ethical intent alone becomes insufficient when accountability, redress, and representation are structurally limited. Structural ethics begins from this recognition, arguing that technological progress can expand collective agency and justice only when the institutional conditions shaping design, deployment, and appropriation are made visible and open to contestation.

Why Traditional Frameworks Fall Short

Ethical reasoning in Information Systems has long been shaped by major traditions within Western moral philosophy – particularly utilitarianism, deontology, and, more recently, virtue ethics (Forattini, 2025). Each offers a distinctive moral orientation: utilitarianism emphasises aggregate outcomes, deontology foregrounds universal duties and obligations, and virtue ethics focuses on the cultivation of moral character. Yet these models share an underlying assumption that ethical action can be evaluated primarily through the decisions of autonomous individuals operating within relatively stable moral contexts (Walker, 2007). Contemporary digital systems, however, operate within far more plural, interconnected, and institutionally complex environments. Information systems increasingly function within social ecosystems characterised by dispersed actors, conflicting values, and dynamic forms of interaction and dependency. While traditional ethical frameworks remain valuable, they can struggle to fully address forms of responsibility that emerge through institutional mediation, collective interdependence, and evolving socio-technical tensions.

Utilitarian ethics, one of the most influential ethical frameworks in Information Systems (Forattini, 2025), evaluates morality primarily through outcomes and seeks the greatest good for the greatest number. Originating in the work of Bentham and Mill, it has shaped debates in moral philosophy, economics, and public policy (Scheffler, 1988). In the technology sector, utilitarian reasoning frequently informs approaches to design, governance, and public policy. A qualitative analysis of seventy international AI ethics guidelines suggests that outcome-oriented reasoning continues to shape how trade-offs between innovation, efficiency, and public good are framed (Franzke, 2022). This orientation appears practical and adaptable, yet it also presents important limitations. By privileging aggregate benefit, utilitarian reasoning can legitimize harms to minorities or individuals in the name of collective advantage (Goodin, 1995). In AI contexts, it may justify privacy intrusions or biased systems when such outcomes are considered beneficial overall (Binns, 2018). Its emphasis on aggregation can obscure differences in lived experience and contribute to unequal distributions of risk and burden (Rawls, 1971).

Deontological ethics emphasizes duties, obligations, and adherence to moral principles rather than the pursuit of desirable outcomes. Grounded primarily in Kantian moral philosophy, it maintains that certain actions are inherently right or wrong regardless of their consequences. Subsequent developments introduced more pluralistic interpretations while retaining a strong emphasis on consistency, obligation, and moral integrity. In technological contexts, deontological principles frequently inform professional standards, codes of conduct, and regulatory approaches. Their influence is particularly visible in commitments to user privacy, data protection, accountability, and responsible AI governance (Floridi & Taddeo, 2016). Advocates argue that these principles provide moral stability amid rapid technological change by establishing boundaries that limit discretionary power and support accountability, even when compliance conflicts with efficiency or profitability (Brey, 2012). However, highly universal approaches can struggle to accommodate the contextual, relational, and culturally plural dimensions of socio-technical systems (Alexander & Moore, 2016). In contexts involving inclusion, participation, or gender-sensitive design, strict rule-based approaches may insufficiently account for lived experience, evolving needs, or mechanisms for feedback and revision, potentially limiting legitimacy through participation ([Bardzell, 2010](#); [Costanza-Chock, 2020](#); [Forattini et al., 2025](#)).

Virtue ethics evaluates morality through the cultivation of character rather than adherence to rules or the calculation of outcomes. Revived in contemporary Information System scholarship, it promotes virtues such as honesty, courage, empathy, and practical wisdom as foundations of ethical behaviour (Swanton, 2003). This emphasis on moral character offers an important corrective to the procedural orientation often associated with utilitarian and deontological approaches and has gained traction in Information Systems, social media, and AI research as scholars and practitioners seek more human-centred approaches to technology. Critics nevertheless argue that virtue ethics can rely on culturally contingent understandings of moral character and may provide limited guidance in contexts marked by institutional complexity and social plurality (Slote, 1993). Questions may also arise regarding which traits should be prioritised as virtues and who has the authority to define them within diverse socio-technical settings (Annas, 2003). When applied to technology design and governance, virtue-oriented approaches may risk framing empathy, civility, or responsibility

primarily as individual attributes rather than as practices shaped by institutional and structural conditions. In doing so, they may insufficiently address the broader social arrangements through which inequality and exclusion are reproduced (Slote, 1993).

Across these traditions, ethical reasoning can struggle to fully engage with the contextual, relational and structural dimensions of socio-technical systems. As a result, ethics in Information Systems can become oriented towards procedural compliance rather than broader institutional transformation. As ethical discourse becomes increasingly institutionalised through frameworks, metrics, and governance mechanisms, its capacity to challenge underlying structural assumptions may also be constrained. In such contexts, ethics risks functioning primarily as a mechanism of legitimation, leaving deeper questions of justice, accountability, participation, and care insufficiently addressed.

Why Relational and Care-Based Ethics Offer a Way Forward

Structural ethics begins from the recognition that responsibility within Information Systems is distributed across socio-technical arrangements rather than located solely in individual actors. One particularly important pathway for such an approach lies in care ethics, developed primarily within feminist moral philosophy, which grounds moral reasoning in interdependence, vulnerability, and relational obligation rather than individual autonomy alone (Gilligan, 1993; Tronto, 1993). Rather than relying primarily on abstract universal principles detached from context, care ethics emphasizes responsiveness to human needs within specific social and institutional contexts.

Care is therefore understood not simply as empathy or benevolence, but as an ongoing practice of attention, maintenance, responsiveness, and repair that recognises power, dependency, and vulnerability as constitutive dimensions of social life. Applied to information systems, care ethics reframes technology as part of an ongoing social infrastructure whose legitimacy depends on how effectively it protects vulnerable groups, distributes risks and burdens, and enables meaningful participation and redress.

Relational and care-based ethics broaden how accountability is understood within digital systems and socio-technical governance. Traditional ethical frameworks often conceptualise harm as an isolated event requiring prevention, mitigation, or compensation, whereas care ethics understands harm as cumulative and relational, emerging through sustained neglect, exclusion, or asymmetry. This perspective aligns closely with the operation of contemporary information systems, where injustices often emerge not as isolated failures but through patterned dependencies, chronic misrecognition, and uneven distributions of power. Automated decision systems may operate with high levels of technical accuracy while still eroding trust or reinforcing stigma when they disregard the lived realities of those subject to their decisions. A care-based approach therefore evaluates systems not only according to measurable outputs, but also according to their responsiveness to vulnerability, exclusion, and lived experience. It requires institutions to remain accountable to affected communities long after systems are deployed. In this sense, repair, dialogue, reflexivity, and attentiveness become ongoing features of ethical governance rather than secondary responses to technical failure.

Care ethics further challenges highly individualised models of moral responsibility by emphasising the relational, institutional, and context-dependent nature of ethical life. It recognizes that responsibility emerges through relations of dependency, vulnerability, and power, rather than through isolated acts of individual judgement (Gilligan, 1993; Tronto, 1993; Engster, 2019). As Held (2006) argues, it is inherently transdisciplinary, connecting the personal and the political, linking intimate relations with broader institutional and structural concerns. Research across multiple domains demonstrates how care-based approaches can inform institutional practice. Tronto (1993) and Noddings (1984), for example, show how care can shape education and civic life through attentiveness and mutual responsibility. In healthcare, care ethics has informed patient-centred approaches that emphasise empathy, reciprocity and responsiveness (Engster, 2007). In emerging technological domains such as nanotechnology, relational approaches have also been linked to more responsible forms of innovation and governance (Nurock et al., 2021). For Information Systems, these developments illustrate how care ethics can support forms of design and governance that are structurally aware, attentive to context, inclusive of diverse perspectives, and oriented toward the ongoing maintenance and repair of trust.

Toward an Agenda for Structural Ethics

The argument developed throughout this editorial rests on a simple premise: technological innovation cannot be separated from the institutional structures that authorize, shape, and sustain it. The ethical challenges facing contemporary information systems - including automation bias, exclusionary data regimes, and algorithmic opacity – should therefore not be understood solely as isolated technical or design failures, but also as expressions of broader political, economic, and organizational asymmetries. Addressing these challenges requires greater attention to the institutional arrangements through which fairness, accountability, participation, and transparency are defined and enacted. Structural ethics proceeds from this recognition by treating context, distribution, participation, and remedy as central conditions of legitimacy for digital systems. Although Information Systems scholarship has long recognised that technologies embed social values, ethical reflection is still too often separated from questions of system design, governance, and institutional accountability. As digital systems increasingly mediate organisational, civic, and public life, technical and ethical reasoning can no longer be treated as separate domains.

Building on this foundation, we propose four commitments for a structural ethics agenda. First, ethics must be treated as design infrastructure rather than an evaluative supplement. Technological projects should make explicit how decisions concerning data, participation, accountability, and redress are structured, who holds authority, and how legitimacy will be evaluated in practice. Second, research and governance processes must incorporate mechanisms for participation, contestation, and inclusion that allow those affected by systems to challenge outcomes and contribute to their revision. Third, institutions should allocate clear responsibility and sustained resources for ethical oversight and maintenance, ensuring that practices of care, repair, and responsiveness remain ongoing rather than reactive. Fourth, evaluation criteria should extend beyond technical performance metrics to consider

distributive and procedural justice, including how systems allocate burdens, distribute benefits, and enable accountability and redress. Taken together, these commitments reposition ethics from a largely compliance-oriented exercise toward an ongoing practice of accountability, participation, and shared institutional responsibility.

Reframed in this way, ethics becomes the architecture of Promethean innovation rather than its restraint. A Promethean leap guided by structural and care-based reasoning represents not only a technical advance, but also a broader institutional and ethical reorientation, creating technologies that expand collective agency rather than reproducing existing asymmetries of power and exclusion. In this sense, Zeusian order need not signify constraint alone, but can also represent the institutional grounding through which freedom, accountability, and participation become durable. By embedding care, participation, accountability, and redress into the structures of technological life, Information Systems can reconcile ambition with accountability and imagination with governance. The fire of innovation must burn within institutions capable of sustaining its light.

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The following *Special Issue* turns to questions of care ethics, relational accountability, and structurally aware approaches to AI-enabled systems. A subsequent issue will further explore governance and implementation challenges in responsible AI practice.

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