

EDITORIAL

Toward trustworthy and verifiable emerging technology ecosystems

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Today, emerging technology ecosystems are no longer defined by the novelty of their tools, but by the ability to integrate them, verify them, and place them at the service of people. With this premise, the present issue of CISAI brings together five contributions from universities in Peru and Venezuela that, from diverse disciplines and approaches, address a single question, namely how to build trust in environments increasingly mediated by technology. To this end, the first study is framed within the field of cybersecurity and examines the protection of administrative services against fraud. Drawing on an analysis of incident management in a Peruvian company, it proposes a defense-in-depth architecture that brings together identity management, protection against advanced threats, cloud security, and analytics supported by artificial intelligence, with the aim of closing the gap between detecting a risk and responding to it.

Moving beyond the corporate sphere, the second contribution turns to small and medium-sized enterprises in the Venezuelan food sector, in a work situated at the intersection of finance and information technologies. Based on a diagnosis of their management practices, it puts forward a model of gradual technology adoption, supported by a data architecture and an implementation roadmap, which recognizes that the digitalization of these firms must be adjusted to their actual capabilities. Along the same lines, the third manuscript addresses philosophical currents and decision-making in intelligent industrial automation systems, showing how positivism, critical realism, and hermeneutics can help train professionals capable of measuring, understanding causes, and interpreting the interaction between people and intelligent systems in Industry 4.0, and it proposes a capability framework that reaffirms the value of human judgment in industrial automation. Likewise, the fourth contribution is aligned with the governance of generative artificial intelligence. From a design science perspective, the author contrasts the main international regulatory frameworks and proposes an ethical-technological integrity framework that links transparency, accountability, bias mitigation, and human oversight to verifiable mechanisms, so that ethics becomes a design variable.

Finally, the last study explores digital identity technologies applied to secure authentication in decentralized ecosystems. The work traces the evolution of blockchain, decentralized identifiers, and verifiable credentials, their application domains, and their regulatory challenges, and proposes understanding digital sovereignty as people's effective capacity to manage their own identity. Taken together, these contributions trace a path that runs from the infrastructure of organizations to the identity of each citizen, passing through the economy of small businesses, the training of decision-makers, and the norms that regulate artificial intelligence, around a shared conviction that technology only creates value when it is integrated into coherent systems, preserves human judgment, and can demonstrate through evidence what it promises. This conviction is especially relevant in Latin America, where innovation advances in contexts marked by institutional constraints and regulatory frameworks that are still under construction. For this reason, CISAI invites the academic community to continue this conversation through implementation studies, evaluations in real-world settings, and cross-country collaborations that make it possible to move from the design of proposals to the verification of their effects. We thank the authors, reviewers, and readers who make this dialogue possible and who contribute, from different perspectives, to strengthening a research agenda aimed at understanding and demonstrating the impact of technology on our societies.