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University of Basilicata, Matera, Italy

The Ecology of Knowledge in the AI Era

CALL FOR EXTENDED ABSTRACTS - IFKAD 2027
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Special Track n.: 38

Designing Resilient and Human-Centric Knowledge Ecosystems in the AI Era: Strategic, Socio-Technical, and Operational Perspectives

Description

In line with the theme of IFKAD 2027, "The Ecology of Knowledge in the Age of AI," this special section examines how organizations can design resilient and adaptive knowledge ecosystems under conditions of technological and informational turbulence. This issue is becoming increasingly relevant as Artificial Intelligence (AI), the Industrial Internet of Things (IIoT), cyber-physical systems (CPS), process mining applications, and other data-intensive technologies are progressively becoming interconnected within organizational processes. Such interconnections — which in some cases take the form of full system integration — are no longer limited to advanced manufacturing but increasingly characterize the healthcare, services, public administration, logistics, and inter-organizational networks. As these technologies become increasingly integrated into organizational activities, they generate growing volumes of heterogeneous data that are continuously updated and increasingly interdependent.

However, greater data availability does not necessarily translate into greater knowledge or organizational value (Günther et al., 2017). Instead, data-intensive environments can introduce a wide range of technological and organizational challenges associated with data collection, management, integration, analysis, and interpretation (Sivarajah et al., 2017). Among these challenges are fragmentation across systems and professional domains, interpretive ambiguity, mismatches between information-processing requirements and available cognitive or organizational capacities, and tensions concerning decision-making autonomy when algorithmic outputs are incorporated into organizational decisions. Notably, the growing influence of algorithms in organizational decision-making raises issues around transparency, control, specialized expertise, and the distribution of decision-making authority between human and technological actors (Newell and Marabelli, 2015; Faraj et al., 2018). Thus, a central issue concerns how signals generated by various technological artefacts are selected, interpreted, combined with existing expertise, shared across organizational boundaries, and ultimately translated into decisions and actions. From this perspective, a resilient knowledge ecosystem can be conceptualized as an organizational configuration designed to transform heterogeneous technological signals into shared, interpretable, and actionable knowledge, thereby preserving coordination, human judgment, and the ability to learn and adapt over time. In this conceptualization, the focus shifts from the mere availability or integration of data to the organizational conditions that enable data to acquire meaning and become actionable knowledge.

When conceived in these terms, the conceptualization, implementation, and maintenance of a knowledge ecosystem require coordinated initiatives at the strategic, operational, organizational and behavioural levels. Strategic decisions define how data and digital technologies contribute to organizational objectives and knowledge governance. Operational decisions translate these priorities into processes, data flows, technological architectures, responsibilities, and decision-making routines. The organizational and behavioural dimensions refer to how individuals and groups interact with technologies, share and integrate knowledge, adapt their roles and competencies, and respond to factors such as trust, autonomy, motivation, acceptance, and decision agency. These dimensions are strongly interdependent and collectively shape a broader sociotechnical transformation of the organization. The complexity of this transformation can be addressed through complementary theoretical perspectives. Each of these perspectives highlights a different mechanism through which data are transformed into organizational knowledge. The knowledge-based perspective explains how specialized knowledge – distributed among individuals, functions, and professional communities – can be integrated and mobilized at the organizational level (Grant, 1996). Organizational information processing theory focuses

on how structures and coordination mechanisms can be configured to match growing information processing demands with available cognitive and organizational capacities (Galbraith, 1974). At the individual and group levels, sensemaking theory helps explain how ambiguous, incomplete, or conflicting signals are interpreted and converted into shared meanings that support coordinated action (Weick et al., 2005). A sociomaterial perspective further emphasizes that the creation and use of knowledge cannot be separated from the technologies, routines, and work practices through which information is produced and enabled (Orlikowski, 2007). Finally, Lean and continuous improvement provide a process-oriented perspective on how emerging knowledge can be incorporated into recurrent cycles of problem identification, experimentation, feedback, and adaptation (Rosa et al., 2023). Building on these perspectives, this Special Track explores how organizations can manage increasingly complex data environments to conceptualize, design, implement, govern, and sustain resilient, adaptive, and human-centric knowledge ecosystems. Particular attention is given to the mechanisms through which data are transformed into usable knowledge, integrated into organizational processes, shared across professional and functional boundaries, and continuously refined through learning and feedback.
We invite scholars, engineers, organizational theorists, and management practitioners to contribute conceptual, empirical, and methodological research that spans traditional disciplinary boundaries. Submissions should offer innovative perspectives on the design, governance, implementation, and continuous development of sustainable, resilient, and human-centric knowledge ecosystems in the AI era.

Indicative Topics

- Data-to-Knowledge Transformation: Processes through which heterogeneous and technology-generated data are selected, interpreted, contextualized, and transformed into actionable organizational knowledge.
- Knowledge Ecosystem Design and Governance: Strategic approaches for designing, governing, and sustaining resilient knowledge ecosystems, including information architectures, decision rights, knowledge responsibilities, and cross-functional coordination.
- Information Processing and Organizational Design: Alignment between increasing information-processing requirements and organizational structures, cognitive capacities, coordination mechanisms, and decision processes.
- Human–AI Interaction, Sensemaking, and Agency in Decision-making: How individuals and groups interpret algorithmic outputs and how AI reshapes expertise, trust, autonomy, accountability, and decision authority.
- Socio-Technical Transformation and Digital Work Practices: How AI, IIoT, CPS, digital twins, process mining, and related technologies reshape routines, professional roles, competencies, workflows, and patterns of interaction.
- Lean, Knowledge Management, and Continuous Improvement: Integration of digital data, knowledge-management practices, and Lean approaches to support problem solving, experimentation, feedback, organizational learning, and process adaptation.
- Resilient and Sustainable Knowledge Ecosystems Across Sectors: Conceptual and empirical studies examining the performance, adaptability, resilience, and sustainability of knowledge ecosystems in manufacturing, healthcare, public administration, services, logistics, and interorganizational networks.
- Cross-Sectoral Applications & Empirical Case Studies: Cross-disciplinary implementations of sustainable data management across manufacturing, healthcare, smart cities, and energy supply chains.

Keywords

Knowledge Ecosystems; Artificial Intelligence; Knowledge Management; Organizational Design; Socio-Technical Systems; Continuous Improvement

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Follow this link to see the Special Track details on IFKAD website ››

Guidelines and Requirements

Researchers wishing to contribute are invited to submit an EXTENDED ABSTRACT (in MS Word format) of min 500 and max 1000 words, not later than **22 JANUARY 2027**. All submission must be done via dedicated form on our website.
The abstract should address theoretical background, research objective, methodology, and results in terms of expected contribution to Knowledge Management theory and practice.
Authors are required to follow the guidelines and templates available on IFKAD website: www.ifkad.org

Important Dates

22 January 2027 – Extended Abstract Submission Deadline
19 February 2027 – Acceptance Notification to Authors
16 April 2027 – Early-Bird Registration & Payment Deadline
23 April 2027 – Full Paper Submission Deadline
28 May 2027 – Regular and PhD Students Registration & Payment Deadline
12 June 2027 – Conference Program Release
28-30 June 2027 – Conference sessions *(to be considered as 3 full working days)*

Please note that all above indicated dates are **CUT-OFF** deadlines. There will not be an extention to any of these.

Further Information

For any information related to the conference and/or any special track, please see the event website at www.ifkad.org or contact the conference manager at **info@ifkad.org**