

From the Invisible Hand to the Invisible Algorithm: Information Logistics in the Age of Artificial Intelligence

Abstract

Artificial intelligence is transforming not only the production of information but also the way information is coordinated within economic systems. This article argues that the central challenge of the AI era is no longer access to information, but the ability to manage its movement, relevance and conversion into effective decisions. Building on the concept of information logistics, the paper proposes that AI extends information logistics from a framework of information management into a mechanism of adaptive economic coordination. In this perspective, competitive advantage increasingly depends on the efficiency with which societies and organizations transform knowledge into timely action.

The New Scarcity of the Digital Economy

Every major economic transformation has been accompanied by a change in what societies consider scarce. In the eighteenth century, Adam Smith demonstrated that productivity could be increased by organizing labour more effectively. The division of labour allowed societies to create unprecedented economic value by coordinating specialized activities.

The industrial age extended this principle beyond factories. Railways, ports and supply chains created new forms of physical logistics that reduced the cost of moving goods and connected global markets. The digital revolution appeared to eliminate another constraint: access to information. The Internet created an environment where knowledge could be produced, distributed and accessed almost instantly across the world.

Yet the success of digitalization created a new paradox. Information is no longer scarce. Attention, interpretation and effective decision-making have become the limiting factors. Organizations today are surrounded by enormous volumes of data. The challenge is not finding information but identifying what matters, when it matters and how it should influence action.

This paradox was already anticipated in research on information logistics, which emphasized that the excess of information may push the most important issues into the background and prevent organizations from using their full potential (Kardasz, 2017). Artificial intelligence intensifies this challenge by multiplying the speed and scale of information production, while simultaneously offering tools capable of organizing and prioritizing knowledge flows.

Information Logistics as an Economic Principle

Traditional logistics concerns the efficient movement of physical resources. Information logistics concerns the efficient movement of knowledge. The concept emerged from the recognition that information flows require organization, structure and optimization. In Internet-based environments, the value of information depends not only on its existence but also on its accessibility, timing and relevance (Kardasz, 2017).

Artificial intelligence extends this principle. AI systems do not merely store or transmit information. They evaluate, prioritize, predict and adapt information flows. They determine which knowledge becomes visible, which patterns are identified and which decisions receive support. The economic value of information increasingly depends on the quality of its logistical management.

A company with access to the same raw data as its competitors may still achieve superior performance if it possesses better systems for transforming information into decisions. Competitive advantage therefore moves from information ownership toward information coordination. In this sense, information logistics becomes a missing layer between data availability and economic value creation.

The broader socio-economic interpretation of information logistics identifies information as one of the most valuable resources of the twenty-first century, provided that it is managed within coherent logistical systems (Kardasz et al., 2022). This perspective shifts the focus from the quantity of information toward the quality of its circulation within organizations and societies.

From the Invisible Hand to the Invisible Algorithm

Adam Smith's invisible hand described how individual decisions could be coordinated through market mechanisms. The market transformed dispersed knowledge into economic outcomes without requiring central control.

Artificial intelligence introduces a new form of coordination. Modern algorithms increasingly influence how information moves through economic systems. They recommend products, optimize production, detect financial risks, support medical decisions and guide investment strategies.

The invisible hand coordinates exchanges between people. The invisible algorithm coordinates flows of information between people, organizations and machines. This does not replace markets. Rather, it changes the infrastructure through which markets operate.

The history of economic development can therefore be viewed as a progression of coordination mechanisms:

- The invisible hand organized decentralized economic activity.
- Industrial logistics organized the movement of physical resources.
- Information logistics organizes the movement of knowledge.
- Artificial intelligence adds the capacity to continuously adapt these flows in real time.

This progression represents more than technological change. It reflects an evolution in the architecture of economic coordination itself. AI transforms information logistics from a passive system of information transmission into an active system of adaptive coordination.

These main theses were presented by Professor Peter Kardasz during the *Future of the Economy Symposium 2026*, held at the Adam Smith Theatre in Kirkcaldy, Scotland, during the celebrations of the 250th anniversary of the publication of Adam Smith's *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776). During this event, Professor Kardasz formulated the following observations:

"In the era of AI, competitive advantage is no longer determined by access to information, but by the efficiency of its logistical flow. Therefore, information logistics becomes a source of innovation, and innovation becomes the wealth of nations."

He further explained:

"In the past, competitive advantage came from simply having access to information. Today, as AI and the internet provide widespread access to knowledge, what matters most is how quickly, accurately, and effectively information flows between people, organizations, and systems. Countries and companies that better organize this flow of information can create innovation more rapidly. Innovation then translates into economic growth and prosperity."

Professor Kardasz summarized this idea with the following proposition:

"Information itself is no longer the most valuable resource for creative innovation; rather, the ability to manage and optimize the flow of information becomes the key strategic resource."

Artificial Intelligence and the Future of Productivity

The greatest economic impact of AI may not come from replacing human labour, but from improving the quality and speed of decisions. Every organization depends on decisions: where to invest, what to produce, which risks to accept and which opportunities to pursue. Poor decisions often result not from a lack of intelligence but from incomplete, delayed or poorly structured information.

AI has the potential to reduce these limitations by creating adaptive information environments. In healthcare, AI can organize complex medical knowledge to support diagnosis. In industry, it can optimize production processes. In finance, it can analyze patterns beyond human cognitive capacity. In public administration, it can improve the allocation of resources.

Across these fields, the underlying mechanism is similar: improving the flow between information and action. The productivity gains of the AI era will therefore depend not only on the power of algorithms but on the quality of information systems in which they operate.

Importantly, AI should not be understood as a substitute for human agency. Contemporary postdigital theory emphasizes that agency is distributed between humans and technological systems, requiring a critical understanding of human-machine relations (Hirblinger, 2023). In economic practice, this means that AI should support, recommend and route information, while strategic responsibility remains with human decision-makers.

Communication, Trust and Information Flow

Efficient information logistics cannot exist without effective communication. In digitally saturated environments, organizations often experience not only information overload but also conflicting signals, fragmented priorities and adversarial communication styles.

Research on communication in the age of digital conflict highlights the importance of reflective exchange instead of winner-takes-all confrontation (Tłuściak-Deliowska, 2023). In organizational contexts, this principle is particularly relevant for leadership teams that must reconcile competing priorities such as growth, profitability, stability and innovation.

Information logistics therefore requires more than technological infrastructure. It requires a culture of mutual understanding, psychological safety and transparent decision-making. AI can facilitate this process by delivering relevant information to the right people at the right time, but it cannot replace the human capacity for dialogue, judgment and ethical responsibility.

Toward an Economics of Information Flow

The history of capitalism has been a history of better coordination. Markets coordinate exchange. Organizations coordinate production. Logistics coordinate resources. The next stage of economic development requires understanding how societies coordinate knowledge.

Information logistics offers a conceptual framework for this challenge. It explains why the value of information depends not only on quantity but on movement, structure and application. Artificial intelligence does not make information valuable by creating more of it. It makes information valuable by improving the path from knowledge to decision.

In the industrial era, nations gained advantage through better factories and supply chains. In the digital era, they gained advantage through better networks. In the AI era, competitiveness may depend on the ability to build superior systems of information logistics — systems that combine technological efficiency with human oversight, ethical governance and reflective communication.

The invisible algorithm may become one of the defining economic forces of the twenty-first century, not because it replaces the invisible hand, but because it extends the logic of economic coordination into the realm of information and decision-making.

References

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