

## The Tamkine Tribune

### Breaking Free from the Technological Illusion: The Frugal and Systemic Path of Artificial Intelligence

Artificial intelligence is often presented as a global race for power: giant models, energy-hungry data centers, and ever-growing volumes of data. This dominant representation is misleading. It confuses technological progress with value creation, technical sophistication with real transformation. In light of all my work devoted to AI, one conviction stands out: the future of artificial intelligence lies not in excess, but in frugality conceived in a systemic way.

The history of digital technologies has shown this repeatedly: technological acceleration does not mechanically generate productivity or sustainable performance. The productivity paradox, which I analyzed in my earliest work, now applies fully to AI. Observed uses in the field confirm this gap: AI is widely used to understand, summarize, write, learn, or organize, but it still only marginally transforms organizational systems in depth.

From a systemic perspective, frugality becomes a structuring principle. It is based on the right need, the right data, the right level of computing power, and the right amount of energy. Frugal AI is contextualized, specialized, understandable, and controllable. It favors modular architectures, lightweight models, lean infrastructures, and local control of data. It stands in opposition to the race toward mega-models and mega-data centers, which are economically costly and strategically dependent.

This frugality is also deeply social. Work carried out through citizen and professional exchanges shows that the main challenge is not an excess of AI, but inequality of access to digital technologies. For many children and territories—particularly in Africa and in Morocco—the primary challenge is inclusion. Include before regulating, equip before constraining, train before banning: this is the logic of a frugal AI conceived as a common good.

The concrete applications of this approach are numerous. In education, frugal AI supports teachers without replacing them, assists students, and promotes local languages and cultures. In healthcare, it supports professionals, optimizes care pathways, and strengthens prevention while protecting sensitive data. In public administration, it automates repetitive tasks and restores time for human interaction. In craftsmanship and historic medinas, it helps preserve heritage and transmit know-how. For SMEs, it constitutes an accessible lever for digital transformation.

Frugal AI is not a second-rate AI. It is an AI of maturity. It requires more reflection, more governance, and greater responsibility. For Morocco and for Africa, it opens a sovereign, inclusive, and sustainable trajectory. Breaking free from the technological illusion means accepting that true artificial intelligence lies not in brute power, but in the intelligence of systems and territories.

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**Tribune by Dr. Az-Eddine Bennani**