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## Three Essential Pillars for AI Adoption

Domain knowledge, business understanding, and people as allies

Kouame Ngoran

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### Article Info

#### *Keywords*

Machine Leadership  
AI Adoption  
Human-AI Collaboration  
Digital Transformation

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### Abstract

Recent advances in artificial intelligence (AI), including systems achieving International Math Olympiad-level performance, demonstrate the rapid maturation of AI as a general-purpose technology capable of complex reasoning. As organizations seek to harness this capability, successful adoption requires more than simply acquiring new tools. This article argues that effective AI transformation rests on three essential pillars: **domain knowledge, business understanding, and people as allies**. First, organizations must rely on internal subject matter experts to ensure data quality, guide model development, and validate AI outputs. Second, leaders must align AI initiatives with organizational strategy, culture, and processes so that technology addresses real business problems rather than short-term productivity gains. Third, AI adoption must prioritize human collaboration, transparent leadership, and workforce development to mitigate resistance and support employees affected by automation. Together, these pillars enable organizations to implement AI responsibly, generate sustainable business value, and maintain a competitive advantage in an increasingly AI-driven economy.

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## Introduction

In 2024, Google's AlphaProf AI systems solved four of the six original International Math Olympiad (IMO) questions, a performance that matches a Silver Medal. This year, other models (including an upgraded Google Gemini and an OpenAI model) achieved Gold Medal-level performance at the IMO, solving five of six problems. DeepSeekMath-V2 also obtained the same performance on the IMO 2025 problems. These breakthroughs illustrate the accelerating capabilities of modern artificial intelligence systems and demonstrate how advances in machine learning and large-scale computation are enabling AI to perform increasingly complex forms of reasoning (Jordan & Mitchell, 2015; Russell & Norvig, 2021).

Public interest in AI has skyrocketed since 2022, and AI technologies are rapidly becoming embedded across industries and organizational processes. In the United States alone, more than 60 major AI conferences were scheduled for December 2025. As Kahn (2024) noted, before the emergence of widely accessible generative AI systems such as ChatGPT, most AI applications operated behind the scenes in recommendation systems, image recognition, or predictive analytics. While these earlier systems were powerful, they were rarely perceived as general-purpose technologies by the public. Today, however, AI is increasingly recognized as a transformative capability with broad economic and organizational implications (Brynjolfsson & McAfee, 2014; Kaplan & Haenlein, 2019).

As organizations rush to adopt AI technologies, leaders face an important strategic challenge: successful AI adoption is not determined solely by access to advanced algorithms or computational power. Instead, organizations must develop the structural, cultural, and human foundations required to integrate AI effectively into their operations (Davenport & Ronanki, 2018). AI will undoubtedly amplify human potential and change the way organizations operate, but fundamentally it can only enhance systems, processes, and capabilities that already exist.

This article lays out three initiatives that C-level executives and AI leaders can take to facilitate AI adoption and help their organizations fully benefit from this technological revolution. To successfully lead AI transformation within their organizations, leaders must focus on three key elements: Domain Knowledge, Business Understanding, and People as Allies.

## Domain Knowledge

A company is composed of people from different backgrounds who collaborate to achieve its strategic goal. Employees with specialized industry knowledge are critical to the successful implementation of any AI transformation project (Davenport & Ronanki, 2018). Therefore, the organization must ensure it has internal Subject Matter Experts (SMEs) to set direction and lead different phases of AI initiatives.

Subject Matter Experts (SMEs) are essential to data preparation, a process critical for the success of any data project. As the saying goes, "Garbage in, garbage out"; SMEs validate the quality standards that data must meet, especially when drawn from systems such as OLTP (Online Transaction Processing), OLAP (Online Analytical Processing), CRM (Customer Relationship Management), and HRIS (Human Resources Information Systems), among others.

Clean, well-governed data ensures accuracy and regulatory compliance (such as GDPR or HIPAA) and is widely recognized as a foundational requirement for reliable AI systems (Jordan & Mitchell, 2015).

For instance, a predictive model built using advanced algorithms to identify why mission-critical employees are leaving the company will not achieve its goal if the training data is not properly cleaned. The dataset may contain outliers and inconsistencies, leading the model to generate misleading predictions (Russell & Norvig, 2021).

Once high-quality data is available, SMEs will, through a gap analysis, define the skills and competencies that will guide the workforce planning process to ensure the company's strategic alignment and future readiness. This phase is critical. C-level executives and AI leaders must avoid the trap of seeking only short-term solutions, such as simply acquiring a tool to increase productivity. That approach alone will inevitably lead to an AI project pitfall. That is why the SHRM Executive Network advises its members: "Before you rush to bring AI tools to your organization, consider the problems that need to be solved, the data you already have on hand, or could start collecting, the resources available to support the implementation, and the scale of your challenges" (Society for Human Resource Management [SHRM], 2024).

Furthermore, a high level of expertise is required to question, interpret, and validate the results produced by these AI systems to ensure their accuracy and relevance (Brynjolfsson & McAfee, 2014). For instance, experts in marketing, finance, customer service, or HR write effective prompts and verify whether the output generated by AI tools aligns with business needs. Their feedback is necessary to identify biases and fine-tune the model so that its output aligns with the company's objectives (Kaplan & Haenlein, 2019). Internal experts should be in place before engaging in any AI transformation project. These experts understand how the company operates.

## **Business Understanding**

In a time of disruption and excess data volume, short-term solutions seem more attractive. However, we are not receiving just a massive influx of data; we are experiencing a fundamental shift that makes it difficult, if not impossible, to predict the future using historical data (Brynjolfsson & McAfee, 2014). In this environment, the company must establish a strong foundation rather than succumb to the temptation to do things faster and cheaper.

Building a knowledgeable company where all employees understand how the business operates is a valuable asset and will help find the right path toward AI transformation. The company should rely not only on its tangible assets but also on its intangible assets: culture, brand, expertise, problem-solving capabilities, processes, and adaptability (Kaplan & Haenlein, 2019).

AI systems depend on how processes, people, and technologies interact. It is important to remember that, like any other tool, AI output relies entirely on the quality and structure of the input provided by users (Russell & Norvig, 2021).

Therefore, C-level executives and AI leaders need to foster a culture and vision aligned with digital transformation. AI transformation projects require clarity, precision, and greater cooperation. All leaders need to understand how power dynamics influence decisions within the company and manage stakeholders effectively to ensure a smooth and humane infusion of AI tools into the company's structures (Davenport & Ronanki, 2018).

Once the vision, culture, and business strategies are explicit, leaders can choose the right AI solutions that meet the organization's needs. The end goal is not merely to acquire an AI tool as an enabler to speed up processes, but to solve concrete business problems and create business value through innovation and customer satisfaction.

## People as Allies

As demonstrated in the introduction, AI systems can mimic human thought processes and solve complex problems. In the coming years, their adoption will transform how we perform our job functions and management practices. AI systems will increasingly work alongside human experts to achieve the company's goals (Brynjolfsson & McAfee, 2014). In this environment, effective leadership requires demonstrating authentic human virtues. Such leadership is essential for cultivating an ecosystem in which humans and intelligent machines can collaborate productively and ethically (Kaplan & Haenlein, 2019).

Leaders need to focus on employees' well-being and human nuance to gain a real competitive advantage by creating value in other people's lives. An honest dialogue around the AI adoption project is necessary to avoid human resistance. Most people argue that AI will not replace us, but rather augment our capabilities. I agree with that assertion for people in managerial and leadership roles (Davenport & Ronanki, 2018).

What about those who perform repetitive, transactional tasks that can be automated rapidly with AI tools? That is why leaders should identify all positions and consider internal mobility and training opportunities to retain affected employees. Downsizing should be the last option. The aim of AI adoption is not to target people, but to improve performance, reduce risk, and accelerate the development of new products and services. This approach helps foster a trustworthy workplace and build relational intelligence, which is essential for overcoming the challenges organizations may face (Jordan & Mitchell, 2015).

## Conclusion

There is now a broad consensus that artificial intelligence is here to stay and will fundamentally transform management practices and organizational decision-making (Brynjolfsson & McAfee, 2014; Davenport & Ronanki, 2018). However, successful AI adoption does not depend solely on technological capability. Organizations must develop the internal knowledge structures, strategic alignment, and human-centered leadership necessary to integrate AI systems responsibly and effectively.

This article argued that sustainable AI transformation rests on three essential pillars: **domain knowledge, business understanding, and people as allies**. Subject Matter Experts ensure the quality, governance, and contextual interpretation of data that AI systems rely

upon. Strong business understanding enables leaders to align AI initiatives with strategic objectives and organizational capabilities. Finally, treating people as allies in the transformation process fosters trust, collaboration, and workforce resilience as AI technologies reshape job functions and workflows.

Organizations that approach AI adoption through these three pillars will be better positioned to generate long-term value and maintain competitive advantage. At Machine Leadership, we collaborate with top AI professionals to democratize AI knowledge and empower individuals to recognize the new opportunities emerging from this technological revolution. As Fitz-Enz and Mattox II (2014) note, technological revolutions create opportunities that will be seized by those equipped with new tools and new ways of thinking.

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