Can AI Solve Complex Business Problems? Separating Fact From Fiction

Artificial Intelligence (AI) has been on C-suite agendas for years, but it is increasingly top of mind, seen as either a panacea or an existential threat. A litany of misconceptions fuels these extreme positions. Based on our experience with executives across industries, a few stand out as obstacles to realizing value from AI.

Demystifying the Myth: AI's Limitations in Complex Problem Solving

Myth 1: AI can provide all answers and solve all problems.

We once had a highly intelligent and accomplished client call us and very excitedly suggest that we should "use AI to fix supply chain issues." When pressed for which supply chain issue he wanted to address, the client waved us off. "AI can fix it … all."

Our client was not wrong. We should use AI to help fix these problems. What he missed was that although machine learning and AI are particularly good at solving well-defined problems where there is ample relevant and available data, real-world business issues are usually ill-defined and nebulous, and almost always lack enough quality data for these tools to effectively solve without investment in data, process design and change management.

Unveiling Bias Amplification: Addressing the Myths of Objective AI Systems

Myth 2: AI systems are objective, rational and systematic.

Businesses are primarily driven by the sum of decisions that line-level employees make day after day. This is as true for transactional processes like payroll and accounts payable as it is for more complex decisions like pricing changes.

Executives rightly see the potential for AI to standardize and automate, but too often believe its use will correct for human error, cognitive distortions and biases.

To the contrary, AI is a bias amplifying machine. Business data models reflect how business has been done in the past — errors and bias included. Likewise, those error-prone humans are also the ones who evaluate and select a model that "best" fits the business problem they are trying to solve. Bias and past errors are baked in and must be addressed systematically.

For example: airline pricing systems have used machine learning for years to estimate the opportunity cost to the airline of selling a seat now versus holding that inventory until closer to the departure date when passengers are willing to pay more. This is based on expected demand. During COVID-19 when demand overwhelmingly disappeared, these models "rationally" calculated a $0 opportunity cost. The result? Wildly unprofitable fares were subsequently published. Consumers may have loved it, but the airlines, which could not operate profitably under such low fares, were left holding the bag.

Distinguishing AI Systems From Traditional Software: Debunking Common Myths

Myth 3: AI systems are just like traditional software solutions.

Whereas traditional software is designed to follow predefined rules and logic, AI systems are based on probabilistic models that continuously learn and make predictions based on patterns in data. Unlike traditional software systems, AI systems require substantial amounts of high-quality data to be effective and need ongoing monitoring and maintenance to remain accurate.

Analyzing the Implications of AI Decision-Making in Recruitment, Advancement, and Autonomous Technologies

Additionally, unlike most traditional software systems, AI systems raise ethical considerations that must be carefully considered and addressed. For example, the judgments and sometimes automated decisions made by many AI systems can have a real impact on human lives, e.g., hiring or promotion decisions, or how an autonomous vehicle responds to changing road conditions. If poor judgment is made by an AI system, who is accountable?

Challenges of Applying Traditional Program Templates to Data and AI Systems

02 Reliance on Inexperienced IT Resources for AI Maintenance

01 Underinvestment in Data and Late Problem Resolution

03 Risk of Reputation Damage and Regulatory Challenges without Ethical Governance

Dispelling these myths and approaching AI with the right understanding of what it can and cannot do, as well as understanding the critical inputs and skillsets required, will position executives to leverage AI tools more effectively. AI is not a silver bullet but when executed well, it can dramatically enhance decision making, increase productivity and lead to better business outcomes.

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