Peer Response

by Saleh Almarzooqi - Sunday, 17 August 2025, 8:08 PM

You talked about the rise of ABS and its utility. Your coverage on the transition between centralised and decentralised systems epitomises why ABS has been very important in the current changing business world. Classical monolithic models fail to satisfy the idea of scalability and autonomy, and ABS will become an ideal solution, because they allow modular and decentralised control (Cisterna, Bigi & Viti, 2022). This mobility comes in very handy, especially in light of industries that require rapid response to the rapidly changing economic environments (Dai, Li & Wang, 2023).

Your illustrations of ABS utilisation in supply chain management and e-commerce show the positive calculative effect of this method. I concur with the idea that in a logistical process, real-time performance can have a significant effect on the efficiency and flexibility when dealing with multiple actors with varying objectives. Also, it is exemplary that you refer to the agent-based simulations in modelling human behaviour, explaining how ABS may assist companies in strategic planning and control of risks, and providing insights into complex systems that are otherwise difficult to predict.

I also like that you mention to belief-desire-intention (BDI) model, which gives a formal pattern of creating smart agents. It is quite remarkable that in this model, the agents are enabled to make some decisions that resemble how a human being would, since they can adjust to various circumstances that change (Lawyer, An, & Goharian, 2023).

As more in these areas require real-time decision-making, is it possible that ABS can achieve similar things in the improvement of operational efficiency or patient care management?

References:

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by Saleh Almarzooqi - Sunday, 17 August 2025, 8:04 PM

I support your points on the trends of implications and organisational benefits of ABS. You talked about the conversion of a centralised system to a decentralised system with autonomous agents that respond to the changing demands of the present-day organisations. Efficiency with regard to the concept of adaptability, scalability, and robustness in ABS is, in fact, quite essential, particularly in technologies such as the case of supply chains, autonomous cars, and even financial modelling, where time-sensitive decision-making and flexibility are essential (Axtell & Farmer, 2025).

You mention the hybrid agent models, which are a marriage between reactive and proactive models. The case of such models is a great testament to the evolution of ABS, as it integrates various approaches to form systems that not only react to a stimulus in the present but also predict the needs in the future, which introduces an additional dimension of efficiency to the decision-making process (Gerges, Demian, & Adamu, 2021). An innovative step towards automation of the complex tasks, error minimisation, and improved operations performance is how ABS is resembling human decision-making.

Two important advantages of ABS are modularity and fault tolerance. The capability to localise failures in particular areas and not let them sprawl into the system can be revolutionary as regards large organisations, particularly in high-stakes tasks such as smart grid systems or financial markets (Mussawar, Urs, Mayyas & Azar, 2023). It provides continuity and a preservation of operational integrity in view of such disruptions in the system.

Would you like to consider that the flexibility of ABS may be applicable in other industries experiencing the same dynamism, and how do you think it would influence the operational efficiencies of these industries?

References:

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