

The 3A's of Artificial Intelligence Integration- Accessibility, Affordability, and Authenticity

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Abstract

Artificial Intelligence (AI) holds a tremendously transformative potential across vivid verticals encompassing all the aspects of our lives. However, to tap its true potential the organizations must deliberate on 3A's first. These 3 A's are what make the Artificial Intelligence productively fruitful for all. AI integrations ought to adhere to the principles of **Accessibility**, **Affordability**, and **Authenticity**. Accessibility ensures that AI tools and technologies are available to all, regardless of any impediment. Affordability is crucial for the widespread adoption of AI, ensuring that the cost of implementation is not prohibitive. Authenticity refers to the accuracy and reliability of AI outputs, ensuring that AI systems provide unbiased and correct results. This paper explores these three critical aspects, supported by real-life examples and case studies, to provide a comprehensive framework for organizations. By focusing on these pillars, businesses and organizations of all domains and dimensions can maximize the positive impact of AI, ensuring that it is inclusive, cost-effective, and trustworthy. This framework is essential for guiding AI strategies and making informed decisions that benefit society as a whole.

Introduction

Out of all the definitions timely rolled out for the term 'Artificial Intelligence' the most pellucid & concisely elaborative one has been from the pen of Dr Elaine Alice Rich stating, "Artificial Intelligence is the study of how to make computers do things at which, at the moment, people are better".¹

This single definition has (and always will) find a preponderance and the apex position in the vast library of knowledge resources because of the terse explanation of what AI researchers have been doing for the last half-century. It has been remarked that this definition will be fully correct and up to date even in 2050 as well.²

The first stepping stone in the journey of Artificial Intelligence is mostly cited to the proof of all true statement being derivable in the first-order predicate logic by the Austrian mathematician Kurt Godel.

The following infographic delineates the details of AI advancements

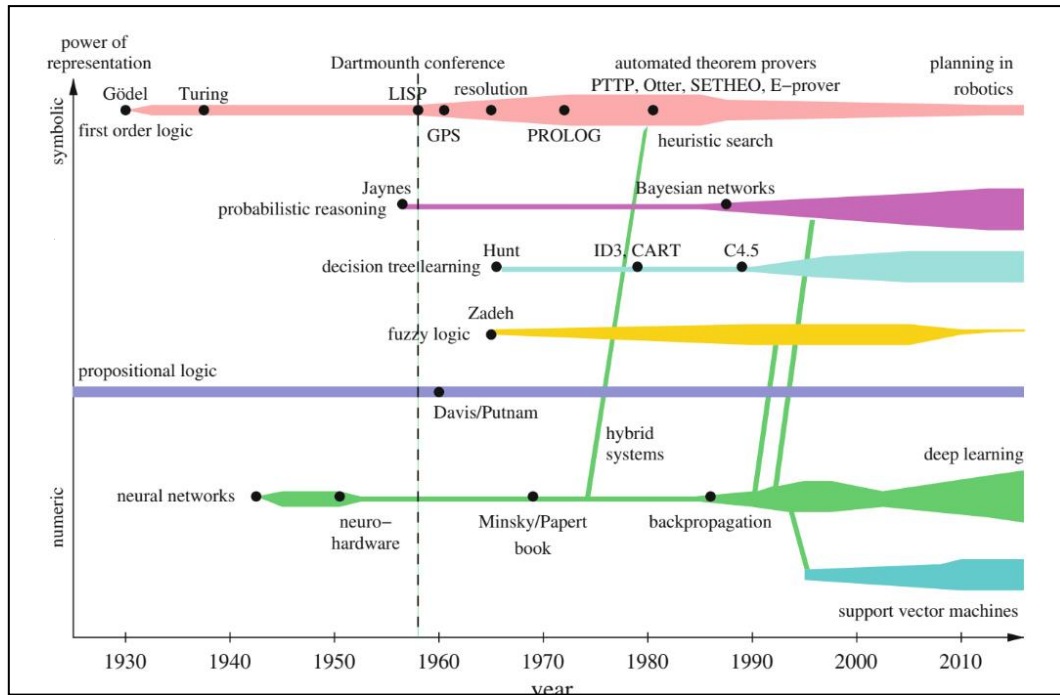


Fig1. History of the Various AI Areas ²

Though Artificial Intelligence has been a part of our life since long but the main impetus and the global limelight over the subject was garnered by the advent of OpenAI's revolutionary Advanced Language model ChatGPT.

With time, AI has penetrated the markets at mass level, and the AI-powered systems are now far advanced than the simple systems designed for processing of transactions and making explicitly programmed decisions. Out of the overt benefits of AI the most important one is the capability to make real and automated decisions at scale.

Businesses, as have to serve their customers well because of the rising competition, are supposed to innovate rapidly. And, the most rapid innovations are now being powered by the Artificial Intelligence systems.

The potential of Artificial Intelligence knows no boundaries, and daily we are being bombarded with new set of technologies and tools. This raises a confusing concern for the corporates to eclectically select the best-suited solution. This problem has not just perplexed the businesses but all the organizations across different domains.

To clarify the confusion, there can be a clear-cut straightforward solution of looking for 3 A's of AI. Going through these 3A's first, all the organizations and the developers can have a clear vision, and will avoid the possibilities of errors and other inadvertent inaccuracies, inconsistencies, and inefficiencies with the Artificial Intelligence as a whole.

These 3 A's are as follows

1. Accessibility
2. Affordability
3. Authenticity

If these 3 A's are met at the first hand then the error chances will be minimized, a lot of time will be saved to use for more productive core operations, and the overall efficiency will be enhanced by leaps and bounds.

Theoretical Framework

Part1. Accessibility

For more than 250 years the fundamental drivers of human & economic growth have been the technological innovations. The most important of these are what economists call 'General Purpose Technologies'.³ This General Purpose Technology is a category that include steam engines, electricity, internal combustion engines. Each one catalysed waves of complementary innovations and opportunities. The internal combustion engine, for example, gave rise to cars, trucks, airplanes, chain saws, and lawnmowers, along with big-box retailers, shopping centres, cross-docking warehouses, new supply chains, and, when you think about it, suburbs. Companies as diverse as Walmart, UPS, and Uber found ways to leverage the technology to create profitable new business models.

Similarly the most potent and important General Purpose Technology of our era is the Artificial Intelligence.

If the previous General Purpose Technologies have been confined to a limited users then there could have never been so much of development at such a fast pace.

So taking a note, the first thing is to check and ensure the accessibility of Artificial Intelligence. Accessibility in AI means making AI tools and technologies available to all, regardless of geographical, economic, or social barriers. This involves ensuring that AI systems are user-friendly and can be integrated into various platforms and devices.

Such accessibility will place the Artificial Intelligence as a whole in the category of general Purpose Technology; then only we can expect the better fruitful outcomes.

Microsoft's AI for Accessibility program aims to empower people with disabilities by providing AI solutions that enhance their capabilities. For instance, Seeing AI is an app that narrates the world around visually impaired users, making information more accessible.⁵

Another Instance is from Rwanda stating the implementation of AI in public health systems has significantly improved healthcare delivery. AI-powered diagnostic tools are used in remote areas to provide accurate and timely medical advice, bridging the gap between urban and rural healthcare services.⁶

There are multiple researches in which various problems including breast cancers have been diagnosed by the AI-powered technologies many years earlier than any symptom manifested.^{7,8}

Such a tremendous scope of AI technology can only be tapped to its full potential when it is accessible to all. For their core operations, businesses need a comprehensive set of AI solutions that are accessible and can be readily integrated with the existing technologies and systems so that the whole organization can leverage its power.

Making AI accessible for all will bridge the digital divide and will promote inclusive growth.

Part2. Affordability

For technology to achieve widespread adoption and become truly transformative, affordability is a critical factor. Research indicates that over 80% of small and medium-sized enterprises (SMEs) prioritize cost when considering new technological investments, often placing it above potential returns on investment.¹⁰

This emphasis on affordability is particularly evident in developing economies, where businesses operate under tight budget constraints. It has been found that in regions like Sub-Saharan Africa, only 15% of businesses adopt advanced digital tools due to prohibitive costs, despite the potential for significant efficiency gains.¹¹

Without affordability, even the most innovative technologies struggle to penetrate the market, leading to a scenario where only a select few can access the benefits. Therefore, to maximize the impact and ensure broad utilization, technology must be priced within reach of the average business, balancing cost with the promise of future returns.¹²

In essence, the path to technological ubiquity is paved not just with innovation but with affordability, and the Artificial Intelligence is no exception. The cost of implementing AI solutions should not be prohibitive. Affordable AI ensures that even small businesses and developing countries can leverage AI to improve efficiency and productivity.

Google's TensorFlow, an open-source AI library, allows developers to build AI applications without incurring high costs.¹³ This has democratized AI development, enabling startups and small businesses to create innovative solutions.

AI-driven agricultural platforms like CropIn provide affordable solutions to farmers, helping them optimize crop yields and reduce costs. By using AI to analyze weather patterns and soil conditions, farmers can make informed decisions, leading to increased productivity and profitability not only in India but at the global levels.^{14,15}

A study has also revealed that affordable AI solutions can increase productivity by up to 40% in small and medium-sized enterprises.¹⁶

These facts and figures lay special emphasis on the affordable aspect of the Artificial Intelligence. If the solutions are affordable only then all businesses can implement them in their operations, and then only we can have more innovations and better efficiency.

Part3. Authenticity

The authenticity of outputs is fundamental to the trustworthiness of Artificial Intelligence solutions.

As AI systems, particularly those based on Generative Pre-trained Transformers (GPT) and large language models (LLMs), become increasingly integrated into business operations, the accuracy and reliability of their outputs are paramount. A recent study revealed that 72% of business leaders are hesitant to fully implement AI-driven solutions due to concerns about the authenticity and accuracy of the generated outputs.¹⁷

Instances of incorrect or misleading information produced by these tools have further exacerbated these concerns. For example, GPT-3, an advanced LLM, has been documented producing factually incorrect statements or biased content, leading to significant challenges in sectors where precision is critical, such as healthcare and legal services.¹⁸

Without assurances of authenticity, businesses are unlikely to trust AI systems with mission-critical tasks, limiting their adoption and potential benefits. Therefore, ensuring the veracity of AI outputs is not just a technical necessity but a prerequisite for widespread adoption and successful integration into automated workflows.¹⁹

IBM's Watson for Oncology has been used in hospitals worldwide to assist in cancer treatment planning. By continuously updating its database with the latest medical research, Watson provides accurate and evidence-based recommendations, ensuring the authenticity of its outputs.²⁰

For their promise of the exceptional services aided by the continuous improvements Watson for Oncology has garnered a sense of deep trust.

Apart from the technical and operational glitches of the AI systems, to avoid the controversies these systems have also been programmed to be a little biased for socially acceptable results as per the norms and expectations.^{21,22}

In this regard, a study has indicated that eliminating bias in AI can improve decision-making accuracy by 25%.²³

AI systems must provide unbiased and correct results to be trusted. Ensuring authenticity involves rigorous testing and validation of AI models to prevent errors and biases. Then only businesses can adopt the AI solutions and can put their tasks on automation with a sense of trust.

Conclusion

The 3A's of AI—Accessibility, Affordability, and Authenticity—are essential for maximizing the benefits of AI technologies. By focusing on these aspects, organizations can ensure that AI implementations are inclusive, cost-effective, and reliable, ultimately leading to better outcomes and greater trust in AI systems.

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