ARTIFICIAL INTELLIGENCE (AI) –
A Powerful Tool for the Board

* Mr. J. C. Laddha

> We're at the beginning of a golden age of AI. Recent advancements have already led to invention that previously lived in the realm of science fiction – and we've only scratched the surface of what's possible.

Jeff Bezos
Executive Chairman & Former President & CEO of Amazon

Future of Everything

'Artificial Intelligence' also referred as 'AI' is a constellation of diverse technologies working together to empower machines to sense, reason, act, and adapt with human likes or levels of intelligence.

Today, AI is not any longer a thing of the future. It's here and exists everywhere around us. AI has become intertwined with every aspect of the business. The use is increasing especially in fast growing sectors such as healthcare, finance, e-commerce, and manufacturing. **In the coming years, AI will transform the way we conduct and operate our businesses.**

AI adoption is growing faster than ever because of the explosion of data & the maturity of other innovations in cloud processing & computing power. Data generated are the treasure troves and a boon to the expansion of AI. With the enablers now in place, organizations are starting to understand how AI can be value multiplier. Automation reduces costs and brings consistency, velocity, and scalability to business processes. **No wonder large percentage of Board members believe they must leverage AI to achieve their growth objectives.**
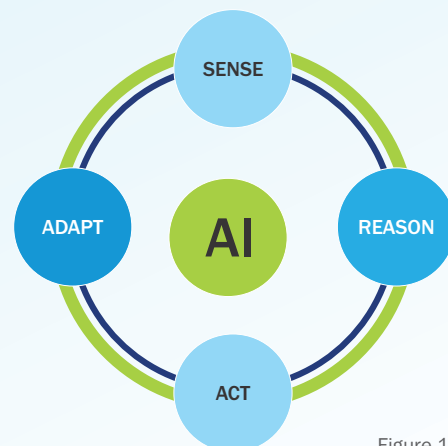

Figure 1 - AI adoption

This technology is not just about productivity & streamlining arduous tasks. Thanks to machine learning, AI applications can learn from data & results in near real time, analyzing new information from many sources & adapting accordingly, with a level of accuracy that's vital to business. This ability to endlessly learn & optimize means AI continually compounds the business benefits it generates.
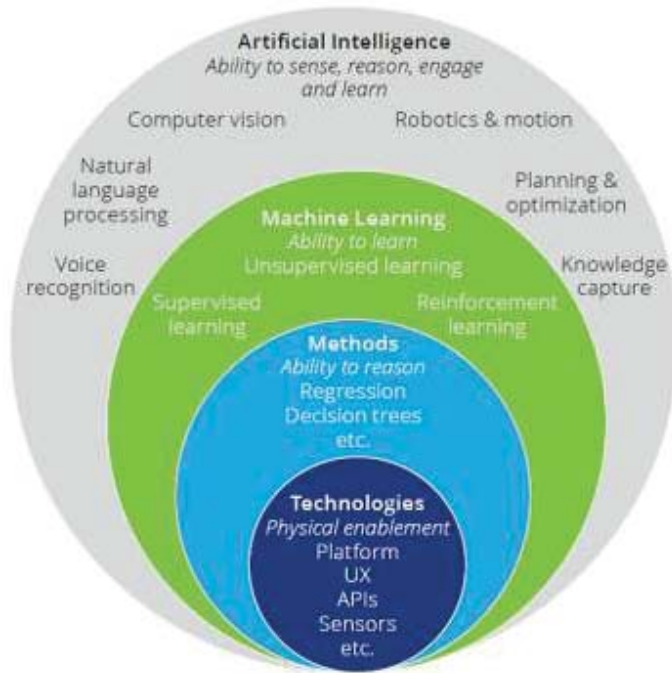

Figure 2 - "Artificial Intelligence defined" – Deloitte – Mar 2018

Hence, AI enables businesses to adapt swiftly, with a steady stream of insights to drive innovation and competitive edge in a world of constant disruption. **When scaled, AI can become a key enabler of company's strategic priorities—and even a lynchpin to existence: most Board members believe that if they are late in deploying and scaling AI within 5 years, they risk going out of business entirely. Clearly, the stakes are high to scale AI.**

As with any opportunity comes some pertaining challenges, implementing AI also can present significant risks and requires specific governance considerations by corporate Boards.

Gearing up the Board

"AI and digital technologies, combined with deep industry expertise, can help companies reshape their manufacturing and supply chains in order to adapt to a post-Covid world. We have now a unique opportunity to make industrial and infrastructure systems more productive, more resilient and more sustainable. When designing a future board, it is critical to ensure a deep understanding of how technologies can help us to drive this transformation."

Roland Busch, Deputy CEO and CTO of Siemens AG

► First, as a **transformative**, general purpose technology, AI has the power to substantially change business opportunities, company risk, investment logic, people and skills requirements, processes, structures, and more. Also, AI has a value destroying and creating effect in the competitive landscape: Existing business models can quickly become obsolete as new competitors emerge, often from adjacent industries. Thus, AI unquestionably deserve board attention.

► Second, to develop, deploy and scale AI solutions, **close collaboration is required among the different parts of the company over the life cycle of a process, product, or service.** For AI solutions, data writes code. Thus, in contrast to common software products, changes in data inputs and code aren't independent, and with AI it's difficult to modularize the progress, testing, and maintenance process—traditionally a requirement for scaling. Instead, development and maintenance of AI is a collaborative effort that cuts across traditional board responsibilities.

► Third, once scalability is achieved for AI, entirely new risks emerge. AI acts at an unprecedented speed and scale, and each outcome is measured and documented. **Even a trivial bias or incorrect processing can have severe negative consequences on financial returns, reputation, or shareholder value**. Unexpected ethical and liability issues may arise, amid novel cybersecurity threats. At the same time, corporate processes require a redesign to ensure fast and data-driven decision making.

► Lastly, organization **cannot 'off-load'** AI by simply choosing the best tech supplier. AI isn't plug-and-play: here own data is involved, and 'make-or-buy' is far more a continuum than it's a discrete decision. Structuring proper partner relationship are often strategic challenge, but even the best supplier won't let leadership off the transformational hook.

Global Updates – Around the world, countries have identified a broad framework to guide the design, development and use of AI systems. European Union has been in the forefront by releasing '**Ethics Guidelines** for **Trustworthy AI**' that proposes a set of 7 key requirements that AI systems should meet to be deemed 'trustworthy'. Along similar lines, Singapore has a '**Model AI Governance Framework**' & the USA has '**Principles for Stewardship of AI Applications**'.

Status in India – Currently, India doesn't have overarching legislation specific to AI. The closest to this is the draft '**Personal Data Protection Bill**' (2019)

designed as comprehensive legislation outlining various facets of privacy protections that AI solutions need to comply with. However, there are certain sector specific frameworks - SEBI issued a circular in Jan 2019 to Stockbrokers & Stock Exchanges and in May 2019 to Mutual Funds/ AMCs/ others on reporting requirements for Artificial Intelligence and Machine Learning.

'Responsible AI' – Approach Document for India – NITI Aayog Feb 2021

Extraordinary Potential

"I am deeply convinced that AI is the greatest transformation in the history of the company." Matthias Ulbrich, CIO of Porsche

► **Improved speed and precision** - AI can perform actions repetitively without any error, and design more competent scenario models by building automation solutions. They are also proficient in eliminating human errors and delivering superior levels of quality assurance on their own.

► **Enhanced level of Innovation** - AI-enabled processes can sharply enhance the quality, durability, and cost of existing products & services, including introducing entirely new line of products to benefit consumers. AI innovation promises novel medicines, improved food flavours, more energy efficient systems, and a host of other small & large improvements in goods & services.

► **Increased scale of operations through deployment of autonomous agents** - AI enabled agents can operate continuously & accurately in product selection, packaging, transportation & delivery, whether it may be using robotic assistants in warehouses or automated vehicles or drones for delivery.

► **New areas of employment** - New types of work stemming from AI includes jobs directly focused on the development and deployment of AI systems, such as designing and training models or implementing new AI applications, but may also include range of indirect opportunities such as, testing & validating the performance & robustness of AI, and training workers to work alongside AI systems.

► **Removal or mitigation of biases and subjectivity** - Decisions with significant impact, such as hiring and promotions, determination of creditworthiness of potential loan seeker and vendor selection, may well be influenced by unwanted biases, caused by the conscious or unconscious likings of decision-makers. AI can do away by identifying and mitigating those biases, bringing objectivity to decisions that are highly subjective today.

► **Reduction of repetitive tasks** – Bringing economics of scale, AI systems can assist in sorting agricultural products, identifying damaged or inferior products during their journey through an assembly line, automating the processes and creation of many types of digital documents and assets, and even fielding common support and customer services queries.

► **Improved safety on job sites due to AI monitoring or control of equipment and vehicles** - AI systems can be deployed to monitor hazardous conditions that might be caused from faulty equipment or exposure to toxic chemicals. These systems can also be put in place to assist workers in maintaining safe distances from operating equipment. In the long term, automated vehicle technology may reduce accidents and minimize worker exposure to associated risks.

► **Environmental Impacts** - Self-driving cars are potentially beneficial to the environment. They can be programmed to navigate the most efficient route and reduce idle time, which could result in less fossil fuel consumption and greenhouse gas emissions. The same could be said for machinery used in heavy industry. AI can accurately follow a sequence of procedures repeatedly, whereas humans are prone to occasional errors.

Handling the perils

"What all of us have to do is to make sure we are using AI in a way that is for the benefit of humanity, not to the detriment of humanity." Tim Cook - CEO of Apple

► **High costs** - Though the cost has been decreasing in the past few years, individual development expenditures can still be very high because of continuous change and advancement in the technology.

► **Algorithmic biases** - Bias has the potential to be introduced, intentionally and unintentionally, throughout the lifecycle of the AI system, including during deployment.

► **Lack of human accountability or liability for AI decisions** - A key challenge will be to determine how to assign responsibility when AI systems are involved and to what extent AI systems will be subject to the same legal frameworks regarding non-AI systems.

► **Risk of Cyberattacks** – AI system may become the target of choice for hackers. Considerable amount of company information especially sensitive may be up for grabs and possible to infiltrate easily with weaker security platforms. Companies will have a daunting task to not only heavily invest in comprehensive AI systems but even do so equally to protect those systems themselves.

► **Potential loss of jobs due to increased AI-enabled**

automation - While the AI economy will likely create many new jobs and occupations, the introduction of AI systems may require some workers to transition to new jobs. Previous technology transformations led to job losses in lower-skilled workers, but with AI-enabled change, it may likely to also affect "white collar" and higher-skilled workers.

► **Lack of explainability of AI algorithms** – The "black box" nature of certain AI models could feasibly lead to unfair decisions & confusion. Insufficiently explainable AI applications can create situations where it is difficult to determine why or how the overall system operates.

► **Acceleration of social and economic divides between workers with and without AI skills** - A new type of "digital divide" could arise if wage differentials between AI augmented work and non-augmented work increase more than is already observed between "high tech" and "low tech" occupations.

COMPLIANCE & GOVERNANCE– To follow the more stringent AI regulations that are on the horizon, companies will need new processes and tools: system audits, documentation, and data protocols (for traceability), AI monitoring and diversity awareness training. Number of companies already test new AI algorithm across a variety of stakeholders to assess whether its output is aligned with company values and unlikely to raise regulatory concerns.

For eg. Google, Microsoft, BMW and Deutsche Telekom are all developing formal AI policies with commitments to safety, fairness, diversity and privacy.

"AI Regulation is Coming" – Harvard Business Review – Oct 2021 Issue

Board's role in embracing the new technology

AI is a new arena and Board's role is increasingly getting critical. It needs to ensure that company leadership is effectively managing both the potential of AI and its organizational risks. Although AI is often getting used in boardrooms, it won't replace the board's responsibility to exercise due care and loyalty—to be fully informed & draw its verdicts in the best interests of shareholders & stakeholders.

A board can provide effective oversight by concentrating on three key areas:
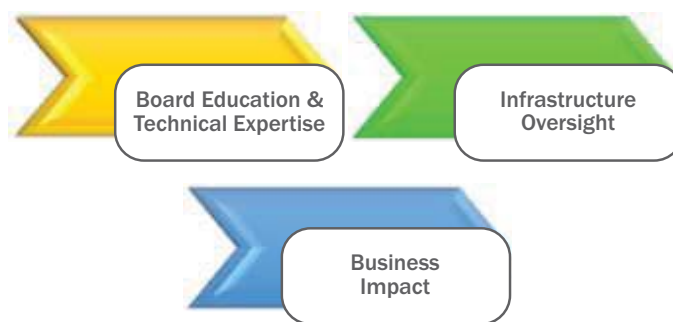
Board Education and Technical Expertise

To be effective in AI field, Board members ought to be educated about AI. Due to growing significance, this responsibility should not be offloaded to the "risk" committee, because AI has far reaching strategic & profound implications a board will face in times to come.

- AI also entails challenges in terms of cyber risk—there are many unknowns for the company's board that make constant oversight critical. Board needs to be fully conversant on how AI is being used within & outside the organization, how they expect it to impact the firm & industry, and what actions are being taken to leverage AI while managing its risks.

- Board committees responsible for director nominations should update their skill-set matrix to include the need for technical and innovative board members—and make it an integral part of the board refreshment process.

- Boards should also consider a separate technical and/or innovation committee.

  For instance, some forward-looking boards, like at 'New York Times' & 'Proctor & Gamble' have already created formal 'Technology & Innovation Board Committees'.

- Boards needs to evaluate if the current management is proficient enough to navigate the firm through the impact of AI. If there are gaps, the board should work to develop a plan to acquire the necessary talent to fill them.

Infrastructure Oversight

- Board needs to be completely apprised of the company's current infrastructure, including the quality, accessibility, and security. This could be done by a baseline assessment of current data infrastructure, analytics and security.

- An external technical expert also can augment the board's work. It can identify vulnerable areas including areas where investment in human capital and other resources could be required.

- Diversity also is critical for AI. Many organizations are concentrating on building more diverse and inclusive workforces. The challenge of bias and prejudice in using AI is quite high: The board must be confident that management is taking diversity and inclusion efforts seriously.

Business Impact

- Board also needs to ensure management is considering the broad impact of AI on the company: the implications for their business model, workforce, & ultimately the business sustainability.

- This effort requires both inward and outward assessments - Key to it is how the organization wants to position itself: does it want to be a frontrunner or laggard in its industry? Though, being a frontrunner will entail higher investments of time and resources but again being at the forefront of AI innovation can also considerably pay off.

- In whichever case, Board needs a solid grip of the opportunities and risks that AI entails. From an opportunity perspective, it should be seen how products & services could be enhanced or transformed by AI, or how AI can it improve quality, safety and decisions—and ultimately drive profitability.

    American Express, for instance, analyses large volumes of cardholder spending data to better target new products. To minimize losses, it seeks to spot fraudulent activity in real time by using data analytics and machine learning.

- Lastly, board should also ensure that a talent management strategy is in place. Employees are beginning to see how AI is transforming businesses: some workers' jobs may become obsolete; some employees may even see AI to leverage their skills and contribute to the transformation. Boards have a responsibility to ensure management is effectively identifying and addressing how its labor force will evolve.

Conclusion

In summary, even with great potential that AI offers, it can still create significant challenges for the directors of the boards. It is a complex field and technical expertise is in its infancy, even as AI usage is growing. AI must become a standard agenda item at board meetings, and thus the board need to acquire the right talent to help navigate the evolving landscape, capitalize on opportunities and manage risk.

 "All members of the Board need to recognize data as a strategic asset. They have to analyze and understand the importance and value of data for their specific business model. But data only creates value when it gets refined into information, and information, in turn, is used to drive decisions and actions in the business. Therefore, Boards need to be ready to invest in this refinement process and organize the responsibility for data and AI in line with how important they are for the business model." ▪

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