

# Strategic Implementation of AI using its Corrective Implications for Business and Society

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**Abstract:** *Not all Artificial Intelligence (AI) Implementations are successful-only 15-18 % are successful and there are so many major factors affecting successful AI implementations in such situations there are new methods that organizations should be adapting for sustainable AI growth strategies and corrective actions. There has been a change in the way AI strategic decisions are being made and that needs to be done to ensure effective implementation of AI strategies for major AI Implementations in Govt. sectors and Private firms [1] - both in the Indian and International context. There are so many initiatives have been taken by the companies in Implementing modern AI strategic principles and practices to resolve companies should resolve various implications of AI Strategy implementations. Company's focus in those areas is different when it comes to AI design, development and adoptions for business and society and these implementations are not the old working ways instead Agile (lean) ways of AI Strategic decisions making are working effectively.*

**Keywords:** AI, Artificial Intelligence, Business

## 1. Introduction

In today's complex organizations, there has been an ever-increasing focus on making AI strategic decisions effectively. This paper aims to do a comparative analysis of the numerous factors [2] that contribute to and effects AI strategic management values, principles, and applications.

AI Strategic management nowadays applies to all functions in an organization [3] and Society. Regardless of how strong of an Information Technology (IT) infrastructure and clean data an organization may have; effective execution of the plan is always challenging. Often, they remain only partially executed and many times, they fail because of *data, human, machine, and algorithmic errors*, which leads to *Major Errors, Ethics, Bias, and Discrimination* in Business and Civil societies.

The primary focus of outlining and researching in this area is to identify AI principles and values that effectively help organizations [4] in resolving failures, issues, and challenges they face from 'Poor AI Strategic Management Decisions.' My research for this paper also includes IT Strategies, tools, and techniques in formulating the solutions for AI strategic [5] decisions.

### 1.1 Objectives

To do comparative analysis and deep research of various technical and cultural dimensions of AI strategic[6] principles[7] within an organization for Business, in the Civic Society as well as for corporate-level strategies that satisfy the company in a cross-cultural working environment, understanding and improving work processes, decision trees, planning for growth, and organizational architecture.

Research analysis and measurement of AI effectiveness would involve mathematical modeling, data strategy, and quantitative & qualitative analysis using AI/ML algorithms from historical data from corporate houses, policies[8], and civic data.

## 1.2 Background

AI is viewed by business leaders as both an opportunity and a risk. The 2019 Boston Consulting Group (BCG) /Massachusetts Institute of Technology (MIT) report says- 9/10 companies feel AI presents a business opportunity and 45% of companies feel AI poses some business risk (*what if competitors, particularly new entrants, figure out AI before we do?*).

Driven by both the opportunities and the risks, companies in many industries have announced many strategic AI initiatives.

Nowadays AI Applications are everywhere – it helps improve customer service, deliver items door-to-door, and increase productivity, self-flying taxis, autonomous monitoring flights, language translation, Data automatic canter cooling's are some of the great applications we have that are utilized on a day-to-day basis.

### 1.3 Executive Summary

Modern businesses face severe challenges because of the rapidly changing environment and market competitiveness. In such a situation only, the traditional AI strategic approach does not work. Strategies should be evaluated hypothetically and that should also come out from the historical, recent market data to make perfect AI strategic decisions for sustainable growth in recent times.

Market studies indicate that approximately 90 percent of data science projects do not make it into production and usage in the field, suggesting the last five years of digital transformation have been defined more by proof-of-concept AI than operationalized value.

Agile ways of working and leveraging on decision science (*Mathematical modelling, AI, Machine Learning (ML)* [9], *etc.* are some of the new ways companies can address the issues-challenges and restricted constraints can be easily

Volume 12 Issue 6, June 2023

[www.ijsr.net](http://www.ijsr.net)

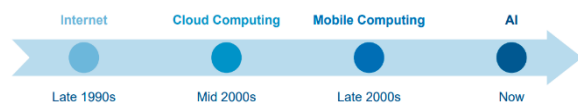
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eliminated. Data-driven strategies are always going to be the future of sustainably growing up industries. Need to be focused on removing the data and human errors creating [10] effective AI Strategy along with working towards *Ethics, Bias, and Discrimination issues*.

#### 1.4 AI Implementation Challenges:

With so many good things from AI innovations for our daily comfort life and at the country[11] levels, AI Applications also have many challenges. In a 2019 MIT/BCG study, 90% of companies surveyed had made investments in AI, and only 40% saw business gains from AI over the last 3 years. However, a subset of the 90% that invested in AI made significant investments whereas only 60% looking just at this subset that invested significantly, only saw business gains from AI over the last 5 years.

Many companies started online divisions due to the Internet. There were some early successes but many more failures. This led companies to shut down/scale back their efforts, which allowed startups to disrupt their industries.



This pattern is likely to repeat itself with AI. So how should companies approach AI to avoid falling into the pattern of premature failure leading to irrational retreats?

A similar pattern of early failures followed by irrational retreats happened with cloud computing. The companies that continued with the cloud are doing well, while those that retreated are still catching up.

#### 1.5 Approach to apply successful AI

- Portfolio Approach to AI:* A portfolio approach[12] can help companies successfully unleash the power of machine intelligence (AI Portfolio = Quick Wins + Long Term Projects), redefine end-to-end processes and optimization at a touch point
- Quick Wins:* Quick wins focus on applying off-the-shelf ML (with suitable adaptations) to internal employee touch points.

These projects will not transform the business, but they serve to expose employees to the benefits of AI and build consensus on its potential.

They also allow companies to build the skills they need for larger AI projects, such as *'large-scale data gathering, processing, and labeling.'*

Some examples of quick wins include a voice interface to help pharmacists look up substitute drugs. a tool to schedule internal meetings.

- Long-Term Projects:* Long-term projects are likely to be the most impactful because they involve rethinking end-to-end processes, not just focusing on point optimization.

An example of a long-term project for an insurance company could be automating claims processing through speech and vision understanding.

Many car insurance companies already allow users to take photos of auto damage and settle their claims on a mobile app.

Technology that has been trained on photos from past claims can accurately estimate the extent of the damage and automate the entire process.

Because long-term projects are more involved than quick wins, off-the-shelf. Technology does not suffice.

Long-term projects require organizational skills in building ML algorithms and controlling high-tech usage regulations [13].

#### Example of a Portfolio Approach by Google:

- Google initially focused on incorporating ML into a few components of systems but is moving towards using ML to replace entire systems.
- Google started with smaller projects and moved towards rethinking.

Some examples include:

- Gmail's Smart Reply
- Data Center Cooling
- Google Photos
- Employee Retraining

#### Solutions to inculcate AI within and outside organizations:

##### a) Training to technical staff:

- To ensure this transformation with ML, companies should embark on internal training programs for training 25K engineers in ML.
- Invites employees to spend 6 months embedded in the ML team with a mentor.
- Then distributes these experts to all product teams in the interest of creating organizational learning.

##### b) Recommended Exercise (Individual or Group):

- Identify a set of activities within your organization that you can automate [14] using ML.
- Classify them into short-term and long-term initiatives.
- Construct a 3-year ML portfolio consisting of 5-6 short-term projects and 1-2 long-term projects.
- Figure out how the AI team will fit into the organization chart.
- Is it a separate group within the organization or does it fit into engineering or a product team?

#### AI Strategies Development:

- Democratization of ML:* Democratization of ML is needed for, Training/ up skilling employees over time is important, but other resources also exist to help companies start developing their AI project portfolios

Resources that are democratizing ML being:

- Hardware (specialized chipsets and scalable computing platforms)
  - Software (open-source frameworks and developer tools)
  - Data & Algorithms (marketplaces)
- 2) *Explainability*: AI Explainability refers to the use of methods in AI systems where why the algorithm arrived at a particular result can be easily understood by human experts to avoid any kind of dangerous.
- Closely related to interpretability understanding why a decision[15] was arrived at by an algorithm, even if you can not necessarily explain that logic.
  - Contrasts with the 'black box' approach normally associated with some types of complex machine learning (e. g., deep learning) major trade-off with more complex models:
  - Able to manage enormous amounts of data and make fully accurate predictions.
  - Can be difficult to explain the logic.
  - Explainability is the key to adoption in many contexts.
  - Big tech companies are currently heavily invested in this issue.
  - Efforts by the government that are funding programs to develop better explainable AI.
- 3) *Responsible [16] AI*: This practice of designing, developing, and deploying AI with good intentions to empower employees and businesses, and fairly impact customers and society allowing companies to engender trust and scale AI with confidence.
- 4) *AI Ethics Principle*:
- Consider what high-level principles should guide your AI initiatives
  - Setting them out explicitly makes it easier to evaluate decisions against a standard[17], and it can highlight concerns to worry about before problems occur
  - It is also a chance to consider what values are most important to your organization
  - Based on your history, your culture, your industry, your geographic location, or some other factors, you might be particularly concerned about certain principles

According to a 2020 Harvard review that evaluated 36 major AI ethics frameworks, coming from big companies like Microsoft, Telefonica, and Tencent; standards bodies; industry coalitions; and governments around the world. The Eight common categories areas:

- Privacy
- Accountability
- Safety and security
- Transparency and Explainability

#### **Fairness and non-discrimination**

- Human control
- Professional Responsibility (infusing ethical and legal concerns throughout the process and the organization)
- Promotion of human values (asking whether your actions are in service of human flourishing)
- An important finding of the Harvard report was that principles are converging:

- Companies[18] like Google, Facebook, Microsoft, Twitter, and governments are considering existing frameworks and not trying to waste a lot of time for no reason
- That does not mean there will ever be a uniform set of principles for everyone organizations, communities, and cultures differ
- It does mean the list of possible starting points for your own AI ethics principles is fairly short
- There are ways to make these principles to be more than just slogans:
  - Consider how your AI ethics principles connect with your larger organizational values
  - If you define yourself as a customer-centric[19] company, are you truly customer-centric in your AI initiatives?
- If you have made a public commitment to racial justice, can you identify how it manifests itself in your business applications of AI and other forms of data?
- Analytics?
- Make sure you have both concentrated expertise on the legal and ethical considerations around AI and a culture in which everyone considers themselves

Asked ethical questions

a) *Data Literacy*: Data Literacy-It involves the skills and knowledge required to work with data, including data collection, data analysis, data visualization, and data-driven decision-making) is important for several reasons:

- Decision-making: In a data-driven world, decisions based on accurate and relevant information have a higher likelihood of success. Data literacy empowers individuals to understand and interpret data, enabling them to make informed decisions based on evidence rather than intuition or assumptions.
- Critical thinking: Data literacy promotes critical thinking skills by encouraging individuals to question the validity and reliability of data sources, identify biases, and assess the soundness of data-driven arguments. It helps individuals separate fact from fiction and make sound judgments based on evidence.
- Problem-solving: Data literacy equips individuals with the skills to analyze and interpret data, identify patterns and trends, and draw meaningful insights. This enables them to solve complex problems by leveraging data and evidence-based reasoning.
- Innovation and competitiveness: Organizations that embrace data literacy foster a culture of innovation and remain competitive in their industries. Data-literate individuals can identify opportunities, detect emerging trends, and drive innovation by leveraging data to gain a competitive edge.
- Effective communication: Data literacy enables individuals to effectively communicate insights derived from data to different audiences. By presenting data clearly and visually, individuals can convey complex information more easily, facilitating understanding and decision-making.
- Data-driven decision-making: Data literacy empowers individuals to use data as a basis for decision-making. By understanding how to collect, analyze, and interpret data,

individuals can make more informed choices and reduce the risk of making decisions based on incomplete or inaccurate information.

- Ethical considerations: Data literacy includes an understanding of ethical considerations related to data privacy, security, and responsible data use. It helps individuals navigate the ethical challenges associated with data collection, analysis, and sharing, ensuring that data is managed responsibly and ethically.

b) *Governance*: Governance in AI implementations refers to the set of policies, frameworks, and processes put in place to guide the development, deployment, and use of artificial intelligence systems. It encompasses a range of considerations, including ethical, legal, social, and technical aspects. Effective governance is crucial to ensure that AI is used in a responsible, transparent, and accountable manner. Here are some key aspects of governance in AI implementations:

- Ethical Guidelines: Establishing ethical guidelines is essential to guide AI development and use. These guidelines should address issues such as fairness, transparency, accountability, privacy, and security. They help ensure that AI systems are designed and deployed in a manner that respects fundamental human rights and values.
- Regulatory Frameworks: Governments and regulatory bodies play a crucial role in governing AI implementations. They can develop and enforce laws and regulations that address AI-related risks[20], protect individuals' rights, and promote responsible AI practices. These frameworks may include data protection regulations, algorithmic transparency requirements, and guidelines for AI deployment in sensitive domains.
- Technical Standards: Developing technical standards for AI can help promote interoperability, fairness, and safety. These standards can cover areas such as data formats, model evaluation, algorithmic bias mitigation, and security protocols. By adhering to these standards, AI developers and users can ensure that their systems meet a certain level of quality and reliability.
- Risk Assessment and Impact Analysis: Conducting thorough risk assessments and impact analyses before deploying AI systems is important to identify potential risks, biases, and unintended consequences. These assessments can help stakeholders understand the potential social, economic, and legal implications of AI deployments and enable informed decision-making.
- Transparency and Explainability: Ensuring transparency and explainability of AI systems is crucial to building trust and accountability. Users and stakeholders should have access to information about how AI systems work, their underlying algorithms, and the data used to train them. Efforts should be made to make AI systems interpretable and provide explanations for the decisions they make.
- Stakeholder Engagement: Governance should involve a wide range of stakeholders, including policymakers, researchers, industry experts, civil society organizations, and the general public. Engaging these stakeholders in discussions, consultations, and decision-making processes can help ensure diverse perspectives are

considered, and the potential risks and benefits of AI are appropriately balanced.

- Ongoing Monitoring and Evaluation: Continuous monitoring and evaluation of AI systems are necessary to assess their performance, identify biases or risks that may arise during deployment, and make necessary adjustments that s includes monitoring for unintended consequences, algorithmic biases, and potential ethical issues.
- Overall: governance in AI implementations aims to strike a balance between fostering innovation and maximizing the benefits of AI while addressing its potential risks and challenges. It requires a collaborative effort between policymakers, industry players, researchers, and the broader society to develop and implement effective governance frameworks that align with societal values and interests.

c) *Bias and Errors*: Data can embed human prejudice such as race & gender bias, data itself can be biased, technical Responses to Algorithmic Bias, and Legal Responses to Algorithmic Bias.

Organizations can respond to these challenges in the following manners:

- Deep and diverse data
- Think about proxies for illegitimate factors (e. g., zip codes)
- Consider the appropriate fairness function-Test and evaluate system performance to assess trade-offs
- Be aware of hidden historical biases-Having diverse teams is critically important

d) *Discrimination*: There could be a legal risk because of wrong or poorly written algorithms:

- Sued for unfair practices and discrimination against groups.
- High-risk systems with a significant possibility of causing illegal discrimination, injury, or major financial consequences if something goes wrong.
- Avoiding Overfitting and Underfitting: Complex AI models such as neural nets can easily overfit (i. e., fit historical data too well but fail in realistic test conditions)
- If we do not understand what is helping the model perform well, there is a risk that the model will fail upon deployment.

The same is also true for underfitting scenarios.

e) *Key inputs for good AI practices*: Software, Skills, Computations & Data

## 2. Conclusion

Numerous significant factors contribute to the challenges faced in implementing AI effectively. To ensure sustainable AI growth and address these hurdles, organizations must adopt new methods and strategies. The decision-making process for AI strategies has transformed, necessitating an initiative-taking approach to implementation in government sectors and private firms, both domestically and internationally. Companies have initiated various initiatives to implement modern AI principles and practices, aiming to

resolve the implications associated with AI strategy implementation. Notably, AI design, development, and adoption prioritize different areas for business and societal impact, favouring the agile lean approach over traditional methods, resulting in more effective decision-making processes.

#### Keywords:

- **AI**-Artificial Intelligence
- **ML**-Machine Learning
- **Agile** – Set of values and principles.
- **Lean**-lean means creating more value for customers with fewer resources.
- **IT** – Information Technology
- **Artificial Intelligence (AI) Implementations**-Purposeful business outcomes using AI technology implementation.
- **Successful AI implementations**-AI implementations without failure
- **Factors affecting successful AI implementations**-Elements blocking Successful AI implementations.
- **Sustainable AI growth strategies**-long-term business outcomes
- **AI strategic decisions**-Plans and adoptions using AI.
- **Fortune 100 companies**-Top 100 companies from the list of Fortune 500 is an annual list compiled and published by Fortune magazine.
- **Data-driven strategies**-A data-driven strategy is based on collecting and analyzing data. It demands that the organization take a systematic approach.
- **Black box in AI**-Black box AI is any artificial intelligence system whose inputs and operations are not visible to the user, or another interested party.
- **Deep learning**-Algorithms which is a subset of Machine learning (ML)
- **Microsoft**-Microsoft Corporation is an American multinational technology corporation.
- **Google**-Google LLC is an American multinational technology company.
- **Facebook**-Meta Platforms, Inc., formerly named Facebook, Inc., is an American multinational technology conglomerate.
- **Twitter**-Twitter, Inc. is an American social media company based in San Francisco, California.
- **Dataliteracy**-The ability to explore, understand, and communicate with data in a meaningful way.
- **Zip Codes**-A ZIP Code is a system of postal codes used by the United States Postal Service (USPS).
- **Overfitting and Underfitting**- Overfitting and Underfitting are the two main problems [21] that occur in machine learning and degrade the performance of the machine learning models.

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