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How to integrate AI Technologies in Business Operations and Decision Making

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ABSTRACT: Artificial Intelligence (AI) is used in major and minor business areas. A system or robot can perform tasks ten times faster than people without limitations on the system being built. In our daily lives, phones, Google, cars, and other items are used to improve and automate our daily lives & tasks better. However, there are challenges when any organization tries to develop, adopt, and deploy an AI system. The continuous understanding, research, feedback, parameters & mathematical operations allow us to identify bugs & issues and help to identify the system output or performance. Their fundamental training process better understands AI systems and, as a result, provides predictive ability. The following topics: the future of AI to create a business strategy to deploy AI systems, how AI technologies can be used to improve operations in organizations, technical characteristics of proposed systems, proposed systems development with deployment timeline, user acceptance testing & impact details, performance testing, Training & monitoring guidelines, limitation, potential barriers and challenges of newly adopted systems, ethical Issues & how to address them, strategic implication with short & long term future goals with a conclusion will be discussed in this paper.

KEYWORDS: Artificial Intelligence (AI), Integration, Automation, Business Strategy, AI adoption, Limitation of AI, Future work of AI, Ethical issues of AI

I. INTRODUCTION

The application of artificial intelligence (AI) can be found in the central and minor areas of business. Systems or robots can perform tasks ten times faster than humans without constraints. Any organization should agree to adopt a common and standard business model language before using AI in their system. This model will not function in the future if proper analysis, plans are documented & executed in services, products, organizational systems, and value chain functions. Business models can be built based on machines and human interactions. This development will broadly influence the ability of machines and humans to “relate” to each other, “sense” with each other, and “communicate” with each other [1].

II. HOW AI CAN BE USED TO CREATE A BUSINESS STRATEGY TO DEPLOY AI SYSTEMS

Multi-business or open-business models will be more helpful and create a business strategy for deploying AI systems. Some business models can operate in the digital, physical, and virtual layers within business model ecosystems. This will help to create new agendas for communication between machines, humans, and businesses with all stakeholders. The world may be controlled by persuasive business model ecosystems with AI systems that move promptly, adapting to and modifying business reality [2]. AI can search for jobs or employees based on the job details and year of experience. AI algorithms can be used to recommend searching for employees or jobs and share recommendations of suitable candidates or job positions. The algorithm can suggest training details for existing employees, based on their experiences, to apply for higher posts or promotions in any organization. The accuracy and fairness must be controlled by implementing machine and deep learning. AI technology can recognize good work or employee of the month based on performance and other factors. Any organization must search for and find a solution by using AI technologies to resolve the following issues: reducing data management costs, long-term projects with fairness & security, and the highest customer satisfaction index [1].

III. HOW AI TECHNOLOGIES CAN BE USED TO IMPROVE OPERATIONS IN ORGANIZATIONS

AI technologies can be used in multiple domains to automate the job/task, save time & reduce manual tasks. AI algorithms help to build software such as new machine learning, natural language processing, or deep learning models. Further development is required to understand the issues & concerns and improve this natural language processing effectiveness. The self-learn feature of AI technology with machine learning helps understand customer pain points and suggest profound solutions. HR-related tasks, such as how an organization hires employees, can be controlled and

managed by AI technologies [1]. AI is used in every industry, from agriculture to healthcare, manufacturing to retail, and school to research work. Many industries lead in AI technology adoption (for example, Robotics, Chatbot), including high tech & telecommunications, automotive & assembly, and financial domains. Many Open-source software platforms are used to continue daily tasks and monitor data. Hadoop is an open-source software that is used to manage big data. Based on Hadoop, salesforce, a cloud-based customer relationship management (CRM) suite, has been developed. Salesforce is used in all domains nowadays with its advanced and user-friendly behaviors [3].

IV. TECHNICAL CHARACTERISTICS OF PROPOSED SYSTEMS

The use of wireless, sensors, and persuasive technologies in everyday life has increased and developed exponentially. This is required to understand the business models and how to use this model to communicate with their employees, customers, and network partners. A conceptual framework model can be used to organize the business concepts and use the new technologies in their future work with business model language (BMI). It is required to identify a common and standard business model language that can be used in all domains (for example, HR, finance, admin, etc.). The proposed conceptual model is the first step in creating a conceptualized overview of the insight, knowledge, and possibilities within the digitalization of the business model idea. The following diagram (Fig 1) explains the business model through the lens of all possible BMI connections. It consists of four main parts: (a). the Machine Intermediary, (b). the Human Intermediary, (c). the Business Model Ecosystem, and (d). Business Models Patterns Analysis. The primary purpose of the conceptual model is to provide an overview and more profound knowledge of the digitization of the business model ideas. So, the Business model is a digital representative and can provide ideas on different models.

Now, this model can be used for many purposes. For example, to automate HR activities, recruit candidates from job portals based on their skills and work experience and reuse any data/service for all future enhancement projects [2].

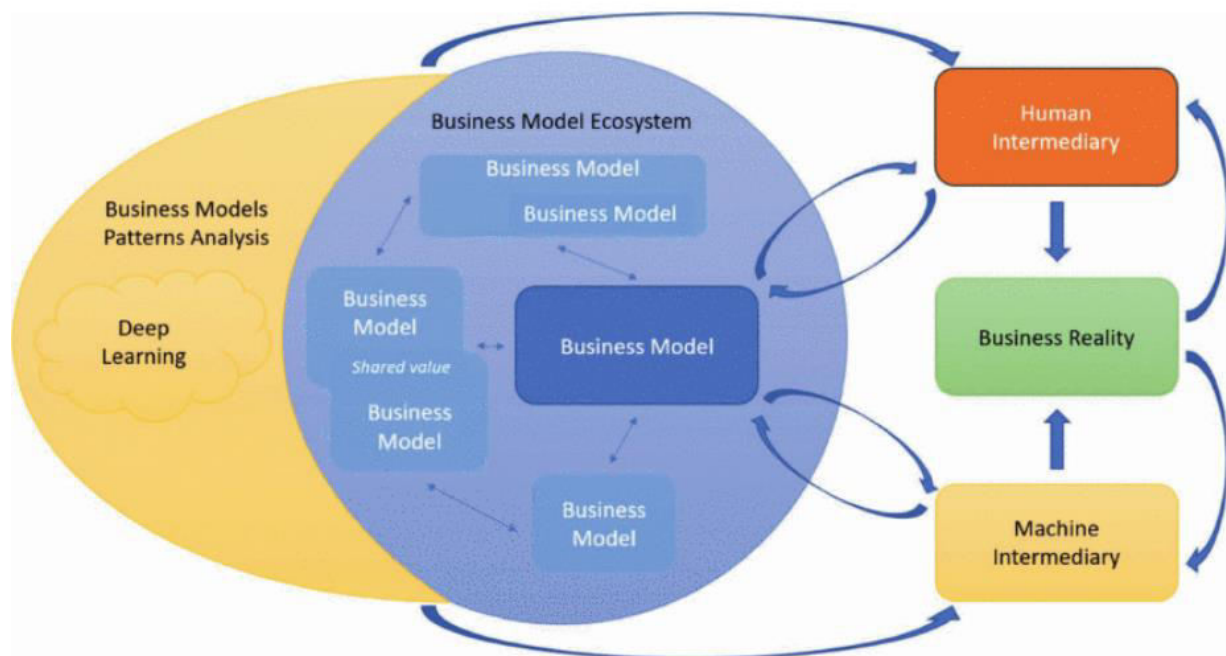


Fig 1: Conceptual model overview [2].

V. PROPOSED SYSTEMS DEVELOPMENT WITH DEPLOYMENT TIMELINE

The leadership team discusses WHY, WHAT, WHO, WHEN, WHERE, and HOW the best and possible way to use AI. Some believe that robots may destroy all, while others guess AI may never reach a higher level than our expectations. They also discussed the deployment timeline and how to engage resources to migrate the manual task to

automation. They propose the following design. (a). To create software using AI technology to track all employee records and answer all common queries using a virtual chat agent: When any new employee joins, it is required to explain all the details so that the employee can understand the business flow and details before starting project work. This task is common for all new employees and can be done by a virtual agent. It will save both time and money for any organization. (b). Validate and reject the resume when any candidate applies multiple times for the same position: Multiple consultancies post the same job from their portal. It is difficult to identify if there is a single job or multiple jobs. As per organization policy, the recruiter team usually never shares end-client details in the job portal. When a candidate applies for a job, they search in the job portal and apply randomly without knowing the client's name details. A new software can be implemented to identify duplicate candidates based on the key: email ID, date of birth, and mobile number. When the recruiter team searches and uploads the final candidate's name, they will get details without duplicate records. (c). Onboarding and offboarding any resource will be an automated process without any manual work by providing join or last date: HR team's responsibility to onboard/offboard resources based on the project start/end date. This can be automated by providing all details at any time from any location. (d). Generate the employee performance bonus based on the employee's work hours, bill rate, and performance history: Some organization pays performance bonuses based on employee work hours, bill rate, and performance feedback (excellent, good, average, etc.) from the client. This task can be calculated and confirmed performance bonus using advanced software created by AI technology [4].

VI. USER ACCEPTANCE TESTING, PERFORMANCE TESTING, AND IMPACT DETAILS

Some dummy users and partners will be created to test user acceptance testing (UAT), and performance testing before actual deployment. The testing team will coordinate with all teams and continue end-to-end testing. They will create all positive & negative test cases and execute the test plan as per plan. The testing result will help to identify and track all the records. The main impact of UAT testing is that all testing will be assumption-based and done before going live. So it will be difficult to identify all possible test cases and issues.

VII. TRAINING & MONITORING GUIDELINES

Training materials and recorded videos will help to understand how AI technology works, how virtual agents will answer all questions, and how to validate duplicate records. The leadership team decided to arrange in-person meetings to explain how to use AI, how to automate jobs and the use of virtual agents. A dedicated team is created that will take complete ownership to set up all training (in person, Webex, etc.). Still, all employees should take complete ownership of attending all training courses and follow monitoring guidelines as per organization rules, policies and guidelines.

VIII. LIMITATIONS, POTENTIAL BARRIERS, AND CHALLENGES OF NEWLY ADOPTED SYSTEMS

The main challenges to adopting new technologies are they must spend money on training sessions and try to convince all employees and stakeholders that new technologies will perform better and provide the best results. They need to finalize database and cloud technology details before cost estimation. Any Organization should be ready to accept all positive and negative comments after implementing the new technologies and updating the system as per demand & business requirements in the future always.

IX. ETHICAL ISSUES AND HOW TO ADDRESS ISSUES

Many users felt that there were ethical issues with their use of social media. The data can be used for tracking personal information by using natural language algorithms. There is a chance to hack personal information by using personal information, and many crimes will be introduced if they do not secure the data correctly [1]. Any organization should avoid pushing the facilities of AI since technically possible but ethically unacceptable. Any solution may be the straw that stops the camel's back and may initiate more severe control in response. AI should not be used to perform wrong or with a limited scope with substantial and costly implications. AI systems with ethical guidelines will also be vital since an improving reliance on AI will make existing organization rules & action plans. The human side and an ethical approach will be increasingly important to prevent too much technology focus on any organization [4].



X. THE STRATEGIC IMPLICATION WITH SHORT AND LONG TEAM FUTURE GOALS

In the current digital world, an organization should identify the following: how AI can be defined in all domains and how the future of AI may look with risk details. Then needs to identify positive and negative points of economics, politics, society, environment, technology, and law [4]. There are still many domains to discover advanced AI solutions and implementations in those domains. Leadership and management teams need to be concerned about the possibilities for business systems as mergers, acquisitions, intellectual capital, and other concerns emerge in the AI community [3]. The long-term goal is to implement AI in all domains in any organization after following all security concerns, rules, and limitations with low or minimal risks.

XI. CONCLUSION

This paper discusses the following topics: the future of AI to create a business strategy to deploy AI systems, how AI technologies can be used to improve operations in organizations, technical characteristics of proposed systems, proposed systems development with deployment timeline, user acceptance testing & impact details, performance testing, Training & monitoring guidelines, limitation, potential barriers and challenges of newly adopted systems, ethical Issues & how to address them, strategic implication with short & long team future goals of any organization. As AI software applications are becoming most of their actual impact on individuals & societies. The convenience and the solutions must be balanced with the threats to privacy & risks of disclosure of infrastructure weaknesses and flaws [2]. Also, all stakeholders and users need better awareness sessions on using new technology to reduce security risks. A theoretical framework model can be used to structure the concepts so that organizations and stakeholders can understand and take advantage of the new AI technologies for their future enhancement purposes.

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BIOGRAPHY

Nabanita Das is a Senior Software Engineer and Integration Consultant. She has over 16 years of work experience with Middleware webMethods, Cloud Microsoft Azure & AWS, and domain- Healthcare, Banking, Insurance, Retail, Rx, HR, Finance, and Cyber security. She has in-depth knowledge of Integration, APIs, Security, Governance, and API standards. She is responsible for designing and developing integration solutions to support API and batch file transfer between various internal/external applications & partners. She has successfully delivered several complex projects with high accuracy & efficiency, resulting in significant cost savings & improved business processes with an exceptional team player, possessing outstanding technical & analytical skills, commitment, a positive attitude, selfless assistance, and excellent contributor. Her active participation in analysis and brainstorming solutions to fix defects and build them without compromising quality is commendable. She has excellent interpersonal skills and has consistently built strong relationships with stakeholders and clients. She persistently shares her views of project risks and provides solutions to address issues with conflicting priorities in high-pressure situations. She holds a Bachelor's degree in Computer Science & Engineering and an MBA in Project Management. Currently pursuing a Ph.D. in Computer Science from the National University. Her research interests are AI, Cyber Security, Integration, and Cloud computing.



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