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COURSE
82403A

AI Implementation, Cryptocurrency, and Blockchain Basics

Putting artificial intelligence to work requires more than good intentions—it takes thoughtful planning, clear policies, and an understanding of real-world challenges. This course addresses AI implementation and management, then shifts focus to two technologies reshaping finance: cryptocurrency and blockchain. You'll explore how digital assets work, what drives their value, and how blockchain serves as the underlying infrastructure. Ideal for professionals advising clients on digital assets or evaluating AI adoption within their own organizations.

CREDIT HOURS 2 | FIELD OF STUDY BUSINESS | EXAM QUESTIONS 7

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Assignment

- Study the full course materials included here.
- Complete the review questions after each chapter.
- Answer 7 final exam questions.
- Final exam is scored immediately, 70% or better passes.
- Certificate of completion is available in your account.
- Failed exams can be retaken free of charge.

Course Objectives

- Recall the various types of bias that can skew AI outputs.
- Identify the characteristics of a cryptocurrency.

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Chapter 1: ARTIFICIAL INTELLIGENCE IMPLEMENTATION AND MANAGEMENT

Chapter Objective

After completing this chapter, you should be able to:

- Recall the various types of bias that can skew AI outputs.

Instacart to Add Chatbot as Grocers Push Boundaries on Digital Content

This week in grocery, Instacart taps AI as supermarkets test shoppable content and new formats.

OpenAI, creator of artificial intelligence (AI) chatbot ChatGPT, announced Wednesday (March 1) that developers are now able to integrate the bot into their products, with one of the first companies to do so being Instacart.

The AI company noted that the grocery aggregator will add to its app the ability for consumers to ask questions related to recipes and inspiration, with the responses featuring shoppable suggestions. The feature will be added "later this year."

With this, the chatbot will have the opportunity to reach the 42% of men and 28% of women who purchase groceries online using a same-day delivery site such as Instacart, according to data from PYMNTS study "The ConnectedEconomy™ Monthly Report: The Gender Divide," which draws from a survey of more than 2,600 U.S. consumers.

Granted, ChatGPT has sparked concern among some.

Most recently, a report Thursday (March 2) by *The Wall Street Journal* (WSJ) said Apple has delayed the approval of an update to its BlueMail app that uses the technology due to concerns that it could generate content that's not fit for younger users. Additionally, a recent CNN report noted that JPMorgan Chase has restricted its global staff's use of the technology because of compliance concerns around the use of third-party software. Additionally, in January, a report noted mixed reviews from companies using the system.[1]

IMPLEMENTATION FRAMEWORK

Many believe artificial intelligence (AI) has the potential to change the type of products and services provided by companies, how we work and make decisions, and how we spend our time at home. This great transformational power comes with a bit of caution. There are many risks associated with

embracing AI. Unleashing an AI application without regard for the ethical implications can negatively impact internal and external stakeholders and society. Before beginning any AI implementation, management must understand and evaluate the implications of such adoption on various stakeholders.

Successful Artificial Intelligence Projects

Organizations have the potential to utilize artificial intelligence to find new products, increase efficiency, or provide better customer service. However, as with many technologies, management should follow several critical practices to increase the probability of a successful implementation.

Have a long-term vision. Investing in artificial intelligence can be expensive. These costs include hardware upgrades, software, and training costs. For this reason, you do not want to consider only the cost of your first AI project when making the initial investment. An organization needs to consider many potential uses of AI and develop a long-term strategy on how it can be incorporated to add business value. The strategy will help ensure that the investment in hardware and software is compatible with possible AI applications and allows seamless integration. Having a long-term vision will also help you determine and plan any hiring or training needs within the organization.

Based on the long-term plan, build processes for evaluating and approving future AI projects that are aligned with the organization's business strategy. A formal process will enable management to decide on significant projects and add flexibility to respond to changing business needs while providing an overall direction for innovation using AI.

Have clear requirements and goals. Especially when you start the first AI project, managers may become overenthusiastic and set unrealistic goals without fully considering the organization's requirements. Consider the requirements, such as whether this AI application will interact with employees using augmented intelligence or whether it can build models and evaluate solutions without human intervention. Similar to any other application implementation, having the overall goals defined at the beginning of the project will provide clear expectations for the project team, management, and other interested stakeholders. Clearly defined requirements will help management define the project scope, determine resource needs, and improve the success of the implementation.

Ensure proper skills. Before beginning, be sure you have sufficient personnel resources trained in AI. If the skills necessary are unavailable within the organization, consider initially hiring external consultants to provide the needed expertise. Consultants will help guide your internal staff in implementing a new area and supplement their training. Of course, technical knowledge is necessary, but don't forget that extensive domain knowledge is required to understand the processes before beginning a project. Employees beyond the technical project team should receive basic technology training if the long-term strategy is to implement

several organizational projects. This strategy will help the organization to adapt and discover new activities if there is widespread knowledge of the capabilities of artificial intelligence. If augmented artificial intelligence is part of the strategy, employees will also need to be able to adjust to working with the technology to use it efficiently.

Create a data plan. Creating a robust artificial intelligent application requires significant data from internal and external sources. Before starting the project, make sure you can obtain the data in a format usable for building the AI model. Create a plan for maintaining data and adding new data to train the model further.

Evaluate the existing infrastructure. Before starting any AI implementation, determine the requirements for the infrastructure. Then decide whether your current infrastructure can handle an AI application or what new hardware needs to be acquired. A long-term view of the needs will ensure long-term scalability and compatibility for your applications. If the current architecture is not capable of the volume of processing needed, consider other cloud options to augment the current environment.

Buy-in from stakeholders. Like most projects that can directly affect employees, getting their buy-in from the start is helpful. AI is likely to change job requirements for many individuals within the firm. Consequently, employees can feel threatened or fear the loss of their jobs, so having clear expectations of what AI applications will and won't do can reduce stress and motivate employees to use AI outputs. Including key individuals from each business function in decision-making will help ease some reluctance to use AI models.

The overall acceptance of AI models will be greater if your organization already has a culture of data-driven decision-making and a data mindset. Table 6.1 offers a list of reasons why most common AI projects fail. Therefore, managers should consider and address the following before beginning an AI project.

The benefits of AI on an organization can be categorized into the following.

- **Increased process efficiency**. AI can increase business process performance by automating tasks, performing tasks faster, and reducing the error rate.
- **Insight generation**. A major advantage of AI is that it can unlock patterns hidden in large sets of data. Organizations will be able to gain insight into patterns in behavior, buying, shipping, and manufacturing to help make better decisions about business operations.
- **Business process transformation**. AI can be used to help influence how resources are allocated, such as demand-driven scheduling.
- **Increase operational performance**. As in the opening story, organizations can use AI tools to create new services for customers, increase satisfaction in customer experience, and enhance the quality of products and services.

- **Increase financial performance.** The previous benefits affect the organization's underlying financial performance. Properly planned AI adoption can lead to better financial performance not only in the year of adoption but also the subsequent years.

TABLE 6.1 WHY DO AI PROJECTS FAIL?

Technical factors contributing to AI failure
• Choosing a solution that requires intensive programming
• Not relying on AI third-party tools when available
• Choosing a solution that did not demonstrate scalability
• Using biased or the incorrect training data
• AI doesn't solve everything
Process factors contributing to AI failure
• Starting with a transformational change rather than a smaller goal
• Implementing AI without a clear goal in mind
• Not focusing on the business problem first
• Not taking time to properly clean and understand the data
Organizational factors contributing to AI failure
• Lack of leadership and stakeholder buy-in
• The company lacks a clear strategy
• Not measuring the ongoing accuracy of the model
• Not having a big picture view of the implementation process
• Poor change management process
• Ignoring the cultural shift required to use AI for decisions
• Fear of failure – AI sometimes needs experimentation
People factors contributing to AI failures
• Unrealistic expectations
• Lack of time commitment from business experts
• Trying to implement AI on your own without adequate expertise

• The project is driven by IT
• Lack of governance

AI Risk Management

Risks of AI can be broadly categorized into two areas: risks to the organization and to society.

- **Risk to the organization**. Most organizational risks can come from the factors listed in Table 6.1. Any bias in the data and algorithms can cost the organization its reputation and brand recognition and impact financial performance. Further, risks to the organization can stem from cyberattacks on data, lack of transparency on testing and AI models, and AI model self-adjustments, causing the models to be noncompliant with existing company policies.
- **Risk to society**. As responsible managers, it is important to consider how AI models used for business decision-making may have negative implications for society. AI can significantly increase automation, leading to job losses across the organization. Over time, an increase in job losses may lead to an increased disparity in the socioeconomic status of the general population. For example, the general population may be manipulated through AI algorithms to buy a particular product. As AI data needs increase, individuals may be burdened by continuous surveillance to provide location data. Therefore, if an organization is a socially responsible company, managers working for such organizations should consider hidden risks to society when implementing AI models for marketing and delivering services and products.

Singapore's Model AI Governance Framework, presented at the 2020 World Economic Forum in Davos, Switzerland, established several measures organizations could use to mitigate risks when deploying an AI model.[2]

- Understand that most datasets are, to some extent, biased. Keeping this in mind, organizations should implement procedures to mitigate bias and understand the potential risks. Evaluate the training output and consider whether there are any other unintended risks.
- Create a monitoring and reporting process to review any issues related to a deployed AI. The monitoring can include model accuracy, errors, explainability, and other specific insights as appropriate.
- Ensure that appropriate individuals receive training on how to use the results of the AI. In addition, implement processes to transfer knowledge on monitoring the AI model when key individuals change positions or leave the firm.