**MODULE 6 UNIT 2**

**Assignment**

Learning outcomes:

LO3: Propose an initiative for a specific business application of AI.

LO4: Produce a roadmap for an organization to gain strategic advantage using AI.

# Name:

## Instructions and guidelines (Read carefully)

### Instructions

1. Insert your name and surname in the space provided above, as well as in the **file name.** Save the file as: **First name Surname M6 U2 Assignment** – e.g., Zadie Smith M6 U2 Assignment. **NB:** *Please ensure that you use the name that appears in your participant profile on the Online Campus.*

2. Write all your answers in this document. There is an instruction that says, “Start writing here” under each question. Please type your answer there.

3. Submit your assignment in **Microsoft Word only**. No other file types will be accepted.

4. Do **not delete the plagiarism declaration** or the **assignment instructions and guidelines**. They must remain in your assignment when you submit.

PLEASE NOTE: **Plagiarism cases will be investigated in line with the terms and conditions for participants.**

IMPORTANT NOTICE: Please ensure that you have checked the Online Campus for the due date for this assignment.

### Guidelines

1. There are 4 pages and 1 question in this assignment.

2. Make sure that you have carefully read and fully understood the questions before answering them. Answer the questions fully but concisely and as directly as possible. Follow all specific instructions for individual questions (e.g., “list,” “in point form”).

3. Answer all questions in your own words. Do not copy any text from the casebook, readings or other sources. **The assignment must be your own work only.**

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| **Plagiarism declaration:** |
| **1. I know that plagiarism is wrong. Plagiarism is to use another’s work and pretend that it is one’s own.**  **2. This assignment is my own work.**  **3. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.**  **4. I acknowledge that copying someone else’s assignment (or part of it) is wrong, and declare that my assignments are my own work.** |

For each assignment submission included in Modules 1 to 5 of this program, you were asked to complete activities that should now help you complete a final, polished AI roadmap. The roadmap will function as a starting point for the successful deployment of AI into an organization of your choice, with the aim of achieving competitive advantage.

For this final assignment, use your answers from previous modules as a guide to populate the roadmap template below. You should be using the organization that formed the basis of your ongoing project submissions from Modules 1 to 5 to fill in your roadmap. Please ensure that you consult the assignment guide in Unit 2 of this module for details on the specific content required for each section. Furthermore, you can use the feedback you have received in previous modules to refine your answers here.

Please adhere to the word limit for each section.

Review guidelines:

Your assignment will be reviewed according to each individual section of the roadmap, and the structure and logic of your writing. View the detailed rubric on the Online Campus.

**Question 1**

Complete the four sections of the following roadmap template.

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| Executive summary Summarize your plan for the strategic implementation of AI into your chosen organization. (Max. 500 words.)  Start writing here:  I am working in a financial service industry. The financial sector has not changed a lot until the 2008 financial crises. The financial crises caused a massive backslash on the public trust in banking. For example, banks used to be the most trusted institutions just a few decades ago in the UK. Now, they are amongst the least trusted since 2008. Declining public trust is a massive problem for banks since they serve public and manage their finance. The solution to improving public confidence is providing the best possible customer service and experience.  High-quality customer service is an expensive operation to run in an organization. The current economic environment is not helping banks to improve and maintain a traditional high-quality customer service. For example, Bank of England set a historically low-interest rate during last few years. At the same time, a future threat from Fintech is forcing us to innovate and implement more changes in my organization. Therefore, we must look for new ways to provide high-quality customer service and products, while maintaining or lowering operational cost to thrive in this harsh economic environment.  Luckily, AI technologies promise a new innovative method to improve customer service while potentially reducing operational cost significantly by a margin of 20-30%. AI technologies, such as machine learning and NLP, provides a much efficient method of working in an organization. AI technologies will play a vital role in delivering innovative and high-quality customer services by utilizing chat-bots and advanced machine learning algorithms.  However, AI technologies are not the solution to our problem. AI technologies are an essential tool to succeed our goal to implement high-quality customer services and products. To achieve this, we need to understand AI’s strength and weaknesses. Recent advancement in machine learning, AI is becoming significantly better at prediction. AI technologies can overwhelmingly outperform human staff in prediction tasks (e.g. detecting a pattern between current and past transaction). But, it does not mean machine learning can make judgments. Human staff (e.g. fraud analyst) can make a much better judgement or a decision based on available information. Therefore, AI technologies and humans need to work together to complement each other’s strength to perform efficiently and productively.  I have proposed three new AI application in my organization. I believe all three AI applications will give us a competitive advantage in cost leadership by cutting operational cost and differentiation by providing high-quality customer services. I hope those three initiatives will be a foundation for the broader AI strategy in my organization.  I believe more AI applications will be implemented in my organization. AI technologies can assist us to make a correct decision by providing necessary information and tools. A recent breakthrough in NLP and machine learning will bring us closer to implement business specific AI assistant to help analyst perform and work more efficiently. |
| Current state Describe the current state of your chosen organization. (Max. 500 words.)  Start writing here:  I am currently working in a financial service industry. Like other organizations in our field, we were slow to change. Our technology was infected with out of date and legacy infrastructure. However, we made a clear strategy to focus on being technology first corporation. This approach allowed us to invest heavily in new technology and ideas.  As for overall organizational strategy, we are focused on providing best customer service possible. A future threat from Fintech urged us to reduce cost significantly by implementing new technologies (e.g. chat-bots and enterprise cloud). This cost-cutting strategy triggered a corporate structural change from a global corporation to a region focused organization. Regarding Michael Porter’s three generic strategies, we are differentiating us from our competitors by providing best customer and product service. To achieve this, we are cutting cost and focusing on a smaller global operation.  We can provide a better price and product services to our customers by cutting operational cost. However, it will put too much constraint on our operation which might reduce our ability to provide best customer service. To address this problem, we have decided to use AI to minimize cost while still providing better customer service. IBM’s Watson powered chat-bot is the most popular example of AI in my organization. The AI can understand and answer simple questions by filtering through vast amounts of data. If the AI unable to find the answer, it passes the inquiry on to a customer service agent who can answer more complex questions. It supports staff to help them respond customer queries more quickly and efficiently by employing collective intelligence of both AI and staff. By applying an advanced AI chat-bot, our organization was able to reduce cost by 15% and improve customer service significantly (by eliminating the need for a customer to wait for a human advisor to be free to answer simple questions).  AI chat-bot is more comfortable to implement at the front end (customer facing) area because information handled is already public. On the other hand, using AI chat-bot in the back office is quite challenging due to the handling of customer information and business-sensitive data. AI chat-bot uses machine learning tools to train itself from big data. Therefore, it is necessary to have access to all information, including sensitive, to be effective. IBM and others are addressing the handling of sensitive information through enterprise cloud (e.g. IBM cloud) where organizations maintain ownership of their data. However, regulators still insist storing and handling of some confidential information in organization own physical premises.  I believe the more advanced use of AI will be implemented in our organization to assist us to make correct decision by providing necessary information and tools. AI chat-bot will help us to lay a foundation for a broader AI strategy in the organization. A recent breakthrough in NLP and machine learning will bring us closer to implement business specific AI assistant to help analyst perform and work more efficiently. |
| Proposed initiative Outline your proposed initiative for using AI in your chosen organization to achieve competitive advantage. (Max. 800 words.)  Start writing here:  I believe AI technologies will play a significant role to improve our competitive advantage in the market. I think NLP and machine learning technologies will be most suitable for my organization at the moment.  **Fraud Prevention**  Rules-based systems are the most popular tool to detect a fraud. However, rule-based methods are not effective at uncovering unknown fraud scheme. Machine learning based fraud prevention system is more efficient and resilient to all kind of frauds. Machine learning algorithms can recognize patterns to find exceptions, abnormalities, and outliers from big data sets (e.g. historical transactions). By receiving this information, an analyst can detect and prevent fraudulent transactions more efficiently in real-time. Fraud is one of the most significant financial loss to my organization, costing us near nine figures lose every year. Machine learning based fraud prevention system can reduce this to low eight figures. It also brings great stress to our customers when they experience fraud. Therefore, preventing potential frauds will improve our customer experience significantly. Machine learning based fraud prevention system will bring competitive advantage to both cost leadership and differentiation (e.g. customer service).  **Personalized Service**  In today’s world, financial service organizations have to provide personalized and high-quality services to their customers. AI technologies, such as machine learning and NLP, can build a high accuracy predictable model. NLP tools can be used to transcribe and analyze customer interactions (e.g. customer call recording). Machine learning algorithms can use this data to build highly accurate customer profiling using techniques like keyword matching. This model can help agents to offer completely personalized services and products that suit customer’s need. Personalized services can reduce cost by downsizing marketing budget and create revenue from new services and products. Personalization also provides a noticeable improvement in customer experience and services.  **Customer Service**  Customer service is becoming an important part of organizational strategy. Successful companies are spending a lot of money on customer services to keep a customer loyal to their services and products. Customer service might become fully automated using AI chat-bots or agents in the future. However, in near term, NLP can be used to understand and analyze customer dissatisfaction using tools such as Cogito and IBM Watson’s tone analyzer. Those tools will pick up lots of useful tips that point toward the cause of customer dissatisfaction. When the cause of dissatisfaction found, machine learning algorithms can examine an appropriate response to it. By utilizing NLP and machine learning tools, customer service agents will have more resource to improve customer experience and services. By having appropriate methods to deal with customer unhappiness will help organization strategy to automate some or all of customer service in the future. AI-assisted customer service can reduce operational cost significantly by reducing the load on customer service agents.  **Leadership and technical requirements**  AI initiatives should be embedded in the organization’s strategy. It requires C-level executives to see it as an important tool to create and implement an AI strategic vision of the group. Otherwise, AI initiatives might not able to realize its full potential.  After creating a strategic vision, those projects (e.g. fraud prevention) requires SMEs (subject matter experts) and project managers. SMEs should be responsible for defining the problem and the desired outcome of the strategy. Project managers should be responsible for managing and resourcing actionable insights.  Machine learning and NLP applications (e.g. fraud prevention, personalized service and customer service) require accessible and quality data for effective implication and training. It is highly likely that we need contracts and expertise from third-party suppliers (e.g. IBM and Cogito) to implement our machine learning applications. Therefore, extensive negotiation and agreement should be reached on handling of sensitive data. The organization might need to accept some business impact risk to reach an agreement.  When data and contracts become available for machine learning and NLP initiatives, SMEs will give technical considerations and requirement to implement those projects. Project managers will make decision-based on those to facilitate. If those requirements are outside of business strategy, project managers will discuss with C-level executives in the decision-making process.  **Conclusion**  I believe all three AI applications will give us a competitive advantage in cost leadership and differentiation. Those three initiatives will be a foundation for the broader AI strategy in my organization. Also, those applications align with our IT strategy to become technology first company. It is important to have leadership and defined roles to implement those applications. C-level executives should oversee and enable the progress of those project, while SME’s and project managers will be working on technical details, requirement and decision making to facilitate the success. |
| Plan of action and criteria for success Detail your plan of action for using AI in your chosen organization. (Max. 800 words.)  Start writing here:  My organization provides financial services to our customers. We are focusing on utilizing machine learning and NLP tools to improve our services. It is important to understand we manage and handle people’s finance. It involves compassion and understanding to our customer during their difficult time. To succeed in our three AI initiatives, we have to understand the impact of AI technologies on our customers and current workforce. To implement AI technologies correctly, we must create a vision for these initiatives. To explain this vision, I will divide my plan of action into three sections, namely “Impact of AI”, “Plan of Action” and “Criteria for success”.  **Impact of AI**  AI technologies are a powerful tool that will enable us to deliver high-quality services and products. Thanks to recent advancement in machine learning, AI is becoming significantly better at prediction. AI technologies can overwhelmingly outperform human staff in prediction tasks (e.g. predicting potential fraud). However, AI technologies are not going to solve our problem single-handedly. To understand our problem clearly, we need to understand AI technologies strength and weakness. AI technologies can perform predictable manual tasks at incredible cost and efficiently. But, AI technologies are not good at making a judgement. In our sector, we make tough judgements based on available information. On the other hand, humans are better at making a judgement than machines.  It is a big responsibility to manage and handle people’s finance. We have to show compassion to our customers during their difficult time. However, AI is not good at showing compassion unless taught. Also, AI is not good at explaining their decision. If we cannot explain their decision, it might result in services bias to some customers. As a financial organization, we have to provide equal and fair service to all of our customers.  Another significant concern of AI is cutting jobs in lower level positions (e.g. clerical or customer service). For example, customer service jobs might get replaced by AI chat-bots powered by IBM’s Watson. But, humans will still be in the loop where complex questions directed to customer service agents.  **Plan of action**  AI initiatives will require both technical consideration and organizational cultural change. Since we are a financial service organization, technical considerations will be easier to complete. We will be most likely to require third-party suppliers (e.g. IBM or Cogito) to implement our AI initiatives. The organization will need new skills to implement those AI initiatives. New skills can be acquired, but it will be preferable if we could retrain our current workforce. On the other hand, organizational cultural change will be more complicated to plan and complete.  AI initiatives will require C-level executives to promote and facilitate the organization’s strategy. Those C-level executives must be champion of change to influence and communicate the new cultural and behavioral change in the organization. The cultural and behavioral change will be a difficult task to complete. There will be a loss of jobs in the organization due to AI applications. But, we need to reassure that AI effects work rather than a job.  Most work in the organization will continue to exist, but AI will make traditions jobs more fluid and efficient. For example, we need to teach our AI chat-bot to be sympathetic and fair to our customers. AI initiatives bring an opportunity to retrain or skill former customer service agents into a new AI training jobs. The managerial position must adapt to new AI working environment to retrain our workforce. Managers should provide mentoring and emotional support to encourage former staffs to retrain in newly created roles. Management and C-level executives must see the opportunity of the future.  **Criteria for success**  It is difficult to set criteria for success for AI initiatives in the organization. However, the well-designed roadmap should catalyze and inspire people to realize the AI vision. It is also important to have well-defined criteria for success to motivate people to act on the goal. I have written basic criteria for success:   * Management must establish a sense of urgency in the organization. * Form a coalition of C-level executives, managers and staff * Create a vision for AI initiatives * Communicate the vision throughout the organization * Empower staff and managers to act on the vision * Plan for short-term win to keep people motivated * Improve and produce more changes and projects relating to AI   AI initiatives are not going to be an overnight success. It might take 5-10 years of continuous progress. I predict AI initiatives will take five years of continuous work to be implemented.  **Future project**  Those three AI initiatives will be the foundation of a broader AI strategy in my organization. There are many possible future projects including robotics, such as fully automated branches and business specific AI assistant to help analyst perform and work more efficiently. |