**Project Overview**

The course project is designed to assist you in learning how to use information technology to improve various business processes' efficiency, resiliency, and scalability. This is shown below.



Role of Information Technology in Business Process Improvement

Various technologies provide means to complete tasks faster with reduced costs, make them less error-prone, and free people to add more value to businesses by devoting their time to tasks that cannot be performed by machines.

The project is designed to accomplish the following objectives:

1. Identify the problems or opportunities in a business, where information technology can provide value in increasing revenue, reducing costs, or improving the quality of products and services that the business provides.
2. Identify the requirements to provide a solution and investigate various information technology solutions.
3. Recommend plausible IT interventions to support the business problem, provide a path to its implementation, and analyze the return on investment.

This is an individual project. Given below are a few guidelines regarding how you should approach this project:

* The output of this project would be in the form of a report.
* Each learner needs to select one of the two problem statements and conduct their research.
* Submit your responses in the form of a PDF document. The document length should be approximately 8–10 pages (double-spaced).
* Ensure that your report is formatted as per the American Psychological Association guidelines for formatting papers, in-text citations, and end references.
* The necessary deliverables are mentioned in the upcoming segments. Include all those deliverables to meet project expectations.

Given below are the details of this project. 

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| **Project Characteristic** | **Details** |
| Type | Individual project |
| Grading weightage | 60% |
| Total marks | 60 |

**Project Introduction**

Choose any one of the problem statements given below.

1. **Problem statement 1**

Suppose you are appointed as the Chief Information Officer (CIO) by a multispecialty hospital that caters to different types of patients needing specialized care.

The chief information officer (CIO) oversees a company’s IT function people, processes, and technology to ensure that it provides outcomes that support the business goals. As one of your upcoming projects, you have been asked to investigate how artificial intelligence (AI) technology can be used to improve healthcare processes that will, in turn, improve healthcare quality. For instance, AI can help optimize patient care by aiding in assisted or automated diagnosis and prescription as well as providing real-time prioritization, personalized medication, and so on.

Currently, the hospital deploys many tools and technologies that automate various patient care processes. However, all these systems produce a large amount of data in many forms, such as scanned images, documents, reports from various databases, and electronic health record systems.

A CIO’s tasks are given below:

1. Drive organizational alignment by providing a clear understanding of the use cases that exhibit the advantages of artificial intelligence
2. Recommend return-based, relevant AI investments to ensure that the hospital benefits from cutting-edge technology
3. Recommend a plan to implement AI solutions by expanding the role of the current Information Technology Department

*Note*: You need to choose a specific function of the hospital (diagnosis and treatment, patient care, administration, medical research, etc.), where you would want to implement AI solutions.

**2. Problem statement 2**  
Suppose you are hired as an IT solution consultant at a telephone company whose current offerings include cloud computing services; mobile services, including 5G, through various towers; and internet services to both businesses and retail consumers. The company foresees an opportunity to create new services through edge computing to connect the Internet of Things, people, and businesses.

Edge computing is the practice of capturing, processing, and analyzing large amounts of data near the source. It contributes to speed and efficiency and enables organizations to analyze data in real-time. It reduces latency during data transfers since computing is performed closer to the source where data is being generated. With edge computing, there is less reliance on cloud services. Since it processes data in real-time, the usage of internet bandwidth as well as the storage requirements on the network are low.

The Internet of Things describes a network of connected physical objects (things) to the internet or/and to each other. They can collect and transfer data over a network without human intervention.

The term “**thing**” in the “Internet of Things” includes everyday objects, such as kitchen appliances, thermostats, cars, and baby monitors, that can now be connected to the internet via devices. These devices enable seamless communication among processes, things, and people. A thing can also be a person with a heart implant, a farm animal with a biochip transponder, an automobile with built-in sensors that alert the driver when the tire pressure is low, or any other natural or artificial object that can transfer data over a network.

Sensors could be temperature sensors, motion sensors, moisture sensors, air quality sensors, light sensors, etc. These sensors, along with an internet connection, allow us to collect information automatically from the environment and make smarter decisions.

Over the last few years, the amount of data generated by sensors and other devices in the Internet of Things (IoT) has increased substantially. 

IoT data is currently processed in the cloud, mostly through computing resources located in data centers across countries. As a result, network bandwidth and communication latency are severe bottlenecks. In addition, the usage of drones and the number of autonomous vehicles are pushing edge computing solutions, which brings computing closer to the producers and consumers of data from these sources.

A consultant’s tasks are listed below:

1. Drive organizational alignment by providing a clear understanding of the use cases that exhibit the advantages of edge computing
2. Recommend a solution to deploy edge computing to connect people, things, and businesses
3. Recommend a plan to implement edge computing solutions by expanding the role of relevant stakeholders at the telephone company for providing edge computing services by leveraging their cellular towers, internet access, and connectivity services

**Project Mechanics**

To create a project paper, you need to apply your learnings from the course, conduct secondary research, and read about the current field developments to address these problems.

The output of the project is in the form of a report. The project should contain the following:

* **Cover Page**
  + Project title as well as student and course details - use [this format](https://cdn.scribbr.com/wp-content/uploads/2020/11/apa-title-page-student-version-7th-ed.png) for the cover sheet. - <https://cdn.scribbr.com/wp-content/uploads/2020/11/apa-title-page-student-version-7th-ed.png>
* **Table of Contents and List of Tables/Figures**
  + A table of contents of your research report - use [this format](https://cdn.scribbr.com/wp-content/uploads/2022/04/APA_Table-of-contents.webp) - <https://cdn.scribbr.com/wp-content/uploads/2022/04/APA_Table-of-contents.webp>  as a reference.-
  + A list of tables and figures; include a one-line description for all the tables or figures used - use [this format](https://cdn.scribbr.com/wp-content/uploads/2022/05/list-of-tables-and-figures.webp) <https://cdn.scribbr.com/wp-content/uploads/2022/05/list-of-tables-and-figures.webp>  as a reference.
* **Introduction**
  + Project Introduction
  + The context describing the current situation, including your chosen role (a CIO or a consultant) and the task at hand
  + A brief overview of your problem statement and setting the context toward your proposed solution
* **Problem statement**
  + The problem statement and key insights
* **Requirements**
  + Requirements for identifying a solution that meets the need in any of the chosen problem statements
* **Analysis of solutions**
  + An analysis of the possible solutions using information technology - briefly explain why this is the best possible solution for the chosen problem statement, with a rationale supported by data/evidence
* **Recommendation**
  + Recommendations with the solution based on your analysis
* **Conclusion**
  + The project conclusion along with the concepts that you have understood that are relevant to the chosen problem statement
* **Executive summary**
  + An executive summary that summarizes the paper for the executives who will send the document to their technical team for evaluation of the recommendation
* **References**
  + A list of references used in preparing the paper - please ensure you follow the [APA guidelines](https://www.scribbr.com/category/apa-style/) to list your references
* Submit your report with a font size of 12 and double-spaced.

**Grading Structure**

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| --- | --- | --- |
| **Deliverables** | **Weightage** | **Marks** |
| **Introduction** | * 2 marks will be awarded for providing an overview of the evolution of IT with respect to the chosen problem statement. * 3 marks will be awarded for providing a brief overview of the problem statement and setting the context for your proposed solution. | 5 |
| **Table of Contents and Figures and Tables** | * 3 marks will be awarded if the table of contents is appropriately indexed. * 2 marks will be awarded if a proper list of figures and tables is provided (along with a one-line description of each). | 5 |
| **Problem Statement** | * 5 marks will be awarded for detailing the relevance of the chosen problem statement in today’s world. | 5 |
| **Requirements** | * 5 marks will be awarded for detailing all the requirements/assumptions that are essential to creating or recommending a solution to the chosen problem statement.  (These requirements can be a company’s monthly or annual reports, documents detailing the adoption or creation of new technology to ease the functioning of business processes, etc.). | 5 |
| **Analysis of Solutions** | * 4 marks will be awarded if at least two solutions are outlined to the chosen problem. * 6 marks will be awarded for a detailed analysis and a clear evaluation or comparison of the proposed solutions that address the identified problems. You need to explain your views on how the new solutions will serve the organization - its employees and customers. | 10 |
| **Recommendation** | * 4 marks will be awarded for providing a sound recommendation for the solution and why it was chosen. Mention your chosen solution's advantages over the one you did not choose. * 4 marks will be awarded for a clear and sound explanation of how the proposed solution will help the said organizations in question. | 8 |
| **Conclusion** | * 5 marks will be awarded for articulating how the course content helped analyze the chosen problem statement and propose a solution. | 5 |
| **Executive Summary** | * 5 marks will be awarded for an overall summary of your analysis of the current and proposed functioning of the recommended solutions or plans. * 3 marks will be awarded for highlighting the differences between the different possible solutions. | 8 |
| **Format** | * 3 marks will be awarded for formatting the report as per the APA guidelines. | 3 |
| **References** | * 2 marks will be awarded for following a proper format to list all references in the report. | 2 |
| **Originality** | * 3 marks will be awarded for the originality of the content and proposed solutions. (Avoid plagiarism at all costs, marks will be deducted if the content is plagiarized.) | 3 |
| **Course Connection** | * 1 mark will be awarded for making evident connections to course material. | 1 |