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BLOCK 6

INFORMATION SYSTEMS

ASSESSMENT TASK 1

LEAF VILLAGE DATA MANAGEMENT

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# 1. INTRODUCTION

## 1.1 INFORMATION SYSTEM

In today's rapidly evolving business landscape, the effective management of information has become a critical factor in the success of organizations. Leaf Village Training Ltd, a prominent international training provider in the creative arts, recognizes the need to improve its information management practices. The company has traditionally relied on documents and spreadsheets to store and process data related to staff, students, management, finances, and compliance. However, this approach lacks a structured data organization and hampers the efficient retrieval and analysis of information. (Boell and Cecez-Kecmanovic)

The vast amounts of data within the organization, establish an organized information structure, and provide solutions to various information-related problems. By doing so, Leaf Village aims to enhance its decision-making capabilities, improve operational efficiency, and ultimately deliver a better learning experience to its customers.

## 1.2 TYPES OF INFORMATION SYSTEM

Before delving into the specifics of information system development, it is essential to understand the need for different types of information systems across management levels within the company. Leaf Village encompasses multiple levels of management, each with its distinct information requirements.

At the operational management level, there is a need for a Transaction Processing System (TPS). This system will facilitate the capture, processing, and storage of day-to-day operational transactions such as student registrations, course enrollments, and financial transactions. By automating these processes, the TPS will streamline operations, eliminate manual errors, and ensure data integrity. (Yalova and Yashyna)

For middle management, a Management Information System (MIS) becomes crucial. The MIS will consolidate data from the TPS and other sources to generate regular reports and provide relevant information for decision-making. These reports will encompass course performance metrics, student progress tracking, financial analysis, and other key indicators to support middle managers in their operational and tactical decision-making processes. (Mason and Mitroff)

At the executive management level, Decision Support Systems (DSS) and Executive Support Systems (ESS) are of paramount importance. The DSS will utilize advanced data analysis techniques and modelling tools to assist executives in making strategic decisions. It will provide insights into market trends, course effectiveness, and forecast future demand. On the other hand, the ESS will provide summarized, high-level information in an easily digestible format such as dashboards and key performance indicators. These systems will enable top-level executives to monitor overall company performance, identify areas for improvement, and make informed decisions. (Watson and Walls)

## 1.3 MODEL TYPES TO BE IMPLEMENTED

Given the organizational structure of Leaf Village as an educational training provider, it is imperative to implement specific model types to address its information needs effectively. For this project, the Transaction Processing System (TPS) and the Management Information System (MIS) are the recommended models to be implemented.

The TPS will focus on automating and managing the day-to-day operational transactions of Leaf Village, including student registrations, course enrollments, and financial transactions. By implementing a TPS, Leaf Village will ensure efficient data capture, processing, and storage for its routine operations.

The MIS, on the other hand, will consolidate data from various sources, including the TPS, and provide middle management with timely and relevant reports. These reports will encompass course performance, student progress, financials, and other relevant metrics. By implementing an MIS, Leaf Village will empower its middle managers with the information they need to make informed decisions, improve operational efficiency, and monitor the overall performance of the organization.

# 2. METHODOLOGIES

To effectively plan and develop a formal information system for Leaf Village Training Ltd, the adoption of appropriate methodologies is essential. The chosen methodologies will guide the project through its various stages, ensuring efficient and successful implementation.

## 2.1 SDLC "Software Development Life Cycle"

The Software Development Life Cycle (SDLC) provides a structured framework for managing the entire software development process. It encompasses several phases, including requirements gathering, system design, implementation, testing, deployment, and maintenance. SDLC methodologies help organizations ensure that projects are completed within budget, on time, and meet the desired objectives. (Radack)

## 2.2 Different types of Methodologies

There are several SDLC methodologies available, each with its unique approach to project management, development, and deployment. The choice of methodology depends on various factors, including project size, complexity, requirements volatility, team dynamics, and organizational culture. Some commonly used SDLC methodologies include:

a) Waterfall: The Waterfall methodology follows a linear sequential approach, where each phase of the project is completed before moving to the next. It is characterized by a structured and planned approach, with a focus on gathering detailed requirements upfront. Waterfall is ideal for projects with well-defined and stable requirements. (Balaji and Sundararajan)

b) Agile: Agile methodologies, such as Scrum and Kanban, have gained popularity due to their flexibility and adaptability. Agile approaches emphasize collaboration, iterative development, and customer involvement. Projects are divided into short iterations or sprints, allowing for continuous feedback, frequent releases, and the ability to accommodate changing requirements. (Balaji and Sundararajan)

c) Iterative: Iterative methodologies involve incremental development, where the project is divided into smaller segments or iterations. Each iteration goes through the complete SDLC process, starting with requirements gathering and ending with deployment. Iterative methodologies allow for feedback and refinement at each iteration, facilitating better alignment with stakeholder needs.

## 2.3 MOST SUITABLE SDLC METHODOLOGY: Agile

For the development of Leaf Village's formal information system, the most suitable SDLC methodology is Agile, specifically the Scrum framework. Agile methodologies align well with the company's dynamic and evolving nature, providing the necessary flexibility and adaptability to deliver a successful project.

Leaf Village's transition to a formal information system involves various stakeholders, evolving requirements, and a need for continuous improvement. Agile's iterative and collaborative approach enables close collaboration between the development team, stakeholders, and end-users throughout the project. It allows for the incorporation of feedback and changes, ensuring the final product meets the evolving needs of the organization. (Reifer)

Moreover, the Scrum framework within Agile provides a well-defined structure for project management, with clear roles, ceremonies, and artifacts. It promotes effective communication, transparency, and efficient project tracking. By adopting Scrum, Leaf Village can ensure regular progress updates, timely issue resolution, and successful delivery of the information system.

# 3. REQUIREMENTS ANALYSIS

## 3.1 Current System

The current system at Leaf Village relies on documents and spreadsheets for data storage and processing. However, this approach presents several challenges. Firstly, the lack of a structured data organization leads to data redundancy, inconsistency, and difficulties in retrieving and analyzing information efficiently. Secondly, manual processes increase the chances of errors and delays in data entry, impacting the accuracy and efficiency of day-to-day operations. Additionally, the current system may have limited scalability, meaning it may not be capable of handling the growing volume of data as Leaf Village expands its operations and customer base. Lastly, the lack of a centralized information system makes it challenging to access and retrieve specific data, requiring manual effort and resulting in time-consuming processes. (Demirel and Das)

## 3.2 Information Gathering

To address these challenges and align the new information system with stakeholders' needs, a comprehensive information gathering process is conducted. Various techniques are employed to collect data from stakeholders. Interviews with key stakeholders allow for in-depth understanding of their roles, responsibilities, and information requirements. Surveys can be distributed to gather quantitative and qualitative data, focusing on specific aspects of workflow processes, data requirements, and system preferences. Workshops involving relevant stakeholders encourage collaboration and interactive discussions, facilitating the identification of common themes and priorities.

## 3.3 Analyzing

Once the information has been gathered, it is important to analyze and synthesize the findings to determine stakeholders' needs and align them with the requirements of the new information system. This analysis phase involves categorizing and prioritizing the identified needs, grouping them based on stakeholders' roles and responsibilities. This helps identify common themes and priorities, ensuring that the information system addresses the most critical needs of the organization. Furthermore, the requirements are mapped to the appropriate information system types, considering the hierarchical nature of Leaf Village's organizational structure. This ensures that each management level has access to the relevant information for effective decision-making. Additionally, the analysis phase involves identifying the specific data requirements for the information system, determining the data entities, attributes, relationships, and data flow within the organization.

By conducting a thorough requirements analysis, Leaf Village gains a comprehensive understanding of stakeholders' needs, the limitations of the current system, and the specific data requirements for the new information system. This analysis serves as the foundation for the design and development of an information system that meets the organization's objectives, improves operational efficiency, and enhances decision-making capabilities. (Anton)

# 4. CONCLUSION

The conclusion of the report highlights the importance of developing a formal information system at Leaf Village Training Ltd. The current system's limitations, including lack of structure, manual processes, limited scalability, and inefficient information retrieval, necessitate a new approach. The requirements analysis phase identified the stakeholders' needs and mapped them to the appropriate information system types, specifically the Transaction Processing System (TPS) and Management Information System (MIS).

To guide the development process, the Agile methodology, specifically the Scrum framework, was chosen. Agile's iterative and collaborative approach, coupled with effective project management, will ensure flexibility, adaptability, and timely issue resolution. The successful implementation of the information system will lead to improved operational efficiency, enhanced decision-making capabilities, and a better learning experience for customers.

Overall, the development of the formal information system will position Leaf Village as a leading provider in the creative arts, equipped to handle evolving demands and maintain its competitive edge in the training industry.

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