PROJECT REPORT ON
KIST COLLEGE OF MANAGEMENT

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DECLARATION

We hereby declare that the project work entitled **Strategic integration of information systems for academic and administrative excellence: A comprehensive analysis of kist college of management** submitted to the Faculty of Management, Tribhuvan University, Kathmandu is an original piece of work under the supervision of Mr. Sandesh Bohara, KIST College of Management, Kamalpokhari, Kathmandu is submitted in partial fulfillment of the requirements for the degree of Bachelor of Information Management (BIM). This project work report has not been submitted to any other university or institution for the award of any degree or diploma.

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RECOMMENDATION

The project work report entitled **Strategic integration of information systems for academic and administrative excellence: a comprehensive analysis of Kist College of Management** submitted by Hridaey Raya, Nabin B.K., Nisha Singh and Sujal Lamsal of KIST College of Management, Kamalpokhari, Kathmandu is prepared under my supervision as per the procedure and format requirements laid by the Faculty of Management, Tribhuvan University, as partial fulfillment of the requirements for the degree of Bachelor of Information Management (BIM). I, therefore, recommend the project work report for evaluation.

Signature: ……

Name of Supervisor: Sandesh Bohara

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CERTIFICATE OF APPROVAL

This is to certify that this project entitled **Strategic integration of information systems for academic and administrative excellence: A comprehensive analysis of Kist college of management** is the bonafide work of Hridaey Raya, Nabin B.K., Nisha Singh Thakuri and Sujal Lamsal of BIM 6th Semester conducted under our guidance and supervision as partial fulfillment of the requirement for the degree of Bachelor of Information Management (BIM), KIST College of Management, Tribhuvan University, Kathmandu.

Signature of Internal Examiner

Signature of External Examiner

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BIM, 6th Semester

ABBREVIATIONS

BBA	Bachelor of Business Administration
BBS	Bachelor of Business Studies
BIM	Bachelor of Information Management
BIS	Business Information System
BIT	Bachelor of Information Technology
BOD	Board of Directors
BSc	Bachelor of Science
CEO	Chief Executive Officer
CRM	Customer Relationship Management
DSS	Decision Support System
ECM	Enterprise Content Management
EIS	Executive Information System
ERP	Enterprise Resource Planning
HRMS	Human Resource Management System
IT	Information Technology
KIST	Kathmandu Institute of Science and Technology
LMS	Library Management System
MEEDAS	Modular Interactive Data Acquisition System
MIS	Management Information System
MIT	Master of Information Technology
MSc	Master of Science
SCM	Supply Chain Management
TPS	Transaction Processing System

ABSTRACT

KIST College and SS, established in 1995 and located in Kamalpokhari, Kathmandu, is a leading educational institution in Nepal renowned for its high-quality NEB +2 Science and Management programs. It offers nine distinguished programs, including BBA, BIM, BIT, BBS, BSc Microbiology, MBS, MSc Microbiology, and MIT. The college aims to produce skilled graduates in science and management through dedicated teachers and effective teaching methods, ensuring high academic standards and excellent exam results. KIST College supports students at every level with personal care, academic and career advice, and development of study and life skills. The college's facilities include modern computer labs, a comprehensive library, a cafeteria, separate hostels, and well-equipped laboratories. The campus promotes a student-centered learning environment, enriched with extracurricular activities and events. The college's information system infrastructure includes robust servers, workstations, peripheral devices, storage solutions, and specialized hardware, supported by a diverse software ecosystem such as MEEDAS, Tally, and various administrative and security applications. Network infrastructure, including routers, switches, firewalls, and surveillance systems, ensures reliable and secure connectivity. Comprehensive safety measures, including physical security, data encryption, regular backups, and disaster recovery plans, safeguard the integrity of the college's information resources. KIST's commitment to high-quality education and continuous facility updates has led to the success of many graduates, making it a significant step towards a successful future.

Keywords: Academic Excellence, Student-Centred Learning, Modern Facilities, Comprehensive Security, Successful Graduates

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CHAPTER I: INTRODUCTION

1.1 Introduction of BIS

A BIS refers to a cumulation of people, technology, and processes designed to accumulate, process, store, and distribute information that avails businesses achieve their objectives. BIS provide information that organizations use to manage themselves efficiently and effectively, typically using computer systems and technology. The key components of BIS are:

a. Hardware

b. Software

c. Data

d. Procedures (design, development and documentation)

e. People

Business information is information that holds meaning, value or significance for your business. It would include any reports, spreadsheets, metrics, regulatory reporting, web pages, documents, dashboards etc. that fit the definition of having meaning, value or significance to your business. Business information reports is an important tool to help you make informed business decisions when trying to check on prospective business partners, potential customers and suppliers. This includes factual information like the business's registration details, core operations, key management and shareholding structure. It is to cater to the information needs for decision making decision in business. BIS are a set of interrelated procedures using IT infrastructure in a business enterprise to generate and disseminate desired information. Such systems are made to support decision making by the people attached to business in the process of attainment of its goals. Business Information System is a professional discipline that combines Computer Science, Management, and Business Administration.

According to Paul Beynon-Davies, BIS is 'a system of people, hardware, software, networks, and data that manages information and supports decision-making in organizations.'

According to Foundation of E-Business, Steven Alter defines BIS as 'a set of interrelated components that collect, process, store, and distribute information to support decision-making and control in an organization.'

According to Efraim Turban, Jae K. Pollard, and David C. Wood define BIS as 'a system that integrates information technology with business processes to support decision-making and control within an organization.'

1.1.1 Types of BIS

a.TPS:

It is designed to process routine transactions efficiently such as sales orders, inventory management and payroll processing. It records data from day-to-day business transaction ensuring accuracy, reliability, and timeless in processing.

b. MIS:

MIS provide managers with information and reports to support decision making and strategic planning. Examples includes: sales reports, financial statements, inventory forecasts.

c. DSS:

DSS assists in complex decision-making and problem-solving. For example: Financial Planning Systems, Market Analysis Tools, What-If Analysis Tools. It leverages data analysis techniques such as data mining, forecasting and executive dashboards used by managers at different level.

d. EIS:

EIS provides top executives with a consolidated view of critical business information. For example: Dashboard Systems, KPI Tracking Systems, Strategic Performance Measurement Systems.

e. CRM Systems:

It manages interactions and relationships with customers. For Example: Salesforce, HubSpot, Zoho CRM.

f. ERP Systems

Integrate core business processes into a unified system. For example: SAP ERP, Oracle ERP, Microsoft Dynamics. Its purpose is to streamline and automate processes across various departments such as finance, HR, manufacturing, and supply chain.

g. SCM Systems

It oversees and manage the flow of goods and services from suppliers to customers. For example: SAP SCM, Oracle SCM Cloud, Kinaxis Rapid Response.

h. BI Systems

It analyzes and visualize data to support business decision-making. Examples: Tableau, Power BI, QlikView. Its purpose is to provide insights through data visualization, reporting, and analysis.

i. HRMS

Its function is to manage HR functions and employee-related data. Examples: Workday, ADP Workforce Now, BambooHR. It helps to handle recruitment, payroll, performance evaluations, and employee records.

j. ECM Systems:

ECM manages and store an organization's documents and content. Examples: SharePoint, Documentum, OpenText. Its purpose is to organize, secure, and facilitate access to enterprise documents and records. Each type of BIS is tailored to specific needs within an organization, and they often work together to provide comprehensive support for various business functions.

1.1.2 Functions of BIS

1. Data Collection and Input: Capture and record data from various sources, including transactions, customer interactions, and operational processes.

2. Data Storage: Store data in databases or data warehouses in an organized and secure manner.

3. Data Management: Ensure data is accurate, up-to-date, and well-organized. Includes data validation, cleansing, and maintenance.

4. Information Processing: Transform raw data into meaningful information through processes like sorting, filtering, and aggregation.

5. Decision Support: Provide analytical tools and models to aid in decision-making and problem-solving. Examples: Decision Support Systems (DSS) with what-if analysis, scenario planning tools, and predictive analytics.

6. Communication and Collaboration: Facilitate internal and external communication and collaboration among team members and stakeholders.

7. Reporting and Analysis: Generate reports and perform data analysis to monitor performance, track metrics, and gain insights.

8. Customer Relationship Management: Manage interactions with customers to enhance relationships, improve service, and drive sales.

1.2 Introduction of Organization

Kist College and SS was established in 1995, it has become a leading institution in Nepal, renowned for its high-quality NEB +2 Science and Management programs. It offers a wide range of distinguished Bachelor's degrees—BBA, BIM, BIT, BBS, and BSc Microbiology—as well as exceptional Masters programs in MBS, MSc Microbiology, and MIT. It is located at Kamalpokhari, Kathmandu. It is a reputed educational institution for over the two decades (30+ years). 9 programs are offered by KIST. KIST aims to produce skilled graduates in both science and management. The college is famous for its high-quality education, which is widely recognized by educators, students, and families. This reputation comes from its dedicated teachers and effective teaching methods. KIST also believes that admitting the right students is crucial for maintaining high academic standards, leading to excellent results in important exams.

KIST College is great at helping students at every level—whether they're in +2, Bachelors, or Masters programs. They support students by offering personal care, academic and career advice, and by developing both their study and life skills. KIST is very effective at motivating students to achieve their educational and career goals. KIST College has everything students need to succeed. It has computer labs, a modern library, a cafeteria, and more. The college is focused on making sure students are at the center of their learning and care. Besides academics, it also offers lots of extracurricular activities and events. KIST, the Kathmandu Institute of Science and Technology, provides strong academic support to ensure students excel throughout their careers. The school is dedicated to high-quality education and continually updates its facilities to maintain this standard. KISTs goal is to educate and prepare students for their futures, and many graduates look back on their time at KIST as a memorable and valuable experience. They believe that choosing KIST is a significant step towards a successful future. KIST is passionate about improving education in Nepal, and this commitment has led to many graduates achieving great success. The institute offers various student councils that help students develop important skills like leadership, teamwork, and time management. KIST also enforces a dress code

to promote equality and a sense of belonging. With both morning and day shifts available, students can attend classes at times that fit their schedules.

KIST offers a great academic environment with a student-focused approach. The campus is well equipped with excellent facilities, including a cafeteria, separate hostels for boys and girls, and convenient transport options nearby. The college features a modern library and an e-library to support learning, along with top-notch laboratories. The campus is designed with safety and student development in mind. Located downtown next to the peaceful Kamalpokhari pond, the college provides a calm and positive atmosphere. It has ample space for both indoor and outdoor activities, and students have plenty of opportunities for extracurricular events, making for a fulfilling campus life. In a societal sense, our learning environment caters to the culture of the population it serves and of their location, and we take care to identify our audience. As far as this cultural context goes, we are a multicultural community of students and education related personnel. Our students come from many different cultures, and even countries. This inclusiveness reflects our global spirit & humanistic commitment. We see to it that no student feels uncomfortable or unwanted here with us and that each one of them is treated with dignity, appropriateness, and decorum. Ladies and gentlemen study together in a community of the best-behaved youngsters our country offers. This is what we do; this is what we are. Once you're at KIST you'd soon realize that its educational approach is exceptional. We provide a 21st century learning environment – learner-centered backed by modern digital technology that is largely internet-based. It's the foundation for holistic individual development. Our learning culture takes into account how students would prefer to interact and how teachers ought to facilitate learning. Positive discipline & pastoral care in an atmosphere of decency enriches the academic milieu that encourages active learning. Our facilities include well-lit, ventilated classrooms and modern laboratories, along with a library that's both physical and digital, supporting virtual learning. We also have sports courts and open areas for academics and extracurricular activities. Our spaces are organized to help students develop essential 21st-century skills and succeed in their studies.

1.3 Objective of the study

1.3.1 General Objective:

- To assess and analyse the effectiveness and efficiency of the information systems used at KIST College in supporting its administrative and academic functions.

1.3.2 Specific Objectives:

1. To evaluate the performance and functionality of the hardware and software components used in the college's information systems.
2. To examine the adequacy and security of the network infrastructure supporting the college's information systems.
3. To identify areas for improvement and provide recommendations to enhance the effectiveness of the information systems at KIST College.

1.4 Methodology

1.4.1 Research Design

This study employed a qualitative research design to explore and analyze the information systems used at KIST College. The research was conducted through interviews, self-observation, and analysis of relevant websites and documents.

1.4.2 Data Collection Methods

a. Interviews

Participants: Interviews were conducted with key personnel at KIST College, including the receptionist, fee department staff, coordinator, and librarian.

Interview Structure: Semi-structured interviews were used to allow for in-depth responses while maintaining focus on specific topics. Questions were designed to cover various aspects of the information systems, including hardware, software, network devices, safety measures, and organizational structure.

Process: Interviews were conducted in person and recorded for accuracy. Notes were taken to capture key points and observations.

b. Self-Observation

Observation Focus: Self-observation was used to understand the practical application and daily use of the information systems within the college environment.

Process: The researcher observed the use of systems such as the library management system (LMS), MEEDAS, Tally software, and the handling of call and visitor information at the reception. Observations included how staff interact with these systems, the efficiency of the systems, and any challenges faced.

c. Website and Document Analysis

Sources: Relevant information was gathered from the college's official website and other related online resources.

Process: Documents and web pages were analyzed to supplement the data obtained from interviews and observations. This included reviewing the college's IT policies, system descriptions, and other publicly available resources.

1.4.3. Data Analysis

Qualitative Analysis: Data from interviews, observations, and document analysis were coded and categorized to identify common themes and patterns. This involved transcribing interview recordings, organizing observation notes, and systematically reviewing documents.

Thematic Analysis: Themes related to the effectiveness, efficiency, and security of the information systems were identified. Comparisons were made across different data sources to ensure the reliability and validity of the findings.

1.4.4. Ethical Considerations

Informed consent was obtained from all interview participants. Participants were assured of confidentiality and the right to withdraw from the study at any time.

1.4.5 Limitations

1. The study was limited to KIST College and may not be generalizable to other institutions.
2. Self-observation might be subject to personal bias. Efforts were made to mitigate this through triangulation with interview and document analysis data.
3. The accuracy of the interview responses depended on the participants' willingness to share information and their understanding of the systems.

CHAPTER II: ORGANIZATIONAL STRUCTURE

An organizational structure is a system that outlines how certain activities are directed to achieve the goals of an organization. These activities can include rules, roles, and responsibilities. Businesses of all shapes and sizes heavily use organizational structures. They define a specific hierarchy within an organization. A successful organizational structure defines each employee's job and how it fits within the overall system. The organizational structure lays out who does what so the company can meet its objectives. Organizational structures are normally illustrated in some sort of chart or diagram like a pyramid where the most powerful members of the organization sit at the top and those with the least amount of power are at the bottom. Not having a formal structure in place can prove difficult for certain organizations. Employees may have difficulty knowing to whom they should report. That can lead to uncertainty as to who is responsible for what in the organization. Therefore, every organization must have certain organizational structure that defines authority, roles and responsibilities.

In similar way, Kist College and SS also have an organizational structure that defines the authority, roles and responsibilities of people working here. It has adopted hierarchical organizational structure which includes Top management consisting of BOD, CEO, Executive Director and Principal who are responsible for overseeing strategic decisions and policies. Under top management, people like; Academic dean, administrative director, Finance and Accounts director exist. Likewise, Administrative director oversee Registrar and HR department. Where, HR department is further divided into Library, IT services and Student Affairs. Finally, under Student Affairs section various department like Department of management, Department of IT, Department of Plus2, Department of microbiology exist where, different department consist of different heads called HOD. Under these department various teaching staffs, assisting staff, cleaning staff works. The organizational structure of Kist college can be further observed through the help of figure shown below:

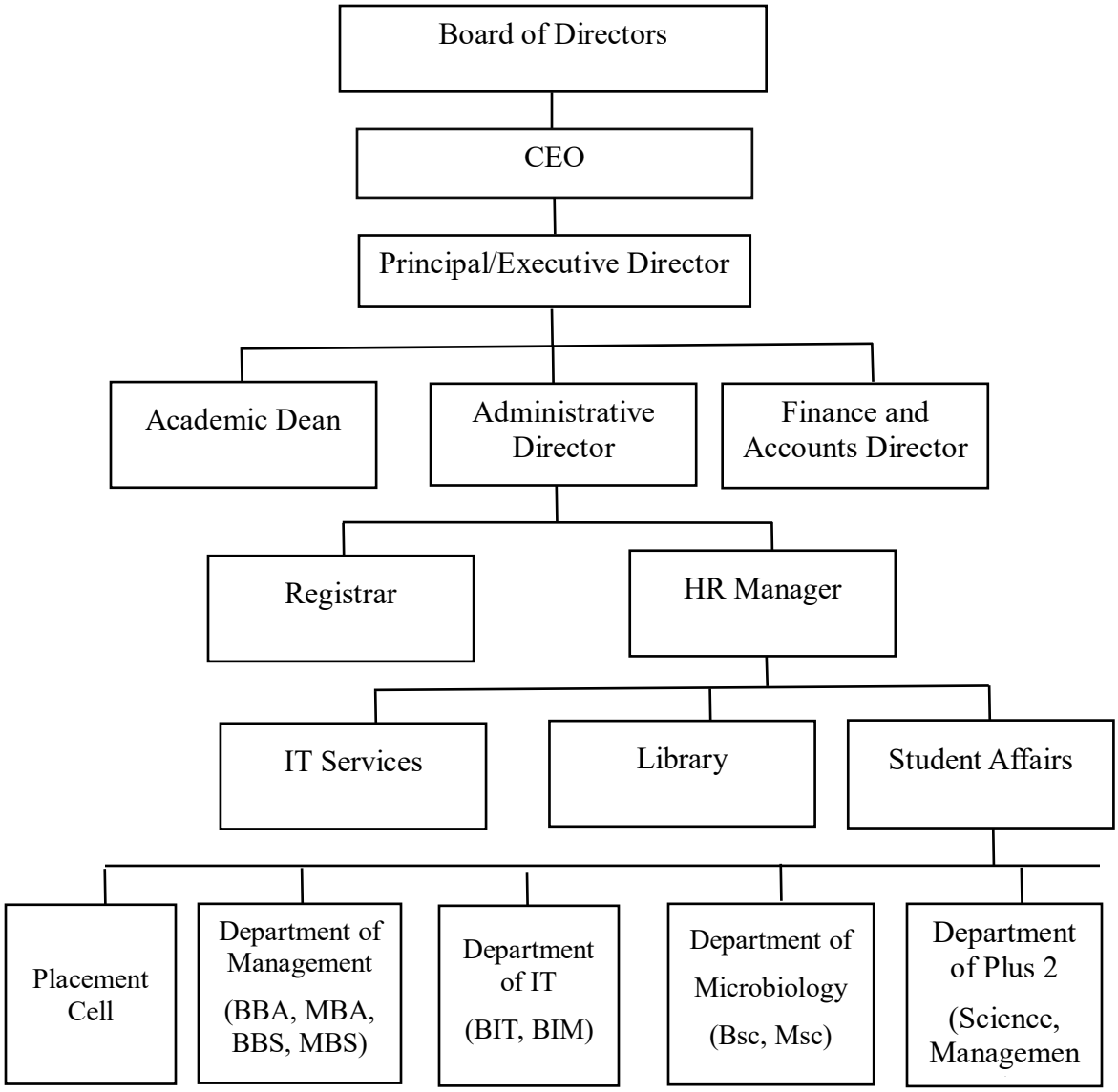

Figure 1: Organizational Structure

CHAPTER III: SWOT ANALYSIS

An organization's strengths, weaknesses, opportunities, and threats are assessed using the SWOT analysis method, which is typically applied in strategic planning. In order to accomplish an organization's goals, SWOT analysis entails determining both internal and external elements that are favourable and unfavourable.

3.1 Strengths (S)

Strengths are the internal characteristics and value which facilitate the achievement of a positive result. Strengths are those activities that an organization does well so that it is in a position to perform better than the competitors. They always give a competitive edge and are essential components for the actualization of business goals.

The following are some key strengths of information systems:

1. **Increased Efficiency and Productivity:**

Information systems enhance the operations of an organization by reducing the rate of repetitive and time-consuming tasks.

Example: Management Information Systems coordinate activities by joining numerous functions in a single platform, thus eradicating duplicated work.

2. **Enhanced Decision-Making:**

They give reliable information since they are updated, which helps in enhancing sound decision-making practices.

Example: Decision Support System (DSS) is a model of information processing that involves an analysis of the data and decision-making suggestions.

3. **Improved Communication:**

Information systems improve internal and external communication through email, Messenger, and Skype.

Example: Microsoft team and Slack are among the platforms that create a virtual environment that supports team work and online communication.

4. **Data Management and Storage:**

They provide efficient qualitative data storage and retrieval systems that guarantee the quality of data stored.

Example: DBMS such as Oracle, MySQL handle and store huge amount of data with more effectiveness.

5. **Customer Relationship Management (CRM):**

IS assist in protecting customer relationships since the interactions and feedback on the set customer relationships are recorded.

Example: CRM systems such as sales force reduce customer services and enhance retention.

3.2 Weakness (W)

Weaknesses are the internal factors that may somehow act as constraints to the achievement of the goals of that particular organization. The weaknesses are the rather the points of vulnerability where the organization is ordinarily deficient or where it is inferior to other forces in the market. It is equally important to look at areas of weakness in order to create an understanding of how the performance and hence competitiveness can be enhanced.

The following are some key weaknesses of information systems:

1. **High Implementation and Maintenance Costs:**

Acquiring first a vast amount for its installation, as an information system and sustaining regular costs for its enhancement is capital intensive.

Example: actual, the implementation of an ERP system entails a high degree of investment in the software and hardware as well as training of employees.

2. **Complexity:**

The systems require specific knowledge and skills for their development, implementation, as well as utilization.

Example: All the functionalities of the advanced BI tools presuppose that the user possesses strong methodological knowledge of data analysis and interpretation.

3. **Security Vulnerabilities:**

Anything that can go wrong with computer systems is likely to result in serious consequences including vulnerability to cyber-attacks, data breaches and numerous other forms of security threats that may result in either loss of data or money.

Example: Ransomware attacks become frequent; this means that there are weaknesses in information systems.

4. **Dependence on Technology:**

The down side of over dependence in Information systems makes organizations more prone to system breakdowns.

Example: When there is a problem with the network connection for instance, a power surge or other tests that can make a computer system shut down, business operation grinds to a halt and this can cost the business a lot of money.

5. **Privacy Issues:**

Managing and storing big data introduce privacy issues and have to meet certain standards or requirements.

Example: Several legal requirements with relevant standards are in place, such as the GDPR, which, especially when it comes to compliance, can be costly and difficult to follow.

3.3 Opportunities (O)

Opportunities are hence influences that the enterprise can exploit to its benefit outside the fundamental operating environment. They originate from features of the market environment, a given industry, or any other factor that holds the potential of growth in an organization. Learning can be a way of recognizing opportunities for exploiting and thus, enhancing the organizational development.

The following are some key opportunities for information systems:

1. **Improved Efficiency and Productivity:**

Information systems can automate processes that would otherwise require a lot of human input in order to basically eliminate them as much as possible.

Example: Routine activities can be automated which are evident from the ERP (Enterprise Resource Planning) systems.

2. **Better Decision-Making:**

Information systems assist in the provision of real-time information and business intelligence which are useful in decision making.

Example: BI systems assist managers in decision-making and planning for the future strategies of a company.

3. **Enhanced Communication and Collaboration:**

Expression is improved within the organization through use of e-mail, chat, instant messaging as well as video conferencing among others.

Example: New-school collaboration tools like Slack and Microsoft Teams enhance the efficiency of the teamwork and project.

4. **Competitive Advantage:**

When information systems are effectively implemented, an organization is placed in a strategic position over competitor that cuts costs while enhancing efficiency.

Example: Organizations, which have implemented the Customer Relationship Management (CRM) systems have an advantage of providing enhanced good and services to customers and balancing their loyalty.

5. **Global Reach:**

Information systems strengthen the operations of organizations and have no bounds with the geographical location of an enterprise.

Example: With the help of e-commerce platforms, companies can sell their products to the consumers from other countries.

3.4 Threats (T)

Threats are outside factors which can actually be a thorn in the flesh to the success of the organization. Market threats are those that affect the market for a product, while micro threats affect an organization in a specific market. Threat identification and assessment is vital to an organization's strategic and tactical management of risks.

The following are some key threats to information systems:

1. **Security Risks:**

Information systems as critical business assets are always under a great risk of being exposed to cyber-attacks, data breaches, and similar threats.

Example: The proliferation of ransomware is an example of risk involved in information system.

2. **Cost of Implementation and Maintenance:**

Organizational costs which include the cost of developing an information system including the constant cost of upgrading the information system tends to be high.

Example: The main challenge of general business ERP is that the introduction can be costly and means constant further investments for the systems updates.

3. **Rapid Technological Changes:**

It is difficult and expensive to maintain the pace with advancing technology as it is characteristic of today's organizations.

Example: In particular, there are daily updates for the software as well as the need to update the hardware often, which puts pressure on an organization.

4. **Dependence on Technology:**

This aspect confirms how dependence on information systems can lead to various problems such as system collapses.

Example: From the use of the IS, it can be realized that a failure may slow down operations or fully bring operations to a standstill hence resulting to heavy losses.

5. **Privacy Concerns:**

Managing big data results in having numerous cases of a privacy breach and the requirement to abide by regulations.

Example: Businesses have to follow such regulations such as the GDPR that can sometimes be very expensive to work with.

CHAPTER IV: INFORMATION SYSTEM USED IN ORGANIZATION

4.1 Hardware

KIST College employs a range of hardware to support its educational and administrative functions. The hardware infrastructure includes:

Servers: The college uses robust servers running Linux-based operating. These servers handle web hosting, databases, and other critical applications.

Workstations and Laptops: Faculty and administrative staff use workstations primarily running Windows 10 and Windows 11.

Peripheral Devices: The college utilizes printers, scanners, projectors, and other peripherals to support daily operations. These devices are distributed across various departments and labs.

Storage Devices: External hard drives, Network Attached Storage (NAS), and cloud storage solutions are used for data storage and backup.

Other Hardware: The college also employs specialized hardware such as lab equipment, interactive whiteboards, and other educational tools to enhance the learning experience.

4.2 Software

The software ecosystem at KIST College is diverse, catering to both educational and administrative needs. Key software applications include:

Operating Systems: Servers run Linux-based OS for stability and security. Workstations use Windows 10/11.

Educational Software:

Moodle: An open-source learning management system (LMS) for creating online courses, managing enrollments, and tracking academic performance.

MATLAB: Used for numerical computing in engineering and science programs.

Administrative Software:

Laravel: PHP framework for custom web applications, including student portals and dashboards.

Museus: Manages student records, enrollment, and academic progress.

Microsoft SQL Server: Manages administrative data such as student information and financial records.

MEDAS and Tally: Used by the fee department for financial management, ensuring accurate fee collection, accounting, and reporting.

Library Management Software: The library uses a comprehensive Library Management System (LMS) for cataloging, managing circulation, and providing access to digital resources.

Visitor Management System: Visitor information, call handling, messaging, and emails are managed and secured using Microsoft Excel. This ensures that visitor data is recorded and accessible when needed.

Communication Systems:

- **Email Systems**: Microsoft Outlook is used for managing internal and external communications via email.
- **Call Handling Systems**: The college employs a system of extension numbers for efficient call transfer within departments. For example, extension 106 connects to the exam department, and extension 205 connects to the fee department.

Security Software:

Nagios: Monitors network infrastructure and detects potential issues.

Firewall Solutions: firewall protects the network from unauthorized access and cyber threats.

Multi-Vendor Security: Ensures comprehensive protection against data breaches and security threats.

Antivirus Software: Regularly updated to protect against malware and viruses.

Other Software:

Microsoft Office 365: Provides productivity tools for word processing, spreadsheets, and presentations.

MySQL: Used for various web applications and data storage.

4.3 Network Devices

The network infrastructure at KIST College is designed to ensure reliable, efficient, and secure connectivity for all users. This infrastructure includes various network devices that

work together to manage traffic, provide wireless access, protect against security threats, and enhance overall network performance.

4.3.1 Routers and Switches

Routers and switches are the backbone of the college's network, responsible for managing and routing network traffic efficiently:

- **Routers**: Routers connect different networks within the college and manage the flow of data between them. They direct incoming and outgoing traffic on the most efficient paths and are crucial for maintaining network performance and reliability.
- **Switches**: Switches connect devices within a local area network (LAN) and facilitate communication between them. By using switches, the college ensures that data packets are delivered to the correct devices quickly and efficiently. Managed switches allow for better control and management of network traffic.

4.3.2 Firewalls

Firewalls are critical for network security, providing a barrier between the college's internal network and external threats:

Firewall: The college uses firewall solutions to monitor and control incoming and outgoing network traffic based on predetermined security rules. The firewall helps prevent unauthorized access, cyber-attacks, and other security threats.

Configuration and Management: The IT department configures and manages the firewall settings to ensure that the network remains secure while allowing legitimate traffic to pass through. Regular updates and maintenance are performed to keep the firewall effective against emerging threats.

Similarly, Structured cabling infrastructure connects various devices and ensures reliable data transmission. Load balancers, VPN devices, and network monitoring tools enhance network performance and security.

4.4 Safety Measures

KIST College implements several comprehensive safety measures to protect its information system. These measures encompass physical security, data security, network security, user training, and incident response strategies to ensure the integrity, availability, and confidentiality of its information resources.

4.4.1 Physical Security

Physical security measures are designed to protect the hardware and infrastructure of the college's information system:

Surveillance Cameras: The college has installed surveillance cameras in key areas, such as server rooms, computer labs, and entry points, to monitor and record activities. This helps in deterring unauthorized access and provides a record for investigating any security breaches.

Secure Server Rooms: Server rooms are secured with physical locks and access controls to prevent unauthorized entry. Only authorized personnel are allowed access, ensuring that the servers and networking equipment are protected from physical tampering or theft.

Restricted Access: Sensitive areas such as data centers, administrative offices, and labs are accessible only to authorized staff.

4.4.2 Data Security

Data security measures ensure the protection of data from unauthorized access, corruption, or loss:

Data Encryption: Sensitive data is encrypted both at rest and in transit. This ensures that even if data is intercepted or accessed without authorization, it remains unreadable without the appropriate decryption key.

Regular Backups: The college performs regular backups of critical data. These backups are stored securely and are tested periodically to ensure they can be restored in the event of data loss or corruption.

Disaster Recovery Plans: Comprehensive disaster recovery plans are in place to ensure that the college can quickly recover from major disruptions. These plans include procedures for data recovery, alternative communication methods, and roles and responsibilities during a disaster.

4.4.2 Network Security

Network security measures protect the college's network infrastructure from internal and external threats:

Firewalls: The college uses advanced firewall systems to control incoming and outgoing network traffic based on predetermined security rules. Firewalls help prevent unauthorized access and protect against cyber threats.

Intrusion Detection Systems (IDS): IDS monitor network traffic for suspicious activity and potential threats. When a potential threat is detected, the system alerts the IT staff for further investigation and action.

Secure Access Protocols: Secure access protocols, such as VPNs (Virtual Private Networks) and encrypted communication channels, are used to ensure that remote access to the network is secure. This is especially important for protecting sensitive information accessed by staff working remotely.

4.4.3 User Training and Policies

User training and policies are essential to ensure that staff and students understand and follow best practices for information security:

Training Programs: Regular training sessions are conducted for staff and students on topics such as password security, phishing attacks, and safe internet usage. This helps raise awareness about potential security threats and how to avoid them.

Access Controls: Policies are in place to enforce access controls. For example, installing new software in college computer labs requires authorization from the IT department. This prevents unauthorized or potentially harmful software from being installed on college computers.

Usage Policies: Clear usage policies are established for using college IT resources. These policies outline acceptable use, responsibilities, and consequences for violations, ensuring that all users are aware of their roles in maintaining information security.

4.4.4 Incident Response

Incident response measures are designed to quickly address and mitigate the impact of security incidents:

System Monitoring: The college employs tools like Nagios to continuously monitor the network infrastructure for performance issues, system breakdowns, and security threats. This proactive monitoring helps identify and address problems before they escalate.

Multi-Vendor Security Tools: A combination of security tools from different vendors is used to provide comprehensive protection. This multi-layered approach ensures that if one security measure fails, others are in place to maintain protection.

Regular Updates: All security software, including antivirus programs, firewalls, and IDS, are regularly updated to protect against the latest threats. This ensures that the college's information system is resilient against evolving cyber threats.

Incident Response Plans: Detailed incident response plans are in place to handle system breakdowns, service downtimes, and network lagging issues. These plans outline the steps to be taken, roles and responsibilities, and communication protocols to ensure a swift and effective response.

In a nut shell, KIST College employs a comprehensive and multi-faceted approach to safeguard its information system. Through robust physical security measures, data security techniques, network security protocols, user training and policies, and well-defined incident response strategies, the college ensures the security and reliability of its information infrastructure. These measures collectively contribute to a secure and efficient educational environment.

CHAPTER V: SOCIAL AND ETHICAL ISSUES

Being a reputed educational institution, Kist College and SS faces various social and ethical issues that impact its operations and reputation. This educational institution has been supporting society by conducting campaign like; cleaning programme of kamalpokhari, Blood donation programme, pad donation for girls living in rural areas, Donation of study materials and money for underprivileged people, Scholarship programme as per Kota system and so on. Although it has been conducting various campaign it is still facing some social and ethical issues which has impact its reputation and operations. Some of the social and ethical issues are:

5.1 Social issues

- **Equity and Inclusion:**

  Being an educational institution, providing an access to quality education to students from diverse backgrounds, including marginalized communities is crucial. College is obliged to provide scholarship facilities and financial aids to support economically disadvantaged students. Although, college is providing scholarship to four people who had studied from government school and college, it is still not sufficient in the case where the number exceeds more than four.

- **Community Engagement:**

  Likewise, college has also been encouraging students to engage in local development initiatives, promoting social responsibilities, and contributing to community welfare.

- **Diversity and Inclusion:**

  The institution fosters an inclusive environment through strict anti-discrimination policies, ensuring that all students and staff have equal opportunities.

5.2 Ethical issues

- **Academic Integrity:**

  Upholding honesty and fairness is crucial. College is maintaining academic integrity by regulating strict policies against academic misconduct and a focusing on ethical research practices.

- **Transparency and Accountability:**

The institution emphasizes operational transparency and financial accountability, ensuring responsible management and clear communication.

- **Environment Sustainability:**

  KIST promotes sustainable practices on campus and integrates environmental education into the curriculum to encourage responsible behavior.

Addressing these social and ethical issues is central to the mission of KIST college and SS. By focusing on equity, integrity, and sustainability, the institution can create positive and ethical educational environment that benefits all.

CHAPTER VI: CONCLUSION AND RECOMMENDATION

6.1 Conclusion

In conclusion, KIST College has implemented a robust and comprehensive information system infrastructure to support its educational and administrative functions. The organizational structure clearly defines roles, responsibilities, and authority, ensuring smooth operation and goal achievement. Through a SWOT analysis, the strengths, weaknesses, opportunities, and threats of the college's information systems have been identified, providing insights into areas of excellence and those requiring improvement. The use of diverse hardware, software, network devices, and safety measures demonstrates the college's commitment to providing a secure, efficient, and productive environment for students and staff. KIST College's multi-layered security approach, encompassing physical, data, network, and user-focused measures, ensures the integrity, availability, and confidentiality of its information resources, thus fostering a safe and effective educational setting.

6.2 Recommendations

1. Regular Training and Awareness Programs: Enhance the current training programs for staff and students on information security practices. Frequent updates and workshops on topics such as phishing, password management, and safe internet usage can further bolster the institution's security posture.

2. Advanced Data Analytics: Invest in advanced data analytics and business intelligence tools to improve decision-making processes. Utilizing these tools can help in identifying trends, predicting future needs, and making more informed strategic decisions.

3. Upgraded Hardware and Software: Regularly assess and upgrade the hardware and software infrastructure to keep pace with technological advancements. This includes updating to the latest versions of software applications and ensuring hardware components are efficient and capable of handling increased workloads.

4. **Enhanced Network Security**: Implement additional network security measures such as intrusion prevention systems (IPS) and regular penetration testing to identify and mitigate vulnerabilities. Strengthening the existing firewall and IDS protocols will further protect against evolving cyber threats.

5. Disaster Recovery and Continuity Planning: Regularly update and test disaster recovery plans to ensure quick recovery from potential disruptions. Developing comprehensive business continuity plans will help maintain operations during unforeseen events and minimize downtime.

6. Feedback Mechanisms: Establish regular feedback mechanisms from users (students, faculty, and staff) to identify areas for improvement in the information system. This can include surveys, suggestion boxes, and regular meetings to discuss IT-related issues and potential enhancements.

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APPENDICES

Appendix 1

Questions for the Coordinator:

1. What is the organizational structure of KIST College?
2. How does the information system support the college's organizational structure?
3. What are the strengths and weaknesses of the information system?
4. What opportunities and threats does the information system face?
5. What social and ethical issues of the organization?

Questions for the IT Department:

1. What types of hardware are used in the college's information system?
2. How is hardware compatibility and maintenance managed?
3. What software applications are used across the college?
4. How are software updates and patches managed?
5. What network devices are used?
6. How is the network infrastructure managed and monitored?
7. What measures are in place to protect data and ensure privacy?
8. How are data breaches or security threats handled?

Questions for the Librarian:

1. What library management system (LMS) is used?
2. How does LMS manage books and digital resources?

Questions for the Receptionist:

1. What system is used to manage visitor information?
2. How is visitor data secured?
3. What systems are used for internal and external communication?
4. How are phone calls and emails managed?

Questions for the Fee Department:

1. What system is used for fee management?
2. How are student fees recorded and managed?

3. What payment methods are supported?
4. How is the security of the payment process ensured?