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Introduction

This report provides a source for an in-depth study using Soft System Methodologies (SSM) on Attendance Management Systems (AMS). Efficient attendance management in the modern organization is essential to smooth operations. This report attempts to explore the various aspects of AMS, highlighting the importance of taking a soft system approach to gain insights into important human issues like student attendance tracking. We have looked at all aspects of the AMS, from defining its mission and scope to identifying key stakeholders and examining system dynamics in order to give readers a complete picture. Using Soft System Methodologies means that the picture is not looked at in isolation with due consideration of all technological factors.

Task 1: Attendance Management Systems

Attendance management systems are administrative processes that involve much manual work compared to other means but also waste money. Moreover, since student attendance is entered into computer systems manually, there will naturally be some distortion and loss (Shoewu and Idowu, 2012). The restored system will be an advanced attendance management system (A.M.S.), able to record and report on student attention and allow for monitoring by various stakeholders. A.M.S. will develop an advanced, automated digital platform integrated with the latest technologies. This includes real-time updating of attendance, 360-degree feedback removing information asymmetry, dynamic analysis, and integration into Student Record Systems (S.R.S.) (Francozo et al., 2022). Timetable frameworks and complying with U.K.V.I. reporting requirements within one system possess multiple attributes, including automation-based precision. The system will record this when students scan their student identity cards onto the attendance card readers outside the classrooms. After the student details in the system are checked, the portal will be updated immediately (Singh, 2019).

Objectives

It is set up to help attain several objectives for effective attendance control in the university field. Digital entry points will accurately and in real-time record attendance data to accurately reflect student attendance using a person's entry as the basis (Shoewu and Idowu, 2012). Besides, the system seeks to make things more transparent by producing clear and accurate attendance records through a comprehensive reporting capability. This mechanism is suitable for different

kinds of users, including the university itself and organizations such as U.K.V.I. (Sivakumar et al., 2021). The system is designed to integrate fully with the student reporting system, providing flawless overall coordination. The interface is user-friendly. It makes accessing, navigating, and interpreting attendance data easy for various stakeholders. Such accessibility is essential for well-informed decisions in planning, resource allocation, timetabling, and strategy matters. The system puts a premium on data security and privacy to protect sensitive attendance information. In addition, the system provides functions to detect students with attendance difficulties and calm concerns about academic advances or compliance with requirements (Mohamed, 2017).

Task 2: System Inside and Outside the Boundary

Everything related to attendance management is within the system boundary of A.M.S. It's a line of demarcation, dividing the internal elements in the system from all those outside that interact with or affect attendance management.

Inside the Boundary

Rahim et al. (2017) stated that the boundary boundaries of the Attendance Management System (A.M.S.) are carefully designed to ensure effective attendance control. The physical infrastructure includes attendance card readers at the entrance of various classrooms, which gather real-time information when students swipe their unique student I.D.I.D. cards. The Digital Platform forms the system's core, integrating attendance data management. It has functions such as automatic integration with the Student Record System (S.R.S.). Its friendly interface increases access so that various stakeholders can interact effortlessly. Many advanced functions are built in, including attendance monitoring and reporting. It is a complete system solution. Total coverage Security measures protect sensitive data, while the ability to identify students with serious attendance problems or those facing difficulties getting into school produces a comprehensive experience for student welfare management (Singh, 2019).

Outside the Boundary

According to Bayoumi et al. (2015), outside the system boundary of the Attendance Management System (A.M.S.), people are involved in shaping and influencing attendance management. University personnel, such as instructors and administrative staff who are in contact with the system as users, monitor attendance and use reports generated by the system. The most

direct beneficiaries are students. They scan their identity cards and impact the accuracy of attendance records themselves. The U.K.U.K. Visa and Immigration (U.K.V.I.) provides the legislation for attendance. A.M.S. is responsible for ensuring that the reporting requirements of the U.K.V.I. are met. Reports generated by the system can be delivered to external organizations, such as accrediting bodies or auditors. They will also add a new reference for broader educational landscape awareness.

Task 3: C.A.T.W.O.E. and Root Definition

The individual elements are called C.A.T.W.O.E. The name represents customers, actors, transformation, worldview, and owner.

Customer

Aarabi et al. (2020) state that A.M.S. customers are university administrators, instructors, and regulatory bodies such as U.K.U.K. Visa and Immigration (U.K.V.I.). Their shared interest involves the system's ability to produce dependable attendance records, ensure compliance with regulations, and make monitoring processes more efficient. This promotes effective management, upgrading of instructors 'abilities, and consistency in the standard for monitoring immigration and attendance.

Transformation

The change in the Attendance Management System (A.M.S.) means a move from manual attendance recording to an automated, instantaneous online system. This includes essential processes such as scanning student I.D.I.D. cards, having updated attendance records in real-time, integrated linkage with the Student Record System, and quick generation of complete reports (Mohamed, 2017).

Worldview

Sivakumar et al. (2021) stated that A.M.I.S.'s unique global and diversified worldview sees the importance of being by international regulations and noting that accurate attendance data is such a factor. Its core values include being open and transparent in its processes, striving to make them as efficient as possible, and sticking rigidly to standards established by regulators so that it is a system conforming to global educational principles.

Owner

The owner of the Attendance Management System (A.M.S.) is either the university administration or other entity responsible for running it. Their main concerns are How to make the A.M.S. work correctly, how robust its data security will be, and what aspects of this system can provide ideal support for meeting diverse attendance management needs at N.C.C.U. (Francozo et al., 2022).

Environment

According to Rahim et al. (2017), the environment for the Attendance Management System (A.M.S.) includes all levels of education, from universities down to student organizations and external groups. Several significant constraints still exist in this highly mobile environment: compliance with the various regulations by U.K.U.K. Visa and Immigration (U.K.V.I.), observance of data protection laws, and difficulties in overcoming differences between students from different countries.

Root Definition using the C.A.T.W.O.E. variables

The Attendance Management System (A.M.S.) is a digital platform shared and served by the administration of the university (Owner), through which manual attendance tracking processes can be transformed into an automated, real-time system (Transformation). As the principal actor, A.M.S. collects attendance information by scanning student identity cards when interacting with students and university staff (Actors) (Bayoumi et al., 2015). A global worldview, the system designed to provide transparent and efficient attendance management in response to the needs of stakeholders (Worldview), can be customized for all kinds of users. In a changing educational environment, it meets the compliance required by U.K.V.I. regulations and data protection standards (Environment) Aarabi et al. (2020).

Task 4: Identification of Stakeholders and Understanding Their Perspective

Identification of Stakeholders

The stakeholders involved in the Attendance Management System (AMS) are numerous, with separate points of view and expectations. At the end of institutional management, university administrators look for simple processes and accurate reporting in attendance figures they can feed

directly into decision-making about how resources are to be allocated. Instructors hope for a user-friendly system to improve their teaching capabilities (Good, 2003). Regulatory bodies such as UK Visa and Immigration (UKVI) need data to be appropriately collected, real-time information for evaluating visas, accurate reporting, etc. Transparency and accuracy in attendance data are sought by external organizations, such as accreditors and auditors, who base their decisions to award or not on participation. IT and system administrators emphasize successful implementation as well as security of data collection and ongoing efficacy in operation run by all departments to provide reliable, professional care over time to stakeholders with different needs. These perspectives need to be recognized and thoroughly understood, for only then will it become possible to design an AMS capable of meeting the expectations and needs of all educational stakeholders (Chu et al., 2019).

Stakeholders' Perspective

Carey et al. (2007) state that the successful development and implementation of the Attendance Management System (AMS) depends upon a complete understanding of different stakeholder perspectives. Strategic planning calls for university administrators to seek speed and accuracy in attendance reporting. The instructor wishes for a system that is easy to use and convenient for content creation. Hassle-free and privacy-conscious attendance recording affects their school progress. Visa evaluation: Regulatory bodies such as the UKVI stress compliance and real-time data. To ensure successful implementation, stringent data security and continued system effectiveness to satisfy diverse stakeholder needs are the primary attention of IT and system administrators. With this broad-based appreciation as a foundation, an AMS which meets the desires and needs of every level within education is possible (Shoewu and Idowu, 2012).

Task 5: Anatomy of A.M.S

System Input

Ribeiro (2021) describes that the principal food for AMS consists of data from scanning student identification cards through attendance card readers. This data can in fact be used to create a complete attendance record which includes student identification details and time stamps. In addition, input comes from the university's Student Record System (SRS) to make sure that attendance records are completely integrated and aligned with other student data.

System Transformation

The heart of this change involves an automated, real-time digital system that replaces old forms of manual attendance tracking. In particular, this transformation requires scanning identity cards and real-time recording of attendance. It also needs to be connected with the Student Record System and generate several different reports all at one time. This process also ensures accuracy, efficiency and compliance with regulatory requirements. (Parli et al., 2021).

System Output

Annosi et al., (2017) the AMS's most important products are accurate, real-time attendance records. Further they should be continuously displayed on a digital screen. System generated reports, such as attendance summaries and analyses are all of great help to university administrators; instructors or external organizations. Once this data on attendance is combined with the Student Record System, it quickly becomes student record information.

System Feedback

Francozo et al. (2022) stated that Within the AMS, feedback is continuous and covers several aspects. Feedback to users (students and staff) regarding successful attendance registration comes first. Another feature is that the system alerts or notifies users about any discrepancies or problems so they can be resolved quickly. Feedback is given to the administrators and instructors required to make rational decisions about attendance management, resource allocation, and compliance. A feedback loop, this continuous improvement mechanism allows issues to be addressed quickly and keeps the system in synch with the evolving needs of stakeholders and regulations. This iterative feedback system makes the Attendance Management System more effective and responsive.

Task 6: Reflection

The CATWOE analysis and Root Definition identified the system's boundaries, stakeholders, and core purpose. This approach allowed a complete examination of the technical aspects and social and organizational elements of AMS. These CAT-WOO elements supplied a checklist that systematically decomposed the question, defining customers (C), actors (A), transformation processes(T), worldview (O), and owner of all these factors as well as the

environment. This, together with the Root Definition, enabled a clean statement of what the system was for and how it fits into education (Sullivan et al., 2023).

Review of the New Attendance Management System

According to Nikghadam Hojjati et al. (2018), AMS is an excellent attempt to overcome the problems brought about by manual attendance-taking in today's international, modern system. Scanning identity cards to capture real-time data, connecting with the Student Record System, which avoids duplicates, and selecting regulatory standards particular to UK Visa and Immigration (UKVI) shows a sense ahead of its time. The importance of data security and privacy is all the more apparent, given that attendance information is susceptible. Transitioning from manual to automated processes is a step toward efficiency and accuracy. The existence of feedback loops means that the AMS will cycle its improvements indefinitely, making it constantly adapt to changes and challenges (Ebrahimi, 2022)

Task 7: Nicholas Carr's statement "I.T.I.T. doesn't Matter"

"IT Doesn't Matter," asserts Carr, is a provocative thought that set off vigorous discussions about the exact function of IT. Technology remains a weapon organizations can use to gain an advantage over rivals in today's business environment. Whether or not IT is essential depends upon the context, industry, and specific organizational goals. Carr's quote, IT Doesn't Matter (referring to Information Technology), was first published in a Harvard Business Review article 2003. This daring assertion provoked much debate in the business and technology communities. Carr maintained that IT had become a commodity, like electricity or railroads, a utility on which users relied but offered them a slight strategic advantage (Sullivan et al., 2023).

Discussion

The most crucial point is that IT infrastructure no longer provides a significant differential as it becomes more standardized and common. He argues that businesses should concentrate on IT as a utility instead of spending heavily to develop custom or exclusive systems. The effective use of technology and new applications can provide a competitive advantage. For instance, one company that is good at using data analytics or unique software applications can have a decisive advantage over its competitors (Moumivand et al., 2022). Carr's perspective risks oversimplification. IT functions like email or data storage may be commodities, but the overall

technological scope, including emerging innovations, still drives industries and markets. It has become an indispensable part of day-to-day business life in today's interconnected, digital world. Carr's statement may need to be more accurate in how IT allows business activities, communication, and efficiency (Sullivan et al., 2023). The effects of IT differ from industry to industry. However, Carr's argument may be more relevant to industries where technology is mature and standardized, in sectors with rapid innovation and speed of adopting the latest technologies. Carr's statement downplays the importance of IT strategy being congruent with overall business strategy. Although essential IT functions can be standardized, organizations must selectively use technology to achieve business objectives (Ribeiro, 2021).

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