SNJB's Late Sau KBJ, College of Engineering, Chandwad

Academic Year 2022-2

Best practices

1. **Title of the Practice:** Digitalization of organizational processes (Academic & Administrative)

A. **Objectives of the Practice:**

- Creating a student-centered higher education ecosystem that supports all aspects of the student lifecycle, from enrollment, learning, job placement, and alumni engagement.
- Streamlining Administrative Processes
- Enhancing Student Experience
- Facilitating Collaboration
- Improving Analytics and Decision Making
- Increasing Cost Savings
- Support new pedagogies and instructional models

B. The Context:

Digitalizing academic and administrative processes is vital for creating a student-centered ecosystem that supports students at all stages of their academic journey, including enrollment, learning, job placement, and alumni engagement. Digitalization improves efficiency, enhances the student experience, facilitates real-time collaboration, enables data-driven decision-making, improves communication, saves costs, and enhances security. It is a crucial investment for engineering colleges to improve the quality of education, meet the needs of students, faculty, and staff, and improve the overall performance of the institution.

C. The Practice:

The implementation of Digitalization of Academic & Administrative is done in planned and systematic phases

Academia ERP: Institute implemented complete enterprise solutions for institutions to automate their Academic and Administrative processes. This comprehensive suite streamlines the complete student life cycle from Inquiry to Graduation as well as administrative processes such as Inventory, Hostel, Library, Human Resources, etc. Also implemented Online fees collection and payment system

Teaching-Learning Process: Faculty members making comprehensive use of ICT tools such as faculty blogs, YouTube channels, Google Classroom, Zoom, Google Meet, Google Forms, and Kahoot can significantly enhance the teaching and learning process, creating a more engaging, interactive, flexible, and accessible learning environment.

Digitized Library: OPAC (koha), Delnet, J-gate, NPTEL Video Lectures, eBooks, Plagiarism software

Placement: To support the Digitalization of placement activities, the institute implemented Superset, which is a platform that allows colleges, students, and companies to interact in a manner that streamlines the campus placements and hiring process.

Alumni Connect: Almashine, an Integrated alumni management solution for alumni offices and alumni associations at colleges for strengthening their alumni community, maintaining the database, enhancing engagement, and managing contributions.

Digital Notice Board for Staff & Students:

Digitized administration & circulars: Padlet is used

Official WhatsApp Groups: For communication with i) Students ii)Teachers and iii) Dept Heads iv)Alumni are created from time to time and used extensively

Apart from these Institute's digital presence in Social Media: Website, Facebook, Youtube Channel, etc.

D. Evidence of Success:

- **Improved Efficiency:** Digitalization helped to improve the speed and accuracy of administrative and academic processes, resulting in increased efficiency and reduced manual workload. This helped the institute save time, effort, and money.
- **Enhanced Student Experience:** As faculty members provide digital access to academic resources, such as e-books, online learning materials, and interactive tools, students are more immersive and engaging learning experiences. Digitalization enables real-time communication with faculty and peers, creating a more collaborative and interactive learning environment.
- **Facilitation of Real-Time Collaboration:** Digital tools enabled real-time collaboration among students and faculty members, facilitating group projects and discussions, which leads to a deeper understanding of the subject matter and a more engaged student body.
- **Data-Driven Decision-Making:** Digitalization allows for the collection and analysis of data, which can be used to inform decision-making and improve institutional performance. Data analytics can also help identify areas for improvement and optimize resource allocation.
- **Improved Communication:** Digitalization helped improve communication between faculty, staff, and students, reducing communication barriers and facilitating faster and more efficient communication.
- **Cost Savings:** Digitalization helps reduce costs associated with administrative and academic processes, such as printing, paper, and storage costs, resulting in significant cost savings for institutions.

E. Problems Encountered & Resources Required:

1. Investment is done in additional hardware, software, and IT infrastructure to support the digitization process.
2. Institutions provided training and development programs for faculty and staff to ensure they are comfortable using the new digital tools.

3. Data Security: Investment in data security measures such as encryption, firewalls, and backups is essential to secure the data.
4. Continuous Improvement: Institutions need to regularly assess and evaluate the digitization process and continuously improve to ensure it meets the evolving needs of the institution and its stakeholders.

2. Title of the Practice: Use of Renewable energy sources to develop an eco-friendly campus of the Institute

A. Objectives of the Practice:

1. To reduce greenhouse gas emissions by using renewable energy sources
2. Increase energy security by reducing dependence on fossil fuels
3. Improve the efficiency of operations by reducing energy waste
4. Improve the quality of life by reducing energy costs

C. The Context:

Nowadays, due to increasing costs and scarcity of fossil fuels, it's a need of time to utilize renewable energy sources effectively. Previously, the electricity bill of around Rs. 5-10 Lakhs per month was the main part of the institute's recurring expenditure. Hence it is decided to opt for solar energy as a prominent renewable energy source for making a pollution-free campus pollution-free and effectively installing solar PV and water heating systems.

D. The Practice:

To develop an eco-friendly campus, renewable energy has been used through the following critical installations:

- **Solar Photovoltaic Plant:** 400.52 kWp On-Grid Roof Top Rooftop Solar Power Project is procured, constructed, and commissioned by Jain Irrigation Systems Limited Jalgaon and in-house faculty members. The system has been in operation since January 11, 2018, and it generates an average of 1900 electrical units per day. The system uses 1292 solar photo voltaic photovoltaic modules of 315 Wp (Watt peak) and eleven numbers REFUsol make inverters. Each solar PV module consists of 72 solar cells with a generation capacity of 310 Wp and occupies an area of 2 sq m. The total area occupied by the system is approximately 3000 sq meters (33000 sq. ft) and its effective cost to SNJB Santha is **Rs. 1,40,00,000/-** after the exclusion of central government subsidy of **Rs. 73, 29,516/-.** In addition to the above installation, there is one more installation of **7 kW** capacity (Off Grid) partially funded by **SPPU, Pune** on the first floor. The Bidirectional energy meter records the amount and direction of energy flow. The inverters generation can also be monitored with the help of Refu-log.com software.

Safety: It includes the balance of DC and AC cables, earthing and lighting arrestors, control panel, etc. All the solar cables are TVV approved with annealed Tinned copper conductor CLASS 5 CLASS 5. The plant has a separate earthing system for DC, AC and earth landing protection.

- **Solar Water Heater (SWH) Plant:**

Solar water heaters use natural sunlight to heat water. This system works on the thermosiphon principle and is designed to provide hot water without consuming expensive electricity.

Specification

No Number of SWH installed - 08 Nos.

The capacity of SWH - 500 liters

Total cost of SWH = 55000 x 8=Rs 4, 40, 000/-

Make- Jain Irrigation System Ltd

Projects: In order to achieve the objectives of the practice, the institute encourages final year students to do projects on solar energy under the guidance of Solar cell.

E. Evidence of Success:

1. The Institute received Clean and Smart Campus Award by AICTE, New Delhi in 2019
2. The Institute received the Award of 2nd rank in the 17th State level EC Award 2021-22 organized by the Maharashtra Energy Development Agency
3. The Institute received the Award of 3rd rank in the 16th State level EC Award 2020-21 organized by Maharashtra Energy Development Agency
4. Till date, the solar PV plant has developed almost more than 4 Lakh units and exported them to MSEDCL
5. Institute has partially recovered the installation cost of solar PV and the SWH plant.

F. Problems Encountered & Resources Required:

The inexpensive and efficient technologies were identified and selected for successful implementation and operation. The institute's faculty members also contributed massively to activities like planning, surveying, commissioning, and installation of the critical setup of solar PV and SWH plants.

There are a few problems that could occur when using renewable energy in the institute. One such problem is that solar energy potentially is more expensive than traditional energy

sources. Another potential problem is that renewable energy could not always be relied upon to meet institute needs. Lastly, renewable energy could be more difficult to produce than traditional energy sources.