# Pokhara University
# Information Technology (IT) Strategy
# 2023



# Pokhara University

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# TABLE OF CONTENTS

# ABBREVIATIONS

CERT        Computer Emergency Response Team

CMS         Content Management System

EIMS        Electronic Information Management System

EMIS        Educational Management Information System

ERPS        Enterprise Resource Planning System

HEI         Higher Education Institution

HRD         Human Resource Development

ICT         Information Communication Technology

ISP         Internet Service Provider

IT          Information Technology

LMS         Learning Management System

MIS         Management Information System

MoEST       Ministry of Education, Science and Technology

MOOC        Massive Open Online Course

NOC         No Objection Certificate

OER         Open Educational Resources

PU          Pokhara University

UGC         University Grants Commission

This document is prepared to present and describe the ***Pokhara University Information Technology (IT) Strategy 2023*** for digitalization of services at University. This describes how the ***Pokhara University Information Technology (IT) Strategy 2023*** is used to implement the ***Pokhara University IT Policy 2023***.

# 1. BACKGROUND

This section describes a short introduction to the Pokhara University and its growth, role of IT, National ICT Policy 2015 and Need of IT Policy in the University.

## 1.1 Pokhara University

Nepal adopted the multi-university concept in 1983. The idea of Pokhara University (PU) was conceived in 1986; however, it was established only in 1997 under the Pokhara University Act, 1997. A non-profit autonomous institution, PU is partly funded by the Government of Nepal and partly by revenues from its students and affiliated schools and colleges. Pokhara University has become the nation's second largest university with its 66 schools and colleges (4 Constituent schools, 4 Joint Constituent colleges and 58 affiliated colleges). Currently, PU has offering 64 plus programs under its four faculties (Faculty of Management Studies, Faculty of Science and Technology, Faculty of Health Sciences and Faculty of Humanities and Social Sciences). Altogether 37645 plus students are studying at levels undergraduate, graduate and PhD.

## 1.2 University Financing

Pokhara University manages its expenditures mainly from three sources: Nepal Government's grants, revenue from students and affiliated institutions. PU has been gradually reducing its dependence on government coffer in line with Nepal Government's fiscal policy of cost-effective sharing with private sectors. However, it fully depends on government grants for financing the capital expenditure, especially on building infrastructures for academic and administrative purposes. With the local community-endowed land, PU provides spaces for Schools and Research Centers included in the University Plan. PU credits donors and contributors involved in the construction of infrastructures, such as hostel, library, stadium, and auditorium.

## 1.3 Role of Information Technology

The University has grown rapidly in its size, program and in the number of students. The use of Information Technology (IT) within and beyond the University is felt extremely necessary to achieve the excellency in its academic, management and administration. IT is the technology that can be used in teaching-learning activities to enhance the quality of education. It can be applied for better the administration in the University.

## 1.4 National ICT Policy 2015

The National ICT policy 2015 has stated that appropriate measures will be taken to facilitate and promote the integration of ICTs within the entire Nepali educational system to

support administration, pedagogy, learning and research, with a view to improving the quality of education and training at all levels and enhancing access to education. The ICT policy 2015 has also stated that a nationwide E-Schools and other related initiatives will be formulated and launched to promote E-learning and E-Education as well as life-long learning. To align with the policy and strategies of National ICT policy 2015 and to fulfill the goal and objective of National ICT policy, Pokhara University has adopted and developed Pokhara University ICT Policy, Strategies and Guidelines for the improvement in service quality and education quality provided by Pokhara University.

### 1.5 Need of IT Policy, Strategies and Guidelines

To achieve the objectives, mission, vision and goal of Pokhara University, the IT can act as a high potential tool to help for better management and administration with more transparent and efficient services. Moreover, ICT can help to address structural problems in education systems enabling expanded access to education services as well as help to bridge quality gaps in education. As technology continues to play an increasingly important role in academia, it is essential to ensure and secure the use of IT resources at Pokhara University. With the aim to strengthen the digitization and automation, PU has developed this **"Information Technology Policy, Strategies and Guidelines 2023"** to improve its IT services within and beyond the University to better support to achieve its mission, vision and ultimately to provide the better administration and quality education.

## 2.  CURRENT STATE

Pokhara University has been taking some steps towards digitalization. Currently, it has some of the systems and practices in place including the following: Centralized email system (PU domain); centralized website management system; account management system; exam management system; online results system. It also initiated online classes and exams during the COVID-19 pandemic. Meanwhile, it developed a policy guidelines. Likewise, web-conferencing and remote guest sessions are also taking place. Importantly, university MIS is in place. Pokhara University has a good internet connectivity to support the academic and administrative activities of the university. This way, Pokhara University has accomplished some works on policy and  taken some basic steps in practice.

## 3.  VISION, MISSION, STRATEGY, GOAL AND OBJECTIVES

This section presents the vision, mission, strategy, goal and objectives for developing and implementing the IT Policy at Pokhara University.

### 3.1 Vision

The vision of this IT policy is "*Quality education, enhanced research and better administration.*".

### 3.2 Mission

The mission of this IT policy is to "*Find new technology that can help to enhance in teaching-learning process, research activities/opportunities and administrative activities.*".

### 3.3 Strategy

The strategy to be applied is to "*Use the available IT technologies to assist in teaching-learning process, research activities and administrative works.*".

### 3.4 Goal

The goal of this IT Policy is to "*Establish a robust and secured IT infrastructure to deliver the IT services to its users so that it will serve to support and enhance the teaching-learning process, research activities and administrative works.* ".

### 3.5 Objectives

The objectives of this IT policy are:

1. To identify IT experts within/outside the University and form a IT expert team.
2. To prioritize the IT Services to deliver so that vision can be achieved.
3. To design, build and adopt the IT infrastructure so that it can deliver its prioritized IT services.
4. To ensure the security of IT resources and secured IT services.
5. To ensure the availability of IT resources and IT services.
6. To promote responsible and ethical use of IT resources and IT services.
7. To ensure compliance with legal and regulatory requirements.
8. To ensure the confidentiality and privacy of IT users and their data.

## 4.  DIGITALIZATION IT STRATEGY

This section presents the IT strategies which the University applies to implement the IT policies for the digitalization of its services.

### 4.1.  Connectivity

4.1.1 The University will provide its IT services through secured high speed wired and wireless connectivity using latest technology like broadband connection.

4.1.2 The University will establish intranet/extranet for secured and reliable connection within the University, its constituent schools, joint constituent and affiliated schools/colleges.

4.1.3 The University will also establish Wi-Fi zones for everywhere connectivity around its central office and constituent schools.

## 4.2. Digital Infrastructure

4.2.1 The University will establish a local data center within the University for regular data backup and data recovery.

4.2.2 University will connect with GIDC for regular secured backup of data.

4.2.3 The University will use the services from national Cloud Infrastructures when required.

## 4.3. Virtual Learning Environment

4.3.1 The University will identify and select a suitable teaching-learning applications/platforms like VLE, LMS, MOOC, TEAMS, and Moodle etc.

4.3.2 The University will provide the necessary trainings for its students, teaching and non-teaching staffs as per requirement.

4.3.3 The university will focus and use the blended learning.

## 4.4. Strengthening web based EMIS

4.4.1 The University will developed its own web based EMIS so that its users across the University can easily use it.

4.4.2 The University will use its own EMIS (Education Management Information System) to manage the data of its students and staffs.

4.4.3 The University may connect its EMIS with other partner institutions for sharing its data.

## 4.5. Digital resource development and dissemination

4.5.1 The University will establish a central Digital Studio that will be used to create and develop eLearning Materials (audio, video, animations etc.) and also for publication of e-books.

4.5.2 The University will develop its own web based digital resource management system.

4.5.3 The University will establish E-library to provide the access of e-Materials like e-books, journals, articles, research reports etc. using its own digital resource management system.

4.5.4 The University can share its digital resources with its partner institutions.

## 4.6. Human Resource Development

4.6.1 The University will establish a training/conference hall that is well equipped with all necessary arrangement of IT resources like video conferencing facility so that training can be virtually run in the training/conference hall.

4.6.2 The University will enhance the human resource capacity of its employees through the use of IT services for training from national and/or international trainers, professors etc.

4.6.3 The University will encourage the use of IT for skill development, knowledge sharing with national/international community for the professional growth of its employees/staffs/students.

4.6.4 The well-equipped hall with IT resources can be used for workshop, seminars, conferences, training or any activities to enhance the human resource capacity of staffs (teaching and non-teaching) and students.

## 4.7. University and its campus office automation

4.7.1 The University will use EMIS for information management at University and its schools/ colleges.

4.7.2 The University will use web based software system to record and manage the student's admission, student registration.

4.7.3 The University will develop its own web based application at Office of the Controller of Examinations for course registration, exam registration, and result processing.

4.7.4 The university will develop its own finance/accounting software for its daily account works.

4.7.5 The University will use the AI technology to assist its daily activities for building Smart/ Intelligent Pokhara University. For this University also establish an AI Lab for developing AI technology.

## 4.8. IT for Administration, Academics and Research

4.8.1 Pokhara University will gradually strengthen its digital infrastructure (including LMS), digital resource access, plagiarism curbing system, accessibility of digital resources, among others. For this, Pokhara University will develop specific guidelines that govern the use of IT in various aspects of its operations. These guidelines will outline best practices, procedures, and protocols for e-admission, e-class, e-examination, e-certificates, e-teaching and learning, MOOC course establishment, digital/open educational resources, e-library, e-research and development, and digital copyrights. In fact, the e-Governance subcommittee will develop guidelines on e-entrance to e-certification (e-admission, e-class, e-teaching and learning, e-examination, e-certificates).

4.8.2 Pokhara University prioritizes developing MOOC guidelines/standards (e.g. for disaster management, climate change, cyber security, gender equality, digital pedagogy, western regional culture, etc.) to assure the quality of the courses. It also coordinates with other institutions providing MOOCs (universities/UGC).

4.8.3 Pokhara University will use IT to enhance the teaching and learning experience, including using e-learning platforms, online resources, and educational apps to provide students with more flexible and interactive learning experiences.

4.8.4 Pokhara University will use IT to support research and innovation activities, including using IT tools for data analysis, simulation, and modeling, as well as using IT to facilitate collaboration between researchers and research teams.

4.8.5 Pokhara University will form a CERT (i.e. Computer Emergency Response Team), which is a roster of IT experts, to rescue the university digital system during emergency and disasters.

4.8.6 The policy encourages patents and digital copyrights of innovative digital products.

4.8.7 The policy provisions remote access of e-resources (e-library; e-research) to students and community.

4.8.8 Pokhara University will promote use of Open Educational Resources (OER) and disseminate local knowledge products (which do not have copyright and patents) through Creative Commons open licenses.

4.8.9 Pokhara University will develop specific guidelines that govern the use of IT in various aspects of its operations such as procurement process. Pokhara University will promote and use the e-procurement system for transparent procurement process to the public.

## 4.9. University intellectual property Security, privacy, Plagiarism System, Surveillance and Copy right law

4.9.1 The University will use secured IT infrastructure with access controls, encryption, data backup, recovery system etc. for ensuring the security and privacy of intellectual property and personal data.

4.9.2 The University will promote to take patents, copyright and trademark of intellectual property.

4.9.3 The University will buy the service of plagiarism test software and provides this service throughout the University and its Schools/Colleges.

## 4.10. University Data Management, Protection, Back up and Disaster Recovery

4.10.1 The University will establish its own small secured data center at the central office.

4.10.2 The University will use the Data Center of Nepal Government for its data backup and data recovery.

4.10.3 The office of the IT department will be responsible for the daily backup of data and recovery of data in case of data loss.

4.10.4 The University can also use the services from Cloud Company for its data protection, backup and recovery.

## 4.11. IT system Security, safety, avoidance and prevention from attack

4.11.1 The university will use most secured IT system security systems, plans and application technologies available in market for the safety, avoidance and prevention from possible threats.

4.11.2 The Office of the IT department will be responsible to conduct regular risk assessments to avoid and prevent the possible threats and cyber-attacks.

4.11.3 The University will implement the strong access controls and user authentication etc. to ensure that only the authorized person can access the data and system.

4.11.4 The University will regularly review and update the best IT security system when required.

### 4.12. IT enabled Monitoring & Evaluations system

4.12.1 The University will use the IT enabled management system to support resource planning and management activities such as budgeting, procurement and inventory management.

4.12. The University will develop and use the IT enabled monitoring and evaluation system to monitor and evaluate daily activities at the University and its Schools/Colleges. For example, increase/decrease in application to admit in different programs/schools/college, student drop rates, student graduate rates etc.

4.12. The University will develop and use the AI enabled IT system to automatically monitor, evaluate and analyze the data of daily activities at the University and its Schools/Colleges.

# 5. IT FOR UNIVERSITY AND SCHOOLS/COLLEGES

5.1 The University will establish safe, secure and reliable Wi-Fi-zone within the school/faculty/ university; the connectivity subscription will prioritize government internet service provider (ISP).

5.2 The University will strengthen connectivity (to provide university's on intra/extranet to faculty/ students/staff

5.3 The University will provide remote resource access to faculty/staff

5.4 The University will use IT to support marketing and outreach activities, including using social media, websites, and digital marketing tools to promote research, programs, and services

5.5 The University will develop following guidelines gradually:

1. University intra/extranet guidelines

2. Network security guidelines

3. Data security and protection guidelines

4. Surveillance and privacy guidelines (CC camera; video conferencing; net TV, radio)

5. Email and e-resource management guidelines

6. Data hosting, backup and disaster recovery

7. University cloud hosting guidelines

8. Develop other guidelines/policies as per the recommendation of the University ICT Steering Committee, as and when required

5.6 Responsibilities of the users will be as follows:

1. Users are expected to use university IT resources in a responsible and ethical manner, and to comply with all applicable laws and regulations. This includes refraining from activities such as hacking, spamming, and illegal file sharing.

2. Users are required to take appropriate measures to protect their devices and accounts from unauthorized access, such as using strong passwords, enabling two-factor authentication, and keeping software up-to-date.

3. Users are responsible for safeguarding any confidential or sensitive information that they access or store using university IT resources. This includes complying with data protection laws and regulations, and reporting any data breaches or security incidents promptly.

4. Users are required to report any suspected violations of this policy or any other IT-related issues to the appropriate authorities, such as the IT staff.

# 6. FORMULATION OF IT MASTER PLAN

The formulation of Pokhara University IT Master Plan will be a collaborative and iterative process. Therefore, Pokhara University will develop its IT master plan (short-term and long-term strategic planning) through a multi-stage participatory process, involving needs assessment and gap analysis; stakeholder engagement; goal setting and prioritization; resource allocation and budgeting; and implementation and monitoring. The Pokhara University's IT Master Plan will be developed within a year of the approval of this IT policy.

# 7. DIGITALIZATION AND AUTOMATION GUIDELINES

Pokhara University will develop its own digitalization and automation guidelines under the IT Steering Committee. The committee will do necessary facilitation and supervision and help set standard of the overall university's automation. Therefore, Pokhara University will have a well-defined set of guidelines, procedures, and standards for university digitalization and automation that provide a framework for the implementation and management of digital and automated systems. The campuses/faculties will develop their own guidelines based on the university digitalization and automation guidelines. The guidelines will have provision to cover certain percentage (based on IT Steering Committee's recommendation) of student access/participation, including e-enrollment, e-classes, e-assessment, e-certification, e-research, e-library

# 8. RESOURCES ARRANGEMENT AND ALLOCATION

7.1 While acquiring IT resources, government sources and partnerships will be prioritized. This can involve joint ventures or outsourcing of IT services.

7.2 Pokhara University will collaborate with other institutions to pool resources and expertise.

7.3 Pokhara University will explore grant opportunities and collaborative projects to fund and support its IT initiatives.

7.4 Pokhara University will accept donations of IT resources from alumni, corporations, and other benefactors. This will include equipment, software licenses, and funding for IT initiatives.

7.5 Pokhara University will optimize the use of existing resources by implementing best practices in IT resource management, including regular maintenance and upgrades, effective use of software licenses, and efficient use of network bandwidth.

7.6 Pokhara University will enhance the practice of resource sharing (data center from the university will be shared with faculties).

7.7 The IT department will coordinate and facilitate in supporting campuses and faculties in technology integration issues

7.8 Pokhara University students (esp. students of Computer Engineering or software Engineering, IT engineering or any relevant program) will be used as interns to support university IT resource mobilization. Scholarship recipient students can also be mobilized so as to maximize the utilization of IT resources.

7.9 IT resources will gradually be expanded to accommodate the increasing number of students and staff. The IT systems will be compatible for further updates.

# 9. INSTITUTIONAL ARRANGEMENT

As stated in the Pokhara University IT policy 2.1, a central level IT Steering Committee consisting of 6 members will be formed.

**Table 1: University Central Level IT Steering Committee**

| SN | Committee Members | Designation |
|----|-------------------|-------------|
| 1 | Registrar-PU | Chair |
| 2 | Dean - (Appointed by VC) | Member |
| 3 | Information Officer-Central Office PU | Member |
| 4 | IT Head- Central Office PU | Member |
| 5 | IT Head- Office of the Controller of Examination PU | Member |
| 6 | IT Head from School-(Appointed by VC) | Member |

Under the IT Steering committee, several other subcommittees and units and their offices can be formed to smoothly run the IT services at University and its Schools/Colleges. The IT Department will be responsible for developing, implementing and managing all the IT policies, strategies and guidelines.

The e-Governance subcommittee will develop guidelines for enterprise resource planning system (ERPS); Educational Management Information System (EMIS); Content Management System (CMS) for websites; Mobile Application; Learning Management System (LMS). These guidelines

will help to automate the university administrative functions, such as registration, voucher, billing, procurement, hiring, system automation towards faceless university service delivery (e.g. NOC, certification). These databases from university campus will be linked to the UGC EMIS.

# 10. RISK PLANNING AND MANAGEMENT

This section presents a thorough risk assessment for the implementation of the stated IT Policy.

| Assumptions | Risks |
|---|---|
| The policy assumes that all students and staff have access to technology and the reliable internet. | May not be the case for some as assumed, due to the geographical location of the Province/s (student cover area),internet connectivity and penetration, and socio-economic conditions of the |
| The policy assumes that all users have a certain level of technological competence. | This may not be true for everyone. |
| The policy assumes that the university has sufficient funds to implement and maintain the necessary infrastructure and software, and support end-users. | If funding is cut or not allocated appropriately, this could result in insufficient resources to meet the needs of users. |
| The policy assumes that backups and recovery procedures are in place. | If backups and recovery procedures are not effective, the loss of important data could have serious consequences. |
| The policy assumes that the technology being used will remain relevant and functional for the foreseeable future. | Technology can change rapidly, and the university may be at risk of investing in systems that quickly become outdated. |
| The policy assumes that all users are aware of the potential security risks associated with using technology and take appropriate measures to protect their data and the University's data. | With the increasing amount of sensitive data stored on university servers, the risk of a security breach is high. |