# Implementation of PMO at NUST
## (National University of Science and Technology)

MSPM- Spring 2024

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## DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

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# CHAPTER 1

## 1. Introduction

The National University of Sciences and Technology (NUST) stands as a colossus in the landscape of higher education in Pakistan and a rapidly rising name on the global academic stage. Established in 1991 by an Act of the Parliament, NUST was conceived not merely as another university but as a national project aimed at propelling Pakistan into the future through the potent engines of science, technology, and innovation. From its inception, the university was endowed with a unique character, forged from the merger of several pre-eminent engineering institutions from the defense sector, such as the College of Electrical and Mechanical Engineering (EME) in Rawalpindi and the Military College of Signals (MCS). This foundational blend of military discipline and rigorous academic pursuit has created an environment unlike any other in the country, one that relentlessly champions excellence, integrity, and a profound sense of purpose. Today, NUST is universally recognized as the number-one university in Pakistan, a position it has consistently defended for years in the rankings released by the Higher Education Commission (HEC). Its vision is clear and ambitious: to be a comprehensive, research-driven, and internationally recognized institution committed to contributing to the socioeconomic development of Pakistan and making meaningful contributions to the global knowledge economy.

NUST's academic and operational model is structured around a multi-campus system, with its sprawling, purpose-built main campus in Islamabad (Sector H-12) serving as the central nervous system. This main hub is complemented by a network of highly specialized constituent colleges and schools, each a center of excellence in its own right, spread across key cities including Rawalpindi, Risalpur, and Karachi. This decentralized yet integrated structure allows NUST to achieve both breadth and depth in its offerings. Institutions like the School of Electrical Engineering and Computer Science (SEECS) in Islamabad are powerhouses for producing world-class software and electrical engineers, while the College of Aeronautical Engineering (CAE) in Risalpur remains the nation's premier institution for aerospace education. The Pakistan Navy Engineering College (PNEC) in Karachi excels in marine and mechanical engineering, and the NUST Business School (NBS) provides management education with a sharp focus on technology and innovation. This diverse ecosystem ensures that NUST caters to a wide spectrum of scientific and technological fields, offering a comprehensive portfolio of undergraduate, graduate, and doctoral programs that are constantly refined to meet contemporary global challenges and market demands.

Beyond its impressive academic infrastructure, the true differentiator for NUST is its deep-seated and uncompromising commitment to research and development. The university has systematically cultivated a vibrant research culture that permeates all its activities. It is not just a place of learning but a dynamic hub of discovery and innovation. This is evidenced by its state-of-the-art laboratories, high-impact research publications in prestigious international journals,

and a significant portfolio of funded research projects from national and international grants. A cornerstone of this research ecosystem is the National Science & Technology Park (NSTP), co-located at the main campus. The NSTP acts as a crucial bridge between academia and industry, providing a fertile ground for startups, fostering entrepreneurship, and facilitating the commercialization of research. This focus on translating knowledge into tangible solutions underscores NUST's role as a key driver of the national innovation agenda.

The university experience at NUST extends far beyond the classroom and the laboratory. The main H-12 campus is designed as a self-contained, vibrant mini-city, offering a holistic and enriching environment for its students. Modern hostel accommodations, extensive sports complexes, and a bustling student society culture ensure the all-round development of its graduates. Students are encouraged to participate in a myriad of clubs, from robotics and debating to music and community service, and annual mega-events like the NUST Olympiad and the cultural festival MILAAP attract talent from across the nation, providing a platform for creativity, competition, and networking. This carefully curated environment aims to produce not just skilled engineers and scientists, but well-rounded leaders, critical thinkers, and responsible citizens.

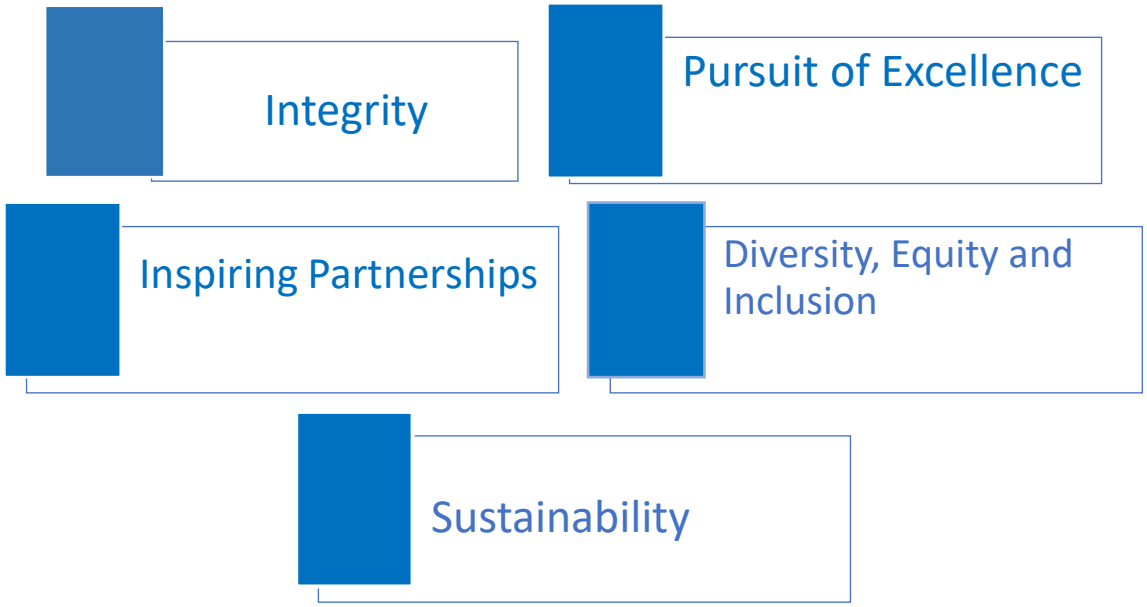
## 1.1 VISION

***"NUST aspires to be a comprehensive university providing a higher education experience grounded in thought leadership, co-creation of knowledge, and sustainability".***

## 1.2 MISSION

***"NUST is committed to being a university that stimulates intellectual curiosity, behavioral progression, and environmental stewardship. We nurture future leaders, job creators, and lifelong learners, with the ability to foster partnerships, and intercultural competence to impact their communities and beyond. Through adherence to our core values, we create an ecosystem that promotes research, innovation, and productivity".***

## 1.3 CORE VALUES




# 1.4 FINANCIAL DETAILS/COMPANY STRENGHTS

### 1.4.1 Financial Overview (Indicative Figures for Context)

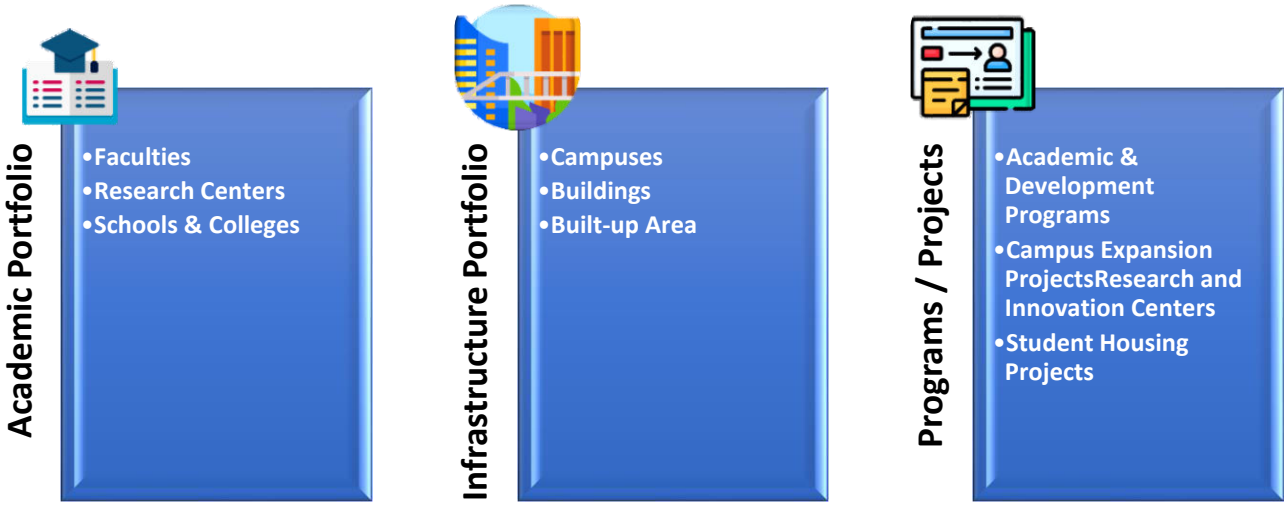
- **Annual Operational Budget:** PKR 20+ Billion
- **Research Funding and Grants:** PKR 1.8 Billion (HEC, Industry, and International bodies)
- **Development Projects (Infrastructure & Research):** PKR 30+ Billion cumulative investment since 2010
- **Scholarship Funding:** PKR 1.2 Billion annually from donors and trust funds

### 1.4.2 Institutional Strengths

- Multi-campus network with state-of-the-art infrastructure.
- Highly qualified faculty (over 60% PhD holders, trained globally).
- Top-ranking in Pakistan for innovation and employability.
- International partnerships with 200+ global universities.
- Robust donor and endowment support programs.
- Advanced R&D facilities and technology incubation centers.

- Focus on sustainability and green campus initiatives.

## 1.5 ORGANIZATION PORTFOLIO, PROGRAMS/PROJECTS




### 1.5.1 Academic Portfolio

- **Faculties:** 7 (Engineering, IT, Natural Sciences, Management, Architecture, Social Sciences, Medical Sciences)
- **Schools & Colleges:** 20+ constituent institutions
- **Research Centers:** 30+ specialized research labs and centers

### 1.5.2 Infrastructure Portfolio

- **Campuses:** Islamabad (Main), Rawalpindi, Karachi, Quetta
- **Built-up Area:** Over 200 acres in Islamabad Campus
- **Buildings:** Academic Blocks, Research Labs, Hostels, Central Library, Innovation Hubs, Sports Complex, Business Centers, Mosques.

## 1.6 Programs / Projects

**Academic & Development Programs**

**Campus Expansion Projects:**

- Construction of new academic blocks for emerging disciplines like AI, Data Science, and Cyber security.

- Green building designs emphasizing energy efficiency.

**Student Housing Projects:**

- Separate modern hostels for boys and girls.
- Smart housing systems integrated with security and IoT monitoring.

**Research and Innovation Centers:**

- National Science and Technology Park (NSTP) – a flagship hub promoting startups and industrial partnerships.
- Renewable Energy Lab, Robotics Center, and Bioengineering Research Hub.

**Social Impact Projects:**

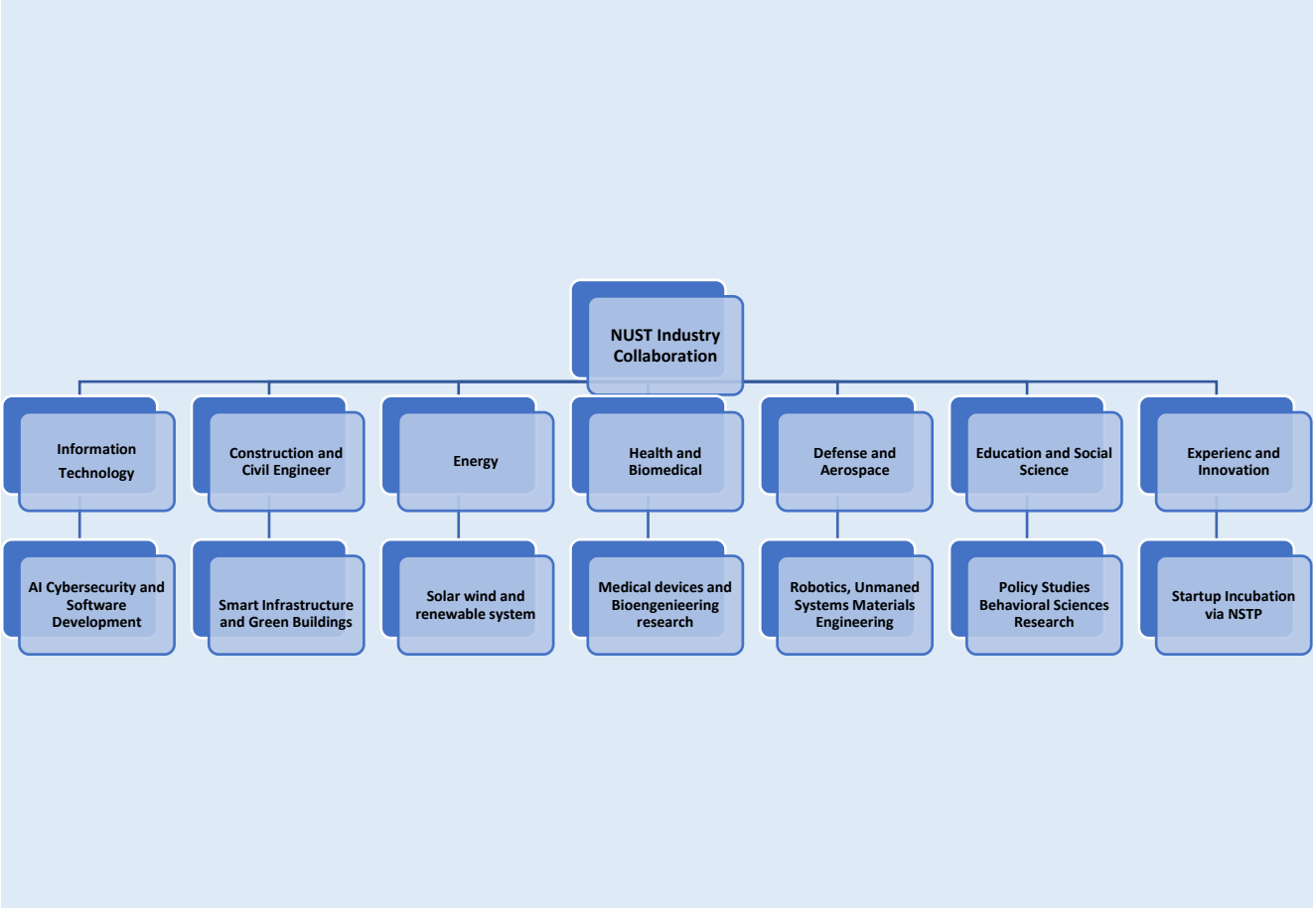
- Endowment and scholarship programs for underprivileged students.
- Community development and sustainability initiatives under the NUST Trust Fund.

**Digital Transformation Initiatives:**

Campus management systems, smart classrooms, and e-learning infrastructure

## 1.7 INDUSTRIES

NUST maintains strong linkages with industrial and governmental sectors to ensure that its education and research align with national development needs.




NUST maintains strategic partnerships across seven key industrial sectors to align its academic and research output with real-world needs**.** These collaborations span critical fields including Information Technology (AI, cyber security), Construction (smart infrastructure), and Energy (renewable systems). In Health and Defense, the university focuses on biomedical research and aerospace technologies like robotics. Additionally, NUST extends its impact through policy studies in Social Sciences and actively fosters Entrepreneurship via startup incubation in its National Science & Technology Park (NSTP).

## 1.8 NO OF PROECTS

| Category | Number of Projects | Approx. Value (PKR) |
|---|---|---|
| **Infrastructure Projects** | 35+ | 18 Billion+ |
| **Research Projects (Funded)** | 250+ | 3 Billion+ |
| **Innovation / Startups (NSTP)** | 150+ active startups | 1.5 Billion+ valuation |

| Category | Number of Projects | Approx. Value (PKR) |
|---|---|---|
| **Social / Community Development** | 20+ | 800 Million+ |
| **Donor-funded Scholarships / Endowments** | 100+ donors | 1.2 Billion annually |

## 1.9 SERVICES AND SOLUTIONS

| Category | Services Provided by NUST |
|---|---|
| **Education and Research** | Undergraduate to PhD programs across 150+ disciplines |
| **Innovation and Technology** | Startup incubation, product development, prototyping |
| **Consultancy Services** | Engineering, environment, IT, management consultancy |
| **Training and Capacity Building** | Professional certifications, leadership programs |
| **Community Development** | Outreach programs, sustainability, and education access |
| **Infrastructure and Facility Management** | Sustainable design, maintenance, and expansion |

## 1.10Organizational Structure:

**Chancellor:** President of Pakistan (Ceremonial Head)

**Rector:** Chief Executive Officer (Overall head of NUST)

**Pro-Rectors:** Oversee Academics, Research, Administration, Planning, and International Cooperation.

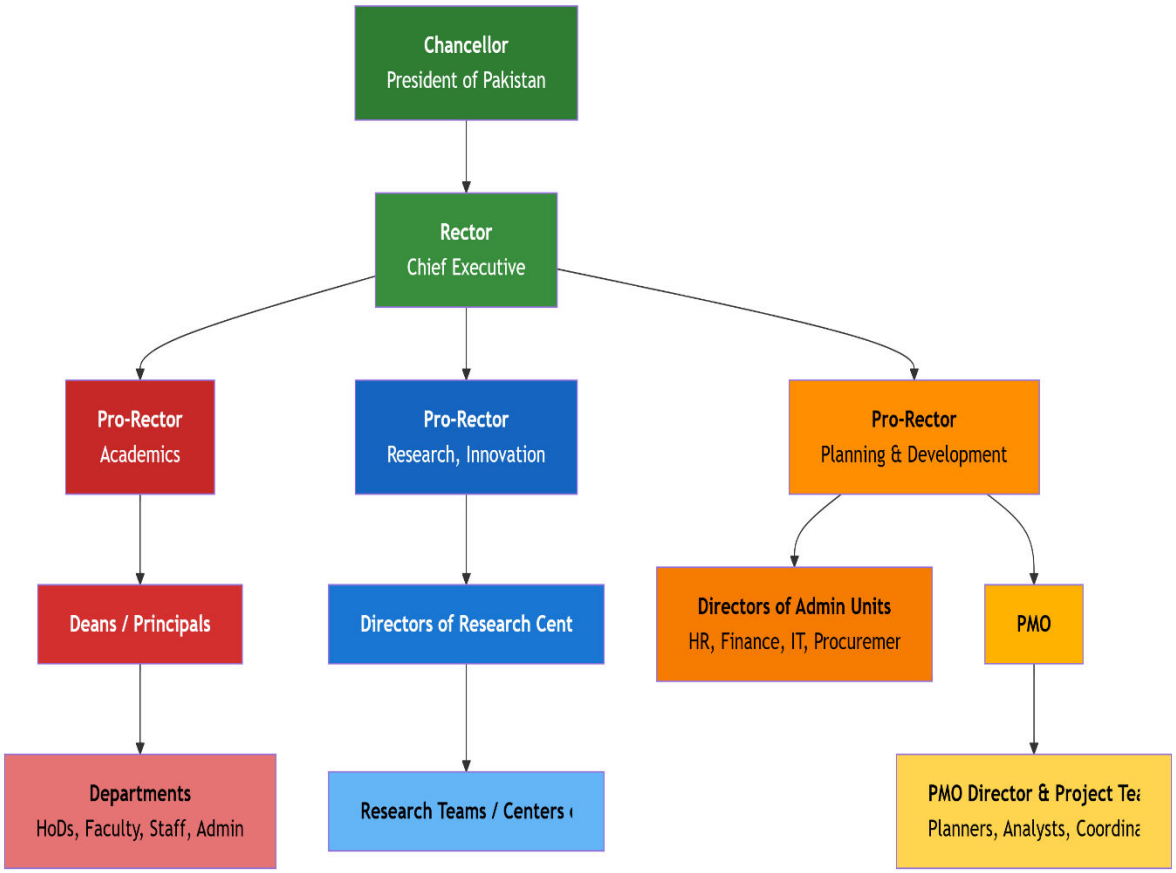
**Deans:** Head of Schools/Colleges under respective disciplines.

**Directors:** Manage departments such as HR, Finance, IT, Projects, and Student Affairs.

**PMO (Project Management Office):**

- Responsible for planning, executing, and monitoring university-wide projects.
- Ensures alignment with strategic goals, budget control, and timely delivery.

NUST is headed by the President of Pakistan as Chancellor, with the Rector serving as the chief executive officer. The university's operations are managed by Pro-Rectors overseeing key areas including academics, research, and administration. Deans lead various academic schools and colleges, while Directors manage administrative departments. The Project Management Office (PMO) plays a crucial role in planning and executing university-wide projects. The PMO ensures all projects align with strategic goals while maintaining budget control and timely delivery.




## RECTOR'S MESSAGE

**Dr Muhammad Zahid Latif**

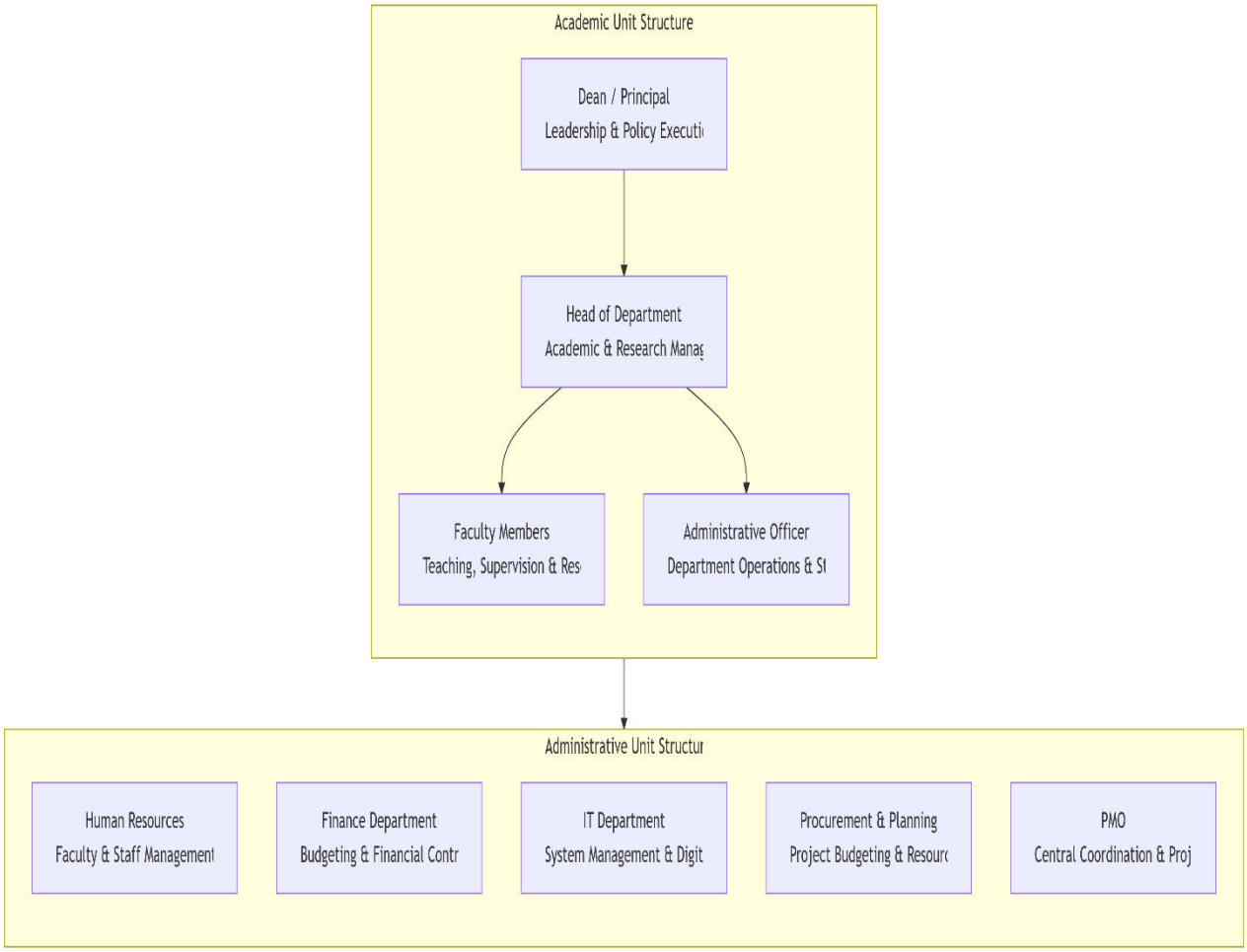
As we embrace the future with a shared vision, our primary focus shall remain on equipping the next generation with world-class knowledge. Simultaneously, we shall emphasise internationalisation, interdisciplinary collaboration and foster cutting-edge research and innovation that align with national growth and collective progress.

View Details →

## LEADERSHIP

- Rector
- Pro-Rector P&R
- Pro-Rector ACAD
- Pro-Rector RIC
- Chief of F&BD

## 1.11 DEPARTMENT/UNIT STRUCTURE




This diagram shows:

- **Academic Structure** (left): The hierarchical flow from Dean to operational staff
- **Administrative Structure** (right): The parallel support units including PMO
- **Relationship**: How academic and administrative units work together to support NUST's operations

## 1.12 SAMPLE PROJECT FOR IMPLEMENTATION

**Project Title:** ***Construction of School of Artificial Intelligence & Data Science (SAIDS), NUST Islamabad***

**Objective:**
To establish a state-of-the-art academic and research facility focused on Artificial Intelligence, Data Analytics, and Machine Learning.

**Key Features:**

- 4-floor academic block with modern classrooms and computing labs.
- AI Research Center and High-Performance Computing Lab.
- Seminar halls, faculty offices, and innovation spaces.
- Sustainable energy design with solar integration.
- Smart building management system (IoT-based).

**Estimated Value:** PKR 1.2 Billion
**Duration:** 18 Months
**Funding Source:** NUST Development Fund & Industry Collaboration
**Impact:**

- 2,000+ students and 50+ researchers to benefit annually.
- National-level hub for AI innovation.

# CHAPTER 2

## 2.1 As-Is Analysis

An As-Is Analysis, also referred to as a Current State Assessment, is a systematic approach used to evaluate how an organization, process, or system presently operates. It involves a comprehensive review of existing workflows to highlight current strengths, weaknesses, and potential areas for enhancement.

### 2.1.1 Processes

. **Documenting Current Workflows:**
This involves outlining every step in the existing processes, identifying inputs, outputs, responsible individuals, and any current challenges or inefficiencies.

**Data Collection:**
Gathering all relevant information and performance indicators related to ongoing operations. This may include quantitative metrics, staff feedback, and direct observations.

**Evaluating the Present Situation:**
Assessing the gathered information to recognize what aspects are effective and which ones require improvement. This evaluation helps uncover both internal strengths and underlying issues.

**Recognizing Gaps and Potential Improvements:**
Determining where the current performance falls short of desired goals or benchmarks, while also identifying opportunities to optimize operations.

### 2.1.2 Purpose

The primary purpose of conducting an **As-Is Analysis** is to gain a comprehensive understanding of how an organization currently functions before introducing any changes or improvements. It provides a factual foundation for decision-making by revealing how processes actually operate, rather than how they are assumed to work.

- To Understand the Existing Operations.
- To Identify Inefficiencies and Improvement Areas.

- To Detect Potential Risks and Barriers.
- To Support Data-Driven Decision Making.
- To Create a Baseline for Future Comparison.

### Purpose (Detailed Explanation)

## 2.1.3 As-Is Analysis (Current Situation)

- NUST currently faces significant gaps in cost, schedule, procurement, risk, and staffing.
- Cost management is the most critical area, followed by schedule and procurement.
- The lack of standardized processes, monitoring tools, and centralized coordination leads to inefficiency, delays, and higher risks.
- Decision-making authority is limited, which slows project execution and risk mitigation.
- Overall, the current state demonstrates low PM maturity, requiring a structured PMO to standardize processes, monitor performance, and build project management capacity.

The technique we employed for as-IS Analysis is given below:

- **Questionnaires Survey**
- **Interviews**

## 2.2 Questionnaires Survey:

| |
|---|
| **1. Are project milestones clearly defined and communicated to all team members?** |
| a. Clearly defined and well communicated |
| b. Defined but communication is unclear |
| c. Poorly defined |
| d. Not defined or communicated |
| **2. What is the most common cause of project delays in your organization?** |
| a) Scope changes |
| b) Late approvals |
| c) Resource shortages |
| d) Procurement delays |
| **3. How often do projects finish on time?** |
| a) Regularly monitored using a structured system |
| b) Monitored only when issues arise |
| c) Monitoring is informal and inconsistent |

| |
|---|
| d) Timelines and milestones are not monitored |
| **4. Does your organization prepare detailed cost estimation before project initiation?** |
| a) Always in detail |
| b) Usually at a high level |
| c) Occasionally |
| d) Rarely or never |
| **5. How often does the project stay within the approved budget?** |
| a) Always stays within budget |
| b) Mostly stays within budget |
| c) Sometimes stays within budget |
| d) Rarely stays within budget |
| **6. Do you believe adequate resources are allocated for project execution?** |
| a) Yes, resources are sufficient |
| b) No, there is a shortage of human resources |
| c) No, there is a shortage of financial resources |
| d) Not |
| **7. What is the most significant challenge in the procurement process?** |
| a) Vendor delays |
| b) Internal bureaucracy |
| c) Budget limitations |
| d) Quality compliance |
| **8. Which method is commonly used for vendor selection?** |
| A) Competitive bidding |
| B) Direct purchase |
| C) Vendor recommendations |
| D) Sole-sourcing |
| **9. Which tools or methods are used to monitor project progress?** |
| a) Professional PM software |
| b) Visual dashboards |
| c) Standard status reports |
| d) Manual tracking |

| |
|---|
| **10. Do project teams have sufficient and skilled staff to meet project requirements?** |
| a) Always sufficient and skilled |
| b) Sufficient but skill gaps exist |
| c) Insufficient but skilled |
| d) Insufficient and unskilled |
| **11. What is the main staffing-related challenge your projects face?** |
| a) Lack of specialized expertise |
| b) High team turnover |
| c) Inadequate training |
| d) Unrealistic workloads |
| **12. How often are project risks identified and monitored?** |
| A) Regularly throughout project |
| B) Only at start |
| C) Only when issues arise |
| D) Not monitored |

## 2.2.1 Survey Results Summary:

| Area | Gap % |
|---|---|
| **Cost Management** | **85%** |
| **Schedule Management** | 72% |
| **Risk Management** | 70% |
| **Procurement Management** | 68% |
| **Staffing & Resources** | 63% |

## 2.2.2 Overall Summary of Gap Analysis

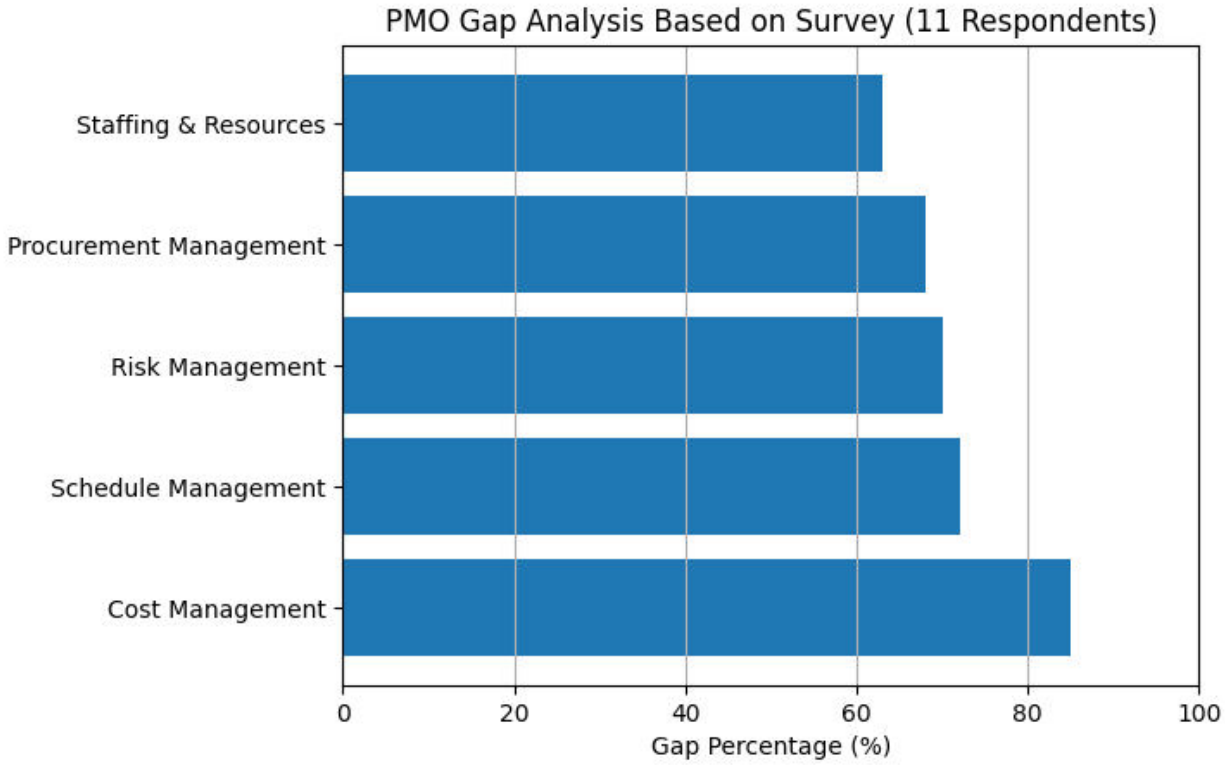
The survey with 11 respondents indicates that **Cost Management has the highest gap (85%)**, making it the most critical area requiring immediate PMO intervention. Most respondents highlighted weak cost estimation practices and frequent budget overruns.

**Schedule Management** also shows a significant gap of **72%**, mainly due to unclear milestones, informal monitoring, and procurement-related delays.

**Risk Management** reflects a **70% gap**, with risks being identified only at the start or when issues occur, showing a lack of continuous monitoring.

**Procurement Management** has a **68% gap**, driven by vendor delays, internal bureaucracy, and reliance on direct purchasing.

Finally, Staffing & Resources show a **63% gap**, where skill shortages and limited specialized expertise impact project execution effectiveness.




## 2.3 Interview:

**What major challenges do you face in completing projects on time?**

Answer:

The biggest schedule challenge is the delay in approvals**,** especially from procurement and finance. Even when the team is ready, waiting for material approvals, payments, or design confirmationsslows down progress.

Material unavailability and late delivery also cause delays. Even small missing items like fittings or cables can stopon-site work. Sometimes unexpected site problems, like hidden utilities, also interrupt work.

**What are the most common reasons for cost overruns in your projects?**

Answer:

Cost overruns happen because of price fluctuations**,** scope changes**,** anddesign modificationsduring execution. When changes happen after the project starts, the original estimates become inaccurate.

Market rates for steel, cement, and imported items often rise between budgeting and procurement. Missing small cost components like transport or inflation adjustment also leads to overruns.

**How effectively does the procurement process support project requirements?**

Answer:

The procurement system is transparent and well-controlled, but the process is slow. Multiple approvals, manual files, and committee reviews add time.

These layers cause delays, especially when materials are urgently required at site. Supplier communication and document verification also create a lag.

**Do staffing levels and skills match what your projects require?**

Answer:

The staff is capable, but workload distribution is uneven. Some officers handle multiple projects at the same time, which reduces focus.

There is also a skill gap in digital tools. Some team members use MS Project or Primavera, while others rely on manual tracking. This creates inconsistency in monitoring and reporting.

**Do project managers have enough authority to make decisions, and how does this affect project risks and delays?**

Answer:

Project managers have moderate authority but still need higher management approval for budget revisions, procurement decisions, and design changes**.**

This limited authority creates risk of delays, as even small decisions require multiple signatures. In several cases, approvals for material changes or payments took too long; leading to time overruns and increased project risks.

## 2.3.1 Overall Findings from Interview:

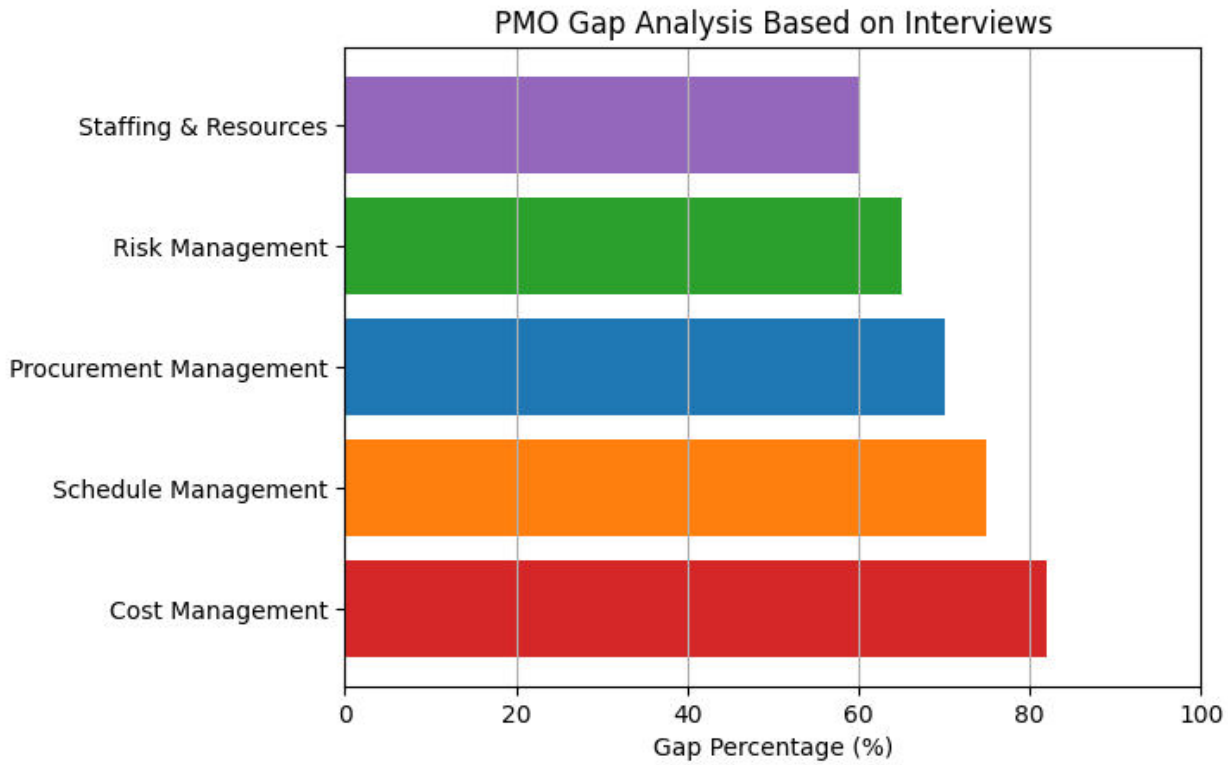
| PMO Area | Key Issues from Interviews | Gap % |
|---|---|---|
| **Cost Management** | Price fluctuations, scope changes, design modifications, weak estimation, missing cost items | **82%** |
| **Schedule Management** | Approval delays, material unavailability, site complications | 75% |
| **Procurement Management** | Slow process, multiple approvals, manual paperwork, supplier delays | 70% |
| **Risk Management** | Reactive monitoring, limited PM authority, delayed responses increase risks | 65% |
| **Staffing & Resources** | Uneven workload, skill gap in digital tools, inconsistency in tracking | 60% |

## 2.3.2 Overall Summary

The interview findings clearly confirm the same gaps highlighted in the survey, with Cost Management emerging as the highest concern (82%)**.** Allmanagersreportedthat material price changes, scope modifications, and inaccurate cost estimation are the primary drivers of budget overruns. Schedule delays are the second major issue (75%), mainly due to slow inter-departmental approvals and material shortages.

Procurement processes, while transparent, are slow and heavily manual, causing a 70% gap that directly impacts both cost and schedule performance. Risk management practices remain reactive (65%), further affected by limited decision-making authority of project managers. Staffing and resource issues show a 60% gap due to uneven workload and a lack of digital tool proficiency.

Overall, the interview results reinforce that cost**;**schedule, procurement, and risk require immediate PMO improvement**,** withCost Management being the most critical area needing attention**.**




## 2.4 Rationale of the Analysis

Based on the survey results and interview feedback, the following key issues were identified

- Projects often face cost overruns and delays due to weak monitoring.
- There is nostandardmethodology, so every department follows its own way of working.
- Communication gaps between PM, HR, Finance, and other departments create confusion.
- Risk management is not proactive, and risks are handled only when they cause problems.
- Teams lack proper tools, templates, and guidelines**,** resulting in inconsistent reporting.
- There is no centralized place to track progress, approvals, or documentation.
- Project roles and responsibilities are not clearly defined.
- Training needs exist because team members have limited knowledge of PM best practices**.**
- Stakeholders want a structured system to improve transparency and accountability.

### 2.4.1 Justification for Establishing a PMO

Based on the above problems, creating a PMO becomes necessary.

## Justification (Why PMO is Needed)

- A PMO will standardize processes, templates, and reporting formats across all departments.
- It will provide central monitoring of cost, schedule, and performance, reducing overruns.
- The PMO will improve coordinationandcommunication by acting as a single point of contact.
- It will implement risk management frameworks, making projects proactive instead of reactive.
- Trained PMO staff will offer guidance, support, and capacity-building for project teams.
- The PMO will provide real-time dashboards and documentation systems for transparency.
- With clear governance, roles, and workflows, the PMO will increase accountability and decision-making quality**.**
- It ensures that all projects are aligned with organizationalgoals and strategic priorities.

## 2.5 PMO Recommendation for NUST

Based on gaps identified in surveys, interviews, the following PMO model is recommended for NUST:

**Recommended PMO Type: Supportive**

We proposed a Supportive PMO for NUST because it provides guidance, templates, training, best practices, and documentation support to project teams without enforcing strict control. This model fits NUST's current environment where departments work independently and need help, standardization, and coordination rather than tight monitoring. A supportive PMO will improve project quality while still giving flexibility to all departments.

**Why Supportive PMO fits NUST now:**

- It provides guidance, templates, and training to improve cost, schedule, procurement, risk, and staffing gaps.
- It does not enforce strict compliance, which is suitable because NUST currently lacks standardized processes.
- It acts as a central hub for communication and coordination, reducing delays and inefficiencies.
- It builds project management maturity gradually, preparing NUST for a more controlling PMO in the future.

# CHAPTER 3

## 3.1 Current PMO Structure at NUST

Although NUST operates complex academic, infrastructure, and research projects, a centralized, fully formal PMO does not exist. Instead, project-related responsibilities are distributed across multiple departments.

### 3.1.1 Existing Project Handling Mechanism

- Projects are initiated with basic scope and budget, but cost estimation is not detailed.
- Milestones and timelines are set, but communication and schedule monitoring are inconsistent.
- Resource allocation exists, but workload is uneven and skill gaps remain.
- Procurement processes are slow due to multiple approvals and manual paperwork, causing material delays.
- Risk management is mostly reactive; risks are identified at the start but not monitored continuously.
- Project execution is department-centric and fragmented, with inconsistent methods and reporting.
- Monitoring and control are informal; budget overruns and schedule delays are often noticed late.
- Project closure lacks standardized lessons learned and formal documentation.
- Overall, the mechanism is ad-hoc, fragmented, and lacks standardization, leading to inefficiencies, cost overruns, and delays.
- Establishing a Supportive PMO is necessary to improve cost, schedule, procurement, risk, and staffing management, and to standardize processes across projects.

### 3.1.2 Gaps in Current Structure

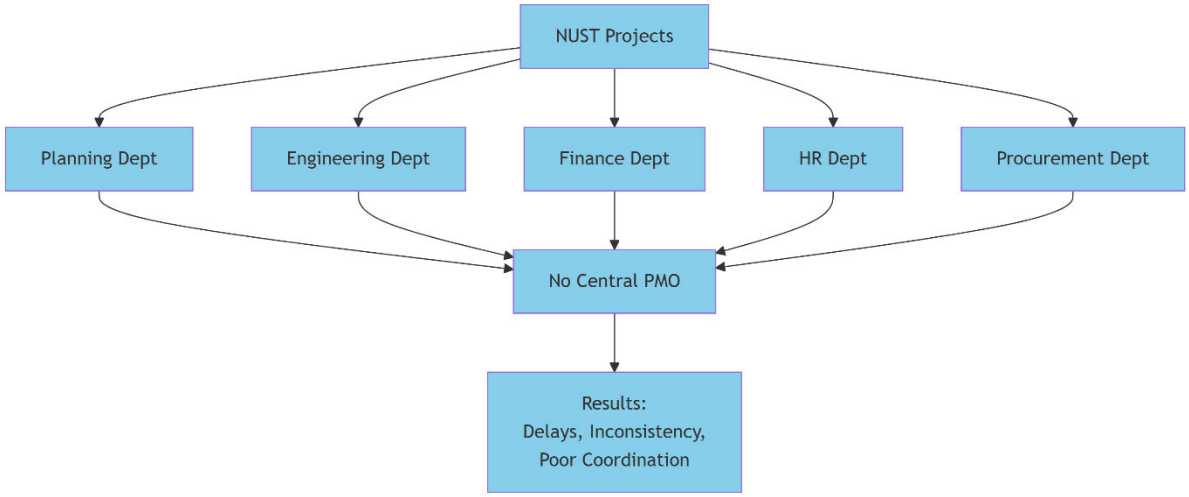
**Cost Management:** Weak estimation, frequent overruns no standardized monitoring.

**Schedule Management:** Poor milestone communication, inconsistent tracking, delays from approvals and material shortages.

**Procurement Management:** Slow, manual processes; vendor delays; no centralized tracking.

**Risk Management:** Reactive approach, limited PM authority, lack of continuous monitoring.

**Staffing & Resources:** Uneven workload, skill gaps in digital tools, inconsistent reporting.




## 3.2 Proposed PMO for NUST

# Proposed PMO for NUST

Based on the current gaps and challenges identified in cost, schedule, procurement, risk, and staffing, it is recommended that NUST establish a **Supportive PMO** initially, with the potential to evolve into a Controlling PMO as processes mature.

**PMO Vision**

**"**To establish a centralized project management framework that standardizes processes, enhances cost and schedule control, mitigates risks, and improves overall project delivery efficiency across NUST."

**Key PMO Objectives**

**A. Cost Management**

- Introduce standardized cost estimation templates.
- Monitor project budgets regularly to prevent overruns.

**B. Schedule Management**

- Standardize project planning and milestone communication.
- Track project timelines using consistent tools and reporting methods.
- Reduce delays caused by approvals and material unavailability.

**C. Procurement Management**

- Centralize procurement monitoring to improve material delivery timelines.

- Streamline approval processes and reduce manual paperwork.
- Ensure vendor accountability and timely communication**.**

**D**. **Risk Management**

- Establish proactive risk identification and monitoring framework.
- Enable project managers to act on risks within defined limits.
- Maintain a risk register and contingency plans for all projects.

**E. Staffing & Resource Management**

- Ensure proper resource allocation and balanced workloads.
- Provide training on project management tools like MS Project and Primavera.
- Improve team capability to enhance project execution efficiency.

**PMO Type Recommendation**

- **Current Stage:** Supportive PMO provides guidance, templates, advisory support, and training.

**Expected Benefits**

- Improved cost and schedule performance.
- Enhanced risk mitigation and decision-making.
- Streamlined procurement and resource management.
- Increased transparency, accountability, and standardization across all projects.
- Capacity building for project managers and team members.

## 3.3 Proposed PMO Organizational Structure

A three-tier PMO hierarchy is suggested:

### 3.3.1 PMO Governance Level (Strategic PMO)

Reports to: Rector / Pro-Rector / Director General (DG)

Key Roles:

- Director PMO
- Deputy Director PMO
- PMO Quality & Compliance Officer

Responsibilities:

- Approves methodologies, policies, standards.
- Ensures alignment with NUST Strategic Plan.
- Reviews portfolio performance and risks.
- Authorizes major changes or escalations.

### 3.3.2 PMO Management Level (Tactical PMO)

Reports to: Director PMO

Key Roles:

- Project Portfolio Manager
- Planning & Scheduling Manager
- Cost Control Manager
- Risk & Compliance Analyst

Responsibilities:

- Portfolio prioritization
- Resource planning
- Tracking timelines, cost, quality
- Conducting audits & risk assessments

### 3.3.3 PMO Operational Level (Execution PMO)

Reports to: Departmental Project Managers

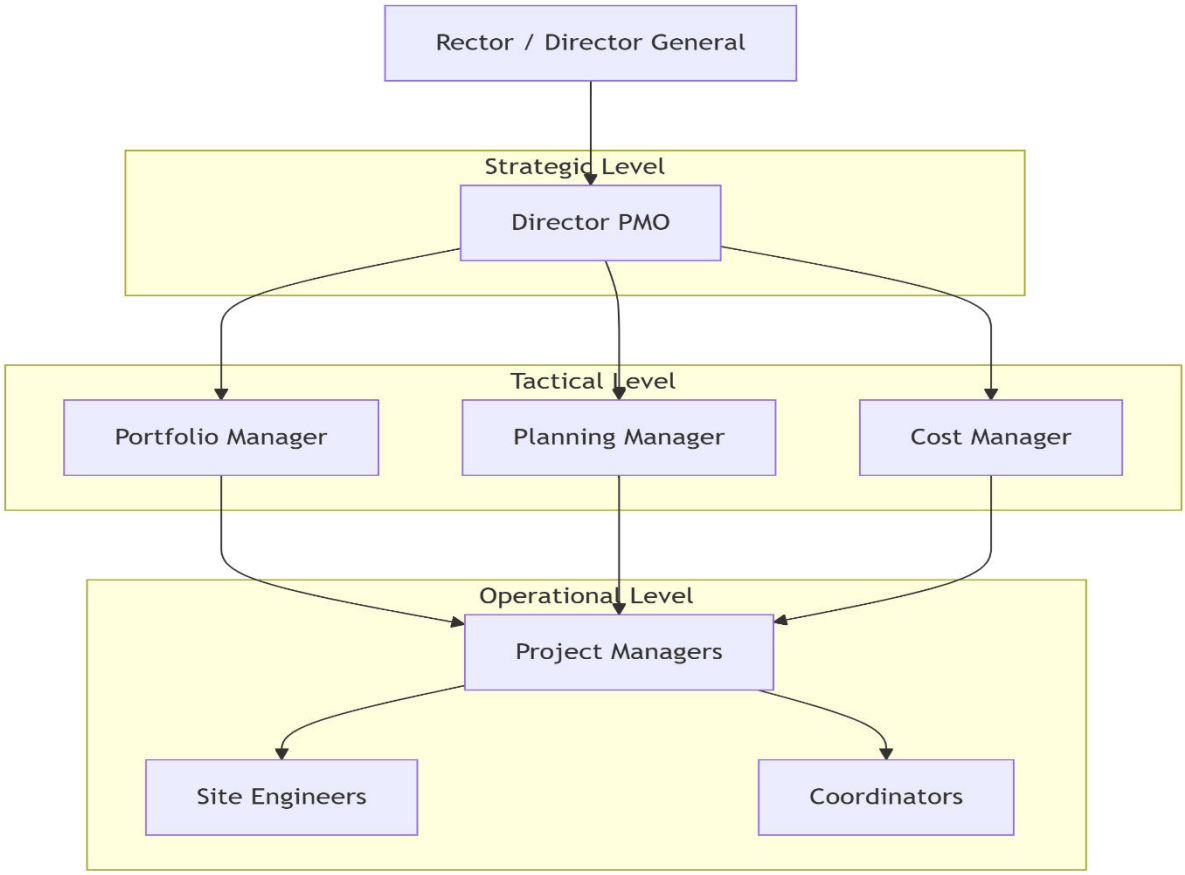
Key Roles:

- Project Managers (PMs)
- Site Engineers / Technical Leads
- Project Coordinators
- Document Controllers

Responsibilities:

- Daily project execution and monitoring
- Coordination with finance, HR, procurement
- Weekly reporting & quality checks

- Maintaining documentation, drawings, approvals




## 3.4. PMO Charter for NUST

| **Project Overview** |
| --- |
| This charter formally authorizes the establishment of a centralized Project Management Office (PMO) at the National University of Sciences & Technology (NUST). The PMO will function as a support and governance body to enhance project planning, execution, monitoring, and control |

| |
|---|
| across the university. |
| **Project Title:**<br>Development of a Centralized Project Management Office (PMO) at NUST |
| **Project Sponsors:**<br>Rector, NUST<br>Pro-Rector (Planning & Development), NUST |
| **Planned Start Date:**<br>20 September 2025 |
| **Planned Completion Date:**<br>20 September 2026 |
| **Expected Organizational Impact:**<br>The PMO will improve overall project performance at NUST by strengthening control over cost, schedule, risk, and procurement, thereby minimizing delays and enhancing delivery outcomes. |

| PMO Project Team Structure | |
|---|---|
| Name | ROLE |
| XYZ | PMO Head |
| XYZ | Planning and scheduling Officer |
| XYZ | Cost Engineering & Estimation Expert |
| XYZ | Financial Planning & Budget Analyst |
| XYZ | Resource Allocation & Capacity Manager |
| XYZ | Procurement & Contract Management Specialist |
| XYZ | Training & Capability Development Lead |
| XYZ | Stakeholder Engagement & Communications Manager |
| XYZ | Performance Measurement & Analytics Officer |
| XYZ | Documentation & Reporting Coordinator |

| Key Stakeholders |
| --- |
| • Rector and Executive Leadership |
| • Deans, Directors, and Department Heads |
| • Finance, Human Resource, and Procurement Divisions |
| • PMO Staff |
| • Project Managers and Project Teams |
| PMO Scope of Work |
| The PMO will operate as a **supportive and advisory entity**, focusing on the standardization of project management practices related to cost control, scheduling, procurement, risk management, and human resource planning.<br>It will also provide continuous guidance, tools, training, and performance monitoring mechanisms to ensure consistent project execution across NUST. |
| PMO Objectives |
| Strengthen budget planning and reduce financial overruns |
| Improve schedule adherence and on-time project completion |
| Enhance procurement efficiency and contract oversight |
| Establish systematic risk identification and mitigation practices |
| Optimize resource utilization and improve staff competency in PM tools |
| Promote transparency, coordination, and accountability in projects |
| Deliverables and Key Milestones |

| |
|---|
| Primary Deliverables: |
| Standardized PMO templates for cost, schedule, procurement, and risk management |
| Centralized project dashboards and reporting framework |
| Training programs and PM knowledge repository |
| Risk registers with mitigation and contingency measures |
| **Major Milestones:** |
| PMO establishment and staffing: Months 1–2 |
| Development and deployment of PM tools and templates: Months 3–4 |
| Issuance of initial monitoring and performance reports: Month 5 |
| University-wide training and process implementation: Month 6 |
| Key Project Risks |
| Resistance from departments in adopting standardized PMO processes |
| Delays in approvals, reporting, or availability of accurate project data |
| Initial shortage of skilled PMO personnel |

| |
|---|
| Procurement-related delays impacting project timelines |
| **Project Constraints** |
| Limited financial and human resources for PMO implementation |
| Existing projects may require phased alignment with PMO standards |
| Dependence on cross-departmental coordination and cooperation |
| **PMO Roles and Responsibilities** |
| Act as a coordination hub between academic, administrative, and project teams |
| Design and maintain PM methodologies, SOPs, and standardized templates |
| Monitor project performance and conduct periodic reviews |
| Provide mentoring, training, and advisory support to project managers |
| Manage a centralized documentation and lessons-learned repository |
| Support procurement planning and institutional resource management |
| **Communication and Reporting Framework** |

| Communication tool | Target Audience | Timeline |
|---|---|---|
| PMO briefing sessions | Project managers and PMO team | Monthly |
| Executive progress summaries | Rector and Senior Management | Quarterly |
| Consolidated performance reports | Departments and Sponsors | Every two month |

| | | |
|---|---|---|
| Online PMO portal for documents & updates | All stakeholders | Real time |
| Issue escalation and feedback meetings | Relevant Departments | As required |

| Authorization and formal approval |
|---|
| This PMO Charter becomes effective upon formal approval by the designated authorities. By signing below, the approving officials confirm their agreement with the objectives, scope, roles, and responsibilities defined in this document and authorize the establishment and operation of the PMO at NUST. |

| **Approving Authority** | **Name** | **Signature** | **Date** |
|---|---|---|---|
| Executive Authority (Rector / Pro-Rector P&D) | XYZ | | |
| Concerned Department Representative | XYZ | | |
| PMO Implementation Lead / Project Manage | XYZ | | |

## 3.5. PMO Value Proposition

The PMO adds measurable value to NUST through:

**Time Efficiency**

Reduction in project delays

Faster decision-making

**Cost Efficiency:**

Reduces budget overruns through standardized cost estimation, monitoring, and dashboards.

**Schedule Reliability:**

Ensures timely project delivery with clear milestones, consistent tracking, and proactive issue resolution.

**Procurement Optimization:**

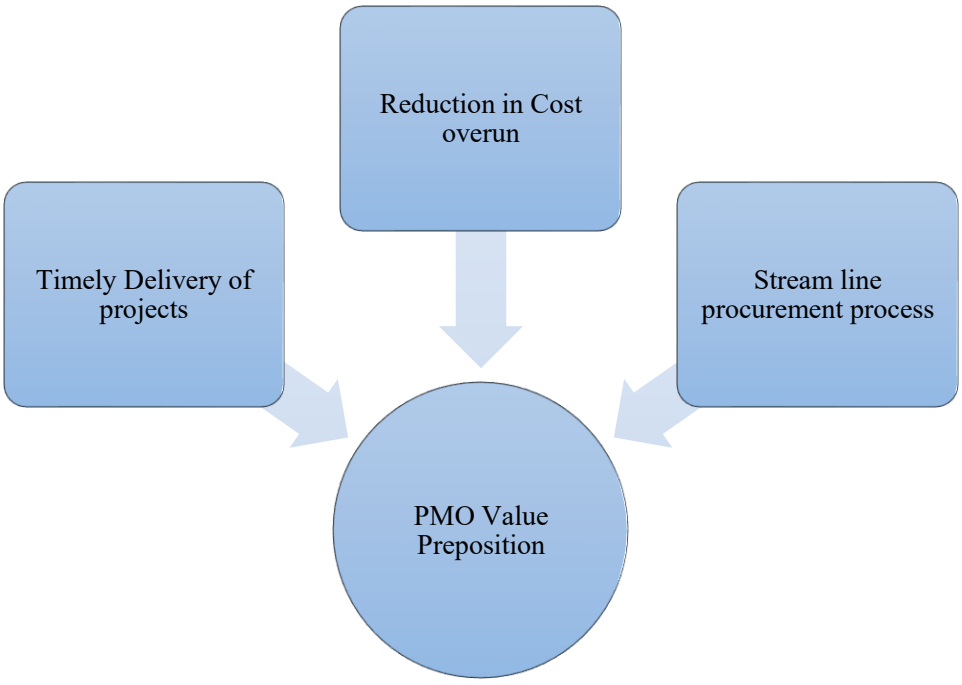
Streamlines procurement processes, reduces delays, and improves vendor coordination.

**Risk Management:**

Enables proactive risk identification, mitigation, and continuous monitoring to prevent project disruptions.

**Staffing & Resource Effectiveness:**

Balances workloads, enhances team skills, and provides training on PM tools for better execution.




## 3.6 PMO Category

**Recommended PMO Category: Supportive PMO**

Proposed PMO Type for NUST: Supportive PMO

We proposed a Supportive PMO for NUST because it provides guidance, templates, training, best practices, and documentation support to project teams without enforcing strict control. This model fits NUST's current environment where departments work independently and need help, standardization, and coordination rather than tight monitoring. A supportive PMO will improve project quality while still giving flexibility to all departments.

## 3.7 PMO Future Roadmap for NUST

Month 1: PMO Setup

- Appoint PMO Director and core functional team (Cost, Schedule, Procurement, Risk, Resource, Documentation)
- Define roles, responsibilities, and reporting lines.
- Identify ongoing projects and key gaps (cost, schedule, procurement, risk, staffing).
- Prepare initial templates for cost, schedule, risk, and procurement tracking.

Month 2: Process Standardization

- Standardize project management processes and reporting formats.
- Implement basic dashboards for cost, schedule, and risk monitoring.
- Start training project managers and team members on PMO processes and tools.
- Develop risk registers and resource allocation plans.

Month 3: Pilot Implementation

- Apply PMO processes on 1–2 pilot projects.
- Collect feedback from PMs and team members.
- Adjust templates, dashboards, and workflows based on pilot results.
- Begin weekly updates and monthly progress reporting to senior management.

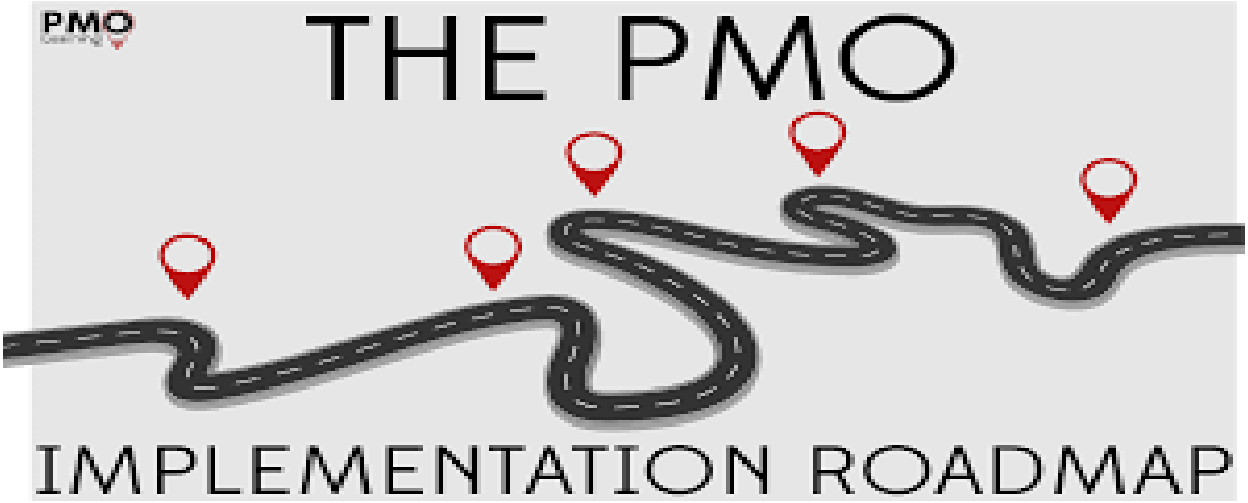
Month 4: Initial Full Implementation

- Roll out standardized PMO practices to more projects.
- Ensure cost, schedule, procurement, and risk monitoring are consistently applied.
- Conduct review meetings to identify early improvements.
- Start building a knowledge repository for lessons learned and best practices.

Key Outcome (First 4 Months):

- Establishes a Supportive PMO framework.

- Provides standardized processes, templates, and dashboards.
- Trains project teams and improve coordination, monitoring, and reporting.
- Prepares NUST for broader PMO adoption and gradual maturity growth.




# CHAPTER 4

## 4.1 Stakeholder list

| Stakeholder | Role in Projects |
|---|---|

| INTERNAL STAKEHOLDER | |
|---|---|
| **Rector Office** | Strategic approval, governance, final decision-making |
| **Pro-Rector (Planning & Resources)** | Oversees infrastructure, resources, budget alignment |
| **Director Planning & Development (P&D)** | Approves planning, feasibility, scheduling |
| **Director Civil Works / Engineering Directorates** | Execution of construction projects |
| **Department HoDs** | Provide academic requirements, lab needs, space planning |
| **Research Centers (ASAB, SMME, SEECS, NUSTIAN R&D)** | Define R&D project requirements |
| **Finance Directorate** | Budgeting, allocation, disbursement, financial audits |
| **Procurement/Stores Directorate** | Tendering, vendor management, material approvals |
| **Quality Assurance Directorate** | Ensures compliance with standards and regulations |
| **ICT Directorate** | Digital transformation, MIS, automation & IT project execution |
| **Project Managers / Focal Persons** | Day-to-day execution and monitoring |
| **Faculty & Staff** | End users and contributors to project requirements |
| **Students** | Beneficiaries, feedback providers for academic and digital initiatives |

| EXTERNAL STAKEHOLDER | |
|---|---|
| **Stakeholder** | **Role in Projects** |
| **HEC (Higher Education Commission)** | Funding approvals, compliance, academic standards |
| **Planning Commission / Government Bodies** | PC-1/PC-2 approvals for federal-funded projects |
| **Contractors & Consultants** | Execution of construction, design, and consultancy |
| **Vendors & Suppliers** | Deliver equipment, digital systems, lab machinery |
| **Regulatory Authorities (PEC, CDA, EPA)** | Certification, safety compliance, environmental approval |
| **Industry Partners** | Collaboration for R&D, labs, internships |
| **Donors/International Agencies** | Funding through grants and research projects |

## 4.2 Stake holder requirements register

Stakeholder Requirements Register (NUST)

| Stakeholder | Role | Contact | Requirements | Priority | Impact | Expectations |
|---|---|---|---|---|---|---|
| Rector Office | Top Executive / Decision Maker | XYZ | Timely completion of projects, transparent reporting, alignment with NUST vision | High | High | Project delivered on time, strategic alignment with university goals, clear progress updates |
| Pro-Rector (Planning & Resources) | Oversight & Budget Approval | XYZ | Budget adherence, compliance with policies | High | High | Accurate budget utilization, policy compliance, cost control |
| P&D Directorate | Planning & Development | XYZ | Clear scope, feasibility study | High | High | Detailed project plan, realistic scope, proper documentation |
| Civil Works Directorate | Construction | XYZ | Updated designs, timely approvals | Medium | High | On-time approvals, smooth construction workflow |
| Finance Directorate | Financial Management | XYZ | Accurate cost estimates, timely release requests | High | Medium | Proper fund allocation, no delays in payments |
| Procurement Directorate | Procurement Management | XYZ | Proper specifications, no last-minute requests | High | High | procurement on schedule, minimal delays |
| ICT Directorate | IT / Digital Systems | XYZ | System requirements defined early, user acceptance criteria | Medium | Medium | Functional IT systems, minimal rework, early testing and acceptance |

| | | | | | | |
|---|---|---|---|---|---|---|
| Department HOD | Academic Oversight | XYZ | Facilities, labs, classrooms that meet academic needs | High | High | Learning facilities ready on time, fit for academic programs, quality assurance |
| Students & Faculty | End Users | XYZ | Functional learning environment, digital systems | Medium | Medium | Usable classrooms/labs, accessible digital tools, minimal disruptions |
| HEC | Regulatory Body | XYZ | Compliance, deliverables reporting, fund utilization | High | High | Timely reporting, proper fund usage, regulatory compliance |

## 4.3 PMO framework:


**PMO Type:** Supportive PMO to provide guidance, templates, training, and centralized monitoring without strict enforcement.

**Objectives:** Improve cost**,** schedule, procurement, risk, and staffing management, increase transparency, and standardize processes.

**Roles:**

- PMO Director – overall oversight
- Project Managers – track cost, schedule, risk, and progress
- Cost, Schedule, Procurement, Risk, and Resource Managers – manage respective areas
- Documentation Officer – maintain templates, reports, and lessons learned

**Processes:** Standardized project initiation, planning, execution, monitoring, risk, procurement, and closure.

**Tools & Templates:** Dashboards, cost sheets, schedule trackers, risk registers, procurement templates, standardized reports.

**Communication:** Weekly PM updates, monthly dashboards to management, regular review meetings, and centralized knowledge repository.

**Key Benefits:** Reduces **cost overruns**, improves schedule adherence, mitigates risks, streamlines procurement, enhances resource management, and strengthens overall project management maturity.

# 4.4 PMO Functional Model and Function Names for NUST:

Based on your survey, interview data, identified gaps (cost, schedule, procurement, risk, staffing), and recommended Supportive PMO**,** here is aPMO Functional Model and Function Names for NUST:

## PMO Functional Model – NUST

### 4.4.1. PMO Director / Head

- **Function:** Overall governance, strategic alignment, and oversight of all PMO functions.
- **Responsibilities:**
    - Ensure PMO supports NUST strategic objectives
    - Monitor performance of all projects
    - Approve PMO processes, templates, and dashboards

### 4.4.2. Project Management / Project Managers

- **Function:** Day-to-day project execution and monitoring
- **Responsibilities:**
    - Track **cost**, schedule, risk, and resource usage
    - Report project progress to PMO Director
    - Coordinate with functional managers and teams

### 4.4.3. Cost / Finance Function

- **Function Name:** Cost Control & Financial Management
- **Responsibilities:**
  - Standardize cost estimation templates
  - Monitor budget adherence and variances
  - Provide financial dashboards and reports

### 4.4.4 Schedule Function

- **Function Name:** Schedule & Timeline Management
- **Responsibilities:**
  - Define project milestones and timelines
  - Monitor project progress and delays
  - Ensure consistent schedule reporting

### 4.4.5. Procurement Function

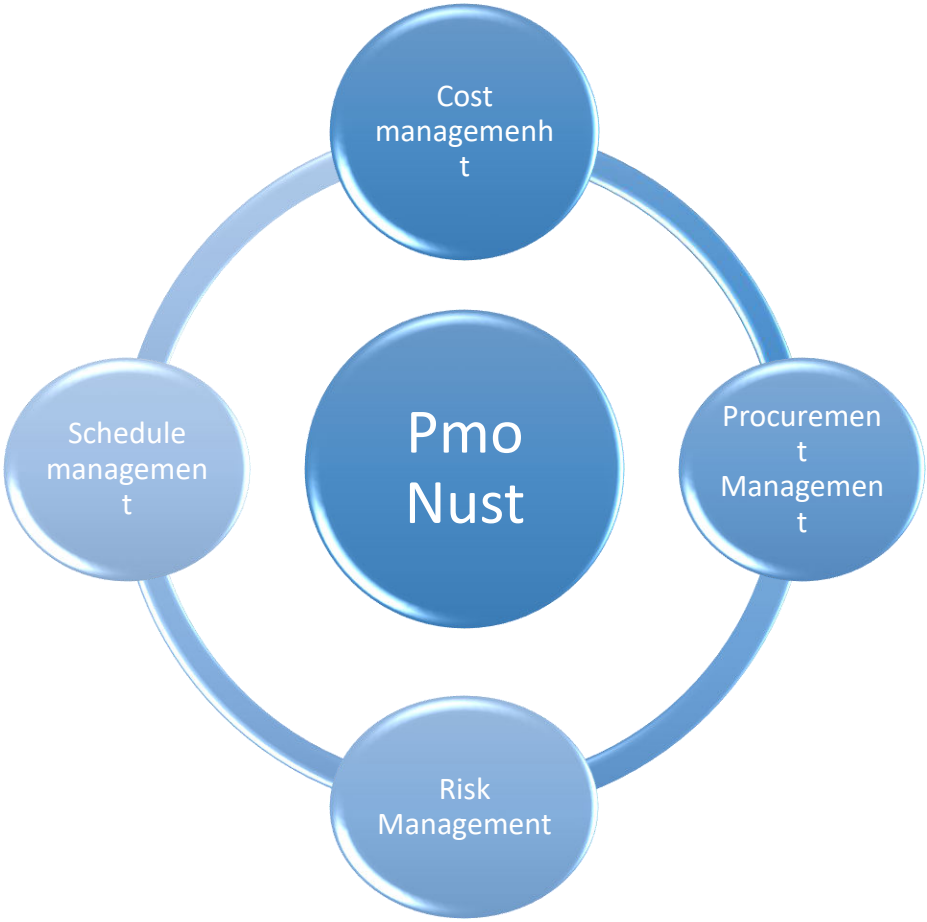
- **Function Name:** Procurement & Vendor Management
- **Responsibilities:**
  - Streamline procurement approvals and processes
  - Track vendor performance and delivery timelines
  - Reduce procurement-related project delays

### 4.4.6. Risk Function

- **Function Name:** Risk Management & Mitigation
- **Responsibilities:**
  - Identify and monitor project risks continuously
  - Maintain risk registers and contingency plans
  - Advise PMs on risk mitigation strategies

### 4.4.7. Staffing / Resource Function

- **Function Name:** Resource & Capacity Management
- **Responsibilities:**
  - Allocate resources efficiently and balance workloads
  - Identify skill gaps and training needs
  - Support project teams in effective resource utilization


Cost managemenh t
Procuremen t Managemen t
Risk Management
Schedule managemen t
Pmo Nust

# CHAPTER 5

## 5.1 PMO SCOPE STATEMENT

| **PMO Scope Statement**<br>**Project Title:**<br>**Construction of School of Artificial Intelligence & Data Science (SAIDS), NUST Islamabad** |
|---|
| Purpose of the PMO<br><br>The PMO will support the project team by giving guidelines, templates, reports, and monitoring tools.<br>It will ensure the project moves smoothly, stays on track, and follows NUST rules. |
| PMO Type<br><br>**Supportive PMO**<br>(Provides help, templates, reporting, guidance, but does not control the project directly.) |
| Objectives<br><br>• To support project planning, scheduling, and reporting.<br>• To monitor progress and highlight any delays or risks.<br>• To ensure quality, safety, and documentation standards are followed.<br>• To coordinate communication between NUST departments (Finance, Procurement, Facilities).<br>• To help the project finish on time, within budget, and meet NUST requirements. |
| In-Scope (What PMO will do)<br><br>• Provide templates for schedule, risk register.<br>• Review project plans and timelines.<br>• Monitor weekly/monthly progress and prepare reports.<br>• Track risks, issues, and change requests.<br>• Support communication between the contractor and NUST.<br>• Arrange meetings, maintain documentation, and ensure proper approvals.<br>• Help maintain quality and HSE reporting. |
| Out of Scope (What PMO will NOT do)<br><br>• Direct control of contractor work on site.<br>• Making engineering or design decisions.<br>• Approving or rejecting payments (finance department responsibility).<br>• Managing procurement of materials.<br>• On-site supervision (handled by project engineer/consultant). |
| **Assumptions** |

- All departments will share timely information.
- Project manager and contractor will cooperate with reporting needs.
- NUST approvals will be provided within expected timelines.
- Budget and resources will be available as planned.

**Constraints**

- Work must follow NUST construction policies and government regulations.
- Limited working hours due to campus operations.
- Schedule depends on timely approvals from NUST bodies.
- Weather conditions may affect construction progress.
- Availability of materials and contractor performance.

## 5.2 PMO Work Breakdown Structure (WBS)

**1.0 PMO Implementation for NUST**

**1.0 As-Is Analysis**

1.1 Current Project Situation
1.2 Gaps in Cost, Schedule, Procurement, Risk, Staffing
1.3 Key Findings & Issues

**2.0 PMO Establishment**

2.1 Supportive PMO Definition
2.2 PMO Vision & Objectives
2.3 PMO Roles & Authority
2.4 PMO Organizational Structure

**3.0 PMO Policies & Processes**

3.1 Project Management Policies
3.2 Standard Procedures (SOPs)
3.3 Standard Templates & Reports

**4.0 PMO Functional Areas**

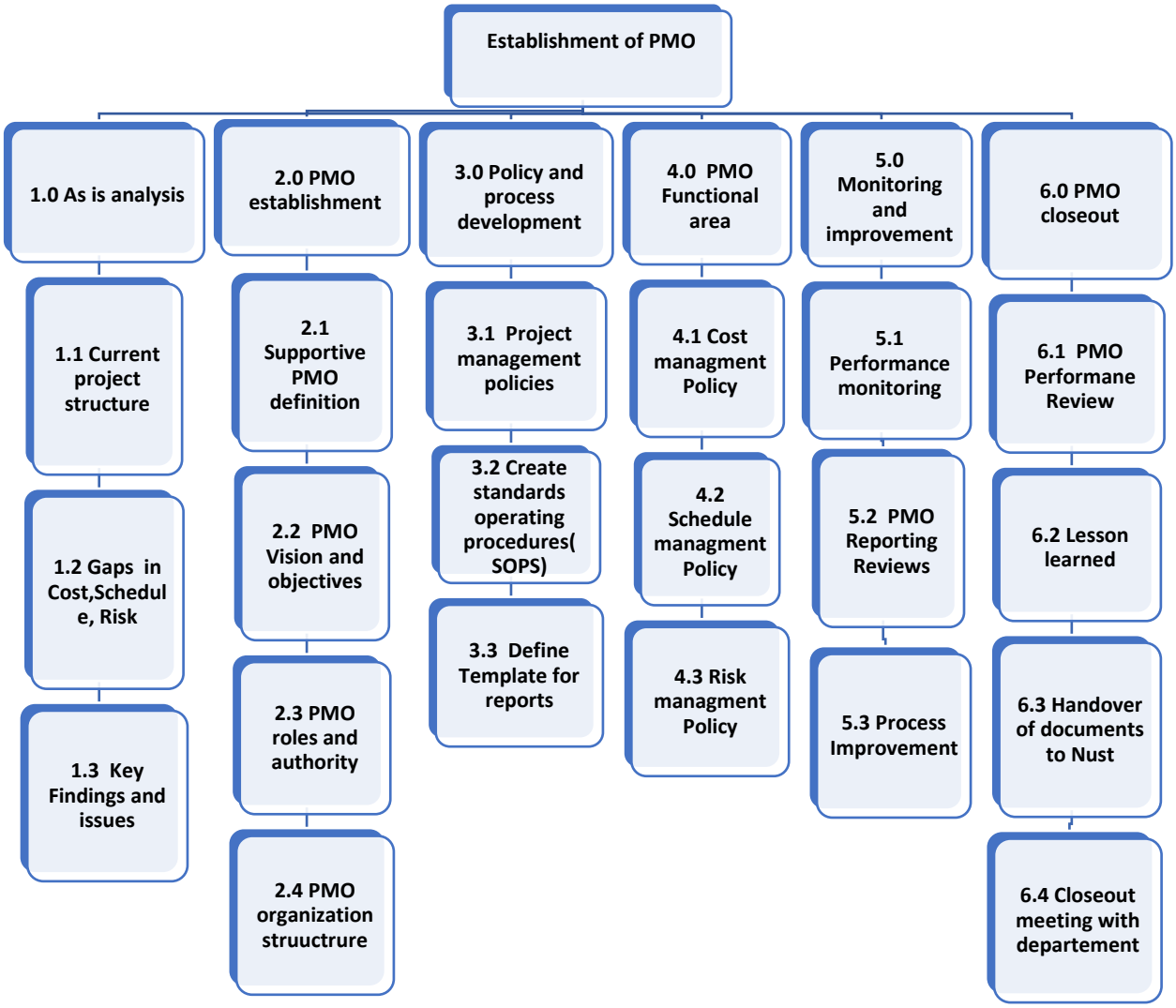
4.1 Cost Management
4.2 Schedule Management
4.3 Procurement Management
4.4 Risk Management
4.5 Resource & Staffing Management

**5.0 Monitoring & Improvement**

5.1 Performance Monitoring
5.2 PMO Reporting & Reviews
5.3 Process Improvement

**6.0 PMO Closeout**

6.1 Final PMO report
6.2 Lessons learned
6.3 Handover of documents to NUST
7.4 Closeout meeting with departments


Establishment of PMO
1.0 As is analysis
1.1 Current project structure
1.2 Gaps in Cost,Schedule, Risk
1.3 Key Findings and issues
2.0 PMO establishment
2.1 Supportive PMO definition
2.2 PMO Vision and objectives
2.3 PMO roles and authority
2.4 PMO organization struuctrure
3.0 Policy and process development
3.1 Project management policies
3.2 Create standards operating procedures( SOPS)
3.3 Define Template for reports
4.0 PMO Functional area
4.1 Cost managment Policy
4.2 Schedule managment Policy
4.3 Risk managment Policy
5.0 Monitoring and improvement
5.1 Performance monitoring
5.2 PMO Reporting Reviews
5.3 Process Improvement
6.0 PMO closeout
6.1 PMO Performane Review
6.2 Lesson learned
6.3 Handover of documents to Nust
6.4 Closeout meeting with departement

# 5.3 PMO Schedule & Plan (Detailed – WBS Based)

**Project:** PMO Implementation for NUST
**Duration:** 15 November 2025 – 31 December 2025 (6 Weeks)

1.0 As-Is Analysis
Duration: 15 Nov – 23 Nov 2025

| WBS ID | Activity Name | Duration (Days) | Start Date | Finish Date | % Complete |
|---|---|---|---|---|---|
| **1.1.1** | Review ongoing project documents and reports | 3 | 15-Nov-25 | 17-Nov-25 | 100% |
| **1.1.2** | Understand cost, schedule & procurement practices | 3 | 15-Nov-25 | 17-Nov-25 | 100% |
| **1.1.3** | Identify existing project monitoring methods | 2 | 18-Nov-25 | 19-Nov-25 | 100% |
| **1.2.1** | Identify gaps in cost control and budgeting | 2 | 18-Nov-25 | 19-Nov-25 | 100% |
| **1.2.2** | Identify schedule and approval delays | 2 | 18-Nov-25 | 19-Nov-25 | 100% |
| **1.2.3** | Identify procurement, risk & staffing issues | 2 | 20-Nov-25 | 21-Nov-25 | 100% |
| **1.3.1** | Compile survey and interview results | 2 | 20-Nov-25 | 21-Nov-25 | 100% |
| **1.3.2** | Document key issues and weaknesses | 2 | 22-Nov-25 | 23-Nov-25 | 100% |
| **1.3.3** | Prepare As-Is Analysis summary | 1 | 23-Nov-25 | 23-Nov-25 | 100% |

2.0 PMO Establishment
Duration: 24 Nov – 30 Nov 2025

| WBS ID | Activity Name | Duration | Start | Finish | % |
|---|---|---|---|---|---|
| **2.1.1** | Define PMO type (Supportive) | 2 | 24-Nov-25 | 25-Nov-25 | 100% |
| **2.1.2** | Clarify PMO advisory & support role | 2 | 24-Nov-25 | 25-Nov-25 | 100% |
| **2.1.3** | Align PMO approach with NUST environment | 2 | 24-Nov-25 | 25-Nov-25 | 100% |
| **2.2.1** | Define PMO vision statement | 2 | 26-Nov-25 | 27-Nov-25 | 100% |
| **2.2.2** | Define cost, schedule & risk objectives | 2 | 26-Nov-25 | 27-Nov-25 | 100% |
| **2.3.1** | Define PMO roles & responsibilities | 2 | 28-Nov-25 | 29-Nov-25 | 100% |

| | | | | | |
|---|---|---|---|---|---|
| **2.3.2** | Define decision-making & escalation authority | 1 | 29-Nov-25 | 29-Nov-25 | 100% |
| **2.4.1** | Finalize PMO organizational structure & reporting lines | 2 | 29-Nov-25 | 30-Nov-25 | 100% |

3.0 PMO Policies & Processes

Duration: 01 Dec – 14 Dec 2025

| WBS ID | Activity Name | Duration | Start | Finish | % |
|---|---|---|---|---|---|
| **3.1.1** | Develop Schedule Management Policy | 4 | 01-Dec-25 | 04-Dec-25 | 100% |
| **3.1.2** | Develop Cost Management Policy | 4 | 01-Dec-25 | 04-Dec-25 | 100% |
| **3.1.3** | Develop Risk Management Policy | 4 | 01-Dec-25 | 04-Dec-25 | 100% |
| **3.2.1** | Develop SOPs for cost, schedule & risk | 4 | 05-Dec-25 | 08-Dec-25 | 100% |
| **3.2.2** | Define approval & reporting steps | 3 | 05-Dec-25 | 07-Dec-25 | 100% |
| **3.3.1** | Develop standard schedule templates | 3 | 09-Dec-25 | 11-Dec-25 | 100% |
| **3.3.2** | Develop cost estimation & tracking templates | 3 | 09-Dec-25 | 11-Dec-25 | 100% |
| **3.3.3** | Develop risk register & reporting formats | 3 | 09-Dec-25 | 11-Dec-25 | 100% |

4.0 PMO Policy Implementation (Schedule, Cost & Risk)

Duration: 15 Dec – 21 Dec 2025

4.1 Schedule Management Policy Implementation

| WBS ID | Activity | Dur | Start | Finish | % |
|---|---|---|---|---|---|
| **4.1.1** | Align schedule with approved scope & WBS | 2 | 15-Dec-25 | 16-Dec-25 | 100% |
| **4.1.2** | Develop standard WBS | 2 | 15-Dec-25 | 16-Dec-25 | 100% |
| **4.1.3** | Define activity sequencing & dependencies | 2 | 17-Dec-25 | 18-Dec-25 | 100% |
| **4.1.4** | Estimate activity durations | 2 | 17-Dec-25 | 18-Dec-25 | 100% |
| **4.1.5** | Assign resources to activities | 1 | 19-Dec-25 | 19-Dec-25 | 100% |

**4.2 Cost Management Policy Implementation**

| WBS ID | Activity Name | Duration (Days) | Start Date | Finish Date | % Complete |
|---|---|---|---|---|---|
| **4.2.1** | Identify direct & indirect project costs | 2 | 15-Dec-25 | 16-Dec-25 | 100% |

| | | | | | |
|---|---|---|---|---|---|
| **4.2.2** | Prepare detailed cost estimates | 2 | 17-Dec-25 | 18-Dec-25 | 100% |
| **4.2.3** | Develop Cost Breakdown Structure (CBS) | 2 | 17-Dec-25 | 18-Dec-25 | 100% |
| **4.2.4** | Allocate costs to activities and milestones | 1 | 19-Dec-25 | 19-Dec-25 | 100% |

**4.3 Risk Management Policy Implementation**

| WBS ID | Activity Name | Duration (Days) | Start Date | Finish Date | % Complete |
|---|---|---|---|---|---|
| **4.3.1** | Identify technical, financial & schedule risks | 2 | 15-Dec-25 | 16-Dec-25 | 100% |
| **4.3.2** | Prepare project risk register | 2 | 17-Dec-25 | 18-Dec-25 | 100% |
| **4.3.3** | Assess and prioritize project risks | 2 | 17-Dec-25 | 18-Dec-25 | 100% |
| **4.3.4** | Develop risk mitigation & contingency plans | 2 | 19-Dec-25 | 20-Dec-25 | 100% |

**5.0 Monitoring & Improvement**

**Duration:** 22 Dec – 27 Dec 2025

| WBS ID | Activity | Duration | Start | Finish | % |
|---|---|---|---|---|---|
| **5.1.1** | Define PMO KPIs & escalation thresholds | 2 | 22-Dec-25 | 23-Dec-25 | 100% |
| **5.2.1** | Define reporting formats & review structure | 2 | 24-Dec-25 | 25-Dec-25 | 100% |
| **5.3.1** | Collect feedback & update PMO processes | 2 | 26-Dec-25 | 27-Dec-25 | 100% |

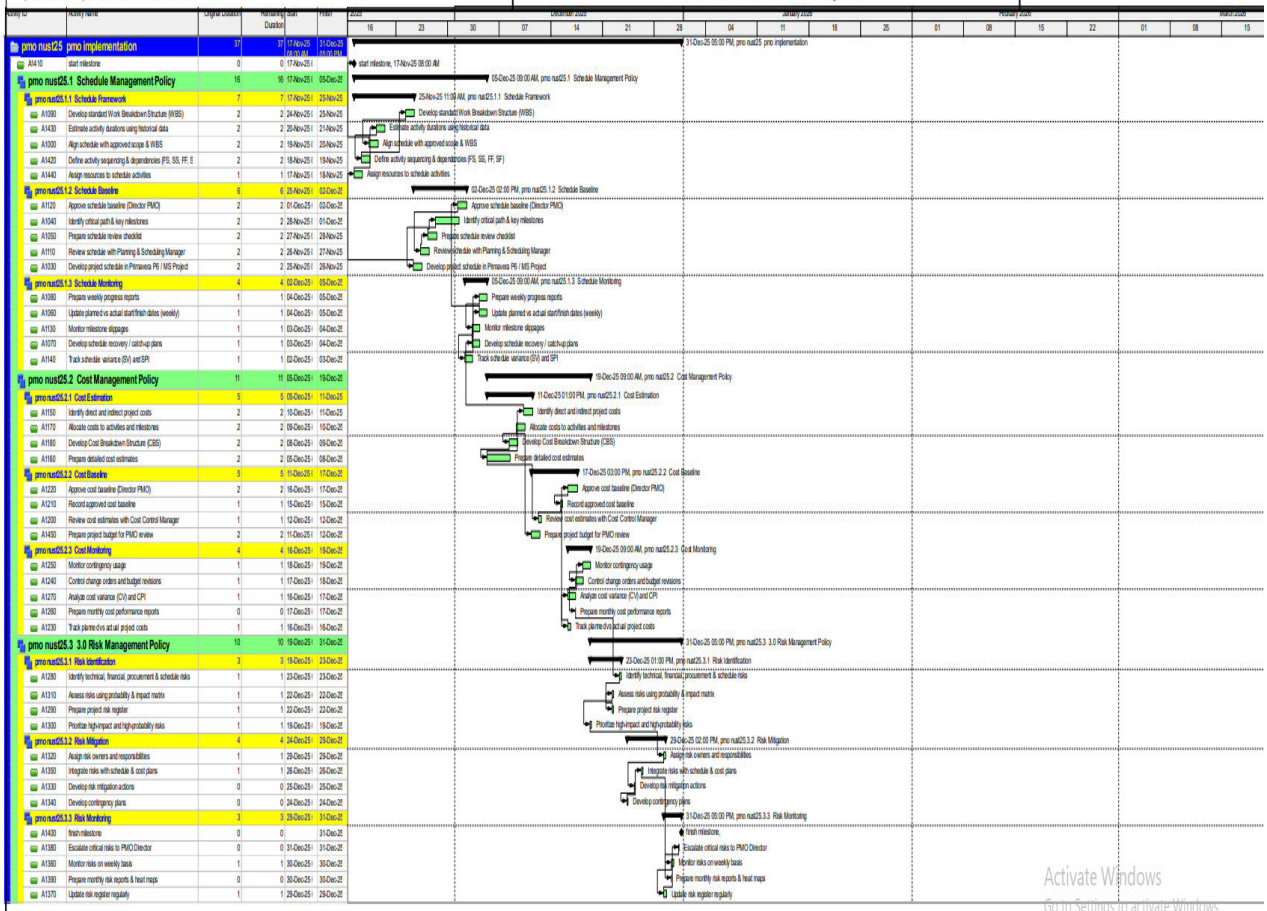
6.0 PMO Closeout

Duration: 28 Dec – 31 Dec 2025

| WBS ID | Activity | Duration | Start | Finish | % |
|---|---|---|---|---|---|
| **6.1.1** | Prepare & finalize PMO final report | 2 | 28-Dec-25 | 29-Dec-25 | 100% |
| **6.2.1** | Conduct & document lessons learned | 1 | 30-Dec-25 | 30-Dec-25 | 100% |
| **6.3.1** | Handover PMO documents to NUST | 1 | 30-Dec-25 | 30-Dec-25 | 100% |
| **6.4.1** | PMO Closeout meeting (Milestone) | 0 | 31-Dec-25 | 31-Dec-25 | 100% |

# pmo implementation

## Classic Schedule Layout



# CHAPTER 6

## 6 .1 SOPs & FUNCTIONAL DETAILS

Below are SOPs for each PMO function: Schedule, Cost, and Risk.

### 6.1.1 SOP – Schedule Management

Purpose:

To standardize planning, tracking, controlling schedules.

Responsibility:

PMO Schedule Engineer & Project Managers

**Procedure:**

| Step | Activity | Responsible | Output |
|---|---|---|---|
| 1 | Collect project WBS | PM | WBS Document |
| 2 | Prepare baseline schedule | PMO Scheduler | Gantt Chart |
| 3 | Review & approve schedule | PMO Director | Approved baseline |
| 4 | Weekly updates | PM | Progress % |
| 5 | Calculate SPI, SV | Scheduler | Variance Report |
| 6 | Schedule control actions | PMO | Recovery Plan |
| 7 | Monthly reporting | PMO | Dashboard |

### 6.1.2 SOP – Cost Management

Purpose:

Ensure cost control consistency across all projects.

Procedure:

| Step | Activity | Responsible | Output |
|---|---|---|---|
| 1 | Prepare budget estimate | PM | Budget estimate |
| 2 | Develop Cost Baseline | PMO Cost Officer | Approved baseline |
| 3 | Track actual vs planned cost | PMO Cost Officer | Cost variance report |
| 4 | Analyze cost overruns | PM/PMO | Corrective actions |

| | | | |
|---|---|---|---|
| 5 | Approve variations | PMO Director | VO approval |
| 6 | Monthly cost reporting | PMO | Cost dashboard |

### 6.1.3 SOP Risk Management

Purpose:

Proactively identify and minimize project risks.

Procedure:

| Step | Activity | Responsible | Output |
|---|---|---|---|
| 1 | Identify risks | PM/PMO | Risk Register |
| 2 | Qualitative assessment | PMO Risk Analyst | Scoring |
| 3 | Quantitative analysis | PMO | Cost & time impact |
| 4 | Response planning | PMO/PM | Mitigation plan |
| 5 | Monitor triggers | PMO | Updated register |
| 6 | Monthly risk reporting | PMO | Risk heat map |

## 6.2 Schedule Management policy

| **Schedule Management** |
|---|
| **Policy Statement:**<br><br>This policy defines a standardized Schedule Management Framework for all infrastructure, academic, IT, research, and development projects executed at the National University of Sciences & Technology (NUST).<br>The objective is to ensure realistic planning, on-time delivery, effective coordination, and proactive control of schedule risks.<br>All project schedules shall be developed, reviewed, approved, monitored, and controlled in accordance with the NUST PMO Schedule Management Methodology. |
| Procedures/Steps for schedule:<br><br>All project schedules shall be developed using the following mandatory steps**:**<br><br>• **Define Project Scope & Deliverables**<br>Align schedule with approved Scope Statement and WBS. |

- **Develop Work Breakdown Structure (WBS)**
  Decompose deliverables into work packages and activities.
- **Sequence Activities**
  Identify logical relationships (FS, SS, FF, SF) and dependencies.
- **Estimate Activity Durations**
  Use historical data, expert judgment, and vendor inputs.
- **Assign Resources**
  Allocate manpower, equipment, and materials to each activity.
- **Develop Project Schedule**
  Prepare schedule using approved tools (Primavera P6 / MS Project).
- **Identify Critical Path & Milestones**
  Highlight key milestones and schedule constraints.

## i. Schedule Review and Approval:

Before submission for approval, the Project Manager shall ensure that the project schedule is complete, logical, and compliant with PMO standards.

The following documents are mandatory for schedule review:

- Approved Work Breakdown Structure (WBS)
- Draft Project Schedule (resource-loaded)
- Schedule Review Checklist
- Schedule Risk Register (time-related risks)
- Resource Allocation & Loading Sheet

**Schedule Approval Process**

The schedule approval process shall follow a formal governance hierarchy:
Project Manager → Planning & Scheduling Manager → Director PMO

- The Planning & Scheduling Manager shall review schedule logic, dependencies, critical path, milestones, and feasibility.
- The Director PMO shall grant final approval and authorize the Schedule Baseline.

## ii. Schedule Monitoring and Adjustments:

**Schedule Monitoring**

- Project progress shall be monitored on a weekly basis against the approved baseline.
- Planned vs. actual start/finish dates shall be updated in the scheduling tool.
- Schedule variance and milestone slippage shall be identified and documented.

**Schedule Control & Corrective Actions**

- Any delay affecting critical path or key milestones shall be reported to PMO immediately.

- The Project Manager shall prepare a schedule recovery or mitigation plan, which may include:
    - Re-sequencing of activities
    - Resource reallocation
    - Schedule compression techniques (fast-tracking / crashing)

## 6.2 Cost Management Policy

### Cost Management Policy

**Policy Statement:**

A cost management system will be used for all NUST projects to ensure delivery within approved budgets. Project Managers will estimate costs and submit them to the Cost Control Manager and Director PMO for approval. After approval, the estimate becomes the Cost Management Plan.

**Procedures/steps:**

- **Estimate Costs**
  Identify all direct & indirect costs (materials, labor, and equipment).
- **Allocate Costs**
  Distribute costs across activities, milestones, and project phases.
- **Set Budget**
  Prepare a detailed project budget for PMO review.
- **Track Spending**
  Compare actual costs with the baseline budget and identify variations.
- **Report Costs**
  Submit monthly budget and cost performance reports to PMO.
- **Vendor Coordination**
  Support procurement in cost negotiation and contract evaluation.

**Review and Approval:**

- PM prepares estimate → Cost Control Manager reviews → Director PMO approves.
- Approved cost becomes the baseline budget.
- PM tracks expenses; PMO monitors financial performance.

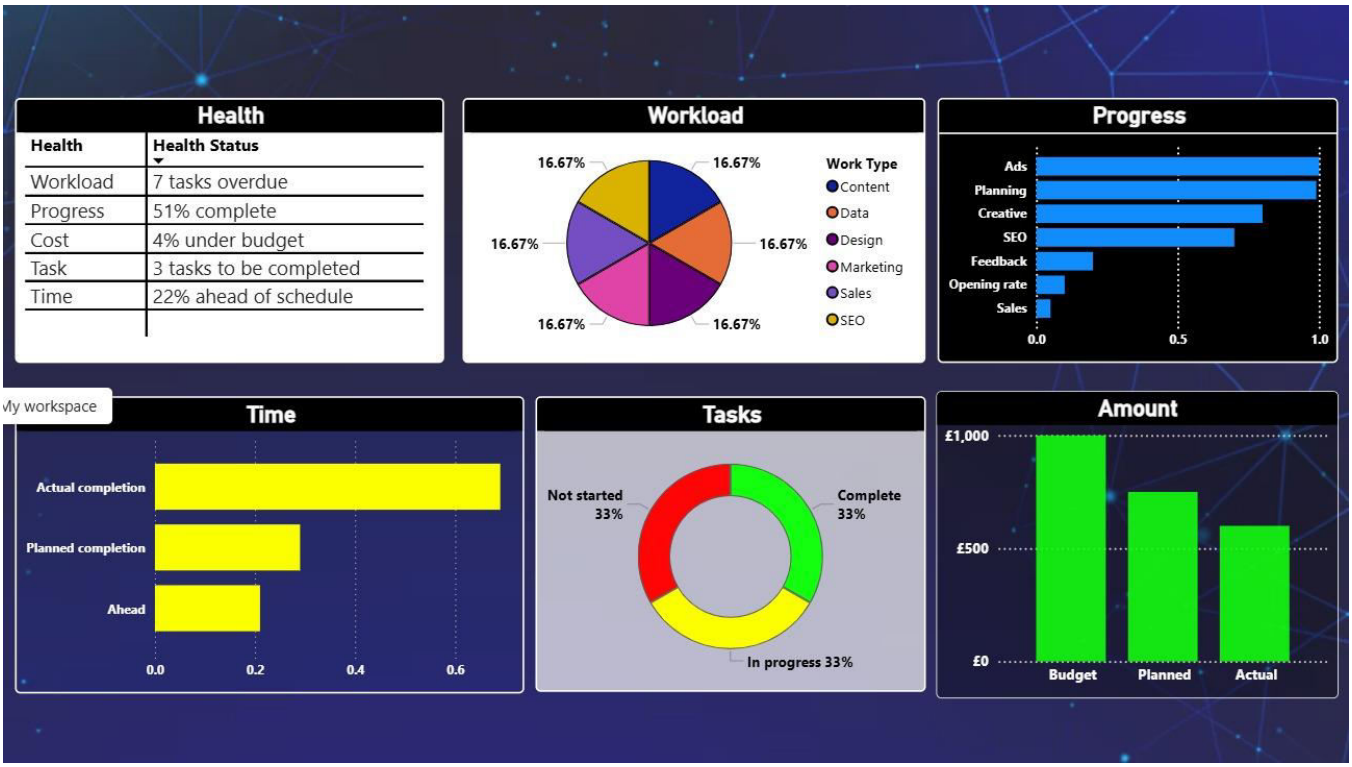
**Cost Control Measures:**

- Any cost change must follow the PMO Change Control Process.
- No budget revision allowed without Director PMO approval.
- Regular cost reviews ensure early detection of overruns.

## 6.4 Risk Management Policy

| Risk Management Policy |
| --- |
| **Policy Statement**<br><br>This policy defines the standard Risk Management Framework for all NUST projects. The goal is to identify, assess, and control potential risks early to avoid delays, cost overruns, and quality issues. Project Managers must prepare a Risk Register and submit it to the Risk & Compliance Analyst and Director PMO for approval**.** |
| **i. Steps for Risk Management:**<br><br>• Identify Risks<br>• List technical, financial, procurement, HR, safety, and external risks.<br>• Assess Risks<br>• Evaluate each risk's likelihood and impact (High / Medium / Low).<br>• Prioritize Risks<br>• Focus first on high-impact or high-probability risks.<br>• Plan Mitigation<br>• Develop preventive actions and contingency measures<br>• Assign Owners<br>• Allocate each risk to a responsible person (PM, Engineer, Procurement, etc.).<br>• Monitor Risks<br>• Review and update the risk status weekly.<br>• Report Risks<br>• Include risk updates in monthly PMO reports and escalate major risks to Director PMO.<br><br>**ii. Review & Approval:**<br><br>• PM prepares Risk Register → Risk & Compliance Analyst reviews → Director PMO approves.<br>• Approved risks become part of the Risk Management Plan.<br>• PMO tracks risk status and ensures corrective actions are taken.<br><br>**iii. Risk Control Measures:**<br><br>• Follow PMO Change Control Process for any major risk-driven scope/cost/schedule change.<br>• High-impact risks must be reported immediately to PMO and Director P&D.<br>• Quarterly risk reviews ensure continuous improvement. |

POWER BI DASHBOARD




PMO Performance Metrics (KPIs)

| KPI | Target | Measurement Method |
|---|---|---|
| **Cost Overrun Reduction** | 20% reduction | Comparison vs. pre-PMO projects |
| **Schedule Adherence** | 85% on-time delivery | Schedule Performance Index (SPI) |
| **Procurement Cycle Time** | 30% reduction | Days from request to PO issuance |
| **Risk Identification Rate** | 90% risks identified early | Risk register analysis |
| **PM Training Completion** | 100% of PMs trained | Training attendance & certification |

# CHAPTER 7

PMO IMPLEMENTATION

PROJECT NAME: Construction of School of Artificial Intelligence & Data Science (SAIDS), NUST

PMO TYPE: Supportive PMO

PROJECT Schedule & Plan (Detailed – WBS Based)

**Project:** Construction Project (NUST)
**Duration:** 01 January 2026 – 31 December 2026 (12 Months)

## PLANNING PHASE
## Duration: 01 Jan – 28 Feb 2026
## 1.1 Project Initiation & Approvals

| WBS ID | Activity Name | Duration (Days) | Start Date | Finish Date |
|---|---|---|---|---|
| **1.1.1** | Project charter approval | 5 | 01-Jan-26 | 05-Jan-26 |
| **1.1.2** | Define project scope & objectives | 5 | 06-Jan-26 | 10-Jan-26 |
| **1.1.3** | Stakeholder identification | 4 | 11-Jan-26 | 14-Jan-26 |
| **1.1.4** | Authority & governance setup | 4 | 15-Jan-26 | 18-Jan-26 |

**1.2 Design & Technical Planning**

| WBS ID | Activity Name | Duration | Start | Finish |
|---|---|---|---|---|
| **1.2.1** | Conceptual architectural design | 10 | 19-Jan-26 | 28-Jan-26 |
| **1.2.2** | Structural design | 10 | 29-Jan-26 | 07-Feb-26 |
| **1.2.3** | MEP design (Electrical, HVAC, IT) | 10 | 08-Feb-26 | 17-Feb-26 |
| **1.2.4** | Design reviews & approvals | 5 | 18-Feb-26 | 22-Feb-26 |

**1.3 Cost, Schedule & Risk Planning**

| WBS ID | Activity Name | Duration | Start | Finish |
|---|---|---|---|---|
| **1.3.1** | Prepare detailed cost estimates | 4 | 23-Feb-26 | 26-Feb-26 |
| **1.3.2** | Develop project schedule (Primavera) | 3 | 27-Feb-26 | 01-Mar-26 |
| **1.3.3** | Risk identification & mitigation planning | 3 | 02-Mar-26 | 04-Mar-26 |

2.0 EXECUTION PHASEDuration: 05 Mar – 30 Nov 2026

2.1 Mobilization & Site Preparation

| WBS ID | Activity | Duration | Start | Finish |
|---|---|---|---|---|
| **2.1.1** | Site handover | 3 | 05-Mar-26 | 07-Mar-26 |
| **2.1.2** | Contractor mobilization | 5 | 08-Mar-26 | 12-Mar-26 |
| **2.1.3** | Temporary facilities setup | 5 | 13-Mar-26 | 17-Mar-26 |
| **2.1.4** | Site layout & safety arrangements | 4 | 18-Mar-26 | 21-Mar-26 |

2.2 Civil & Structural Works

| WBS ID | Activity | Duration | Start | Finish |
|---|---|---|---|---|
| **2.2.1** | Excavation & earthworks | 15 | 22-Mar-26 | 05-Apr-26 |
| **2.2.2** | Foundations | 20 | 06-Apr-26 | 25-Apr-26 |
| **2.2.3** | Superstructure (columns, slabs) | 60 | 26-Apr-26 | 24-Jun-26 |
| **2.2.4** | Roofing works | 15 | 25-Jun-26 | 09-Jul-26 |

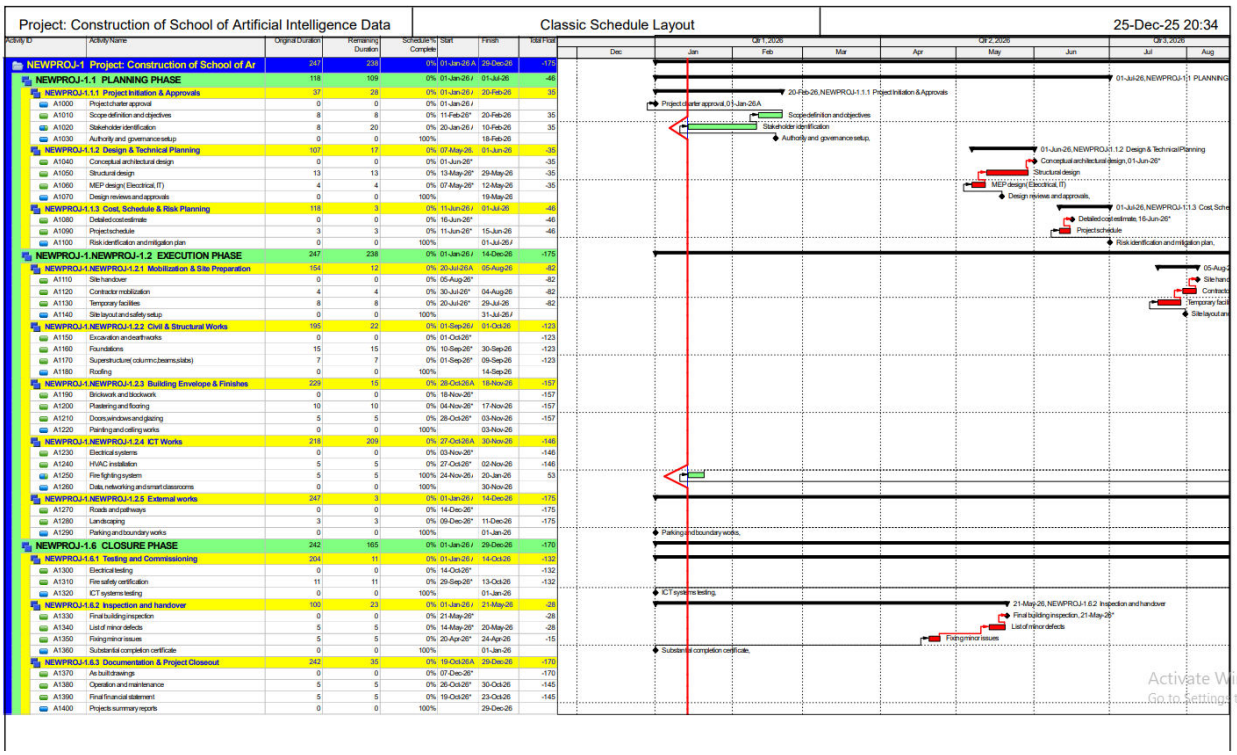
2.3 Finishes & MEP Works

| WBS ID | Activity | Duration | Start | Finish |
|---|---|---|---|---|
| **2.3.1** | Brickwork &block work | 30 | 10-Jul-26 | 08-Aug-26 |
| **2.3.2** | Electrical, HVAC & plumbing works | 45 | 09-Aug-26 | 22-Sep-26 |
| **2.3.3** | Doors, windows & finishing works | 40 | 23-Sep-26 | 01-Nov-26 |
| **2.3.4** | Painting & final finishes | 20 | 02-Nov-26 | 21-Nov-26 |

**3.0 CLOSING PHASE Duration: 01 Dec – 31 Dec 2026**

**3.1 Testing, Handover & Closeout**

| WBS ID | Activity | Duration | Start | Finish |
|---|---|---|---|---|
| **3.1.1** | Testing & commissioning | 10 | 01-Dec-26 | 10-Dec-26 |
| **3.1.2** | Final inspection & snag list | 7 | 11-Dec-26 | 17-Dec-26 |
| **3.1.3** | Fixing minor defects | 7 | 18-Dec-26 | 24-Dec-26 |
| **3.1.4** | Project handover & closeout report | 5 | 25-Dec-26 | 29-Dec-26 |




## 7.1 SCHEDULE MANAGEMENT TEMPLATES

### Project Schedule Template (Baseline)

**Project Title:** Construction of School of Artificial Intelligence & Data Science (SAIDS), NUST
**Department / Directorate:** Planning & Development / Civil Works
**Prepared By (PM):** Project Manager – SAIDS
**Reviewed By (PMO):** PMO Planning & Scheduling Officer
**Approved By (Director PMO):** Director PMO – NUST
**Baseline Date:**

### Project Overview

**Project Objective:**
To construct and commission a modern academic building for SAIDS with complete civil, MEP, and IT infrastructure.

- **Total Duration:**

### Baseline Schedule Table

| Task ID | Task Name | Start Date | End Date | Duration (Days) | Dependency | Responsible |
|---|---|---|---|---|---|---|
| 1.0 | Project Initiation | ------- | ------- | 30 | — | PM |
| 2.0 | Design & Planning | -------- | -------- | 90 | 1.0 | Design |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | Consultant |
| 3.0 | Procurement | -------- | -------- | 120 | 2.0 | Procurement Dept |
| 4.0 | Construction / Execution | -------- | --------- | 425 | 3.0 | Contractor |
| 5.0 | Testing & Commissioning | -------- | --------- | 60 | 4.0 | PM / PMO |

## WBS (Work Breakdown Structure)

**Project Title:** SAIDS Project – NUST

| WBS ID | Activity Name | Description | Deliverable |
|---|---|---|---|
| 1.0 | Project Initiation | Approvals & kickoff | Approved Project Charter |
| 1.1 | Feasibility Review | Technical & financial review | Feasibility Report |
| 2.0 | Design Phase | Architectural & engineering design | Approved Drawings |
| 2.1 | Design Validation | Stakeholder review | Approved Design Set |
| 3.0 | Procurement | Tendering & contracts | Awarded Contracts |
| 4.0 | Execution | Civil & MEP works | Completed Building |
| 5.0 | Closeout | Handover & documentation | Completion Certificate |

## Milestone List & Tracking

**Project Title:** SAIDS Project – NUST

| Milestone ID | Milestone Name | Description | Planned Date | Actual Date | Status | Approval Authority |
|---|---|---|---|---|---|---|
| M1 | Design Approval | Final drawings approved | --------- | --------- | Completed | Director P&D |
| M2 | Contract Award | Contractor on boarded | ---------- | -------- | Completed | Procurement |
| M3 | Structure Completion | Grey structure complete | ---------- | -------- | In Progress | PMO |
| M4 | Final Handover | Project completion | ---------- | -------- | Planned | Rector Office |

## Schedule Review Checklist (PMO – NUST)

✓ WBS completed and approved
✓ Logical dependencies defined
✓ Milestones clearly identified
✓ Procurement activities included
✓ Resource allocation reflected
✓ Risks linked with schedule
✓ Realistic durations assigned
✓ Compliance with NUST timelines

**PM Name & Signature:** Project Manager – SAIDS
**PMO Reviewer:** PMO Scheduling Officer
**Date:**

## Weekly Progress Update

**Project Title:** SAIDS Project – NUST

Progress Summary

- **Planned Progress (%):** 8%
- **Actual Progress (%):** 7%
- **Variance:** -1%

### Key Activities Completed This Week

- Design development drawings finalized
- Stakeholder coordination meeting held

### Activities Planned for Next Week

- Design validation review
- Preparation of tender documents

Issues / Delays

- Minor delay due to stakeholder feedback

Support Required from PMO / Management

- Fast-track design approvals

## Schedule Variance Report (SV / SPI)

**Reporting Month:** Dec 2025

| Activity | Planned % | Actual % | SV | SPI | Remarks |
|---|---|---|---|---|---|
| Design Phase | 10% | 9% | -1% | 0.90 | Minor delay |
| Procurement | 0% | 0% | 0 | 1.00 | Not started |
| Construction | 0% | 0% | 0 | 1.00 | Not started |

**Overall Schedule Status:**
☑**Minor Delay**

## Schedule Recovery / Catch-up Plan

**Reason for Delay:**
Delay in design approval due to additional stakeholder requirements.

Recovery Actions

| Issue | Root Cause | Corrective Action | Responsible | Target Date |
|---|---|---|---|---|
| Design delay | Late approvals | Parallel review & extra design resources | Design Consultant | |

Revised Completion Date:

**PM Signature:** _____
**PMO Approval:** _____

## Look-Ahead Schedule (2–4 Weeks)

**Project Title:** SAIDS Project – NUST

2–4 Week Look-Ahead Plan

| Week | Activity | Planned Start | Planned Finish | Responsible |
|---|---|---|---|---|
| Week 1 | Final design review | Nov-2025 | Nov-2025 | PM / Consultant |
| Week 2 | Design approval | Nov-2025 | Nov-2025 | P&D |
| Week 3 | Tender documents prep | Dec-2025 | Dec-2025 | Procurement |
| Week 4 | Tender advertisement | Dec-2025 | Dec-2025 | Procurement |

**Constraints / Risks:**

- Design approval delays
- Stakeholder availability

## 7.2 COST MANAGEMENT TEMPLATES

### Project Cost Estimate Template

**Project Title:** Construction of School of Artificial Intelligence & Data Science (SAIDS), NUST
**Department / Directorate:** Planning & Development / Civil Works
**Prepared By (PM):** Project Manager – SAIDS
**Reviewed By (PMO – Cost):** PMO Cost Control Manager

### Cost Estimation Summary

| Cost Category | Description | Estimated Cost (PKR) |
|---|---|---|
| Direct Costs | Materials, labor, equipment | 850,000,000 |
| Indirect Costs | Supervision, admin, utilities | 120,000,000 |
| Procurement Costs | Tenders, logistics | 150,000,000 |
| Contingency | Risk allowance | 80,000,000 |
| **Total Estimated Cost** | | **1,200,000,000** |

**Assumptions:**

- Prices based on current market rates
- No major scope changes expected
- Normal inflation accounted in contingency

### Cost Breakdown Structure (CBS) Template

**Project Title:** SAIDS Project – NUST

| CBS ID | Cost Element | Description | Estimated Cost (PKR) |
|---|---|---|---|
| 1.0 | Design Cost | Consultancy & drawings | 60,000,000 |
| 2.0 | Civil Works | Structure & finishing | 600,000,000 |
| 3.0 | Electrical Works | Wiring & fixtures | 180,000,000 |
| 4.0 | Mechanical Works | HVAC & plumbing | 150,000,000 |
| 5.0 | Equipment | Lab / IT equipment | 130,000,000 |
| 6.0 | Contingency | Risk reserve | 80,000,000 |
| **Total** | | | **1,200,000,000** |

# Cost Baseline Approval Template

**Project Title:** SAIDS Project – NUST
**Approved Budget (PKR):** 1,200,000,000
**Baseline Date:**

## Approval Record

| Role | Name | Signature | Date |
|---|---|---|---|
| Project Manager | XYZ | _____ | nov-2025 |
| Cost Control Manager (PMO) | XYZ | _____ | nov-2025 |
| Director PMO | XYZ | _____ | nov-2025 |

Approved cost becomes the **official cost baseline** for monitoring and control.

# Budget Tracking Sheet (Planned vs Actual)

**Reporting Month:**

| Cost Item | Planned Cost (PKR) | Actual Cost (PKR) | Variance | Remarks |
|---|---|---|---|---|
| Design | 60,000,000 | 58,000,000 | -2,000,000 | Savings |
| Civil Works | 200,000,000 | 210,000,000 | +10,000,000 | Steel price increase |
| Procurement | 50,000,000 | 48,000,000 | -2,000,000 | On track |
| Equipment | 30,000,000 | 30,000,000 | 0 | As planned |
| **Total** | **340,000,000** | **346,000,000** | **+6,000,000** | Minor overrun |

## Cost Variance Report (CV / CPI)

**Reporting Period:**

| Activity | Planned Value (PV) | Actual Cost (AC) | Earned Value (EV) | CV | CPI |
|---|---|---|---|---|---|
| Design | 60,000,000 | 58,000,000 | 60,000,000 | +2,000,000 | 1.03 |
| Construction | 200,000,000 | 210,000,000 | 195,000,000 | -15,000,000 | 0.93 |
| Procurement | 50,000,000 | 48,000,000 | 50,000,000 | +2,000,000 | 1.04 |

**Overall Cost Status:**
☑**Minor Overrun**

## Change Order / Variation Request Template

**Project Title:** SAIDS Project – NUST
**Change Request No:** CO-03
**Requested By:** Civil Works Directorate

## Change Details

**Description of Change:**
Additional foundation strengthening due to soil condition.

**Reason for Change:**
Unexpected site condition identified during excavation.

## Impact Analysis

| Impact Area | Yes / No | Remarks |
|---|---|---|
| Cost Impact | Yes | Additional concrete & steel |
| Schedule Impact | Yes | 2-week delay |
| Scope Impact | No | No functional change |

**Additional Cost (PKR):** 25,000,000

## Approval

| Authority | Signature | Date |
|---|---|---|
| PM | _____ | |
| PMO Cost Manager | _____ | |

| | | |
|---|---|---|
| Director PMO | _____ | |

## Contingency Reserve Tracking Template

**Project Title:** SAIDS Project – NUST

| Risk ID | Risk Description | Approved Contingency (PKR) | Used Amount | Balance |
|---|---|---|---|---|
| R1 | Price escalation | 50,000,000 | 20,000,000 | 30,000,000 |
| R2 | Design changes | 30,000,000 | 15,000,000 | 15,000,000 |
| **Total** | | **80,000,000** | **35,000,000** | **45,000,000** |

## Monthly Cost Dashboard Template

**Project:** SAIDS Project – NUST
**Month:** November 2025

### Cost Performance Summary

- **Approved Budget:** PKR 1,200,000,000
- **Actual Cost to Date:** PKR 346,000,000
- **Remaining Budget:** PKR 854,000,000
- **CPI:** 0.98

### Status Indicator

🟡 **Monitor**

### Key Remarks

Minor cost overruns observed due to civil works price escalation. Contingency reserve being utilized under PMO approval.

## 7.3 RISK MANAGEMENT TEMPLATES

## Risk Identification Sheet

**Project Title:** Construction of School of Artificial Intelligence & Data Science (SAIDS), NUST
**Department / Directorate:** Planning & Development / Civil Works

**Prepared By (PM):** Project Manager – SAIDS
**Date:** NOV-2025

| Risk ID | Risk Category | Risk Description | Possible Cause | Affected Area |
|---|---|---|---|---|
| R-01 | Procurement | Delay in material delivery | Lengthy approval process, vendor delays | Schedule |
| R-02 | Technical | Design changes during execution | Late academic requirements | Cost / Schedule |
| R-03 | Financial | Increase in material prices | Market inflation | Cost |
| R-04 | HSE | Safety incidents at site | Non-compliance with safety SOPs | Quality / Safety |

## Risk Register Template

**Project Title:** SAIDS Project – NUST

| Risk ID | Risk Description | Probability | Impact | Risk Score | Mitigation Strategy | Risk Owner | Status |
|---|---|---|---|---|---|---|---|
| R1 | Procurement delays | High | High | Critical | Early tendering, PMO follow-up | Procurement Officer | Open |
| R2 | Design changes | Medium | High | High | Design freeze, change control | Project Manager | Open |
| R3 | Price escalation | Medium | Medium | Medium | Contingency reserve | PMO Cost Manager | Open |
| R4 | Site safety risk | Low | High | Medium | Safety training & audits | Site Engineer | Open |

## Risk Assessment Matrix (Applied)

**Example Classification**

| Risk ID | Probability | Impact | Severity |
|---|---|---|---|
| R1 | High | High | High |
| R2 | Medium | High | High |
| R3 | Medium | Medium | Medium |
| R4 | Low | High | Medium |

## Risk Response / Mitigation Plan

**Project Title:** SAIDS Project – NUST

| Risk ID | Risk Description | Response Type | Mitigation Actions | Responsible | Target Date |
|---|---|---|---|---|---|
| R1 | Procurement delays | Mitigate | Advance approvals, weekly follow-ups | Procurement Officer | Nov-2025 |
| R2 | Design changes | Avoid | Design freeze, approval matrix | Project Manager | Oct-2025 |
| R3 | Price escalation | Accept | Use contingency reserve | PMO Cost Manager | Ongoing |
| R4 | Safety incidents | Mitigate | HSE training & inspections | Site Engineer | Ongoing |

## Risk Owner Assignment Sheet

**Project Title:** SAIDS Project – NUST

| Risk ID | Risk Description | Assigned Risk Owner | Role / Dept | Responsibility |
|---|---|---|---|---|
| R1 | Procurement delays | Procurement Officer | Procurement | Ensure timely material delivery |
| R2 | Design changes | Project Manager | PM | Control scope & approvals |
| R3 | Cost escalation | PMO Cost Manager | PMO | Monitor budget & contingency |
| R4 | Safety risk | Site Engineer | Civil Works | Enforce safety compliance |

## Risk Trigger & Early Warning Log

**Project Title:** SAIDS Project – NUST

| Risk ID | Trigger Event | Early Warning Signs | Action Required | Status |
|---|---|---|---|---|
| R1 | Tender approval delay | Repeated file returns | PMO escalation | Active |
| R2 | New lab | Emails from HoDs | Change review | Active |

| | | | | |
|---|---|---|---|---|
| | requirements | | meeting | |
| R3 | Market rate increase | Supplier quotations | Use contingency | Active |
| R4 | Minor site accidents | PPE violations | Safety briefing | Controlled |

## Monthly Risk Status Report

**Project Title:** SAIDS Project – NUST
**Reporting Month:**

### Risk Summary

| Total Risks | High | Medium | Low |
|---|---|---|---|
| 4 | 1 | 2 | 1 |

**Top Critical Risks**

| Risk ID | Description | Current Status | Action Taken |
|---|---|---|---|
| R1 | Procurement delays | High | Escalated to PMO |
| R2 | Design changes | Medium | Design freeze issued |

### Overall Risk Status

🟡 **Moderate**

**Prepared By (PM):** Project Manager
**Reviewed By (PMO):** PMO Risk Analyst

## Risk Escalation & Approval Form

**Project Title:** SAIDS Project – NUST
**Risk ID:** R1

### Escalation Details

**Risk Description:**
Delay in procurement approvals affecting construction timeline.

**Reason for Escalation:**
Repeated approval delays beyond planned schedule.

**Potential Impact:**
☐ Cost ☑ Schedule ☐ Scope ☐ Safety

### Recommended Action

Fast-track approvals and engage alternate suppliers.

### Approval

| Authority | Signature | Date |
|---|---|---|

| | | |
|---|---|---|
| Project Manager | _____ | Nov-2025 |
| PMO Risk Analyst | _____ | Nov-2025 |
| Director PMO | _____ | Nov-2025 |

## SCHEDULE MANAGEMENT TEMPLATES

| Project Schedule Template (Baseline) |
|---|
| **Project Title:** _____<br>**Department / Directorate:** _____<br>**Prepared By (PM):** _____<br>**Reviewed By (PMO):** _____<br>**Approved By (Director PMO):** _____<br>**Baseline Date:** _____ |
| **Project Overview** |
| **Project Objective:** |
| |
| |
| **Total Duration:** _____ |

| Baseline Schedule Table | | | | | | |
|---|---|---|---|---|---|---|
| **Task ID** | **Task Name** | **Start Date** | **End Date** | **Duration (Days)** | **Dependency** | **Responsible** |
| **1.0** | | | | | | |
| **2.0** | | | | | | |
| **3.0** | | | | | | |
| **4.0** | | | | | | |
| **5.0** | | | | | | |

| Work Breakdown Structure (WBS) – Sample | | | |
|---|---|---|---|
| **WBS ID** | **Activity Name** | **Description** | **Deliverable** |
| **1.0** | | | |
| **1.1** | | | |
| **2.0** | | | |
| **2.1** | | | |
| **3.0** | | | |

## Milestone List & Tracking (Sample)

| Milestone ID | Milestone Name | Description | Planned Date | Actual Date | Status | Approval Authority |
|---|---|---|---|---|---|---|
| **M1** | | | | | | |
| **M2** | | | | | | |
| **M3** | | | | | | |

## Schedule Review Checklist (PMO – Sample)

☐ WBS completed and approved
☐ Logical dependencies defined
☐ Milestones identified
☐ Procurement activities included
☐ Resource allocation reflected
☐ Risks linked with schedule
☐ Realistic durations assigned
☐ Compliance with organizational timelines

**PM Name & Signature:** _____
**PMO Reviewer:** _____
**Date:** _____

## Weekly Progress Update (Sample)

**Planned Progress (%):** _____
**Actual Progress (%):** _____
**Variance (%):** _____

**Key Activities Completed This Week:**

- 
- 

**Activities Planned for Next Week:**

- 

- 

**Issues / Delays:**

**Support Required from PMO / Management:**

## Schedule Variance Report (SV / SPI) – Sample

| Activity | Planned % | Actual % | SV | SPI | Remarks |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

**Overall Schedule Status:** ☐ On Track ☐ Minor Delay ☐ Major Delay

## Schedule Recovery / Catch-up Plan (Sample)

**Reason for Delay:**

| Issue | Root Cause | Corrective Action | Responsible | Target Date |
|---|---|---|---|---|
| | | | | |

**Revised Completion Date:** _____
**PM Signature:** _____
**PMO Approval:** _____

## Look-Ahead Schedule (2–4 Weeks) – Sample

| Week | Activity | Planned Start | Planned Finish | Responsible |
|---|---|---|---|---|
| **Week 1** | | | | |
| **Week 2** | | | | |
| **Week 3** | | | | |
| **Week 4** | | | | |

**Constraints / Risks:**

| |
|---|
| • |
| • |

## COST MANAGEMENT TEMPLATES (SAMPLE)

### Project Cost Estimate Template

| Cost Category | Description | Estimated Cost (PKR) |
|---|---|---|
| **Direct Costs** | | |
| **Indirect Costs** | | |
| **Procurement Costs** | | |
| **Contingency** | | |
| **Total Estimated Cost** | | |

**Assumptions:**

| |
|---|
| • |
| • |

### Cost Breakdown Structure (CBS) – Sample

| CBS ID | Cost Element | Description | Estimated Cost (PKR) |
|---|---|---|---|
| **1.0** | | | |
| **2.0** | | | |
| **3.0** | | | |

### Cost Baseline Approval Template

**Approved Budget (PKR): _____**
**Baseline Date: _____**

| Role | Name | Signature | Date |
|---|---|---|---|
| | | | |

| | | | |
|---|---|---|---|
| **Project Manager** | | | |
| **PMO Cost Manager** | | | |
| **Director PMO** | | | |

## Budget Tracking Sheet (Planned vs Actual)

| Cost Item | Planned Cost | Actual Cost | Variance | Remarks |
|---|---|---|---|---|
| | | | | |
| | | | | |

## Cost Variance Report (CV / CPI) – Sample

| Activity | PV | AC | EV | CV | CPI |
|---|---|---|---|---|---|
| | | | | | |

**Overall Cost Status:**☐ On Track ☐ Minor Overrun ☐ Major Overrun

# RISK MANAGEMENT TEMPLATES (SAMPLE)

## Risk Identification Sheet

| Risk ID | Risk Category | Risk Description | Possible Cause | Affected Area |
|---|---|---|---|---|
| | | | | |

## Risk Register Template

| Risk | Risk | Probability | Impact | Risk | Mitigation | Risk | Status |
|---|---|---|---|---|---|---|---|

| ID | Description | | | Score | Strategy | Owner | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

## Risk Response / Mitigation Plan

| Risk ID | Response Type | Mitigation Actions | Responsible | Target Date |
|---|---|---|---|---|
| | | | | |

## Monthly Risk Status Report

**Overall Risk Status:** ☐ Low ☐ Moderate ☐ High

| Risk ID | Description | Current Status | Action Taken |
|---|---|---|---|
| | | | |

## Risk Escalation & Approval Form

**Risk ID:** _____

**Risk Description:**

**Reason for Escalation:**

**Potential Impact:**

☐ Cost ☐ Schedule ☐ Scope ☐ Safety

| Authority | Signature | Date |
|---|---|---|
| **Project Manager** | | |
| **PMO** | | |
| **Director PMO** | | |