Central University of Technology, Free State

OFFICE OF THE VICE-CHANCELLOR

Central University of Technology, Free State

Strategic Plan 2026 – 2030

Table of Contents

Tables

Abbreviations

ACEEU	-	Accreditation Council for Entrepreneurial and Engaged Universities
AI	-	Artificial Intelligence
BBBEE	-	Broad-based Black Economic Empowerment
CHE		Council on Higher Education
CPRM	-	Centre for Rapid Prototyping and Manufacturing
CUT	-	Central University of Technology
DHET	-	Department of Higher Education and Training
ECPs	-	Extended Curriculum Programmes
ERP	-	Enterprise Resource Planning
FabLab	-	Fabrication Laboratory
FFE	-	Furniture, Fixtures, and Equipment
FPL	-	Food Poverty Line
FTE	-	Full-time Equivalent
GNU	-	Government of National Unity
GDP	-	Gross Domestic Product
HEQSF	-	Higher Education Qualifications Sub-Framework
HR	-	Human Resources
I&E	-	Innovation and Entrepreneurship
i-Gym	-	Innovation Gymnasium
Industry 4.0	-	Fourth Industrial Revolution
ICT	-	Information and Communication Technology
IoT	-	Internet of Things
IP	-	Intellectual Property
IPerM	-	Integrated Performance Management
IT	-	Information Technology
KPAs	-	Key Performance Areas
KPIs	-	Key Performance Indicators
LMIP	-	Labour Market Intelligence Partnership
merSETA	-	Manufacturing, Engineering and Related Services Sector Education and Training
MIT	-	Multi-, Inter-, and Transdisciplinary
MTDP	-	Medium-Term Development Plan
NDP	-	National Development Plan
NPPSET	-	National Plan for Post-School Education and Training
NSFAS	-	National Student Financial Aid Scheme
PSET	-	Post-school Education and Training
PQM	-	Programme Qualification Mix
R&D	-	Research and Development
SET	-	Science, Engineering and Technology
SETAs	-	Sector Education and Training Authorities

SI	-	Supplemental Instruction
SIS	-	Student Information System
SoTL	-	Scholarship of Teaching and Learning
STI	-	Science, Technology and Innovation
STEM	-	Science, Technology, Engineering, and Mathematics
STEP	-	Strategic Transformation of Educational Programmes
TVET	-	Technical and Vocational Education and Training
UoT	-	University of Technology
WIL	-	Work-integrated Learning

1. Introduction

The Central University of Technology (CUT) Strategy 2026-2030 represents a visionary blueprint that places students at the heart of the institution's mission and operations. Anchored in the values of Ubuntu, Integrity, Diversity, Innovation, Excellence, Sustainability, and Digital Citizenship, this strategy articulates a compelling vision of CUT as "a leading University of Technology - changing lives, transforming society and shaping the future." This strategy's ethos is fundamentally about creating an integrated student-centred ecosystem where systems, processes, and academic initiatives converge to prioritise student needs, growth, and ultimate success. This student-centred approach is not merely aspirational but is embedded in every strategic goal and operational initiative outlined in the framework.

This five-year strategy aims to consolidate and integrate CUT's existing institutional investments to significantly enhance student academic success, produce work-ready graduates with entrepreneurial mindsets, and strengthen the university's position as a technology-driven institution of choice. Through focused attention on retention and graduation rates, curriculum transformation, and digital process enhancement, CUT intends to create educational experiences that respond to the evolving demands of industry and society. The strategy further aims to accelerate research development, foster innovation, and strengthen work-integrated learning partnerships, thereby ensuring that CUT graduates are equipped with the theoretical knowledge, practical skills and entrepreneurial capabilities necessary for thriving in a rapidly changing world.

At the heart of CUT's strategic implementation approach is a comprehensive *Theory of Change* that connects strategic interventions to institutional outcomes through a logical chain of cause and effect. This methodical approach drives performance through clearly articulated strategies that target specific institutional challenges and opportunities. By renewing student recruitment and registration systems, building integrated academic advice and early alert mechanisms, improving teaching quality, institutionalising the *Strategic Transformation of Educational Programmes* (STEP), and promoting entrepreneurship throughout the curriculum, CUT creates a multifaceted approach to achieving its goals. This strategic framework is further bolstered by initiatives to build the university's brand, enhance financial sustainability through consultative budgeting, strengthen governance structures, and systematically develop campus infrastructure.

The strategy's effectiveness is ensured through a robust performance monitoring framework with detailed key performance indicators that track progress across all strategic dimensions. Each indicator features annual targets over the five-year period, providing a clear roadmap for progress evaluation and accountability. Through this comprehensive performance measurement approach, CUT will systematically monitor its advancement toward becoming a leading University of Technology that delivers quality education, drives impactful research, and fosters meaningful community engagement.

2. Situational Analysis

The development of this strategy was informed by a comprehensive situational analysis that examined both the external context and the internal operating environment. This analysis provided critical insights to ensure the strategy is responsive, future-oriented, and aligned with national and regional priorities.

External Context

The analysis began by situating CUT within the broader landscape of *South Africa's development priorities*, including the imperatives of the National Development Plan (NDP), the White Paper on Post-School Education and Training, and Agenda 2063. Special attention was paid to the *regional socioeconomic dynamics of the Free State Province*, including youth unemployment, economic stagnation, and uneven development - factors that significantly shape CUT's mandate and opportunities for impact.

The role of *Universities of Technology (UoTs) in the 21st century* was examined in the context of global and national trends, highlighting the need for technological institutions to drive applied research, innovation, and the development of work-ready graduates. The *labour market analysis* pointed to profound ongoing shifts in job content and skills demands, including the impact of automation, the rise of digital competencies, and the growing premium placed on entrepreneurship, creativity, and adaptability.

Internal Operating Environment

The internal analysis reviewed CUT's current capabilities and institutional performance across academic and operational domains. The university's *teaching, learning, research, and innovation activities* were evaluated alongside the *Strategic Transformation of Educational Programmes (STEP)* initiative. An in-depth *enrolment plan analysis* provided insights into demographic trends, programme demand, and institutional growth potential.

Key *teaching and learning priorities* were clarified in light of CUT's aspirations to promote inclusive, high-quality, and digitally enhanced education. This was complemented by a detailed *review of actual output delivered versus planned research outputs*, identifying strengths in applied research while also noting areas requiring greater collaboration and productivity. The university's growing commitment to *entrepreneurship and innovation* was also assessed, along with the ongoing *repositioning of the Welkom Campus* as a distinctive innovation-driven academic hub.

The analysis further covered *work-integrated learning (WIL)* initiatives, emphasising the need for more structured partnerships, enhanced assessment frameworks, and increased student placement opportunities. The *internal administrative and service environment* was reviewed, identifying areas for operational efficiency, digital transformation, and customer service improvements.

A *governance and institutional review* examined decision-making structures, oversight bodies, and alignment with strategic goals. The assessment of *workforce dynamics and institutional culture* highlighted the need for improved performance management systems, leadership development, and the embedding of a values-driven, high-performance ethos. The *digital transformation review* focused on modernising systems and improving data-informed decision-making.

A comprehensive analysis of *space, infrastructure, and facilities* underscored both progress and significant future needs, especially in relation to long-term campus development. Finally, the *Council on Higher Education (CHE) Institutional Audit* provided an important external quality assurance perspective, highlighting recommendations for strengthening academic governance, quality assurance, and continuous improvement across all institutional functions.

This situational analysis provided a robust evidence base that informed the strategic priorities, goals, and implementation strategies of the 2026–2030 Strategic Plan.

3. Opportunities, Threats, Strengths and Weaknesses

This section highlights the key drivers of change in the higher education and University of Technology context in South Africa. This assessment is based on analysis of key external issues, developments and trends noted in this report.

3.1.1. Opportunities and Threats in the External Environment

Five trends, as described below, significantly influence the opportunity and threat landscape of the CUT.

Digitalisation and automation

The technologies driving the Fourth Industrial Revolution (Industry 4.0) are transforming technical professions through advancements in areas such as artificial intelligence (AI), robotics, the Internet of Things (IoT), and cyber-physical systems. South Africa's economic shift from resource-based to knowledge- and service-driven industries further accentuates this trend.[1] For a University of Technology (UoT) such as CUT, this presents an *opportunity to position itself as a leader in technologies such as smart manufacturing, digital diagnostics, and engineering automation* by expanding programmes in mechatronics, cybersecurity, and data analytics. Additionally, leveraging regional innovation ecosystems can facilitate pilot projects in relevant emerging technologies. However, failure to *regularly update curricula* to reflect these advances risks obsolescence, leaving graduates ill-prepared for evolving job markets where hybrid digital-technical competencies are increasingly essential.

[1] See Central University of Technology. (2025). *Strategy Development: Document Review Report*. Unpublished Report. Central University of Technology.

Demand for interdisciplinary and hybrid competencies

Traditional disciplinary boundaries are blurring as industries increasingly require professionals with adaptability, systems thinking, and digital literacy. Engineering and technology sectors, in particular, are witnessing changes in occupational profiles, necessitating graduates who can integrate technical expertise with transversal skills such as critical thinking, collaboration, and entrepreneurship. CUT can seize this opportunity by *redesigning curricula to incorporate project-based learning, design thinking, and interdisciplinary innovation labs* that merge engineering, IT, health, and business disciplines. However, curricular rigidity and *limited academic staff capacity in interdisciplinary and digital teaching methods* may hinder responsiveness, potentially leaving graduates disadvantaged in a fluid job market.

Rising expectations for applied research and regional innovation impact

There is growing pressure on universities to contribute to regional socio-economic development through applied research and innovation, particularly in areas such as renewable energy, health technology, and smart manufacturing. CUT can strengthen its relevance by *expanding technology stations, innovation hubs, and partnerships with municipalities, large corporations and small enterprises* to drive a problem-solving approach to research.

Increasing demand for work-integrated learning (WIL) and employer partnerships

Employers increasingly prioritise job-ready graduates with practical experience, prompting a stronger emphasis on WIL and cooperative education models. CUT can capitalise on this trend by *positioning itself as a leader in WIL.* However, challenges such as uneven employer participation, particularly in rural or economically stagnant regions, and *insufficient institutional support structures* could limit scalability, affecting both graduate employability and institutional reputation.

Changing student demographics and expectations

Higher education in South Africa is experiencing a surge in first-generation, economically marginalised, and digitally diverse students who require flexible, career-oriented, and technology-enhanced learning. UoTs can respond by *offering stackable credentials and blended learning* while strengthening student support systems, including digital skills enhancement bootcamps and articulation pathways with regional universities and Technical and Vocational Education and Training (TVET) colleges. However, *inadequate digital infrastructure and academic readiness for online teaching* may constrain delivery; while failure to meet evolving learner expectations could negatively impact enrolment, throughput rates, and institutional competitiveness.

These *five* trends[2] present both opportunities and threats for CUT. Proactive adaptation, including curriculum innovation, strategic industry/ community partnerships, and investment in digital and research infrastructure, will be crucial for the institution to remain relevant and impactful in a rapidly evolving higher education landscape. Failure to respond effectively risks institutional

[2] Ibid.

stagnation and diminished graduate employability in an increasingly dynamic and technology-driven economy.

3.1.2. Strengths and Weaknesses Arising From the Internal Operating Environment

Five significant issues are driving and influencing and change at CUT, each with significant implications for its future.

Digital transformation and technology integration

Digital transformation and technology integration are reshaping higher education globally, necessitating CUT to transform its digital infrastructure in order to remain competitive. However, fragmented systems, outdated technologies, and underinvestment in ICT hinder progress. *Failure to integrate emerging and advanced digital technologies risks curriculum obsolescence and diminished student experiences*. At the same time, successful digital transformation could position CUT as a leader in SMART education and research, enhancing graduate employability and industry partnerships.

Workforce and leadership gaps

Workforce and leadership gaps pose a critical challenge, with *skill shortages in IT, research, and senior management* **-** compounded by inequitable workload distribution. Leadership instability, including vacant senior roles, disrupts strategic execution and strains service delivery. Addressing these gaps could improve institutional resilience, research output, and employee morale. While CUT benefits from an age-diverse workforce and structured performance management policies, negative employee sentiment reflects systemic cultural issues that need to be resolved.

Governance and institutional culture

Governance and institutional culture have been flagged as areas of concern, with the CHE audit revealing *mistrust, inconsistent policy enforcement, and weak academic governance.* These issues undermine CUT's strategic goals and erode stakeholder confidence. Strengthening governance through initiatives like the *Registrar's Restructuring Plan* could enhance transparency, accountability, and alignment with national mandates. While clear governance frameworks and values like *Ubuntu* offer opportunities for cultural renewal, tackling unresolved grievances and repairing fragmentation is vitally needed.

Infrastructure and resource constraints

Infrastructure and resource constraints significantly impact teaching, research, and service delivery. *Overcrowded facilities, deferred maintenance, and outdated systems* compromise staff and student satisfaction, as well as institutional efficiency. Strategic investments, such as those outlined in the *Facilities Master Plan*, could improve sustainability and safety. Forward-thinking plans like the Bloemfontein Campus pedestrianisation project demonstrate potential, but budget constraints and slow implementation limits progress. The acquisition of new property to expand

and reinvent the Bloemfontein Campus and the availability of land and the development of new infrastructure at the Welkom Campus constitute key strengths to leverage.

Student-centred challenges and stakeholder expectations

Student-centred challenges and stakeholder expectations highlight unmet needs, as evidenced by recurring NSFAS-related protests and demands for flexible learning options. Poor student experiences risk *declining enrolment and reputational damage*. Prioritising student-centric reforms, such as streamlined financial aid processes, could boost retention and graduate employability. Initiatives like Lexicon and WIL partnerships demonstrate responsiveness, but fragmented systems and a lack of standardised policies exacerbate dissatisfaction.

Industry Orientation

CUT has a *strong industry orientation*, evidenced by its robust practice-based learning approaches and industry-relevant academic offerings. This orientation is exemplified by CUT's well-established Work-Integrated Learning (WIL) partnerships spanning multiple sectors, which have achieved an impressive *99% placement rate for students* requiring industry exposure as part of their qualifications. This industry-embedded approach creates a distinctive advantage for CUT in developing work-ready graduates whose technical and practical capabilities are recognised by employers.

Providing Access

An analysis of CUT student data indicates that CUT serves primarily historically disadvantaged populations in South Africa, particularly African students from poor and working-class backgrounds, with a focus on the Free State province. The university appears to be successful in providing educational opportunities for female students and attracting academically strong students despite their often disadvantaged backgrounds.

CUT has positioned itself as a *regional education hub*, providing access pathways for historically underserved student populations, while *incrementally expanding its postgraduate training* to meet growing demand for advanced qualifications. Complementing this access mission, CUT *has established several recognised research centres and disciplinary niches* with significant growth potential, including additive manufacturing, rapid prototyping, environmental engineering, and information technology.

The table below provides a summary of the strengths, weaknesses, opportunities and threats:

Table 1: SWOT Summary

Opportunities	Threats
• Opportunity to position itself as a leader in technologies such as smart manufacturing, digital diagnostics, and engineering automation by strengthening/ expanding	• Failure to regularly update curricula to reflect various advances risks obsolescence, leaving graduates ill-prepared for evolving job markets where hybrid digital-technical competencies are increasingly essential.

programmes in mechatronics, cybersecurity, and data analytics. • Redesigning curricula to incorporate project-based learning, design thinking, and interdisciplinary innovation labs that merge engineering, IT, health, and business disciplines. • Strengthen its relevance by expanding technology stations, innovation hubs, and partnerships with municipalities and small enterprises to drive a problem-solving approach to research. • CUT can position itself as a leader in WIL. • Commercialisation of prototypes and patents through the technology transfer.	• Limited academic staff capacity in interdisciplinary and digital teaching methods may hinder responsiveness, potentially leaving graduates disadvantaged in a fluid job market. • Overemphasising commercial outputs (e.g., patents, spin-offs) without meaningful community engagement could undermine developmental impact, reducing the CUT's regional relevance. • Challenges such as uneven employer participation, particularly in rural or economically stagnant regions, and insufficient institutional support structures could limit scalability, affecting graduate employability and institutional reputation.
Strengths	**Weaknesses**
• CUT has a strong industry orientation through robust practice-based learning approaches and industry-relevant academic offerings • Well-established WIL partnerships spanning multiple sectors, which have achieved a 99% placement rate for students • CUT has positioned itself as a regional education hub, providing access pathways for historically underserved student populations • Incrementally expanding its postgraduate training • Established several recognised research centres and disciplinary niches with significant growth potential,	• Failure to integrate emerging and advanced technologies risks curriculum obsolescence and diminished student experiences • Mistrust, inconsistent policy enforcement, and weak academic governance • Over-crowded facilities, deferred maintenance, and outdated systems compromise student satisfaction and institutional efficiency. • Poor student experiences risk declining enrolment and reputational damage.

4. Enrolment Plan

CUT has adopted a deliberate strategy of enrolment stability for 2026 and 2027, maintaining consistent headcount targets of 21,418 students for both years. This strategic pause reflects a commitment to quality. It addresses several critical operational challenges including infrastructure capacity constraints, staffing challenges, and the need to focus on improving pass rates, graduation rates, and throughput rates. The stability period will allow establishing essential systems and support structures for sustainable future growth. Following this stability period, CUT projects significant growth, with 24,235 students in 2028, representing a 13.1% increase from 2027, 26,228 students in 2029, reflecting an 8.2% increase, and 27,184 students in 2030, showing

a 3.6% increase. This trajectory represents an average annual increase of 13.10% from 2025 to 2030, indicating measured expansion.

Regarding qualification types, undergraduate programmes will maintain 19,827 students during the stability period of 2026-2027 before growing to 25,164 students by 2030, representing 4.9% average annual growth over the five years. Total postgraduate enrolments are projected to grow significantly from 1,548 students in 2026-2027 to 1,965 students in 2030, with Masters programmes showing growth of 1.5%, and an average annual decrease of -2.5% for the doctoral programme over the period 2025 – 2030.

Table 2: Planned Enrolments

HEADCOUNT TOTALS: CONTACT + DISTANCE							
	Planned/expected enrolment						
	Approved Proposed Target 2025	Proposed Target 2026	Proposed Target 2027	Proposed Target 2028	Proposed Target 2029	Proposed Target 2030	Average Annual Increase: 2025-2030
First-time entering undergraduates	4 515	4 656	4 656	5 308	5 481	5 682	+4.7%
Total undergraduate	**19 803**	**19 827**	**19 827**	**22 434**	**24 279**	**25 164**	**+4.9%**
Postgraduate to masters level	2 710	892	892	1 010	1 093	1 133	-18.2%
Masters	542	460	460	520	563	584	+1.5%
Doctors	283	196	196	222	240	249	-2.5%
Total postgraduate	**3 536**	**1 548**	**1 548**	**1 752**	**1 896**	**1 966**	**-12.1%**
Occasional students		43	43	49	53	54	+5.0%
TOTAL ENROLMENT	**23 339**	**21 418**	**21 418**	**24 235**	**26 228**	**27 184**	**13.1%**

The postgraduate enrolment strategy addresses historical underperformance in research programmes. Masters programmes have shown significant under-achievement, with 2023 seeing only 24 graduates against a target of 164, representing an 85% shortfall. However, projections show growth from 460 students in 2026-2027 to 584 students in 2030. Doctoral programs, which have consistently fallen short of targets, are projected to grow from 196 students in 2026-2027 to 249 students in 2030.

The enrolment projections by major fields of study reveal differentiated growth patterns. SET will maintain 8,425 students during the 2026-2027 period, then grow to 9,532 in 2028, 10,317 in 2029, and 10,692 in 2030. However, the average annual growth rate of –0.7% from 2025 to 2030 is a concerning trend. Business and Management is projected to grow from 5,184 students in 2026-2027 to 6,580 in 2030, with an average annual growth rate of 3.2%. Education shows the strongest growth trajectory, expanding from 6,015 students in 2026-2027 to 7,634 in 2030, with an average annual growth rate of 9.7%. Other Humanities will grow from 1,794 students in 2026-2027 to 2,278 in 2030 with a 4.4% average annual growth rate.

Table 3: Headcount Enrolments By Major Field of Study

TOTAL: HEADCOUNT ENROLMENTS BY MAJOR FIELD OF STUDY							
	Planned/expected enrolment						
	Approved Proposed Target 2025	Proposed Target 2026	Proposed Target 2027	Proposed Target 2028	Proposed Target 2029	Proposed Target 2030	Average Annual Increase: 2025-2030
Science, engineering, technology	11 096	8 425	8 425	9 532	10 317	10 692	-0.7%
Business/management	5 608	5 184	5 184	5 867	6 349	6 580	+3.2%
Education	4 801	6 015	6 015	6 806	7 365	7 634	+9.7%
Other humanities	1 834	1 794	1 794	2 030	2 197	2 278	+4.4%
TOTAL	**23 339**	**21 418**	**21 418**	**24 235**	**26 228**	**27 184**	**+3.1%**

The university has identified several quality improvement measures to support success, including implementing the Siyaphumelela Project to enhance student success*, increased Supplementary Instruction* (SI) programmes, and infrastructure development through *expansion of Welkom campus* facilities. Additionally, CUT *is introducing fully online programmes* in collaboration with Higher Ed Partners Africa (HEPSA), starting with pilot programmes in 2025 and planning to roll out eight online programmes by 2030.

4.1. Research Output

CUT's research output targets for the 2026-2030 period reflect *ambitious growth projections* that seek to address historical underperformance while establishing more aggressive benchmarks for institutional research productivity. The targets demonstrate the university's commitment to transforming its research profile and achieving significant improvements across all research output categories.

Publication units are targeted to experience substantial growth throughout the planning period. The target for 2026 is set at 245 publication units, representing a significant increase from the 2023 actual performance of 181.93 units, acknowledging the need for critical progression in this area. The trajectory continues with 264 units targeted for 2027, 285 for 2028, 307 for 2029, and 331 for 2030. This progression represents an average annual growth rate of 7.8% from 2025 to 2030, indicating the CUT's commitment to substantially improving its research publication output. The targets suggest a *strategic focus on building research capacity, supporting faculty research activities, and creating incentive structures that promote increased scholarly productivity*.

Table 4: Research Output

RESEARCH OUTPUTS							
	Planned/expected enrolment						
	Approved Proposed Target 2025	Proposed Target 2026	Proposed Target 2027	Proposed Target 2028	Proposed Target 2029	Proposed Target 2030	Average Annual Increase: 2025-2030
Publication units	227	245	264	285	307	331	+7.8%
Research masters graduates	177	80	82	85	88	91	-12.6%
Doctoral graduates	87	50	51	53	55	57	-8.3%
WEIGHTED TOTAL	**665**	**475**	**499**	**529**	**560**	**593**	**-2.3%**

The research output data reveals a concerning paradox at the heart of the institution's academic enterprise. While publications are growing at an impressive 7.8% per year, demonstrating that current researchers are productive and actively contributing to scholarly knowledge, the foundation for future research capacity is simultaneously deteriorating. Research Masters graduates decline by 12.6% annually, and Doctoral graduates fall by 8.3% per year. This reduction in research degree completions means fewer qualified researchers are being trained to sustain and expand the institution's research capabilities in the years ahead. Despite the increase in publication activity, the overall research output still declines by 2.3% annually due to the weighted calculation. This creates a troubling scenario where short-term research productivity masks a long-term sustainability concern, as the pipeline of future researchers continues to decline. At the same time, current academics remain active in their scholarly pursuits. Achieving these targets will require significant interventions in *supervision capacity, student support systems, and programme structures* to ensure improved completion rates.

5. Strategic Levers

CUT stands at a critical juncture where strategic intervention through *five carefully identified levers* can catalyse comprehensive institutional transformation and performance improvement, building upon a significant investment in preparatory work and already undertaken analysis. These strategic levers represent interconnected opportunities for systemic change that collectively address CUT's most pressing challenges, while positioning the institution for sustainable growth and an enhanced reputation as a *leading University of Technology*.

The *first* lever involves institutionalising the Strategic Transformation of Educational Programmes (STEP) through systematic rationalisation and consolidation initiatives that include programme stream-lining by merging overlapping offerings and eliminating duplication; curriculum restructuring that delays undergraduate specialisation to strengthen foundational knowledge while reserving niche focuses for postgraduate levels; and implementing demand-driven adjustments that regularly assess student demand, financial viability, and staffing efficiency to phase out low-impact programmes whilst simultaneously expanding high-demand offerings.

The *second* lever focuses on repositioning the Welkom campus through finalising and implementing a comprehensive 10-year Development Plan that transforms the site from its current subordinate satellite status into a campus with a distinctive academic identity.

The *third* lever emphasises implementing consultative and transparent budget management processes grounded in clear revenue and expenditure models that enhance financial sustainability and accountability across all operations.

The *fourth* lever involves leveraging existing research and development capabilities through establishing differentiated support models that enable the creation, support, and development of research centres - capable of generating substantial output and external funding.

The *fifth* lever requires executing a comprehensive digital transformation roadmap that creates an integrated digital ecosystem capable of supporting CUT's strategic objectives while eliminating current fragmentation and inefficiencies that undermine operational effectiveness.

When implemented cohesively and systematically, these five strategic levers represent a transformative framework capable of addressing fundamental institutional challenges, while capitalising on existing strengths and investments. They will propel CUT toward its vision and establish its position as a premier technology-focused higher education institution.

5.1. Institutionalising the Strategic Transformation of Educational Programmes (STEP) Review

The Strategic Transformation of Educational Programmes (STEP) Review represents a comprehensive strategic initiative the CUT undertook from May to October 2022, designed to fundamentally evaluate the relevance and effectiveness of the institution's academic programmes in response to evolving work-life demands and industry requirements. Initiated by the Senate's critical questioning regarding optimising qualifications for contemporary professional landscapes, the STEP Review thoroughly assessed the Programme Qualification Mix (PQM), delivery mechanisms, and institutional systems. The overarching goal of this initiative is to institutionalise continuous improvement processes that enhance teaching quality, ensure financial sustainability, and strengthen industry alignment while simultaneously fostering graduate adaptability and global citizenship competency. This strategic review emerged from the recognition that higher education institutions must continuously evolve their academic offerings to remain relevant and responsive to rapidly changing economic, technological, and social contexts.

The STEP Review generated comprehensive recommendations spanning both cross-cutting institutional improvements and faculty-specific interventions to transform CUT's educational landscape. Cross-cutting recommendations include replacing the traditional "first come, first served" admissions approach with strategic recruitment practices aligning with institutional goals and programme capacity; enhancing financial transparency across all operations; and standardising teaching practices through peer reviews and digital tool integration. The review

emphasises significant investment in "bottleneck subjects" that contribute to student failures and increased debt burden, formalising resource allocation processes to prevent infrastructure mismatches, and implementing systematic monitoring of underperforming qualifications while developing differentiated programme offerings for the Welkom campus.

Faculty-specific recommendations included the development of Advanced Diplomas; the phasing out of underperforming programmes; and conducting a comprehensive review of their feeder systems by the Faculty of Engineering, Built Environment and IT (FEBEIT). Further, the rebalancing and standardisation of the Faculty of Health and Environmental Sciences (FHES) programme portfolio, with greater alignment to the offerings and pathways of TVET colleges; and consideration of the establishment of Education as a standalone faculty. Also, to undertake a major overhaul of the Communication Sciences programmes; reviewing existing diploma programmes, and strengthen the integration of Work-Integrated Learning within the Faculty of Humanities (FoS).

The follow-through on recommendations across faculties to date has been varied. However, implementing the recommendations and institutionalising the continuous process of educational programme review is a powerful strategic lever that CUT can utilize.

5.2. Repositioning the Welkom Campus

The repositioning of CUT's Welkom Campus represents a critical strategic lever that requires the urgent *finalisation and implementation of a comprehensive 10-year Development Plan* to transform the campus from its current status as a *subordinate satellite facility* into a *unique campus with a distinctive academic identity,* and thereby infuse rich meaning to the call for *One University, Two Campuses*. The cornerstone of the Welkom repositioning strategy must be a distinctive set of programme offerings focused on high-subsidy, high-demand fields that address regional, social, economic and environmental needs. Each proposed programme must undergo rigorous viability assessment, including analysis of employer demand, enrolment projections, break-even calculations, staffing requirements, and infrastructure requirements.

The successful implementation of this transformation requires a fundamental restructuring of governance and management frameworks that balance relative campus autonomy with institutional coherence - empowering the Campus Principal position with sufficient executive authority over academic programming, financial management, and operational decisions while maintaining appropriate oversight from central university structures. The revised governance model must include campus-specific academic and management committees empowered to make decisions relevant to Welkom's unique context, supported by a reformed resource allocation model that ensures transparent and equitable distribution of funds based on strategic priorities, enrolment targets, and infrastructure needs, instead of recurrent patterns that have disadvantaged the campus. Furthermore, the infrastructure component of the 10-year Development Plan represents a critical enabler requiring phased implementation across multiple domains.

5.3. Consultative Budget Management and Accountability

The university's current budgeting approach has become progressively disconnected from its strategic priorities, resulting in what is termed "budget drift." This incremental, inflation-adjusted budgeting process limits the institution's responsiveness to its evolving academic and developmental priorities. To address this misalignment, it is necessary to *transition to a consultative and transparent budget management process*, based on a clear revenue and expenditure model. Such a model must empower faculties and departments with (near) real-time insights into the financial sustainability of qualifications, enabling more strategic, informed, and accountable planning and decision-making.

A transparent budgeting process should incorporate revenue and cost data at the qualification level and a robust workload model that assigns costs based on actual academic effort and teaching capacity. By integrating institutional overheads, breakeven thresholds, and pedagogically optimal enrolment levels, this model provides academic leaders with the tools to make evidence-based decisions. It critically enables them to assess the impact of new and existing programmes, evaluate return on investment, and plan around staff capacity, infrastructure needs, and student throughput. The alignment of these elements will support a more rational allocation of resources and allow underperforming or unsustainable programmes to be restructured or phased out, while prioritising those with substantial academic and/or strategic value.

Furthermore, embedding this model in a participatory process ensures that Deans, Heads of Departments, and academic managers are not merely recipients of top-down decisions, but rather *active participants in shaping the political economy and sustainability of the academic enterprise*. Through structured, faculty-led planning dialogues supported by financial and planning units, academic leaders can test financial scenarios, advocate for strategic investments, and align academic work plans with financial realities. This approach promotes shared accountability and fosters a culture of transparency, enabling the university to achieve financial sustainability and drive strategic transformation through its academic portfolio.

5.4. Leveraging Existing Research and Development Capabilities

The research centres at CUT demonstrate robust Research and Development (R&D) performance characterised by academic excellence, industry integration, and tangible societal impact. The Additive Manufacturing Ecosystem, comprising the Centre for Rapid Prototyping and Manufacturing (CRPM), FEBIT Research Centre, and SARChI Chair, has achieved significant milestones, including over 1,098 patients receiving custom medical devices, 75+ journal articles, and R27.3 million in funding since establishment. CRPM, operational since 1997, leads in applied research and industry partnerships, while the SARChI Chair focuses on medical innovations like sternal implants. The FEBIT Centre bridges academic curricula with industry needs, developing skilled graduates. Similarly, the Centre for Applied Food Sustainability and Biotechnology (CAFSaB) excels with 110 publications (2022–2024), and R7.68 million in funding. Its nine

specialised units address challenges from food waste valorisation to antimicrobial resistance. Though newer, the Clinical and Basic Medical Sciences Hub contributes 49 peer-reviewed publications and focuses on community health through drug discovery and cardiovascular research, albeit with very modest funding (R1.16 million in 2024). Collectively, these centres highlight CUT's commitment to interdisciplinary and applied research with measurable societal benefits.

To accelerate research output and strengthen research productivity and development, the university must strategically position its most mature and high-performing research centres at the leading edge of innovation. These centres, already anchored in R&D niches with concentrated expertise, strong industry linkages, advanced facilities, and active networks, should be recognised as institutional flagships, and resourced accordingly. A key strategy is *establishing a differentiated support model* that prioritises these centres for targeted investments in cutting-edge equipment, high-calibre research talent, postdoctoral fellowships, and administrative support in order to manage large-scale, collaborative projects. This means *adopting a clear and transparent framework for the establishment, support, and development of research centres.* This framework should define criteria for centre designation, including demonstrated research capacity, alignment with institutional and national priorities, a critical mass of active researchers, and a track record of research funding and outputs. It should articulate growth pathways for emerging centres, outlining developmental support such as seed funding, mentorship from mature centres, and incentives to build networks and facilities.

The newly established Artificial Intelligence (AI) Hub is central to this evolving research ecosystem. To maximise its impact, the AI Hub should be positioned not only as a driver of cutting-edge, externally responsive AI research, but also as an enabling resource for the university's established research centres. Its mandate should include the application of AI methodologies, such as data analytics, machine learning, predictive modelling, and intelligent systems, to enhance and accelerate the research agendas of centres across all disciplines. By embedding AI researchers in collaborative projects with existing centres, the Hub can help unlock new insights, improve data-driven decision-making, and generate innovative solutions to the complex problems these centres are investigating. In doing so, the *AI Hub becomes an integrative platform that promotes interdisciplinary collaboration, amplifies research productivity, and strengthens the university's overall research capability*. Positioned at the centre of the institution's research ecosystem, the AI Hub should also serve as a training ground for AI talent and a catalyst for future-facing innovations that advance both academic inquiry and societal impact.

5.5. Digital Transformation

The CUT faces critical challenges across *four* fundamental dimensions of digital transformation that collectively undermine its strategic objectives and operational effectiveness. Alignment issues stem from the inconsistent connection between CUT's digital transformation efforts and its strategic goals, compounded by the lack of a unified Technology Strategy due to the separation of IT Strategy and Digital Transformation Strategy, thereby creating resource allocation ambiguity

and fragmented efforts that fail to address core operational challenges. Governance deficiencies are evident in the apparent ineffective ICT Governance structures, the absence (or failure to make use of) of enterprise architecture roadmaps, leading to haphazard investments in unintegrated ancillary systems, and the failure to practice global standards like COBIT or ITIL for structured governance frameworks. Systems interoperability represents perhaps the most glaring challenge, with CUT operating up to 55 standalone systems that lack integration, resulting in duplicated efforts, inconsistent data, and critical processes being executed outside the core ERP system using spreadsheets or ancillary utilities. Organisational capability gaps manifest through understaffing in the ICT Department with only one database administrator creating a single point of failure, limited buy-in from academic and administrative staff regarding new technology adoption, absence of robust training programmes and change management strategies, and chronic underinvestment in ICT infrastructure and human resources that has severely constrained transformation efforts since recognition of crucial upgrading needs in 2019.

The rationale for immediate action is compelling and multifaceted, driven by the deteriorating impact on student experience and institutional reputation that threatens CUT's potential positioning as a technology education leader. Students encounter numerous pain points throughout their lifecycle from recruitment to graduation due to such fragmented systems and inefficient processes, with financial aid management remaining cumbersome and academic administration struggling with data visibility and accuracy. The fragmented digital technology business model reflects outdated digital architecture that fails to support dynamic university needs, with multiple versions of records, operational inefficiencies that hinder scalability, and an inability to leverage data for evidence-based decision-making. Without decisive intervention, CUT risks permanently compromising its ability to deliver high-quality education, meet stakeholder expectations and maintain competitive positioning in the higher education landscape.

Accelerating CUT's digital transformation journey requires immediate consolidation of IT and Digital Transformation Strategies into a cohesive roadmap aligned with the University’s strategic priorities; the establishment of robust governance frameworks ensuring shared accountability between business and IT units; and prioritised investment in upgrading ERP and Student Information Systems with emphasis on integration and interoperability to eliminate the current fragmentation of 55 standalone systems. The transformation framework should incorporate *enterprise architecture roadmaps that guide systematic technology investments, cross-functional workflows that eliminate siloed operations, and continuous workforce upskilling programs that ensure sustained digital competency across all organisational levels*, ultimately creating an integrated digital ecosystem that supports CUT's strategic objectives and enhances its reputation as a leading University of Technology.

6. Strategic Consolidation

The strategic orientation of CUT for 2026–2030 is premised on the need to consolidate past investments to unlock their full potential and lay the groundwork for organic and strategic growth. Over recent years, CUT has made significant strides in strengthening its institutional foundation through various initiatives, including enrolment planning, campus repositioning, infrastructure development, curriculum transformation, research advancement, and industry engagement. While these efforts have generated valuable momentum, their impact remains constrained by fragmentation, uneven implementation, and limited alignment. As the institution enters a new strategic phase, the imperative is no longer to expand initiatives but to integrate, optimize and convert what already exists.

Consolidation thus represents a shift in core institutional strategy, from episodic expansion to systematic consolidation, from initiative and review proliferation to synergetic integration. This deliberate consolidation approach is not about scaling back ambitions; it is about refining focus, enhancing efficiency, and extracting greater value from prior investments. It acknowledges that meaningful and sustainable growth emerges from coherence, not the continual layering of new projects. By prioritising alignment, CUT can build institutional synergy across its academic, administrative, and operational dimensions, ensuring that efforts are cumulative and catalytic.

Consolidation signals a confident shift from building capacity to strategically deploying it. It emphasizes intentionality, integration, and institutional alignment as the pathways to greater impact. By consolidating today, CUT strengthens its platform for tomorrow, positioning itself as a leading university of technology with the agility, coherence, and resilience to grow sustainably in a dynamic higher education landscape.

7. Strategy Ethos

Ethos refers to the characteristic spirit of a phenomenon as manifested in its attitudes and aspirations. In this case, therefore, the strategy ethos refers to the core values, beliefs, and principles that guide decision-making and shape the overall direction of an organisation – it refers to the "why" behind the "what" and "how" of the strategy.

The ethos of this strategy is anchored in placing students at the heart of CUT's mission, ensuring their needs, growth, and success define the institution's priorities and actions. This ethos emphasises the consolidation of teaching and learning excellence, enrolment stability, and strengthening Work-Integrated Learning (WIL) delivery, all underpinned by robust governance frameworks and strategic land assembly to enable spatial development. CUT further commits to harnessing its unique research niches and fostering a dynamic research ecosystem to drive innovation, productivity, and impactful scholarship. Guided by a focused set of strategic goals and a clear implementation roadmap, the institution prioritises alignment between its aspirations and actionable outcomes. Central to this ethos is the recognition that institutional culture - manifested

through daily behaviours, decisions, and interactions - will ultimately determine its success or failure. CUT's strategy underscores that authentic cultural alignment, where values are lived rather than merely stated, is essential to realising its vision of changing lives, transforming society and shaping the future.

8. Strategic Orientation

The strategic orientation is expressed by CUT's vision, mission and values, theory of change (ToC), and its goals and implementation strategies, as set out below:

8.1. Vision and Mission

The vision of CUT is:

A leading University of Technology - changing lives, transforming society and shaping the future

The Mission of CUT is:

CUT delivers quality academic programmes and applied research, promotes access with success, engages meaningfully with communities, and leverages strategic partnerships to drive innovation, entrepreneurship, social impact, and inclusive development.

8.2. Values

The values that guide behaviour and action at CUT are as follows:

Table 5: Values

Values	Description
Ubuntu	A person is a person through other people, expressed through the qualities of humanity, compassion, mutual respect, and tolerance. Ubuntu in the 21st century means fostering global citizenship and recognising our interconnected responsibilities across digital and physical communities. *Do I place the people I serve first? Do I demonstrate empathy and consider diverse perspectives? Am I contributing to collective well-being beyond my immediate community?*
Integrity	We behave ethically and professionally in both physical and digital environments. We conduct our activities in an accountable and transparent manner, with particular attention to data ethics and information stewardship. We ensure the integrity of our information, systems, and processes. *Do I practice what I preach? Am I ethical and professional in all contexts? Do I uphold conduct informed by respect, honesty, and dignity? Do I consider the ethical implications of technological decisions?*
Diversity	We embrace social, intellectual, and cognitive diversity. Students and staff reflect broad societal characteristics encompassing race, class, multilingualism, ethnicity,

	national origin, religion, freedom of conscience, gender, sexual orientation, age, ability, neurodiversity, and disciplinary backgrounds. We value critical scholarship and the expression of multiple opinions and ways of knowing. *Do I understand the evolving definition of diversity in my context? Have I created an environment that actively supports and leverages diverse perspectives? Am I challenging my own biases?*
Values	**Description**
Innovation	Finding new, sustainable ways of practice and design to contribute to advancements in technology and life, with careful consideration of long-term impacts on society and the environment. *Is this the best way/method/process/product for today and tomorrow? Have I thought about doing it differently and more sustainably? How creative am I? Do I always think of new ideas and approaches that challenge conventional thinking? Have I questioned the status quo and its implications for future generations?*
Excellence	We strive to offer outstanding and relevant academic programmes that foster intellectual inquiry, exploration, and discovery that transcend traditional boundaries and apply knowledge with creativity. We provide effective tools, technologies, and facilities for learning and excel in research and scholarly activity. We embrace continuous improvement and adaptability in a rapidly changing world. *Do I continuously strive to improve on previous efforts? Was this my best effort? Do I pursue excellence while remaining adaptable to new knowledge and approaches? Do I measure success not just by traditional metrics but by meaningful impact?*
Sustainability	We commit to environmental, social, and economic sustainability in all university operations, research, and teaching. We strive to develop solutions that meet present needs without compromising future generations. *Are our practices environmentally responsible? Do our decisions promote social equity and economic viability? Are we preparing students to address complex sustainability challenges? Do we model responsible resource stewardship in our institutional practices?*
Digital Citizenship	We promote responsible, ethical, and effective engagement with digital technologies. We develop critical digital literacy, respect for privacy, cybersecurity awareness, and the ability to evaluate information in an era of misinformation. *Are we using technology ethically and responsibly? Are we teaching students to navigate digital environments critically? Are we addressing digital divides and ensuring equitable access? Do our digital practices reflect our core values?*

8.3. Theory of Change

CUT drives educational excellence and innovation that positions the institution as a leading University of Technology changing lives, transforming society and shaping the future through quality academic programmes, applied research, meaningful community engagement, and strategic partnerships. This transformation is premised on creating an integrated educational ecosystem that produces work-ready graduates, innovators and entrepreneurs while building an institutional reputation for quality education and impactful research and innovation. CUT contributes to this change by leveraging its institutional capacity to deliver industry-relevant

academic programmes, promote student success, and foster innovation and entrepreneurship across all its activities.

CUT undertakes programme development and applied research, in collaboration with industry partners and communities, to advance knowledge and create academic offerings that produce work-ready graduates equipped with relevant skills and competencies. This educational work provides the foundation for developing innovative, industry-relevant academic programmes that respond effectively to economic and social needs. The knowledge generated through research development and productivity initiatives informs programme transformation and ensures that educational offerings remain current and impactful.

The expertise developed through CUT's academic and research activities is used to enhance understanding of effective university of technology models, the importance of work-integrated learning, the role of entrepreneurship and innovation in higher education, and the significance of quality teaching and learning in student success. This work produces evidence of how integrated student support systems, combined with industry-relevant curricula and research excellence, contribute to improved educational outcomes and graduate employability.

CUT draws on this knowledge to build an integrated student-centred ecosystem that enhances academic success, support, and experience throughout the student journey. The academic programmes are pivotal in preparing graduates with practical skills, innovation capabilities, and entrepreneurial mindsets to ensure continuous production of work-ready professionals who can contribute meaningfully to economic development. The institution focuses on renewing student recruitment, registration, assessment and graduation systems, building integrated academic advising and early alert systems, and improving the quality of teaching and learning to support student success.

CUT collaborates with industry, communities, and educational partners through strategic partnerships and alliances to strengthen work-integrated learning opportunities and ensure programme relevance. By building the brand and advancing institutional reputation, various platforms are used to showcase excellence and disseminate innovative educational approaches. The institution leverages strategic partnerships to drive innovation, social impact, and inclusive development while ensuring financial sustainability and maintaining high-quality infrastructure and facilities.

CUT uses multiple channels to promote its mission and vision, building recognition as a university of technology of choice through demonstrated excellence in education, research, and innovation. The institution recognises that achieving its vision requires academic excellence and strong governance, leadership, management, and institutional culture that supports continuous improvement and adaptation.

Linking the approaches and actions outlined above and applying an if-then logic while recognising that change is a dynamic and iterative process with complex feedback loops, the pathway to change for CUT can be expressed as follows:

If CUT successfully implements strategies to promote an integrated student-centred ecosystem through renewed systems and processes, enhanced academic advice, improved teaching and learning quality, and strategically transformed educational programmes...

Then the institution will achieve enhanced student academic success in terms of retention and graduation, while simultaneously building institutional capacity for excellence...

Then CUT will deliver innovative, industry-relevant academic programmes supported by accelerated research development, strengthened through work-integrated learning, and promoted by entrepreneurship and innovation...

So that CUT produces work-ready graduates, innovators and entrepreneurs and becomes recognised as a university of technology of choice for quality education and impactful research and innovation...

So that CUT achieves its vision of becoming a leading University of Technology that changes lives, transforms society and shapes the future through excellence in education, research, and community engagement.

This theory of change recognises that institutional transformation requires coordinated efforts across all strategic areas, supported by enhanced financial sustainability, strong governance and leadership, and appropriate infrastructure development. The success of CUT's approach depends on the synergy between student-centred support systems, academic excellence, research productivity, industry partnerships, and institutional capacity building.

8.4. Strategic Goals and Implementation Strategies

The 3 Strategic Goals and associated implementation strategies are discussed below.

8.4.1. Strategic Goal 1: Enhancing student academic success in terms of retention and graduates

Strategic Goal 1 is ***to promote an integrated student-centred ecosystem that enhances academic success, support, and experience throughout the student journey***. This goal seeks to achieve ***enhanced student academic success in terms of retention and graduation***. Several implementation strategies, briefly described below, will be implemented to achieve this outcome.

This goal reflects the university's unwavering commitment to placing the student at the heart of its academic mission by promoting an integrated, student-centred ecosystem that supports academic success throughout the student journey. It embodies an institutional ethos that recognises students not merely as recipients of education but as active partners in a supportive and empowering learning environment. Through the renewal of core academic systems and processes, establishing an integrated academic advice and early alert system, and continuously enhancing teaching and learning quality, the university is deliberately aligning its structures, practices, and culture to better respond to student needs.

8.4.1.1. Renewing the Student Recruitment, Registration, Assessment and Graduation Systems, Processes and Practices

This implementation strategy incorporates system, process, and practice components and is integral to CUT's digital transformation journey.

From a systems perspective, it involves establishing a roadmap and implementation plan to renew or replace the Student Information System (SIS) as one of CUT's core enterprise-wide systems. The *roadmap* should set out an enterprise-wide integrated and interoperable business, data, application, and technology architecture and include an indicative budget of the required investment; the change management and capacity building approach; and milestones to be achieved over three years. The approval of the roadmap should initiate a *flagship project* with a dedicated budget that is championed by the CUT leadership and incorporates a structured roll-out process to ensure an effective stakeholder alignment and governance set-up; procurement and vendor management; systems development and configuration: change management and capacity building; and deployment and use of continuous improvement. Ultimately, this project must create seamless student touchpoints from recruitment admission through graduation, enhancing self-service and accessibility. Furthermore, a significant priority is establishing a *data warehouse* to improve data visibility and analytics for better-informed decision-making across academic, administrative and professional support functions.

From a process perspective, implementing the Student Information System will unlock comprehensive process optimisation by eliminating the fragmentation of up to 55 standalone systems and manual spreadsheet-based processes that create inefficiencies, data inconsistencies, and operational bottlenecks throughout the student lifecycle. *Process optimisation* will be undertaken through *automated workflows* that connect student recruitment, application processing, academic record management, financial aid administration, timetabling, assessment, and graduation processes within a single integrated platform. Mapping current-state processes, gap analysis, optimisation design, and process automation should undergird the SIS systems implementation.

From an operational perspective, several practices have emerged that undermine the effectiveness of recruitment, assessment, and graduation. For instance, the 'first-come, first-served' basis of student admission often puts higher-performing matric entrants at the back of the queue. Additionally, the role played by the Assessment and Graduation Unit (AGU) in approving and recording marks after the relevant academic authorities have signed off blurs lines of accountability and burden the process with unnecessary duplication of effort. The process optimisation will provide an opportunity to identify, highlight and address poor practices, duplication, and actions that undermine accountability and, ultimately, performance.

8.4.1.2. Building an Integrated Academic Advising and Early Alert System

CUT has made progress in implementing measures for student access, retention, and success, particularly in supporting underprepared students entering the higher education system. Academic support measures include a robust First-Year Experience (FYE) programme featuring orientation activities, academic advice services, and peer mentoring initiatives to facilitate the transition to university life. Supplemental Instruction (SI) provides additional assistance through peer-led sessions targeting high-risk modules with historically challenging content. Literacy development receives dedicated attention through the Writing Centre and Reading Laboratory, which supports specialised academic writing and comprehension skills development. The Core Curriculum addresses critical articulation gaps in numeracy, digital literacy, and communication that might otherwise impede academic progress.

This implementation strategy is concerned with *creating and implementing a proactive, data-informed academic advice system* that integrates academic performance, attendance, and engagement data to support early identification of students who may be at risk of under-performance or dropping out. The approach and support system should empower academic advisors and student support staff with (near) real-time dashboards and alerts, enabling timely and targeted interventions. This includes one-on-one academic advising, study skills development, personal counselling, and referrals to support services. The system must be integrated across academic departments, student support units, and ICT systems, ensuring (near) real-time insights into student progress, engagement, and risk indicators. It should combine digital platforms with human advisory networks and be embedded in the institution's academic life. Collaboration between various academic and support functions, including the Registrar and

Academic Administration (providing access to enrolment, registration, and progression data), Academic Departments and Faculties (designation of advisors and integration of support processes into department routines), Teaching and Learning Support Units (advisor training, academic support referrals, alignment with FYE and tutoring), Student Affairs and Wellness (mental health and social support referrals), Institutional Planning and Quality Enhancement (evaluation of effectiveness and strategic alignment), and ICT and Data Analytics Units (system development, integration, dashboards, and data analytics).

8.4.1.3. Improving the Quality of Teaching and Learning

Improving the quality of teaching and learning is central to achieving academic excellence and enhancing student success. A key priority is to *improve pedagogical practices* across the institution by fostering active, student-centred learning approaches that promote deeper engagement and understanding. This involves equipping lecturers with tools and strategies to design inclusive, outcomes-based curricula; use formative assessment effectively; and apply a variety of teaching methodologies that respond to diverse learning needs. Strengthening the culture of teaching excellence also requires embedding reflective teaching practices, peer reviews, and structured opportunities for continuous pedagogical improvement within academic departments.

A critical dimension of *enhancing pedagogical practices* lies in embracing the transformative role of technology, particularly Artificial Intelligence (AI), in enriching the learning experience. Rather than viewing AI tools primarily through a lens of suspicion as threats to academic integrity or sources of misinformation, institutions must engage critically and constructively with AI's potential. Developing institutional guidelines, training lecturers to use AI responsibly, and promoting digital literacy among students can mitigate concerns while positioning the university at the forefront of innovation in teaching and learning. This must include teaching their students how to use AI tools in ways that support effective learning in which AI is used to expose students to vast knowledge bases and teach them the critical thinking and conceptual competence to apply it in ethical ways as part of their learning experience.

Equally important is the *professionalisation of teaching* through the continuation and strengthening of CUT's approach of institutionalising formal qualifications in higher education teaching as a requirement for all academic staff. This should be complemented by structured, faculty-based professional development programmes and robust mentoring systems for new academics. Prioritising the development of teaching competencies through postgraduate certificates, workshops, communities of practice, and mentorship will ensure that academic staff are equipped with the pedagogical, technological, and reflective capabilities needed to thrive in dynamic learning environments. These measures should be geared toward creating a *supportive and high-performing teaching culture* committed to continuous improvement and student success.

Libraries are evolving from traditional repositories of books and journals into dynamic, technology-integrated hubs that directly support innovation, research, and practical skill development. In the

UoT context, the library must transcend its conventional role to become a collaborative ecosystem where students, academics, and industry partners converge to tackle real-world technological challenges, access cutting-edge digital resources, and engage in interdisciplinary learning that bridges theoretical knowledge with practical application. *Implementing a Digital Scholarship and Data Services programme* that offers specialised support for research data management, digital publishing, bibliometric analysis, and technology transfer. These strategies position the library as an essential catalyst for the university's technological mission, transforming it from a passive information centre into an active participant in knowledge creation and innovation.

Table 6: Goal 1

Goal 1	To promote an integrated student-centred ecosystem that enhances academic success, support, and experiences throughout the student journey.
Outcome	Enhanced student academic success in terms of retention and graduation.
Outcome Indicators	• Increase in undergraduate student success rate • Increase in the number of graduates • Decrease in dropout rate in first-year students • Achieved the total student headcount enrolments • Achieved the total first-time entering student enrolments
Strategies	• Renew the student recruitment, registration, assessment and graduation systems, processes and practices • Build an integrated academic advising and early alert system • Improve the quality of teaching and learning • Improve the quality of postgraduate supervision and experience
Outputs	• Student Information System (SIS) flagship digital transformation project implemented • Student administrative processes optimised and automated • Effective student recruitment, registration, assessment and graduation support processes established • Proactive, integrated data-informed academic advising system established • Formal qualification in higher education teaching institutionalised for all Instructional/Research staff without teaching qualification • Formal training of Instructional/Research staff in supervisory capacity

8.4.2. Goal 2: Developing Work-ready Graduates, Innovators and Entrepreneurs

Goal 2 is ***to deliver innovative, industry-relevant academic programmes that produce work-ready graduates, innovators and entrepreneurs***. The outcome of this goal is focused on developing ***work-ready graduates, innovators, and entrepreneurs***. Several implementation strategies, briefly described below, will be implemented to achieve this outcome.

By delivering innovative, industry-relevant academic programmes, the university aims to produce graduates who are not only work-ready but also equipped to be job creators and innovators. Through the institutionalisation of the STEP process at faculty level, CUT ensures that academic programmes remain responsive to evolving industry needs. Complementary strategies, including the promotion of entrepreneurship and innovation, acceleration of research development and productivity, and the strengthening of work-integrated learning, reinforce this goal by embedding real-world experience, entrepreneurial thinking, as well as applied research, into the student journey. Together, these initiatives reflect CUT's role as a responsive, engaged university that empowers its graduates to thrive in a rapidly changing economy.

8.4.2.1. Strategically Transforming Educational Programmes

If institutionalised as an ongoing initiative, the STEP process holds significant promise for ensuring the relevance of CUT's academic project, which serves as an intermediary between academia and industry and fosters innovation while addressing workforce demands. Given its primary role of preparing a future-ready workforce and community impact through applied research, the curricula of UoTs need to be continuously renewed for relevance.

In addition to the recommendations emanating from the STEP review concluded in 2022, further opportunities for rationalisation and consolidation include programme streamlining through merging overlapping offerings and eliminating duplication, curriculum restructuring that delays undergraduate specialisation to strengthen foundational knowledge while reserving niche focuses for postgraduate levels. It further includes demand-driven adjustments that regularly assess student demand, ensure financial viability, and staffing efficiency, enabling the phasing out of low-impact programmes while expanding high-demand offerings.

The *institutionalisation of STEP at the faculty level* requires establishing dedicated Faculty STEP Committees comprising cross-functional teams with designated champions responsible for overseeing implementation, tracking progress, and providing annual reports to the Senate. These committees must ensure that recommendations are prioritised, aligned with faculty goals, and subject to rigorous accountability measures. By adopting these comprehensive measures, STEP transforms from a one-time review into a living framework that drives sustained excellence in teaching, learning, and institutional agility, thereby positioning CUT to respond continuously to changing educational and professional landscapes.

The STEP process should also be deployed to *finalise the distinctive academic programme of the Welkom Campus Repositioning*. This is a necessary input to the finalisation of the 10-year Development Plan for the campus, which is discussed under Goal 3.

8.4.2.2. Promoting Entrepreneurship and Innovation

To produce work-ready graduates, innovators, and entrepreneurs, CUT is committed to fostering a vibrant entrepreneurial ecosystem that equips students with the skills, mindset, and support necessary to thrive in a dynamic and challenging economy. This strategy aims to *develop a robust institutional entrepreneurship environment* that enables graduates to launch and sustain businesses, particularly in high-potential sectors aligned with national development priorities. By prioritising entrepreneurial ecosystem development, the university will build pathways for students to move from ideation to market, supported by mentorship, access to facilities, and exposure to entrepreneurial networks.

A cornerstone of this approach is the *systematic embedding of entrepreneurship and innovation across all academic programmes*. CUT will introduce a mandatory online entrepreneurship module for all undergraduate students, ensuring that every graduate has a foundational understanding of business creation, innovation processes, and opportunity recognition. This will be accompanied by a drive to achieve institutional accreditation from the Accreditation Council for Entrepreneurial and Engaged Universities (ACEEU), reinforcing CUT's commitment to becoming a formally recognised entrepreneurial university.

To bring entrepreneurial learning to life, the university will host regular ideathons, hackathons, and other *experiential learning events,* linked to the national Entrepreneurship Development in Higher Education (EDHE) initiative. These platforms will stimulate student creativity, encourage multidisciplinary collaboration, and offer opportunities to apply entrepreneurial concepts to real-world challenges. Beyond ideation, students will be *supported to prototype and develop their innovations* through CUT's existing infrastructure, including the Fabrication Laboratory (FabLab), Innovation Gymnasium (i-Gym), and Centre for Rapid Prototyping and Manufacturing (CRPM). These cutting-edge facilities provide students access to advanced technologies, expert guidance, and maker-spaces to convert their ideas into tangible solutions.

CUT's *Intellectual Property Policy* will serve as a key enabler of innovation, providing a clear and supportive framework for protecting and commercialising university-generated ideas and inventions. To *foster a culture of innovation*, academic staff will be actively engaged through ongoing professional development in entrepreneurship and innovation methodologies, with at least one dedicated training workshop offered per semester. In addition, the university will introduce *incentives to encourage research commercialisation*, including recognition of entrepreneurial efforts through annual awards for inventors, intellectual property creators, and spin-off ventures. These initiatives will transform the institutional culture to one that celebrates and supports innovation, ensuring that entrepreneurship becomes a shared responsibility and a distinct hallmark of the CUT experience.

8.4.2.3. Accelerating Research Development and Productivity

CUT will strategically position its most mature and high-performing research centres at the forefront of innovation. These centres, already anchored in specialised R&D niches with strong

industry partnerships, concentrated expertise, advanced infrastructure, and dynamic networks, will be recognised as institutional flagships. To maximise their impact, the university will implement a differentiated support model that directs targeted investments toward these centres, including funding for state-of-the-art equipment, postdoctoral research talent, and dedicated administrative support for managing complex, collaborative projects. Central to this effort will be *the adoption of a clear, transparent framework for the establishment, development, and evaluation of research centres*, providing a structured pathway for new, emerging and mature centres to grow and contribute to the institution's research agenda.

Improving research output across the university requires a focused effort to boost publication rates and build a vibrant, supportive research culture. CUT will *introduce targeted research incentives that reward high-quality publications, impactful research activities, and collaborative outputs*. Adjustments to the workload models for active researchers will provide the time and space needed to focus on scholarly work, while recognition programmes will celebrate excellence in research and motivate continued productivity. *Strengthening doctoral capacity* will also be a priority, with initiatives aimed at recruiting more PhD candidates, expanding funding for doctoral research, and enhancing the training and support provided to supervisors. These measures will collectively build a sustainable pipeline of research talent and increase the university's contribution to national and global knowledge production.

To foster innovation through research, CUT will actively *promote Multidisciplinary, Interdisciplinary, and Transdisciplinary (MIT) research* that bridges traditional academic boundaries and responds to complex societal and industry challenges. The university will provide seed funding and institutional support for large-scale, multi-year, multidisciplinary projects with strong entrepreneurial potential, enabling researchers to tackle pressing issues from multiple perspectives while exploring commercialisation and social impact opportunities.

Ensuring that academic staff contribute meaningfully to the university's research goals requires a systematic approach to *productivity monitoring*. CUT will implement mechanisms to track research outputs, grant activity, and supervisory responsibilities, particularly for new academic appointments. These monitoring systems will help ensure faculty recruitment aligns with the university's research priorities and that academic staff are held accountable to their research commitments. Regular performance reviews and developmental support will ensure a high-performing academic workforce, well-positioned to drive the university's research mission forward.

8.4.2.4. Strengthening Work-integrated Learning

Employers increasingly prioritise job-ready graduates with practical experience, prompting a stronger emphasis on WIL and cooperative education models. However, challenges such as uneven employer participation, particularly in rural or economically stagnant regions, and insufficient institutional support structures could limit scalability, affecting graduate employability and institutional reputation.

In 2024, CUT successfully placed 8,912 out of 8,915 students, achieving a placement rate of 99%. The university mobilised SETA funding of just over R103m from 2020 – 2024, benefitting 2855 students. This excludes WIL “salaries” negotiated directly from WIL employers of just over R80m from 2020 -2024. A robust policy framework, meticulous procedures, and an effective hybrid management model underpin CUT’s success in WIL placements. This hybrid model allows the central office to handle strategy formulation, oversight, and quality control activities while delegating other aspects of the quality cycle to individual faculties. Such an arrangement ensures strategic coherence across the institution while allowing faculties the flexibility to tailor WIL activities to their specific needs.

The institution's commitment to continuous improvement ensures it remains at the forefront of global WIL practices. CUT can further consolidate its position as a leader in WIL by addressing areas such as increased funding, refined assessment processes, and expanded career development initiatives. Doing so will require *strengthening of existing capacity by refining the assessment and monitoring processes*. Although CUT has established clear guidelines for assessing student performance during WIL, continuous refinement of these processes can ensure they remain relevant and effective. Regular feedback loops between employers, students, and academic staff members can help identify areas where the WIL experience can be improved. Furthermore, incorporating technology-driven solutions for real-time monitoring and assessment could enhance the efficiency and accuracy of these processes - thus, boosting staff and infrastructure resources required to maintain, upscale and enhance the impact of the operations of WIL is a priority.

The additional resources can be attained by moving payment of SETA stipends from the Finance Department to Payroll, which will deliver an Employment Tax Incentive (ETI) rebate of at least R1000 per student per month, creating a source of additional income/funding. For the 623 students for 2024, at an average of 6 months, an additional amount of R3,7m will be available to fund one or two additional positions required.

Table 7: Goal 2

Goal 2	To deliver innovative, industry-relevant academic programmes that produce work-ready graduates, innovators and entrepreneurs
Outcome	Work-ready graduates, innovators, and entrepreneurs produced
Outcome Indicators	• Number of research commercialisation outputs per year
Strategies	• Institutionalise STEP • Promote entrepreneurship and innovation • Accelerating research development and productivity • Strengthen WIL
Outputs	• Institutionalised STEP in all faculties • Distinctive academic programme for Welkom Campus finalised and implemented • Annual programme of awareness-building and ideation events hosted to stimulate entrepreneurial mindset among students and staff • Skills-building and experiential learning events (e.g., hackathons, bootcamps, innovation challenges) conducted annually across faculties • Large-scale multiyear, multidisciplinary research programmes launched (flagship projects) • Research productivity improved • e-WIL assessment and monitoring system introduced

8.4.3. Goal 3: Positioning a Future-focused University of Technology

Goal 3 is ***to position CUT as a future-focused university of technology distinguished by a culture of innovation, industry-relevant partnerships and impactful research***. The outcome this goal seeks to achieve is for CUT to be ***recognised as a university of technology of choice for quality education and impactful research and innovation***.

Through building a strong institutional brand and advancing its reputation, CUT seeks to communicate its value as a trusted partner for learning, entrepreneurship, and innovation. The university's commitment to enhancing financial sustainability and implementing inclusive budget management ensures that resources are aligned with strategic priorities. At the same time, efforts to strengthen governance, leadership, and institutional culture promote a high-performance, innovation-driven environment. By investing in infrastructure development and maintaining modern, safe, and functional facilities and equipment, CUT is creating a physical and intellectual environment where students, staff, and partners can thrive. These strategies collectively reinforce CUT's identity as an agile, collaborative institution that delivers relevant solutions and drives socio-economic progress through education and research.

8.4.3.1. Building the Brand and Advancing the Reputation of CUT

Despite its growing academic and research capabilities, CUT faces challenges in positioning itself as a university of choice among prospective students, parents/sponsors, and the broader public. Historical reputational setbacks, limited brand visibility, and under-publicised institutional achievements have weakened perceptions of educational quality and research impact. The university has not yet successfully translated its academic strengths and research niches into a compelling public narrative that resonates with key stakeholders. Furthermore, the nature of alumni engagement and under-leveraged stakeholder relationships, both locally and internationally, has constrained efforts to build a strong institutional identity and attract broader support.

To address these challenges, CUT must implement a *comprehensive brand-building, marketing, and communication plan* that elevates its profile and reinforces its identity as a leading university of technology. This includes crafting a clear, compelling brand narrative focused on innovation, student success, and applied impact. A sustained media relations effort and strategic digital marketing and storytelling campaigns should showcase student and alumni success stories, research breakthroughs, and societal contributions. Rebuilding trust and visibility also requires proactive engagement with local communities, industry partners, and the media to communicate the university's transformation journey and overall value proposition.

Alumni engagement must be revitalised through *building long-term relationships and leveraging alumni as institutional ambassadors*. Stronger alumni relations can open doors to industry partnerships and mobilise financial contributions that support scholarships, research, and infrastructure development. Simultaneously, CUT must *strengthen its institutional advancement efforts* by strategically engaging donors, government agencies, and corporate partners to unlock new financial and academic support streams. This includes aligning fundraising campaigns with strategic priorities, such as infrastructure upgrades, student support, and innovation projects. *Internationalisation efforts must also be deepened* through meaningful global partnerships, research collaborations, student and staff exchanges, and participation in international networks. These initiatives will expand CUT's global footprint, enhance academic excellence, and raise the institution's visibility on the world stage. Lastly, *expanding and deepening strategic and industry partnerships* will be critical to securing resources, providing real-world learning opportunities for students, and co-developing innovative solutions that reinforce the university's relevance and value to the economy and society.

8.4.3.2. Enhancing Financial Sustainability and Inclusive Budget Management

A *consultative budget management and accountability process* must be established, underpinned by a transparent, programme-level *revenue and expenditure model* linked to the national subsidy formula and internal workload allocations. This model should provide faculties and departments with (near) real-time insights into the financial performance and sustainability of qualifications, enabling data-driven decision-making. Academic leaders can better align spending with strategic

goals and academic outcomes by standardising this model across the institution and integrating it into planning and resource allocation processes.

The university should create inclusive, faculty-led budget planning and review forums. These platforms would bring together academic, finance, and planning units to collaboratively review programme performance, test budget scenarios, and make resource allocation decisions. This participatory structure fosters shared accountability and builds financial literacy among academic managers, while ensuring that budget decisions are grounded in academic priorities and operational realities. Capacity-building workshops should be introduced to train heads of departments and deans in interpreting financial data and using it to guide strategic planning.

Funding allocations should be linked to measurable outputs such as enrolments, graduate throughput, research productivity, and strategic programme relevance. This approach encourages efficient resource use, rewards high-performing units, and creates incentives for academic and financial sustainability. By *developing dashboards and reporting tools* that consolidate academic, financial, and workload data, decision-makers at all levels can access the insights they need to manage resources effectively.

To further enhance the university's financial sustainability, a dedicated institutional strategy should be developed to *diversify income streams*, leveraging, among others, the External Funding Policy. This includes expanding external income through research commercialisation, continuing education (short courses), industry partnerships, and donor engagement. In parallel, *cost containment measures*, such as optimising class sizes, reducing underutilised offerings, and consolidating low-performing programmes, must be pursued with a clear focus on quality and impact. Together, these strategies will enable the university to build a financially resilient model that supports long-term academic excellence and institutional sustainability.

8.4.3.3. Strengthening Governance, Leadership, Management and Institutional Culture

The governance review conducted in 2024 identified several significant challenges facing CUT, including internal and external factors. Internally, there are challenges regarding administrative efficiency, the need for better technology integration and automation, and policy compliance and enforcement challenges. Externally, there is an implied challenge to meet evolving stakeholder expectations, particularly for more efficient and student-centred services. However, institutional governance structures have recently been restructured and revitalised. These include the Vice Chancellor’s Management Committee (VCMC), comprised of the Executive Management team, and the Executive Management Committee (EMC), comprising of the Executive Management team, Deans and Senior Directors. The key challenge these structures must confront is the consolidation of such governance structures to more effectively to support academic, administrative and support services leadership. Furthermore, the management leadership of CUT must play an active role in shifting the prevailing culture to a performance-oriented modality that

values technological innovation and entrepreneurialism as a means to address the challenges of the institution.

CUT must focus on *institutionalising effective governance structures and decision-making protocols*. Within the new context of the Vice Chancellor's Management Committee (VCMC) and the Executive Management Committee (EMC), it is crucial to ensure that these bodies function with clarity of purpose, defined roles, and integrated planning cycles. Embedding consistent reporting lines, agenda-setting clearly aligned with strategic priorities, and decision-making frameworks that include evidence-based inputs will significantly enhance institutional coherence and accountability. These structures should also serve as influential strategic platforms for alignment between academic, administrative, and support service leadership, thereby fostering a coherent approach to institutional goals. In addition, an appropriate *governance model for the Welkom Campus* needs to be designed, approved and implemented as part of this improvement process.

The university should invest in the *digital transformation of its administrative systems* to improve efficiency, responsiveness, and data integrity. This includes integrating digital tools for enterprise resource planning (ERP), workflow automation, and data-driven performance monitoring across key functions such as finance, HR, student services, and academic administration. Technology integration must be underpinned by digital literacy training for staff and leadership, ensuring the institution can effectively use these tools to streamline processes and enhance service delivery. A digital governance framework should guide these efforts, focusing on compliance, data security, and user-centric design. This initiative is linked closely to the SIS implementation and should be rolled out as part of the Digital Transformation Roadmap, discussed under *Goal 1*.

To transform the institutional culture, CUT must *embed performance, innovation, and entrepreneurial values into its organisational ethos*. This can be achieved through targeted culture change initiatives, including recognition and rewards for innovation, staff-led solution challenges, and university-wide campaigns that promote agility, initiative, and results-driven behaviours. Institutional leaders must champion and model these values consistently. Furthermore, entrepreneurship should be infused in academic programmes and into the general *modus operandi* of the university, encouraging intrapreneurial thinking within departments and support units in order to solve problems creatively and efficiently. Combined, these strategies will reposition CUT as a forward-thinking, agile institution responsive to its internal challenges and external demands.

8.4.3.4. Developing Infrastructure and Maintaining Facilities and Equipment

The new Spatial Master Plan for the Bloemfontein Campus (current draft for consultation, still to be finalised) and the existing spatial plan for the Welkom campus, present a comprehensive spatial development framework addressing several aspects of key campus planning and functionality. The plans identify distinct characteristics and challenges for each campus while proposing targeted interventions to enhance efficiency and cohesion. In the case of the

Bloemfontein Campus, with approximately 142,546 m² of total bulk area spread across various stands, the campus currently suffers from randomly distributed functional zones, with some clustering of social and administrative buildings in the east and scattered residences and sports facilities in the southeast. The new master plan proposes clustering faculty buildings, centralising shared facilities, and placing residences and sports facilities peripherally to create more coherent functional zones. For the Welkom Campus, the master plan emphasises replacing prefab structures, creating a northwest residential precinct, developing future retail space, and clustering academic functions while centralising shared facilities.

CUT's infrastructure development strategy prioritises long-term consolidation and strategic land use to support future growth and enhance institutional functionality. Central to this is the property consolidation through *land assembly*, particularly leveraging land recently acquired via the land swap agreement with the Free State Provincial Government. This presents a significant opportunity to reconfigure, expand and reinvent the university's physical footprint to support its academic and research priorities of a 21st Century University of Technology. The *development of comprehensive 10-year Campus Development Plans for both the Bloemfontein and Welkom campuses*, informed by the recently completed Bloemfontein Spatial Development Plan and current Welkom plan, will guide this expansion and ensure coordinated, sustainable infrastructure development aligned with CUT's emerging strategic vision.

Securing financial resources to implement these long-term development plans is a critical next step. The university will actively mobilise funding through government grants, donor engagement, and partnerships with the private sector and development finance institutions. These efforts will focus on enabling the phased development of new academic, research, student support, and residential infrastructure and creating integrated, inclusive, and accessible campus environments. Funding strategies will be aligned with institutional priorities and national higher education infrastructure frameworks to ensure coherence and responsiveness.

A key pillar of CUT's infrastructure priorities is strengthening facilities maintenance through increased budget allocations and full *implementation of the university's maintenance strategy*. This includes *building the necessary human resources and systems capacity to ensure efficient maintenance operations*. Regular inspections, adherence to statutory requirements, and safety protocols will be strictly enforced to ensure compliance and risk mitigation. The goal is to optimise asset performance by minimising downtime, reducing deferred maintenance backlogs, and extending the life of critical infrastructure. Well-maintained facilities will directly support the academic and research missions of the university by ensuring reliable and high-quality teaching, learning, and research environments.

In parallel, the university will implement a comprehensive *equipment life-cycle assessment and renewal programme*, with a particular focus on laboratories and research facilities supporting CUT's research centres. This will involve tracking the condition and performance of key equipment, planning timely replacements, and allocating resources strategically to avoid disruptions in research and academic activities. Collectively, these priorities aim to ensure that

CUT's physical and technological infrastructure supports a high-quality, future-ready academic environment while promoting financial sustainability and institutional resilience.

Table 8: Goal 3

Goal 3	To position CUT as a future-focused university of technology distinguished by a culture of innovation, industry-relevant partnerships and impactful research.
Outcome	Recognised as a university of technology of choice for quality education and impactful research and innovation
Outcome Indicators	
Strategies	• Build the brand and advancing the reputation of CUT • Enhance financial sustainability and inclusive budget management • Strengthen governance, leadership, management and institutional culture • Develop infrastructure and maintain facilities and equipment • Ensure Safety of Staff and Students on Campus
Outputs	• Comprehensive brand-building and communication strategy and implementation plan developed and implemented • Institutional advancement strengthened • Participatory budget model institutionalised • Revenue from diversified sources increased • Digital administrative systems modernised (HR, Finance, Procurement, Planning, Reporting, etc.) • Culture of performance excellence and innovation established • 10-Year Campus Development Plans for Bloemfontein and Welkom approved and implemented • Campus Safety Strategy developed and implemented

9. Conclusion

As CUT embarks on this transformative journey toward 2030, this strategy embodies the collective aspiration to fundamentally change lives and shape the future through excellence in education, research, and innovation. The path ahead will demand unwavering commitment, adaptive leadership, and authentic cultural alignment, where values are genuinely lived rather than merely stated. By placing students at the centre of everything CUT does, harnessing unique research niches, and embracing its role as a catalyst for regional development, the institution will be positioned to overcome challenges and to seize opportunities with confidence and determination.

Annexure A: 2026 – 2030 Strategic Plan - Five-Year Performance Plan

Goals	Strategies	Outputs	Indicators	Baseline	2030 5-year Target	Annual Target 2026	2027	2028	2029	2030	Accountable
Outcome 1: Enhanced student academic success in terms of retention and graduation.			1. Increase in undergraduate student success rate[3]	68% (2023 AR)	76.2%	72.1%	72.1%	74.1%	75.1%	76.2%	DVC: T&L
			2. Increase in the number of graduates	4 399	5 221	4 543	4 699	4 863	5 037	5 221	DVC: T&L
			3. Decrease in dropout rate in first-year students	13,2%	10%	13%	12,5%	12%	11%	10%	DVC: T&L
			4. Achieved the total student headcount enrolments	21 601	27 184	21 418	21 418	24 235	26 228	27 184	DVC: T&L
			5. Achieved the total first-time entering student enrolments.	4 733	5 682	4 656	4 656	5 308	5 481	5 682	DVC: T&L (REGISTRAR, ED: RESOPS, CFO)
Goal 1: To promote an integrated student-centred ecosystem that enhances academic success, support, and experience throughout the student journey	1. Renew the student recruitment, registration, assessment and graduation systems, processes and practices	1. Student Information System (SIS) flagship digital transformation project implemented	6. Full implementation of Data Strategy	New Indicator	Approved Data Strategy	Phase 1: Building the governance foundations	Phase 2: Enablement and adoption	Phase 3: Enablement and adoption	Phase 4: Optimise and Scale	Maintain	REGISTRAR (ED: RESOPS)
			7. Student Information System (SIS) /Enterprise Resource Planning (ERP) evaluated and optimised	SIS/ERP Review in progress	SIS//ERP reviewed, Maintained	SIS/ERP Reviewed & Roadmap Approved	Enhance/Replace	Enhance/Replace Deployed	Maintain & optimise	Maintain & optimise	ED: RESOPS'(REGISTRAR)
		2. Student administrative processes optimised and automated	8. Percentage of student administrative processes digitised	30%	80%	7%	20%	30%	40%	80%	REGISTRAR (ED: RESOPS)
		3. Effective student recruitment, registration, assessment and graduation support processes established	9. Percentage of students report satisfaction with the registration, assessment, and graduation	70% registration 93.6% graduates	80%	60%	65%	70%	75%	80%	REGISTRAR (DVC: T&L)
			10. Operational Student Centric Centre	New indicator	Launch and full operation	Foundation and Proof of Concept	Requirements and Design Development	Planning and Piloting	Build and Integration	Launch and full operation	REGISTRAR/ED:RESOPS
	2. Build an integrated academic advising and early alert system	4. Proactive, integrated data-informed academic advising system established	11. Number of students who receive structured academic advising and documented follow up interventions within 14 days of being identified.	1 200	7 000	1 300	1 350	1 400	1 450	1 500	DVC: T&L
	3. Improve the quality of teaching and learning	5. Formal qualification in higher education teaching institutionalised for all academic staff without teaching qualification	12. Number of additional Instructional/Research staff with formal teaching qualification	20	Policy development and approval	Policy development and approval	-	-	-	-	DVC: T&L (ED: RESOPS)
					100	20	20	20	20	20	
	4. Improve the quality of postgraduate supervision and experience	6. Formal training of academics/researchers in supervisory capacity	13. Percentage of Instructional/Research staff trained in post graduate supervision	10%	60%	20%	30%	40%	50%	60%	DVC: RIE
Outcome 2: Work-ready graduates, innovators, and entrepreneurs developed											
Goal 2: To deliver innovative, industry-relevant academic programmes that produce work-ready graduates, innovators and	5. Institutionalise Strategic Transformation Educational Programmes (STEP)	7. Institutionalised STEP in all faculties	14. Number of STEP recommendations implemented	New indicator	12	4	5	1	1	1	DVC: T&L
		8. Distinctive academic programme for Welkom Campus finalised and implemented	15. Distinctive academic programme (shape and size) developed and implemented for the Welkom Campus	New indicator	4	1 Programme development	1 Programme development	2 Programmes development	-	-	WELKOM CAMPUS PRINCIPAL/ DVC: T&L
					4	-	-	1 Programme implemented	1 Programme implemented	2 Programme implemented	

[3] The success rate refers to the total number of courses passed by students in a given academic year relative to course enrolments. It is calculated by dividing the total number of FTE degree credits (courses completed) by FTE enrolments. These calculations, for a programme or for an institution as a whole, produce weighted average success rates.

Goals	Strategies	Outputs	Indicators	Baseline	2030 5-year Target	Annual Target					Accountable
						2026	2027	2028	2029	2030	
	6. Promote entrepreneurship and innovation	9. Annual programme of awareness-building and ideation events hosted to stimulate entrepreneurial mindset among students	16. Number of students participating in entrepreneurship awareness and ideation-focused activities aimed at stimulating early-stage innovation thinking	New Indicator	5000	500	700	1000	1300	1500	DVC RIE
		10. Skills-building and experiential learning events (e.g., hackathons, bootcamps, innovation challenges) conducted annually across faculties	17. Number of students participating in applied entrepreneurship development programmes involving skills-building, venture creation, or prototype development	New Indicator	400	40	60	80	100	120	DVC RIE
	7. Accelerating research development and productivity	11. Large-scale multiyear, multidisciplinary research programmes launched (flagship projects)	18. Number of large-scale, multi-year, multi-disciplinary research programmes implemented	2	15	2	3	3	3	3	DVC RIE
		12. Research productivity improved	19. Percentage of research-active staff as a percentage of Instructional/Research staff	10%	10%	10%	10%	10%	10%	10%	DVC RIE
			20. Number of doctoral graduates	24	57	50	51	53	55	57	DVC RIE
			21. Number of research master's graduates	61	91	80	82	85	88	91	DVC RIE
	8. Strengthen WIL	13. e-WIL assessment and monitoring system introduced	22. Percentage of students placed who have qualified for WIL placement	99,9%	99%	99%	99%	99%	99%	99%	DVC: T&L
			23. Amount of funding generated to support WIL	R28.485m	60m	12m	12m	12m	12m	12m	DVC: T&L
Outcome 3: Recognised as a university of technology of choice for quality education and impactful research and innovation			24. Number of research commercialisation outputs per year	4 outputs	27 outputs	5	5	5	6	6	DVC RIE
Goal3: To position CUT as a future-focused university of technology distinguished by a culture of innovation, industry-relevant partnerships and impactful research	9. Build the brand and advancing the reputation of CUT	14. Comprehensive brand-building and communication strategy and implementation plan developed and implemented	25. Comprehensive brand and communication strategy of CUT developed and implemented	New indicator	Developed and implemented	Developed and approved	Implement	Implement+ review	Implement	Implement	ED: RESOPS
		15. Institutional advancement strengthened	26. Percentage increase in funding raised through institutional advancement	R30m	50%	10%	20%	30%	40%	50%	ED: OFFICE OF THE VC
			27. Number of strategic partnerships with top universities of technology established outside traditional partner countries (Asia, South America, etc.)	Forty-eight (48) active existing partnerships	15	3	3	3	3	3	DVC: RIE
	10. Enhance financial sustainability and inclusive budget management	16. Participatory budget model institutionalised	28. Percentage decrease in annual student debt	10%	10%	10%	10%	10%	10%	10%	CFO
		17. Revenue from diversified sources increased	29. Third Stream Income generated by Faculties	115.710m	28m	20m	22m	24m	26m	28m	DVC: T&L
	11. Strengthen governance, leadership, management and institutional culture	18. Digital administrative systems modernised (HR, Finance, Procurement, Planning, Reporting, etc.)	30. Number of business process review activities performed for administrative business units	New Indicator	Business Process Review completed for 12 administrative units	Business Unit Process Reviewed (HR & Finance)	3 Business Unit Process Reviewed (Estates, IPQE & Comms and Mark)	3Business Unit Process Reviewed (Protection, ICT & Risks)	2 Business Unit Process Reviewed (Internal Audit & PostGrad &Research)	2 Business Unit Process Reviewed (VC's Office and Library)	ED: RESOPS

Goals	Strategies	Outputs	Indicators	Baseline	2030 5-year Target	Annual Target					Accountable
						2026	2027	2028	2029	2030	
		19. Culture of performance excellence and innovation established	31. Implement the recommendations of the biennial (two-yearly) employee engagement survey to gauge and foster employee engagement, and workplace well-being.	New Indicator	90% of survey recommendations implemented	Conduct the 2026 Engagement Survey.	70% of recommendations implemented.	Conduct 2028, engagement survey.	90% of recommendations implemented.	-	ED: RESOPS
	12. Develop infrastructure and maintain facilities and equipment	20. 10-Year Campus Development Plans for Bloemfontein and Welkom approved	32. Campus Master Plans approved by Council and implemented	New Indicator	Approved by Council and implemented	Approved by Council	Implemented	Implemented	Implemented	Implemented	ED: RESOPS
	13. Ensure Safety of Staff and Students on Campus	21. Campus Safety Strategy implemented	33. Campus safety strategy developed and implemented	New Indicator	Campus Safety Strategy approved and implemented	Approved Campus Safety Strategy	Implemented	Implemented	Implemented	Implemented	ED: RESOPS

Annexure B: Horizon 2040 Scenarios

Scenario 1: Collaborative Resilience - Transforming Technological Education in South Africa

By 2040, Central University of Technology (CUT) had emerged as a beacon of innovative higher education, fundamentally reimagining its approach to addressing South Africa's deep-seated educational and technological challenges. The university's strategic transformation was rooted in a holistic understanding that technological education was not merely about transferring knowledge, but about creating adaptive, contextually responsive learning ecosystems that could empower students from historically marginalised backgrounds.

At the core of CUT's pedagogical philosophy was a radical approach to curriculum design that broke down traditional disciplinary boundaries. The Additive Manufacturing programme exemplified this approach, integrating physics, materials science, mechanical engineering, and emerging technologies into a modular, interconnected learning experience. This interdisciplinary model was deliberately constructed to mirror real-world technological innovation's complex, integrated nature, preparing students like Zanele to become versatile problem-solvers rather than narrow specialists.

The university's research, development, and innovation strategy was characterised by its commitment to solving local challenges through advanced technological solutions. In the field of Additive Manufacturing, this meant developing 3D printing technologies that could address specific needs in healthcare, agriculture, and community infrastructure. Researchers and students collaborated on projects ranging from creating low-cost prosthetic limbs for rural communities to designing specialised agricultural equipment to enhance small-scale farming productivity.

Recognising the historical barriers to technological education, CUT implemented a support system far beyond traditional academic intervention. This included personalised AI-driven learning pathways that could adapt to individual student backgrounds, language capabilities, and learning styles. For students like Zanele, who came from a rural community with limited prior educational resources, these adaptive technologies provided a critical bridge to advanced learning, offering targeted support in areas where she might have previously struggled.

Stakeholder collaboration became a defining characteristic of the university's approach. CUT developed intricate partnerships with government agencies, private sector technology companies, international research networks, and local community organisations. These collaborations were not transactional but deeply relational, focusing on knowledge co-creation and mutual capacity building. Companies like global engineering firms and local manufacturing startups provided funding, mentorship, internship opportunities, and real-world project engagement. The university's funding model underwent a radical transformation, moving away from traditional dependency on state allocations to a more dynamic, project-based funding ecosystem. CUT developed multiple revenue streams by creating value through innovative research outputs, commercialised technologies, and strategic partnerships. This approach allowed for financial sustainability and reduced vulnerability to diminishing government higher education budgets.

The technological infrastructure at CUT was designed with inclusivity in mind. Advanced fabrication laboratories were equipped with state-of-the-art 3D printing technologies but were not isolated, elite spaces. Instead, they were integrated learning environments where students, researchers, and community innovators could collaborate. Zanele, for instance, found herself working alongside seasoned engineers, local artisans, and international research collaborators in these dynamic spaces. The university's approach to digital literacy was similarly transformative. Recognising that technological proficiency extended beyond technical skills, CUT embedded critical thinking, ethical considerations,

and social innovation into its technological education. Students were encouraged to view technology not as a neutral tool, but as a potential mechanism for addressing social inequalities and driving sustainable development. Language and cultural diversity were seen as strengths rather than challenges. The university developed multilingual technological education approaches, creating learning materials and teaching methodologies that respected and leveraged students' diverse linguistic backgrounds. Zanele's learning experience was not about assimilation into a dominant educational model but celebrating and utilising her unique cultural and linguistic perspective.

Research priorities were explicitly aligned with national and continental development goals. In the field of Additive Manufacturing, this meant focusing on technologies that could address critical infrastructure challenges, enhance local manufacturing capabilities, and create pathways for technological sovereignty. Zanele's doctoral research, for example, focused on developing 3D printing technologies for producing specialised agricultural equipment that could be manufactured locally and adapted to specific regional needs.

The university's international collaborations were carefully curated to avoid traditional dependency models. Instead of simply receiving technologies or methodologies from global north institutions, CUT established partnerships based on mutual knowledge exchange and co-development. This approach ensured that technological innovations were contextually relevant and rooted in local knowledge systems.

By 2040, Zanele's journey represented the transformative potential of this educational model. Having overcome significant structural barriers, she completed her doctoral research and established a technology development hub that worked directly with rural communities. Her work exemplified CUT's ultimate goal: to create technological professionals who were not just skilled technicians but holistic social innovators capable of driving meaningful societal transformation. The success of this model was evident in its broader impact. Graduates like Zanele were not just employed in traditional sectors. Still, they created new technological ecosystems, established startups, drove innovation in government and private sector organisations, and fundamentally reshaped South Africa's technological landscape. CUT had become more than a university; it was a dynamic platform for social and technological reimagination.

Scenario 2: Digital Pedagogical Revolution - Reimagining Education Through Technology

By 2040, the Central University of Technology (CUT) had transformed the landscape of teacher education in South Africa by reimagining pedagogical approaches. The university recognised that addressing the country's deep-seated educational challenges required more than incremental change. It demanded a fundamental reconstruction of how teachers were prepared, supported, and continuously developed in an increasingly complex technological world.

The Digital Teacher Education programme emerged as a pioneering model of holistic professional preparation, breaking away from traditional teacher training paradigms. Unlike previous approaches that emphasised theoretical knowledge and standardised curriculum delivery, CUT's programme focused on developing adaptive, technologically empowered educators capable of navigating rapidly changing learning environments. This approach was particularly critical when educational inequality remained a persistent challenge, requiring teachers who could bridge technological, cultural, and socio-economic divides.

At the heart of the programme was an innovative curriculum that integrated cutting-edge digital technologies with deep pedagogical understanding. Nicole, a determined student from a low-income family in Durban, enrolls at CUT because of its reputation for inclusive and community-centred education. Growing up in an area where schools lacked qualified teachers and resources, she is

passionate about improving educational access and quality for underserved communities. She studies Teacher Education with a specialisation in Further Education and Training, knowing that vocational and skills-based education is critical for youth employment and economic empowerment. CUT's blended learning model, which integrates online coursework, part-time study options, and hands-on community-based training, allows Nicole to balance her studies with part-time work to support her family. However, CUT faces significant challenges in maintaining its commitment to inclusivity. Funding shortages continue to impact teacher training programmes, and rural schools remain severely understaffed. Additionally, many students entering university lack foundational academic skills, making it difficult for them to succeed in traditional teacher education programmes. To combat these issues, CUT redesigns its curriculum, integrating adaptive learning technologies, mentorship programmes, and community teaching practicums to ensure that every student receives the support they need to succeed.

One of CUT's key strategies is strengthening partnerships with schools, local governments, and NGOs to create teaching hubs in disadvantaged areas. Nicole participates in a teaching practicum programme, where she spends time in rural and township schools, working directly with learners who struggle with literacy and numeracy. She also mentors young adults who missed out on formal education, helping them develop vocational skills through CUT's FET outreach centres. These experiences reinforce her belief that education must be practical, accessible, and community-driven. CUT develops fast-track teacher certification programmes to address teacher shortages for mid-career professionals and unemployed graduates interested in transitioning into education. These intensive, skills-based programmes allow students to gain teaching qualifications in shorter timeframes, making it easier for schools to fill critical vacancies. Nicole's classmates include former artisans, IT professionals, and social workers, all bringing diverse perspectives and expertise into the classroom. This multi-disciplinary approach strengthens the quality of teacher education at CUT.

CUT also invests in digital infrastructure to expand access to learning materials and reduce costs. Students in remote areas can access lectures, training modules, and interactive teaching simulations through a low-bandwidth mobile learning platform. Even those without consistent internet access can participate in teacher training. Nicole benefits from AI-driven personalised tutoring, which helps her improve her lesson planning, classroom management, and assessment skills. This technology-driven approach makes teacher education more efficient and adaptable. Despite these advancements, social and political challenges persist. Many communities remain sceptical of online learning, and funding for teacher education fluctuates with political shifts. CUT responds by actively engaging in policy advocacy, using research from its Education Faculty to influence national strategies on teacher development, school funding, and curriculum innovation. Nicole gets involved in a student-led advocacy initiative, helping to develop policy recommendations for inclusive teacher training and education reform. This experience broadens her understanding of systemic educational challenges and equips her with the skills to drive change beyond the classroom.

A significant tactic employed by CUT is aligning teacher training with labour needs. The university integrates vocational training modules into its FET programmes, ensuring graduates can teach academic subjects and practical skills like coding, entrepreneurship, and sustainable farming. Nicole, for example, takes an elective course in digital literacy training, which allows her to incorporate technology into her teaching methods and prepare her students for the contemporary job market. This holistic approach to education ensures that CUT graduates become teachers and community development leaders. Nicole's journey at CUT transforms her. After graduating, she takes a position at a community learning centre, teaching a blended curriculum of academic subjects and vocational skills. She also launches a youth mentorship programme, helping students transition from education into employment. Inspired by CUT's commitment to policy engagement, she later pursued a Master's in Educational Leadership to influence national teacher training policies. Her success highlights how inclusive education models can break cycles of poverty and drive sustainable community development.

By 2040, CUT will have become a national leader in inclusive education and teacher development, proving that universities can drive social change by empowering educators. By focusing on teacher training, FET, community engagement, and digital learning, CUT ensures that every student, regardless of background, has the opportunity to succeed. The university's graduates, like Nicole, reshape South Africa's education system, ensuring that future generations have access to quality, relevant, and equitable learning opportunities.

Scenario 3: The Green Pioneer

By 2040, the Central University of Technology (CUT) has emerged as a leader in sustainability, climate resilience, and green technologies, positioning itself at the forefront of precision agriculture, food security, and biotechnology. As South Africa transitions to a green economy, CUT adapts its academic focus to train the next generation of environmental scientists, agricultural innovators, and biotechnology experts. With worsening climate change, water scarcity, and soil degradation threatening food security, CUT commits to research-driven, technology-enhanced, and community-focused solutions that address both local and global agricultural challenges.

Willie, an environmentally conscious student from Bloemfontein, is drawn to CUT's Agriculture and Biotechnology programmes, eager to be part of a generation working towards sustainable food production. He quickly becomes immersed in CUT's precision agriculture labs, where AI-powered sensors, drone-assisted monitoring, and bioengineered crop solutions redefine traditional farming practices. As part of his coursework, Willie joins a student-led sustainability initiative, helping rural farmers implement AI-driven irrigation systems that optimise water use while improving crop yields. Through these experiences, he realises that technology and agriculture must work hand in hand to combat food insecurity.

However, CUT faces significant challenges in achieving its sustainability vision. Climate change continues to disrupt traditional farming cycles, and rural communities often lack the resources to adopt cutting-edge solutions. Additionally, government policies on green energy and sustainable agriculture remain inconsistent, making it difficult for universities to secure long-term research funding. CUT responds by forming strategic alliances with international research institutions, agricultural technology companies, and environmental NGOs, ensuring that it remains a key player in South Africa's Just Transition to a green economy. A key strategy in CUT's success is its focus on applied research and industry partnerships. The university establishes a Centers of Excellence in Precision Agriculture and Food Security, where students and faculty collaborate on AI-powered pest detection, and bio-based fertilisers. These centers attract significant investment from global agritech companies, positioning CUT as a major player in sustainable agricultural research. Through these partnerships, students like Willie gain hands-on experience in cutting-edge agricultural technologies, ensuring they graduate with practical, market-ready skills.

CUT also prioritises community engagement, recognising that the success of green innovations depends on their adoption by local farmers. The university launches field-based learning programmes, where students work directly with rural communities to implement sustainable farming techniques. Willie spends several months in a farming village, training small-scale farmers to use drone-assisted soil analysis and AI-driven crop rotation models, helping them improve efficiency while reducing environmental impact. This blend of academic knowledge and practical fieldwork strengthens CUT's reputation as an institution that bridges the gap between research and real-world impact.

To overcome financial constraints, CUT develops self-sustaining funding models, including agritech startup incubators, commercialisation of biotech patents, and carbon-credit initiatives. Students and faculty collaborate on patentable innovations, such as climate-resistant crop varieties and bioengineered pest repellents, generating revenue while advancing research. These income-generating

projects help CUT reduce its dependence on government funding, ensuring the long-term sustainability of its green innovation agenda.

Willie's academic journey is deeply transformative. Through his coursework and internships, he gains expertise in hydroponics, climate-resilient food production, and agricultural robotics. In his final year, he works on a project that uses blockchain technology to improve supply chain transparency for small-scale farmers, ensuring fair pricing and reducing food waste. Upon graduation, he secures a leadership role in an international NGO focused on climate adaptation, where he works on policies that integrate AI-driven sustainability solutions into national food security strategies.

CUT's Agriculture, Food Security, and Biotechnology programmes become global models for sustainable agricultural education. The university integrates big data analytics, IoT-powered monitoring systems, and genetic research into its curriculum, ensuring that students develop the interdisciplinary expertise needed for the future of farming. By combining technological innovation with environmental stewardship, CUT's graduates become key players in South Africa's transition to a climate-resilient economy.

Despite these successes, CUT remains vigilant against political and economic challenges. National funding for sustainability initiatives fluctuates, and corporate influence on agricultural research sparks debates about ethical considerations. To navigate these tensions, the university strengthens policy engagement efforts, working with government agencies and advocacy groups to ensure that sustainability remains a national priority. The Communication Sciences and Government Management departments play a key role in training students to advocate for evidence-based environmental policies.

Ultimately, CUT's ability to adapt, innovate, and integrate sustainability across disciplines secures its place as a global leader in green technology and agricultural resilience. As Willie and his peers move into leadership roles in agribusiness, policy development, and research, they carry forward CUT's mission, ensuring that technology, environmental responsibility, and social equity remain at the heart of Africa's agricultural future.