





OLLSCOIL TEICNEOLAÍOCHTA na **MUMHAN**

ESTABLISHING THE MUNSTER TECHNOLOGICAL UNIVERSITY

Application for Designation as a Technological University



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GLOSSARY

AIQR	Annual Institutional Quality Assurance		
	Reports Academic Year		
AY			
CAPPA	Centre for Advanced Photonics & Process Analysis (CIT)		
CCAD	Crawford College of Art and Design (CIT)		
CEED	Centre for Entrepreneurship and Enterprise		
	Development		
CIT	Cork Institute of Technology		
CSM	Cork School of Music		
CSO	Central Statistics Office		
EER	European Entrepreneurial Region		
EI	Enterprise Ireland		
EIS	Economic Impact Study		
ESG	European Standards and Guidelines for Quality Assurance		
FAI	Football Association of Ireland		
FDI	Foreign Direct Investment		
Fórsa	Fórsa is a trade union with over 80,000		
	members		
FTE	Full-Time Equivalent		
GAA	Gaelic Athletic Association		
GDP	Gross Domestic Product		
HEA	Higher Education Authority		
HEI	Higher Education Institution		
HR	Human Resources		
Horizon 2020	EU Research and Innovation programme with approximately €80 billion of funding available over seven years (2014 to 2020)		
IDA	Industry Development Authority		
iEER	Interreg Europe funded flagship project		
	bringing together 10 regions around Europe		
ILO	International Labour Organisation		
IMaR	Intelligent Mechatronics and RFID (ITT)		
IR	Industrial Relations		
IRFU	Irish Rugby Football Union		
ISCED	International Standards Classification of Education		
ΙοΤ	Institute of Technology		
ISSE	Irish Survey of Student Engagement		
ІТТ	Institute of Technology Tralee		
кті	Knowledge Transfer Ireland		
LF	Labour Force		
MEDIC	Medical Engineering Design and Innovation Centre (CIT)		
MoU	Memorandum of Understanding		
MTU	Munster Technological University		
NFQ	National Framework of Qualifications		
Nimbus	Nimbus Centre is a leading research centre		
	in Cyber-Physical Systems & Internet of Things		
NMCI	National Maritime College of Ireland		
NORF	-		
	National Maritime College of Ireland National Open Research Forum		

NStEP	National Student Engagement Programme			
OECD	National Student Engagement Programme Organisation for Economic Co-Operation			
OECD	and Development			
PMO	Project Management Office			
PMSS	Professional Management and Support Staff			
PPP	Public Private Partnership			
Programme	A programme of study that leads to an			
	award			
PSN	Public Service Number			
PwC	PricewaterhouseCoopers is a multinational professional services firm			
QA	Quality Assurance			
QQI	Quality and Qualifications Ireland			
RCF	Researcher Career Framework			
RDI	Research, Development and Innovation			
RPL	Recognition of Prior Learning			
RTC	Regional Technical College			
SED	Supplementary Evidence Document			
SFI	Science Foundation Ireland			
SIPTU	Services Industrial Professional and Techni-			
	cal Union			
SME	Small Medium Enterprise			
Sparq	Students as Partners in Quality			
Springboard+	The Springboard+ upskilling initiative in			
	higher education offers free courses at cer-			
	tificate, degree and master's level leading			
	to qualifications in areas where there are			
	employment opportunities in the economy.			
SRS	Student Records System			
Start-up	A start-up is a fledgling business enterprise			
STEM	Science, Technology, Engineering and Mathematics			
TASS	Technical, Administration and Support Staff			
Teagasc	Teagasc is the state agency providing			
	research, advisory and education in			
	agriculture, horticulture, food and rural			
	development in Ireland			
TD	Teachta Dála, Member of the Dáil			
THEA	Technological Higher Education Association			
ToR	Terms of Reference			
TRA	Thematic Research Area			
TTSI	Technology Transfer Strengthening Initiative			
ти	Technological University			
TUI	Teachers Union of Ireland			
UCC	University College Cork			
UNESCO	United Nations Educational, Scientific and Cultural Organisation			
UNITE	Unite is the largest trade union in the UK			
	and Ireland with members across the pri-			
	vate, public and voluntary sectors including			
	manufacturing, public services, transport,			
	food, finance and construction.			
USI	Union of Students in Ireland			
WTE	Whole Time Equivalent			

FOREWORD | IMPLEMENTING THE VISION

It is with great pride and delight that we introduce this document to readers. Since 2012 the Governing Bodies of Cork Institute of Technology (CIT) and Institute of Technology, Tralee (ITT) have been working towards the creation of the Munster Technological University (MTU). Over these years we have endeavoured to act as one and work together to bring both CIT and ITT to this point in time. As the chairs of the respective Governing Bodies we are proud of both institutes' histories to date and of our people; staff, students and stakeholders. Together, we now look forward to the future and the creation of MTU.

CIT and ITT welcome this opportunity to bring about a step change in higher education for the South-West region. Ireland stands on the cusp of great change. In the next 20 years the country will grow by an extra one million people. The South-West is ready for a multi-campus technological university based in the region.

Project Ireland 2040¹ has many objectives to ensure the country's prosperity and happiness in an ever-changing world, including; enhanced regional accessibility, strengthened rural economies and communities, a strong economy, supported by enterprise, innovation and skills. Building on the foundations of CIT and ITT and their demonstrable evolution and success over the past four decades, MTU is set to take on these challenges of the future for the region.

Creating a strong economy will depend on creating places that can foster enterprise and innovation and attract investment and talent. MTU working closely with its many stakeholders will be a key driver in ensuring the South-West region leverages the potential of its location. MTU will be a centre of excellence in education, research and engagement for career-focused learners seeking enterprise and community-ready qualifications and experiences. The entrepreneurial focus of MTU will open a world of opportunities for its stakeholders. MTU will have an extensive regional footprint with six campuses across the South-West region providing programmes and delivering leading research with multi-disciplinary, industry-focused research with national and international partners. Partnering with industry and community, MTU will seek out dynamic cross-sector relationships with start-ups, innovators and industry leading companies. MTU will continue to invest in the future with state-of-the-art research, education, enterprise, cultural and sports facilities.

Over time the creation of MTU will bring about considerable benefits through its enhanced critical mass. MTU will provide significant opportunities for multi-disciplinary collaboration across the multi-campus, regionally-based, technological university. These opportunities will deliver additionality for the South-West region and nationally across the areas of teaching and learning, research, innovation and engagement supporting the economic, social and cultural fabric of the region. Technological university designation will enable MTU to compete on equal terms with peer universities on a national and global stage, attracting international and home students, funding, partnerships and highly skilled staff.

MTU will foster a culture for success by preserving the warm, welcoming, entrepreneurial, innovative, people-oriented culture and community CIT and ITT are known for. We will maintain our reputation as being good to do business with and continue to be the preferred partner of industry leaders. Our ambition is to have a lasting positive impact on the South-West region and beyond; and our values will guide our relationships with students, with staff, our partners and the wider community of stakeholders.

Alt ho

Bob Savage Governing Body chair, CIT

Lionel Alexander Governing Body chair, ITT

¹ http://npf.ie/project-ireland-2040-launched/

The creation of technological universities in Ireland is an exciting time in the history of higher education in Ireland.

The establishment of MTU will help to position Munster and the South-West of Ireland as an attractive region. In my role as CEO of IDA Ireland I look forward to working with MTU in promoting the region as a key location for new business and to support the expansion of existing businesses in Ireland, helping to significantly boost and enable regional growth and development. MTU will help to secure the future flow of relevant talent ready to work for high-performing FDI companies across a range of pioneering sectors.

Mr Martin Shanahan, CEO, IDA Ireland



SUBMISSION OVERVIEW

This submission document is a key milestone in the CIT/ITT application for designation as a technological university. This document demonstrates the strong foundations that MTU will build upon.

CHAPTER 1: Context, places the application by CIT/ITT for designation as a technological university in context.

CHAPTER 2: Management of the MTU Project, describes elements of the MTU project including development and activity that has enabled two institutes to act as one for the past six years.

CHAPTER 3: Introducing MTU: A Regionally Based Multi-Campus Technological University, sets out the functions of a technological university and it details how MTU, will fulfil these functions through our vision, mission, and values, essential characteristics, features, and attributes.

CHAPTER 4: Criteria, outlines how MTU meets the statutory criteria and related requirements as specified in section 28 of the Technological Universities Act 2018.

CHAPTER 5: Teaching and Learning, presents details of the provision of teaching and learning in MTU, the flexible curriculum model, its delivery and the MTU graduate attributes and characteristics.

CHAPTER 6: Support for Student Development and Student Opportunities, describes the practical support functions, the student-centred opportunities and the social and cultural opportunities available to students to enable them to develop as rounded individuals. **CHAPTER 7: Entrepreneurship, Enterprise Development and Innovation,** outlines how engagement is aligned to the characteristics of MTU.

>> >> >> MTU – Munster Technological University

CHAPTER 8: Research, presents MTU's approach to research and outlines strategic objectives, principles and key thematic areas of focus. The research supportive environment, structure, career framework, performance metrics and impact are outlined.

CHAPTER 9: Serve the Community and Public Interest, sets out to define MTU's contribution to the community and public interest by and through its people and activities.

CHAPTER 10: The Financial and Economic Impact of MTU, sets out the financial case for MTU, including the integration costs and financial benefits.

The submission document is supported by a Supplementary Evidence Document (SED) which describes key achievements. The annotation SED with an associated number is used throughout this document to identify where appropriate examples and evidence exist in the Supplementary Evidence Document.

SECTION I ESTABLISHING MTU



CHAPTER 1 | CONTEXT

Chapter Overview

This chapter places the application by Cork Institute of Technology (CIT) and the Institute of Technology Tralee (ITT) for designation as a technological university in context. An overview of the historical and regional context of Munster Technological University (MTU) is provided with reference to the changing educational landscape of higher education in Ireland.

"Munster Technological University will provide the impetus for continued economic development within the region. This ambitious project will provide the necessary human capital this region needs to prosper and grow and will be a central economic driver both regionally and nationally."

Mr Edmond Scanlon, Chief Executive, Kerry Group

Introduction

CIT and ITT play a significant role as higher education providers in the South-West region of Ireland. Within the changing landscape of higher education in Ireland, the two institutes have now reached a pivotal moment in their journey towards achieving technological university designation and the creation of MTU. The creation of MTU will be the largest sectoral change in the region in recent times and will consolidate the position of the South-West region as a leading centre for practice-led and research-informed education. Together as MTU, the combined histories and expertise will be leveraged to deliver a higher education experience capable of transforming the lives of the people of the South-West and Ireland. We will provide an international experience to our students and staff through our relationships with over 180 international education and research partners.

Institutional Context

In a development of major significance for education in Ireland, regional technical colleges (RTCs) were established in the 1970s. The educational objective of the new RTCs at the time of establishment was to address significant skills gaps in the technical areas, with an initial focus on engineering and sciences. In 1992, legislative changes resulted in the institutions becoming self-governing and in 1997/98 both institutions achieved designation as institutes of technology (IoTs). Both CIT and ITT have played a major role in the growth of higher education in the South-West region developing innovative pathways for learners and contributing to the continued development of their local regions. Both institutions have a proud history of success and achievement. Since their foundation, the depth and breadth of their programme offering, and operations has grown. From initially providing nationally recognised technician diplomas, both institutes deliver education from higher certificate awards at level 6 on the National Framework of Qualifications (NFQ) to PhD awards at level 10. In addition, apprenticeships and traineeships are offered as real-life learning in both institutes, which combines learning in the place of work with learning in a higher education institute. Together the institutes provide educational programmes across the disciplines of education, visual and performing arts, humanities, business and administration, natural sciences, mathematics and statistics, information and communication technologies, engineering and manufacturing, architecture and construction, and health and welfare.

Over their histories, the institutes have broadened their activities by developing considerable portfolios of research, managed across a number of research centres. These research centres operate across areas with delegated authority at level 10 in the fields of physical sciences, life sciences and electronic engineering and computing. CIT and ITT have shown their capacity for collaboration through their participation, as partners and leaders, in a wide range of regional and national higher education collaborations, covering academic, research and administrative activities.

Both CIT and ITT operate with engagement as a core activity and this will be capitalised upon in MTU. Engagement permeates all aspects of institute life through the level of direct contact with industry, enterprise, community, student work placements, consultancy projects and research collaborations as well as internal engagement between departments, students and staff. Both institutes are deeply embedded in their respective communities, providing multiple access routes to higher education, enabling and supporting participation across all sectors of society. The presence and growth of the institutes within the South-West region has proven to be a catalyst for positive change. The investment in human capital directly attributable to the institutes has led to economic and societal progress across the region (SED 1).

The internationalisation objectives that both institutes have pursued over the years have added greatly to the diversity of the student population across all campuses. This is not only evident on campus, but in the communities where the institutes reside. Students from over 70 countries attend programmes of study at CIT and ITT. The participation of students from a diverse range of countries, their cultural contribution and the diversity that they add to the student experience has benefited students, staff and the community at large. Since their establishment the institutes, students, staff, researchers and collaborators have succeeded in numerous arenas, both nationally and internationally.

Over their histories the institutes have expanded their physical footprints; invested in significant capital infrastructure projects, teaching and learning facilities, research buildings, innovation and incubation centres, library and information facilities, in addition to sports and cultural facility development. Long-term capital development masterplans are in place and their delivery will ensure the future growth and development of on-site facilities (SED 2). This will safeguard the quality of the experience of MTU students and staff into the future.

Introducing Cork Institute of Technology

CIT was developed from earlier institutions including the Royal Cork Institution, which existed from 1807 until 1861; the Crawford Municipal Technical Institute, which opened in January 1912; and the Municipal School of Music, which was founded in 1878. Cork RTC was established in 1974 and now CIT hosts students across four campuses: the Bishopstown Campus, CIT Crawford College of Art and Design (CCAD) in Sharman Crawford Street, CIT Cork School of Music (CSM), Union Quay, and the National Maritime College of Ireland (NMCI), located in Ringaskiddy in Cork Harbour.

CIT has a substantial footprint in Cork City and the footprint of CCAD was recently expanded with the opening of 46 Grand Parade, Cork

City. Blackrock Castle Observatory (BCO) is located in the suburb of Blackrock and acts as a centre of excellence in science, technology, engineering and maths (STEM) for the institute. The Rubicon Centre, CIT's innovation centre for entrepreneurs, forms part of the CIT entrepreneurship ecosystem. The Cork Centre for Architectural Education is a joint initiative with University College Cork and is a newly developed purpose-built facility located in Cork City, which accommodates joint provision in architecture.

CSM has over 3,000 part-time enrolments for music and drama school students as part of the conservatory provision of the school, with all students benefiting from the dynamic learning and teaching environment offered at CSM.

Introducing Institute of Technology Tralee

ITT was established in 1977 as Tralee Regional Technical College (Tralee RTC) and in 1997 was designated as an institute of technology and became Institute of Technology Tralee (ITT). When first established in 1977 Tralee RTC was based in Clash, a 10-acre site located less than two kilometres from Tralee town centre. In 1997 ITT, in partnership with the then Shannon Development, purchased a 113-acre site at Dromtacker, Tralee. Following a €45m investment by ITT a number of the institute activities in the South Campus were relocated to Dromtacker. Today ITT operates on two campus locations in Tralee: the original South Campus and the North Campus.

ITT has grown significantly over the past four decades and has three principal schools spread across both campuses – School



of Business, Computing and Humanities; School of Science, Technology, Engineering and Mathematics; and School of Health and Social Sciences. With the support of Enterprise Ireland, ITT developed the Tom Crean Business Centre, an on-campus incubation centre. The centre plays a key role in fostering and developing the entrepreneurial mindset as part of the innovative ecosystem of ITT.

Overview of the South-West Region

In Chapter 10 the socio-economic and financial impact case for merger of the institutes and designation as Munster Technological University can be found. This has been developed against the following national and regional context.

Today, Ireland has a population of 4,857,000² and has the youngest population in Europe, with just over 47% aged under 35 years old. Ireland's population will continue to expand over the coming years and will likely exceed five million by 2021, 6.2 million by 2041 and 6.5 million by 2046. By 2046³, it is estimated that close to 23% of the population will be aged over 65 – up from just over 12% today. This changing demographic structure will have significant implications for plans to accommodate the associated growth of demand for services such as third-level institutions. Ireland's ability to respond to current and future capacity pressures is one of the biggest threats to the national competitiveness and economic well-being.

CIT and ITT are located in the counties of Cork and Kerry respectively and these two counties together form the NUTS3⁴ South-West region of Ireland. These two counties, along wsssith the four counties of Clare, Limerick, Tipperary and Waterford, form the Munster region.

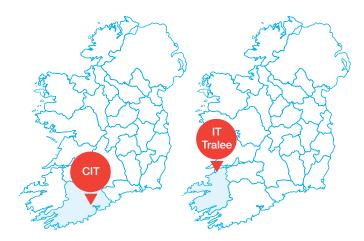


Figure 1: Location of CIT and ITT in the South-West region of Ireland

In 2016, the population of the South-West region was 690,575 (542,868 in Cork and 147,707 in Kerry), which is 14.5% of the total population of the State, with an increase in population of 19% since 2006. The Central Statistics Office (CSO)⁵ predicts that over the period 2016-2031 the population will increase annually by 0.5% in the South-West region. Ireland has the highest proportion of young people who have successfully completed third-level education in the EU. In Ireland, 43.3% of people currently in the labour force are educated to at least degree level⁶. This varies substantially across regions and local areas. In Cork City almost five in every 10 people in the labour force have completed at least a level 7 degree, and almost four of every 10 in Kerry hold a level 7 degree (see Table 1). In Q4, 2016 third-level graduates had the lowest unemployment rate at 4%⁷.

² Population and Migration Estimates April 2018, CSO https://cso.ie/en/statistics/population/populationandmigrationestimates/

³ Local Economic Indicators 2018, Doing Business Locally, Ibec, October 2018 https://www.ibec.ie/IBEC/Press/PressPublicationsdoclib3.nsf/ vPages/Newsroom~ibec-publishes-latest-local-economic-indicators-01-10-2018/\$file/Ibec+Local+Economic+Indicators+-+2018.pdff

⁴ The Nomenclature of Territorial Units for Statistics (NUTS) was drawn up by Eurostat in order to provide a single uni-

form breakdown of territorial units for the production of regional statistics for the European Union

⁵ Population and Migration Estimates April 2018, CSO

⁶ Local Economic Indicators 2018, Doing Business Locally, Ibec, October 2018

⁷ National Skills Bulletin, 2016

	Cork City	Cork County	Kerry	National
Population ⁸	125,657	417,211	147,707	4,673,700
Under 35 (%)	48.7	46.2	49.8	47.2
Over 65 (%)	15.7	13.0	16.9	13.3
Key indicators – skills ⁹	Cork City	Cork County	Kerry	National Average
Participation rate (%LF)	58.3	67.7	65.9	65.2
Third-level graduates (%LF)	47.4	43.3	38.1	43.3
Concentration of STEM grads (%LF)	10.6	7.1	5.6	7.1
Key indicators – enterprise9				
IDA Ireland ¹⁰ jobs per 10,000 (LF)	1,516.00	1,516.0	353.5	1,034.90
LEO ¹¹ jobs per 10,000 (LF)	146.6	144.1	170.3	184.3
El ¹² jobs per 10,000 (LF)	1,117.2	1,117.2	789.8	1,029.5

Table 1: Relevant key indicators by local authority area for Cork City, Cork County and Kerry compared to the national average

The availability of a skilled workforce is essential to the creation of Irish companies and in attracting new companies to locate in Ireland. A key strategic priority of The National Strategy for Higher Education to 2030¹³ is to maintain and develop high-quality research and innovation. Ireland is recognised for its skilled workforce and concentration of science, technology, engineering, mathematics (STEM) graduates. Cork City at circa 10% has a high concentration of STEM graduates in the local labour force (national average is 7%). With a population representation of 14.5% of the nation, the South-West region accounts for 17.7% of the national gross value added (GVA)¹⁴. The Q2 2017, ILO¹⁵ unemployment rate (15-74 years) for the South-West was 4.8%, was the lowest of all Irish regions¹⁶. Figure 2 shows that industry is the largest sector of employment, followed by wholesale and retail in the South-West region for Q2, 2017.

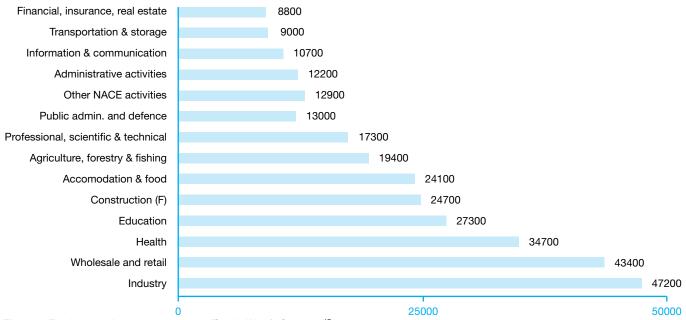


Figure 2: Employment by economic sector (South-West), Q2, 2017¹⁷

¹³ National Strategy for Higher Education to 2030, Report of the Strategy Group, 2011

⁸ Population and Migration Estimates (April 2016), CSO, https://www.cso.ie/en/releasesandpublications/er/pme/populationandmigrationestimatesapril2016/

⁹ Local Economic Indicators 2018, Doing Business Locally, Ibec, October 2018

Industrial Development Agency Ireland (IDA Ireland) – Ireland's inward promotion agency that works with companies in the set up of their operations in Ireland
 Local Enterprise Office (LEO) – provides advice, information and support to companies starting up or grow-

ing and has 31 dedicated teams across the local authority network in Ireland

¹² Enterprise Ireland (EI) – the State economic development agency focused on helping Irish-owned business deliver new export sales

 ¹⁴ CSO County Incomes and Regional Accounts, 2015 https://www.cso.ie/en/releasesandpublications/er/cirgdp/countyincomesandregionalgdp2015/
 ¹⁵ International Labour Organisation (ILO). The ILO is the internationally recognised measurement of unemployment. The definition of 'unemployed'

used by the ILO does not include some people who are entitled to unemployment payments, and therefore included on the Live Register

¹⁶ CSO, Quarterly National Household Survey, QNQ22, October 2018 https://www.cso.ie/px/pxeirestat/Statire/SelectVarVal/saveselections.asp

¹⁷ CSO, Quarterly National Household Survey, QNQ40, October 2018 https://www.cso.ie/en/statistics/labourmarket/quarterlynationalhouseholdsurvey/

The sectors with the largest enterprises across the South-West region exist within the manufacturing arena, with a particular emphasis on high-tech manufacturing, reinforcing the demand for qualified STEM graduates. Tourism remains a significant employer across the region, accounting for employment in accommodation and food standing at 7.9% across the region. In total the region has approximately 34,400 active enterprises representing a substantial and varied client group which will benefit further from the engagement activities that will result from the value-added brought about by the creation of MTU.

åAs outlined in the Regional Labour Markets Bulletin 2016¹⁸, knowledge intensive services (market, high-tech and financial) account for 12% of the region's employment; in Q4 2015; 41,500 persons in the South-West region were employed in manufacturing; 40% were employed in high-tech manufacturing activities (pharmaceuticals, electronics, optical products etc.); and 48,200 persons were employed in professional occupations, while over 29,000 were employed in associate professional occupations, combined these two occupations accounted for over a quarter of employment.

Given its demographic and economic profile, the South-West region, along with the main national centre of Dublin, has potential for immediate and sustained growth. MTU will respond to the changing skills needs of the region through the development of flexible programmes of study to suit the changing demographic nature of the region. MTU will continue to develop and enhance curricula and research opportunities through stakeholder engagement ensuring that the changing demands of regional enterprise, professional occupations and the community are realised.

Ireland has been identified as a 'Strong Innovator' in the European Commission's European Innovation Scoreboard 2018; placed first in three out of the 10 innovation dimensions: innovators, employment impacts and sales impact¹⁹. Based on the strength of the region in terms of population density, economic output, enterprise activity, innovation profile and growth potential, it is evident that the necessary elements exist for the creation of a vibrant successful technological university. MTU will span the region, serving the needs of its population and enterprises and participating in its ongoing growth and success.

MTU Meeting the Challenges of Higher Education in an Irish Context

The Expert Group on Future Funding of Higher Education²⁰ has highlighted a number of significant challenges facing higher education in Ireland. Institutions need to adapt and respond to the fundamental changes. Higher education institutions need to become more responsive to the changing needs of the economy, society and public sector in the medium and long term.

MTU is ready to face these challenges through its commitment to the region demonstrated via its approach to engagement, research, programme provision, practice-based teaching and learning and inclusivity.

The South-West region will not only derive both economic and societal benefits from MTU but also contribute greatly to the development and progress of MTU itself. MTU will be a catalyst for positive change, development and support across the region, providing the required human and intellectual capital supply to ensure sustained growth. The stakeholders across industry, enterprise and the public sector will continue to have the opportunity to inform new programme design and development while engaging with cutting-edge technology and research initiatives. The increased development of human capital driven by MTU will lead to wider social capital and, in turn, sustainable societal change. MTU will reinforce the Irish reputation for academic excellence and progress the concept of the technological university in the Irish higher education sector to that of a globally recognisable brand.



¹⁸ Regional Labour Markets Bulletin 2016; Expert Group on Future Skills Needs, October 2016

¹⁹ https://ec.europa.eu/docsroom/documents/30201

²⁰ https://education.ie/en/the-education-system/higher-education

CHAPTER 2 | MANAGEMENT OF THE MTU PROJECT

Chapter Overview

This chapter presents an outline of the process that was followed in the development of the MTU project. It gives information on project activity to date and articulates how the two institutes have been 'acting as one' over the last six years. It seeks to demonstrate the inclusive and collegial approach to development and the values embedded in the new technological university and the organisational framework for the creation of MTU.

"Munster Technological University will be structured in a manner to support the pillars of the proposed ecosystem – Teaching and Learning, Research, and Engagement. A well-structured organisation is essential in providing a solid base for effective planning, goal attainment and strategy implementation. The MTU organisational structure will also need to manage effectively the geographic span of the organisation, while demonstrating the flexibility and agility required to respond to local and regional needs."

Professor Edmond Harty, CEO, Dairymaster

Introduction

Both CIT and ITT have been working towards the establishment of MTU since 2009 and extensive work has been completed to bring the MTU proposal to fruition. The passing of the Technological Universities Act 2018 gave greater impetus to the work that the partnership had been doing. It has facilitated accelerated progress as the two institutes developed their case in light of the now established criteria for designation. In pursuit of the goal to achieve designation as MTU, planning and preparations are on schedule for merger and designation for September 2019.

Considerable thought was given to why the institutes should merge and what the advantage and benefits of a technological university will mean for students, staff, the region and stakeholders. This led to significant work being undertaken to put in place a management structure and governance which would facilitate and support the development of a project plan to deliver MTU.

MTU will be, inter alia, a person-centred institution. The project development process reflects this and illustrates how the two institutions have worked together as one and will work as one in the future.

Taking on board one of the functions of the Technological Universities Act 2018, to make best use of expertise and resources, both institutes have a shared vision of developing new operating principles and behaviour to support the advancement of MTU. To date, combining knowledge has cultivated cooperation between the two institutes. This has allowed staff to get to know and value each other's roles, contributions, strengths and skills and led to staff from both institutes working as one in many areas. Joint decision-making has enabled development of a comprehensive project plan which will allow both institutes to realise their joint ambition to attain technological university designation. The very act of coming together and acting as one has brought additionality of scope and scale across the range of the core functions described in the Technological Universities Act 2018.

The Munster Technological University Project Background

CIT and ITT are seeking to create a regional multi-campus technological university because it will deliver advantages and benefits for students, staff and stakeholders. Through its enhanced capacity, enlarged critical mass and status, MTU will improve and change lives by providing inclusive access to educational opportunities; continuing to promote a culture of lifelong learning, offering bespoke programmes of study and qualifications in the workplace as well as recognising prior learning. Through its new unique reach, the technological university will offer vital services to surrounding communities including access to cultural amenities and sports facilities. In particular, MTU will present many new and exciting opportunities for staff and students.

The new status of being a technological university will afford students a broader range of educational and engagement opportunities. The range and quality of services and supports available to students will be enriched. This is further explored in Chapter 6. Graduates will have greater options for further study and research collaboration. MTU graduates will have enhanced employability opportunities, especially international opportunities, as they will be conferred with qualifications from an institution with a globally recognised title of technological university.

The staff of MTU will experience a broader range of career opportunities. Staff will have the opportunity to develop their skills in the areas of education, research and engagement. Staff mobility will be facilitated by MTU including greater opportunities to work with enterprises and enhanced opportunities for international exchange with Higher Education Institutions (HEIs) abroad. MTU will deliver more than the sum of its two constituents' parts. As we outline in Chapter 10 MTU will generate a net economic impact of between €156m and €224m²¹ for the South-West region over a 10-year period. The research capacity of MTU will provide a platform for increased research investment, which is expected to create a regional GDP increment of between €26m and €52m in the South-West region.

Timeline of Project Activities

MTU consultation has been ongoing since the publication of the National Strategy for Higher Education to 2030 and Table 2 shows a high-level overview of the key milestones since 2011.

Date	Activity		
January 2011	Publication of the National Strategy for Higher Education to 2030		
February 2012	Higher Education Landscape Document provided detail on the process and criteria for TU designation		
July 2012	Submission to HEA: Higher Education Landscape and Technological University		
November 2013	Information and consultation meetings held with staff and students in CIT and ITT		
June 2014	Submission to HEA: Establishing the Munster Technological University		
September 2014	MTU partners meet jointly with the International Review Panel		
December 2014	International Review Panel Report published		
June 2015	MTU Integration Agreement approved by both Governing Bodies		
March 2017	MTU Programme Oversight Board established and Project Sponsors agreed		
March 2017	MTU Project Management Office established		
Nov/Dec 2017	MTU information sessions with staff; 29 staff information sessions with 413 staff across six campuses over 12 days		
March 2018	Technological Universities Act 2018 signed into law		
May 2018	MTU representatives met with a sub-group of the HEA board to outline funding requirements for MTU with respect to the Higher Education Landscape Funding call		
Throughout 2018	CIT and ITT presidents, Governing Body chairs and chair of the MTU Oversight Board met with the Tánaiste, Minister of State for Higher Education and Department of Education officials to discuss progress on the MTU Programme and associated dates for the final submission and planned designation date		
June 2018	Work commences on the guiding principles in the organisational design for MTU		
August 2018	MTU Business Case and Economic Impact Study completed		
February 2019	MTU Application submitted to the Department of Education and Skills		

Table 2: Timeline of key milestones to date



²¹ Economic Contribution and Impact of MTU, Dr Matthew Fannin, September 2018

>> >> >> >> MTU – Munster Technological University

Acting as One

CIT and ITT have been working together on the development of MTU for a number of years. This has enabled them to 'act as one' in several areas whilst remaining separate legal identities. This cooperation has been important as the MTU project has unfolded. Table 3 shows a number of examples where the two institutes are working together.

Students	Staff	Corporate
The 'Terms of Reference' (ToR) and 'Memorandum of Understanding' (MoU) have been developed jointly between the CIT and ITT Students' Union.	'Terms of Reference (ToR) and a 'Memorandum of Understanding' (MoU) have been developed jointly with CIT/ITT professional, management and support staff (PMSS) and technical staff (SIPTU, Fórsa, Unite) in an industrial relations forum in May 2014.	A dedicated network connection between the two campuses has been installed and MTU project staff are actively collaborating using a dedicated Microsoft SharePoint site and Skype for Business.
MTU information has been included in the 2018/2019 institute prospectuses and CIT/ITT presented an MTU stand at careers fairs in Dublin, Limerick, Cork and Kerry since September 2018 (SED 3).	'Terms of Reference (ToR) and a 'Memorandum of Understanding' (MoU) developed jointly with by CIT/ ITT TUI industrial relations forum.	Currently key finance, HR, and student administration systems used in both institutes are hosted externally.Discussions have commenced with third-party vendors to recommend a single instance of each system for MTU.
The Certificate in Supervisory Management programme has been co-developed by CIT and ITT (SED 4).	Joint Institute Executive Team meetings.	Joint upgrading and alignment of HR systems in both institutes (SED 5).
CIT and ITT have successfully received funding following a joint bid to roll out CIT's Student Accelerator Programme (Student Inc.) under two funding calls (Regional Enterprise Development Fund and HEA: Innovation and Transformation Call). (More details in Chapter 6.)	Joint representation at Institute Strategic Dialogue sessions with the HEA over the last three years.	The two institutes have been working closely on harmonising their current policies and practices, for example in the areas of HR, finance and student administration and support in order to establish a single policy framework. Draft MTU policies will go through the relevant consultation process and will be approved by both Governing Bodies in advance of designation day.
Culinary Arts Apprenticeship programme (level 7) rolled out collaboratively in September 2018 (SED 6).	CIT and ITT are working together under the KTI Technology Transfer Strengthening Initiative (TTSI) (SED 7).	The two institutes have been working together on a combined physical environment strategy, joint masterplan and green campus approach (SED 2).
	CIT and ITT are co-delivering the New Frontiers programme (Ireland's National Entrepreneur Development Programme) which is funded by Enterprise Ireland to facilitate company start-ups for innovative business ideas (SED 8).	CIT/ITT have been working together transparently and with full data disclosure on a unified basis to ensure that the financial resourcing and viability of the MTU project is robust (in line with the requirements of Sections 30 (b) and 34 (2)(c) and (d) in particular of the Technological Universities Act 2018), as provided to the HEA.
		The development of a joint Data Sharing Agreement (in accordance with the Data Sharing and Governance Bill 2018) to cover the exchange of information between the two institutes until designation day. A data cleansing exercise is under-way and a review and alignment of the data retention schedules has progressed.
		CIT/ITT have agreed to establish a joint Governing Body. This group will draw from existing membership of both CIT/ITT Governing Bodies.

Table 3: Examples of 'acting as one'

As can be seen from the above examples, there has been a gradual process of coming together and acting as one where this is possible. Against this background of working closely together the MTU project has been gathering pace.

The MTU Project

The completed MTU project will see the development and delivery of an organisational architecture and system of governance and management, which will support the delivery of a regionally dispersed multi-campus technological university.

The MTU project is divided into three main phases: pre-merger, designation period and post-merger. Each phase is characterised by a specific focus of activity, which reflects the priority tasks that must be completed during that phase. During the pre-merger phase, the focus has been, and continues to be, on putting the essential foundations in place, including:

- > Governance;
- Management and executive structures;
- Organisational structures;
- Administrative services;
- Infrastructure;
- > Resources;
- Common policies and procedures.

It is planned that at designation date there will be a smooth and successful transition from operating as two separate institutions to operating as a single entity. The post-merger phase will focus on the deeper integration of all aspects of the new technological university to ensure that the benefits envisaged are realised as quickly as possible.

Programme Oversight Board

A Programme Oversight Board (POB, Figure 3) was established comprising:

- > An independent external chairperson;
- > Two chairs of Governing Bodies;
- > Two presidents;
- Two project directors;
- > One international higher education advisor;
- Five sponsors drawn from the executive membership of both institutes.

The POB is the key vehicle for authoritative decision-making and for ensuring that the delivery of outcomes are in line with key milestones, quality, cost and time requirements. An early decision was taken to establish a risk register to ensure all risks are recorded, including all mitigating actions. This has been providing a basis for analysis of any strategic, programme, operational or project risks.

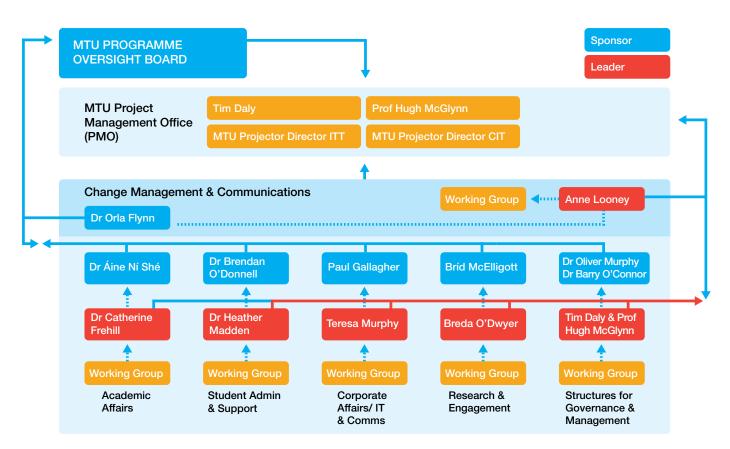


Figure 3: MTU Programme Oversight Board

The MTU project approach, as shown in Figure 4, was developed by the MTU POB with assistance from an external consultancy support service PricewaterhouseCoopers (PwC).

MTU Programme Oversight Board	A single MTU Programme Oversight Board is the ultimate decision making authority of the MTU Programme.
Project Director	One Project Director from each institute will drive and manage the Programme on a day-to-day basis supported by the Project Management Office which comprises the Project Leaders and the PMO Admin.
Project Sponsor	Each Project is sponsored by a Project Sponsor who ensures the Project meets their objectives and delivers the planned outcomes by providing leadership, guidance and decision-making.
Project Leader	Each Project is assigned a Project Leader to manage all aspects of the Project from initiation to closure.
	Each Project will be supported by a Working Group that will be responsible for implementing the relevant Project by carrying out Project related tasks.

Figure 4: MTU project approach

As can be seen the MTU Project was divided into six programmes of work reflecting the main activities and support services to be operationalised in the new technological university. Each programme of work had a working group made up of staff from the two institutions and a leader responsible for operationalising the work stream. A member of CIT/ITT executive was identified as a 'sponsor' for each work stream to add authority to the deliberations and to resolve issues.

The POB has prioritised a focus on consultation and communication throughout the development process drawing upon the widest range of experience from within and outside the two institutes. Numerous briefings, consultations, meetings and workshops with stakeholders including senior management, staff, students, Governing Bodies and external stakeholders have taken place.

The work stream 'Change Management and Communications' was especially designed to span all other work streams to ensure that there has been effective communication and engagement with key stakeholders especially students and staff. Various meetings and workshops with staff from both institutes have been held throughout the process to date. These have ensured that

staff are getting to know each other, are building relationships and collaborating. Staff involved in meetings and workshops to date have been proactively engaged, committed and positive about the MTU development. Their contributions and insights have been key in assisting with planning as they see MTU as an opportunity to look at innovative ways of developing processes.

Union engagement has been ongoing with TASS unions as the MTU project has developed. TASS union industrial relations (IR) liaisons have been in place in both CIT and ITT since 2014. TUI members were involved in national industrial action from April 2015 to June 2017. With the allocation of designated time for TUI involvement in the MTU Project and following multiple engagements in the development of an MOU between October 2018 and January 2019, significant progress has been made. Management will continue to consult with the TUI as the project progresses. Meetings have also been held with the other key stakeholder via the Students' Union executives of both institutes. The Students' Union executives have engaged with the student body as a whole through their various fora. The Students' Union presidents sit on the Governing Body of each institute where MTU updates are regularly provided. Communications and engagement with the student body is seen as vital in the advancement and success of MTU.

Whilst the POB has had ultimate responsibility for progressing the MTU project, the day-to-day organisation has been undertaken by the MTU Project Management Office (PMO) overseen by two project directors, one from CIT and one from ITT. Since the establishment of the MTU PMO in March 2017 the programme team has been meeting weekly online, in addition to monthly face-to-face workshops.

In three programmes of work, project plans have been consulted on, developed and finalised:

- > Student Administration and Support
- > Corporate Affairs / IT & Comms
- > Change Management and Communication

Led by the project leaders, several sub-projects have already commenced for these programmes of work. Project plans are currently under development and consultation in the remaining programmes of work:

- > Academic Affairs
- > Research and Engagement

At the time of writing these are on target to be completed.

The requirements for merger and subsequent designation are significant including the integration of major systems like HR, finance, payroll, student records and IT systems and processes like admissions, assessment and library. A key element in the developmental process has been the identification, analysis and evaluation of existing systems, processes, policies and procedures with a view to developing project plans which are efficient, effective and in place in a timely manner prior to merger. A substantial volume of preparatory work has been completed and through the consultations, discussions and workshops held to date, a clear picture has emerged of the developmental agenda, the body of work still to be undertaken and where the main challenges currently lie. As is to be expected, extensive planning and preparation will continue on various aspects of the project, up to and beyond the date of designation and as the new MTU culture is developed. Prior to the point of merger, implementation of essential structures and systems of the new technological university will be put in place, to ensure that crucial services will be operational at the time of designation.

The Foundations of MTU

As indicated above, the development of MTU is a gradual process which will go beyond designation day. Cooperation to date between the two institutes has been progressive and where they have been able to act as one they have.

Some key decisions have been made early in the deliberations to establish the framework for the new MTU and they include:

- > The vision, mission, and values of the new technological university as detailed in the next chapter.
- > Good governance arrangements have been identified as essential to the development and operation of MTU, underpinning its responsibilities as a transparent and accountable technological university.
- > The approach to governance as set out in the current Code of Governance, which was published by THEA in January 2018, for institutes of technology and new technological universities, seeks to preserve the balance between accountability and autonomy. Both institutes have committed themselves to this current code and remain committed to achieving the highest possible standards.
- > A single Governing Body with member competencies reflecting the requirements of a modern technological university will be established, drawing upon the best available individuals regionally, nationally and internationally. MTU's Governing Body will be the technological university's decision-making authority, and it will be constituted in line with the provisions of the Technological Universities Act 2018 – with between 14

and 22 members, including the president and chairperson. The members will be representatives of both academic and professional staff, representatives of both undergraduate and postgraduate students, nominated external members, three members nominated by the Minister, and one member nominated by local education and training boards. This will be in place by designation day.

- > There will be a single Academic Council, the representation of which will be in line with that outlined in the Technological Universities Act 2018. This will be in place by designation day.
- MTU will be a single integrated institution with governance, management and academic structures designed to ensure consistency of treatment and experience for all members of the technological university community.
- > Priority will be given to the development of a single set of academic policies and procedures for MTU which adhere to good international practice and are consistent for all MTU students and staff.
- Key principles, designed to enable the establishment of an institution that is flexible, responsive and has an inclusive ethos will underpin the design of the MTU organisation and management structures. The design will:
- Support the creation of a teaching and learning work environment that attracts, empowers and retains staff, providing opportunities for development, and ensuring that talents and expertise are appropriately recognised and utilised.
- Be forward-looking in creating a modern technological university by building on the cultures, capabilities and achievements of the founding organisations, and optimising their collective potential.
- Support a consistent, equitable and high-quality student, staff and alumni experience, in the most efficient and effective manner across MTU.
- 4. Be flexible, dynamic and agile, to support an innovative approach across all its activities, and in responding to the opportunities and challenges presented by the environment in which it operates.
- Provide clarity and reassurance to staff, students and other key stakeholders in terms of transparency, accountability and responsibility.
- 6. Enable and empower leadership and decision-making at the most appropriate level in the management structures.
- Support engagement with enterprise in graduate formation and will recognise the role of long-term mutually beneficial relationships informing relevance and currency of the curriculum.

- Enhance the expansion of research and innovation, advancing international goals and opportunities, thereby enabling MTU to be a driver of economic, cultural and social development.
- 9. Provide a unified and equitable management structure, which can drive development opportunities to deliver success across all disciplines, campuses and the region, and build a sustainable, future-focused technological university with an international mindset.

Appropriate organisation structures that reflect and support the vision, mission and values of the institution will be put in place which will serve to unite the two founding institutions. Initial consideration has been given to the structural design options for MTU. Based on the International Review Panel's recommendations of September 2014, a two-tier organisational structure will be implemented. CIT/ITT have engaged external consultants to assist in the organisational design for MTU. This consultative process has a planned duration of six months with the planned output of a high-level organisational structure design in place at designation day.

A strong supportive management structure has been identified comprising a president and vice-presidents, each aligned with the major functions of MTU. The technological university will include a management structure and the essential supporting administration to ensure that MTU academic imperatives and those of the technological university are aligned and effective. Administrative processes will be integrated and operate across all campuses. With this framework in mind a fuller picture of the functions of the new technological university is described in the following chapters.



CHAPTER 3 | INTRODUCING MTU: A REGIONALLY BASED MULTI-CAMPUS TECHNOLOGICAL UNIVERSITY

Chapter Overview

This chapter sets out to outline the functions of a technological university and details how MTU, as a regional multi-campus technological university, will fulfil these functions. The chapter presents the vision, mission and values of MTU as well as its essential characteristics, features and attributes.

"Munster Technological University will serve as a catalyst in the future development of the region. Its vision and mission of transformation, empowerment and leading change through education will have a significant impact on the region and nation. Both the quantitative and qualitative outputs of MTU will positively affect people for generations to come."

Mr Dick Spring, Director, FEXCO Holdings and former Tánaiste (Deputy Head of Government of Ireland)

Introduction

MTU will be a multi-campus technological university, contributing to the region through the provision of academic programmes which support student development and opportunities, education and research. MTU will support entrepreneurship, enterprise development and innovation, and will serve the community and public interest.

Acting together, CIT and ITT have built on their individual strengths, their extensive experience and passion for education and entrepreneurship to create MTU. The two institutes share an ethos of excellence, an ambition to serve the needs of their communities, and a vision of higher education provision that is innovative, responsive, entrepreneurial and forward-looking.

The new technological university will grow from the foundations laid down by CIT and ITT and will thrive and flourish, meeting the needs of stakeholders and leave a strong, positive impact in the South-West region for future generations to come.

The Functions of a Technological University

In response to questions raised in 2016 with respect to the Technological Universities Act 2018, the then minister for education and skills Richard Bruton TD outlined that "a technological university has a systematic focus on the preparation of graduates for complex professional roles in a changing technological world"²². A technological university advances knowledge through teaching and learning, research

and scholarship and disseminates this knowledge to meet the needs of society and enterprise. A technological university has particular regard to the needs of the region in which it is located. In this case MTU will serve the needs, challenges and opportunities of the South-West region of Ireland as outlined in Chapter 1.

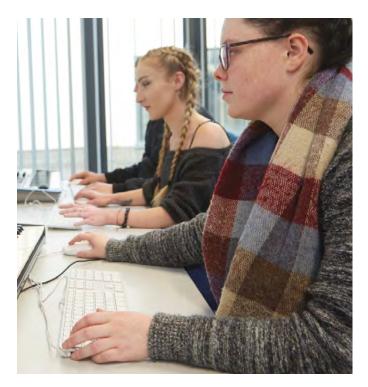
A technological university is characterised by the breadth of its programme provision across higher education levels 6 to 10 of the National Framework of Qualifications (NFQ). It has programmes of study that are professionally-oriented to meet the social, cultural and economic needs of the region. Research is primarily focused on fundamental, problem-oriented research and discovery, with effective knowledge transfer alongside the provision of consulting and problem-solving services that are relevant to the region. The technological university supports intensive and broad-based links with regional business, enterprise, professions and related stakeholders that inform curriculum, teaching and learning, assessment and research.

Having reviewed the functions of a technological university as outlined in the Technological University Act 2018, the main functions can be categorised as follows:

- > Provision of teaching and learning;
- > Support student development and student opportunities;
- Support entrepreneurship, enterprise development and innovation;

- > Provision of research;
- > Serve the community and public interest.

What follows in this chapter will describe MTU, including its vision, mission, values and essential characteristics, and demonstrate how the proposed institution clearly addresses the functions of a technological university. Table 4 below summarises the key characteristics of our technological university.



Chapter	Our Technological University				
3	Vision	Leading transformation through education			
3	Values	Inclusive	Engaging	Dynamic	Bold
3	Mission	To lead change and, through education, empower people for a successful future in a globalised world			
3	Key characteristics	Person-centred	Open and outward-facing	Commitment to excellence and quality	Commitment to internationalisation
	TU Functions				
5	Provision of teaching and learning	I	I	I	 Image: A start of the start of
6	Support student development and student opportunities	S	Ø	Ø	I
7	Support entrepreneurship, enterprise development and innovation	S	O	Ø	I
8	Provision of research	I	S	Ø	 Image: A start of the start of
9	Serve the community and public interest	S	0	0	I

Table 4: The key characteristics of our technological university

²² https://www.oireachtas.ie/en/debates/question/2016-06-21/186/ grow

The Vision for MTU

Leading transformation through education

MTU's vision is deliberately bold. It will embrace change through its delivery of the technological university functions.

The Mission of MTU

To lead change and, through education, empower people for a successful future in a globalised world

MTU will embody this mission by leading change through its culture and people, through relevant multi-disciplinary programmes and an innovative approach to teaching and learning, research and engagement. MTU will plan for tomorrow and be consistently relevant. MTU will create opportunity through flexible lifelong learning and will ensure access for a wide variety of people at every stage in their learning process, enabling them to achieve their real potential. MTU will deliver agile, studentcentred learning and career-focused education, research and innovation. MTU will be committed to supporting the regional economy.

The Values of MTU

Values capture what MTU is and how it will act, engage and treat the communities it serves. MTU's values will be constant and will guide the development of its strategic imperatives now and into the future.

Inclusive: At its core MTU will be all about people. MTU exists to provide educational pathways to all, helping people invest in their future potential through lifelong learning. MTU will work in collaboration with a multitude of students at different levels and stages in their learning cycle, as well as businesses and communities at home and abroad, to deliver the best education for the world of tomorrow.

Engaging: MTU will both engage and be engaging; investing in understanding and collaborating with students, staff, employers, regional and global enterprises and government. MTU will demonstrate its vision and ambition exhibiting its values through dialogue and action.

Dynamic: MTU will be a responsive and agile multi-campus regionally based technological university. MTU will respond to the needs of local, regional and international communities. The technological university will be designed to support an innovative approach across all its activities.

Bold: MTU will recognise the need to take managed risk to deliver economic and technological impact. MTU will be a positive force for change in its pursuit of educational and technological innovation for tangible economic and social impact. MTU will inspire people to realise their potential.

MTU Defining Characteristics

In order to fulfil the functions of a technological university, CIT/ ITT, working together have identified four defining characteristics of MTU:

- > A person-centred technological university
- > An open and outward-facing technological university
- > A commitment to excellence and quality
- > A commitment to internationalisation

A Person-Centred Technological University

MTU will ensure a person-centred approach in all its activities. A person-centred organisation is a learning organisation, continuously developing and improving the skills of its students and staff. As outlined above, our mission will be embodied by leading change through our culture and our people. The person-centred ethos of MTU will be evident through; visionary leadership, shared values and beliefs, opportunities for students, staff and stakeholders; a community focus; an empowered and valued staff; individual and organisational learning; partnership and collaboration. For all stakeholders, MTU will endeavour to create a culture that is inclusive, diverse, forward-focused and passionate for change.

MTU will deliver a high-quality experience by providing excellent student-centred teaching and learning, student support and learning resources. Students will be empowered through involvement at decision-making level by representation at various committees and councils, e.g. Academic Council – the main academic decision-making authority of the new technological university.

The creation of MTU offers a unique opportunity to build on the existing staff culture in both institutes. Integral to the MTU future strategic plan is the goal of nurturing the personal development and well-being of its staff. The aim is to foster a vibrant and inclusive culture that crosses disciplines and organisational boundaries.

An Open and Outward-Facing Technological University

MTU will be an open and outward-facing technological university with an organisational culture focused on understanding and responding to the needs of stakeholders.

MTU will be committed to collaboration and knowledge exchange with industry, society and the public sector. It will demonstrate active involvement in collaborations with other HEIs, industry and enterprise partners. These collaborations will involve regional and local organisations, SMEs, social enterprises, schools, alumni and entrepreneurs. MTU will maintain and grow links with research and innovation centres, thereby facilitating technology transfer and enabling dynamic knowledge exchange. MTU will provide opportunities for staff and students to take part in entrepreneurial activities. Staff and student mobility will be supported between academia and the external working environment. MTU will demonstrate a commitment to social and cultural inclusion and to widening participation in higher education to all who have the ability and motivation to benefit from it.

A Commitment to Excellence and Quality

In developing the new technological university, the Governing Body and Academic Council of both CIT and ITT have been mindful of the central importance of quality and the pursuit of excellence. Merger and designation will provide an opportunity to enhance existing quality through the creativity facilitated by the new mix of Governing Body members, management and staff, both academic and professional services staff.

The approach to quality assurance (QA) and enhancement in MTU will be in full alignment with the principles set out in the Technological Universities Act, 2018, the Qualifications and Quality Assurance (QQI) Act 2012, the 2015 European Standards and Guidelines for Quality Assurance (ESG), and QQI published guidelines.

Since 2001 and 2004, CIT and ITT, respectively, have had delegated authority to make their own awards and are therefore fully appreciative of the standards expected of university level institutions. Currently the two institutes hold delegated authority to make awards for taught and research programmes to master's level and make PhD awards in particular research areas including electronic, manufacturing and mechanical engineering, educational sciences, mathematics, arts, computing and science.

The comprehensive quality infrastructure for both taught and research degree provision in place in both institutions will enable the two institutes to make a seamless transition to assuming full degree awarding powers following designation as a technological university. With authority to make awards from level 6 to 10, MTU will continue to develop, validate, review, maintain and improve the quality of education, training and research it provides.

Building upon the current effective policies and procedures, within the two institutes, MTU will ensure that all QA processes are in line with the mission and vision of the new technological university. A key challenge for MTU will be to ensure that a single unitary quality assurance framework will be in place for designation day. Designing and approving a fully integrated and unitary quality assurance framework within the short time frame before designation day is, of course, challenging. At the same time, QA processes in the academic period prior to designation in both CIT and ITT will be maintained.

MTU will develop a set of key principles to support the technological university in the delivery of the highest standards across the university in its academic, research and operational activities. In developing the principles MTU will be mindful of, and take into consideration, all the knowledge and experience accumulated by CIT and ITT. The key principles of quality assurance will also cover governance, procedural and organisational areas.

Both institutes submit Annual Institutional Quality Assurance Reports (AIQR) and engage with QQI Annual Dialogue Meetings. QQI Institutional Reviews are also completed.

Through the quality processes MTU will continue to embed a quality culture across all aspects of the technological university for the benefit of students, staff and relevant stakeholder communities. A transparent and robust governance structure will safeguard continuous progress in implementing and supporting quality assurance and improvement measures. Appropriate procedures to identify, assess and manage risk will be implemented in order to safeguard and sustain the integrity of MTU's academic excellence.

MTU will also implement policies and procedures relating to the approval, monitoring and development of the portfolio of study programmes. The inclusion of independent external assessors, which include professional, statutory and regulatory bodies and external examiners in the internal and external review processes, will ensure best practice is embedded within MTU.

Building on the existing CIT/ITT School of Graduate Studies and the Research Offices, MTU will oversee quality enhancement in the research and innovation arena. Recognition of the commitment to the development of a quality framework has been endorsed through obtaining the HR Excellence in Research²³. This commitment will be carried forward into MTU.

The opportunity will be taken in MTU to develop and strengthen the student voice as a key stakeholder in quality assurance and enhancement. Students will be represented on Governing Body, Academic Council and related committees. Student feedback and student satisfaction will be monitored through regular feedback including the Irish Survey of Student Engagement (ISSE) and locally through engagement with the Students' Union, Student Affairs Personnel, the implementation of the National Student Engagement Programme (NStEP) and Students as partners in quality (Sparq).

Student achievement will be measured by the award of qualifications and records of performance. MTU will also use external verification and the requirements of professional bodies to assess its performance. MTU will monitor the success of students in securing employment and pursuing career opportunities or further study. This data will be used to evaluate MTU's performance against mission and changes will be made where necessary.

Through its HR Office, MTU will recruit appropriately qualified and experienced staff and enable existing staff to develop their pedagogical, research and entrepreneurial skills in line with the mission of this technological university. MTU will demonstrate evidence of a well-founded, vibrant academic community involving professional services staff, academic staff, researchers and students as measured through research output, funding secured and pedagogical engagement in discipline development and academic debate.

A Commitment to Internationalisation

MTU will promote a global perspective to recognise the importance of competing on a world stage and engaging in the development of an international knowledge economy. It will benchmark its performance against comparable institutions in other countries and take part in international cooperation. MTU will develop an internationalisation strategy that will:

- Embed internationalisation into a high-quality teaching and learning environment;
- Develop and deliver global best practice in process, implementation and evaluation of its impact regionally and globally;
- Collaborate with world-class international partners in research activities, shared projects and initiatives and transnational programme provision;

- Recognise the social and cultural benefits of an internationaloriented MTU learning and research experience;
- > Support the socio/cultural and economic impact of MTU's international strategy in the wider region.

An MTU International Office based upon the experience of CIT/ITT, will continue to promote, develop and support the implementation of the technological university's international strategy. The office will be responsible for establishing, implementing and evaluating all international agreements. It will facilitate all inward/ outward staff and student mobility. It will develop the necessary international policies and procedures for MTU.

MTU will be committed to supporting Ireland as a destination of choice for researchers in EU research applications. It will encourage young people to learn European and other languages and avail themselves of study, placement, research and/or employment opportunities globally. MTU will focus on opportunities to boost mobility and student/staff exchanges and will through the development of integrated curricula and mobility, contribute and support the European Commission initiative of Networks of European Universities.

CIT/ITT have grown their international presence through developing and increasing their collaboration with over 180 international partners. MTU will build on and develop, these existing partnerships as one of its key characteristics. Detailed evidence of successful international achievements is available in SED 9.

MTU will continue to target international exchanges across all disciplines. This will be in line with its teaching and learning, research and innovation objectives. MTU will ensure that all students will have an international experience irrespective of whether they choose to engage with an international programme at home or abroad. This will be achieved for those who do not travel abroad, by creating and promoting an 'international campus at home'. This will be accomplished by integrating the 70-plus nationalities studying (credit-based modules/programmes) or researching at MTU through international cultural, social events and societies.

MTU – Fulfilling the Functions of a Technological University

MTU, through its vision, mission, values, defining characteristics and activities will fulfil the functions of a technological university. The following table illustrates a number of activities currently in place at CIT and ITT. Most importantly, however, it summarises how the new technological university in action is envisaged.

In November 2016 CIT submitted an application to the European Commission to receive the HR Excellence in Research Logo in recognition of our commitment in implementing the principles of European Charter & Code for Researchers

Chapter	Our Technological	Ir Technological University			
3	Vision	Leading transformation through education			
3	Values	Inclusive	Engaging	Dynamic	Bold
3	Mission	To lead change and, through education, empower people for a successful future in a globalised w			in a globalised world
3	Key characteristics	Person-centred	Open and outward-facing	Commitment to excellence and quality	Commitment to internationalisation
	TU Functions		1		
6	Provision of teaching and learning Support student development and student opportunities	 Modular and semester- based programmes A choice of programmes at all NFQ levels 6-10 as well as apprenticeship programmes Programmes offered across a broad range of discipline areas Flexible modes of delivery allowing students to access education at a time and place to suit their needs within the available offering CPD opportunities CPD opportunities Inclusive access – mature students, students with disabilities and under- represented socio- economic backgrounds Non-standard access pathways Recognition of Prior Learning Holistic development Online delivery Online services Student enterprise programmes Student Engagement across student lifecycle 	 Work place and/ or work-based learning Enterprise involvement in programme design, delivery and assessment Focused curriculum development Engaging industry experts as adjunct faculty Industry Advisory Boards for each discipline area Focus on regional and national skills need Work placement, internships, work- based projects Support for student entrepreneurship 	 Best practice quality enhancement and assurance activities QQI oversight Co-design and co- develop programmes Research informed teaching Practice-led teaching Professional accreditation of programmes Quality benchmarking against international exemplars Graduate attributes Student feedback via ISSE Student engagement in curriculum design, development and review Student participation in programme quality assurance and enhancement 	 programmes in and out Internationalisatio of the curriculum Joint programmes with international partners International exchange
7	Support entrepreneurship, enterprise development and innovation	 > Embedded entrepreneurship/ innovation > Shared staff with enterprises > Secondments to industry > Recruitment from industry > Industry Representatives 	 Secondments to industry Recruitment from industry Co-Researchers 	 Benchmarked performance nationally and internationally using standard KTI metrics (e.g. patents, spinouts etc) Student exemptions by professional 	 International partnerships International projects

	TU Functions				
8	Provision of research	 Researcher career framework Quality research environment Facilitated staff engagement in research and PhD development 	 Relevant Collaborative projects with stakeholders Innovation Partnerships Collaborations with other HEIs 	 > Delegated authority at level 10 > Benchmarked research performance > Research Career Framework > Citation Index U-Multirank 	 Lead or participation in research projects with international partners Recruitment of international researchers
9	Serve the community and public interest	 Respect for diversity of values, beliefs and traditions Working towards Athena SWAN attainment Inclusivity in workplace Community based learning Develop social and civic responsibility amongst students and staff Credit bearing community service initiative modules 	 > Strong social and cultural links > Relationships with regional and national stakeholders > Promote entrepreneurial ethos > Staff engaged in public service activities (advisory boards and committees) 	 Extended campus with associated feedback loop 	 Strong social and cultural links supporting creativity International diversity across campuses leading to an international presence in the locality

Table 5: Our Technological University



CHAPTER 4 | CRITERIA

Chapter Overview

This chapter sets out how CIT and ITT combined (as MTU) meet each of the criteria for designation as specified in section 28 of the Technological Universities Act 2018.

The figures used for student numbers are from CIT/ITT Student Record System (SRS) returns to the Higher Education Authority (HEA) March 2018. The staff percentage numbers are compiled from CIT/ITT Public Service Number (PSN) Returns to the HEA of September 2018 (combined with syllabus timetable extract for academic year 2018/2019 (AY 18/19)).

"The professional, management, and support staff

fully support the formation of Munster Technological University because MTU will offer enhanced educational programmes and opportunities for the people of Munster. It will further underpin the development of the commercial, scientific and industrial sectors in Ireland, thus creating employment opportunities for our graduates."

Fórsa, SIPTU, and UNITE Trade Unions (representing PMSS)

Student Profile Criteria

Overview

In preparing our submission to meet the student profile criteria, the MTU project office compiled the criteria figures based on the SRS returned to the HEA with respect to period March 2018.

The data presented represents the combined figures of enrolled students who are registered on programmes at levels 8, 9 and 10.

To compile the student results (undergraduate and postgraduate candidates), the factors used included – type of student, age of student, type of programme registered, field of study narrow ISCED (International Standard Classification of Education), participation profile and NFQ level.

To compile the research student numbers – we have included students registered on a programme of education and training (at NFQ level 9 or level 10) where not less than 60% of the available credits assigned are for thesis or theses prepared by the student based on research conducted by him or her (i.e. Programme Type classification 26 and 27). Also included in the figure are students registered on some taught postgraduate programmes (classification type 25) where the contexts are identified in formats which have a research component accounting for 60% of the total credits.



Legislative Criteria	How MTU Meets the Criteria
28. (1) The applicant institutes concerned shall, in relation to an application for an order under section 36, jointly comply with the following criteria (in this chapter referred to as 'eligibility criteria'):	
 a) of the students of the applicant institutes registered on a programme that leads to an award to at least honours bachelors degree level— 	The total number of students registered on a programme that leads to an award to at least honours bachelors degree level = 7547
 (i) at least 4% are research students registered on a programme which leads to an award to at least master's degree level, and 	The total number of students is 7547 of whom 358, i.e. 4.74% are research students or participating in a master's where not less than 60% of the available credits are assigned in respect of a thesis or theses prepared by the student based on research conduct.
(ii) at least 30% fall within one or more than one of the following classes of students:	Thus, the criterion has been met.
 (I) students who are registered on a programme that is provided on a flexible basis, such as by means of part-time, online or distance learning; 	The total number of students considered is 7547 of whom, 1465, i.e. 19.47% are registered on part-time, distance learning or e-learning programmes.
(II) students who are registered on a programme that has been designed, and is being delivered, with the involvement (which shall be construed in accordance with subsection (2)(b)), of business, enterprise, the professions, the community, local interests and other related stakeholders in the region in which the campuses of the applicant institutes are located;	All programmes are designed and developed in conjunction with industry contact(s) relevant to the programme. All programmes require involvement of external examiner(s) (of business, enterprise, the professions, the community, local interests and other related stakeholders) to contribute to the assessment of learners. The total number of students is 7547 of whom 4468, i.e. 59.20% are registered on programmes containing work placement as part of the programme. Thus, the criterion has been met.
(III) students who are not less than 23 years of age;	The total number of students is 7547 of whom 37% were 23 years old as of the 1 January 2017. Thus, the criterion has been met.
 b) the applicant institutes have a plan that demonstrates, to the satisfaction of the advisory panel, that they would have capacity, as a technological university to increase within 10 years of the date of the making of an order under section 36, from at least 4% to at least 7%, the proportion of their research students referred to in paragraph (a)(i); 	MTU is required to put in place a strategic plan within six months of designation. This plan will include a trajectory which will satisfy the TU trajectory criteria and is outlined in the bullet points on the next page.

Table 6: Research student numbers

MTU Trajectory Research Student Plan

CIT/ITT currently meets criteria of 4% for research students. As MTU this will increase to 7% within 10 years through the following measures:

- Expansion of delegated authority to all departments in MTU will increase student and in turn graduate numbers;
- > Providing the best possible governance of research;
- > Enhancement of the staff doctorate programme;
- > Recruitment and retention of talented researchers;
- > Strategic recruitment of international research students;
- Ensuring that educational programmes are predicated on research excellence and, reciprocally, that research excellence is reflected in educational programmes;
- Supporting graduate student success while optimising existing resources;

- Providing and sustaining a high-quality research environment that enables and nurtures the expertise and aspirations of researchers;
- Supporting new collaborative research initiatives in response to emerging opportunities.

Staff Profile Criteria

Overview

In accordance with the Technological Universities Act 2018, the data presented represents the combined figures of full-time academic staff, who are employed on contracts of permanent whole-time, temporary whole-time or indefinite duration with a full-time equivalent (FTE) of 1 and are engaged in the provision of programmes that lead to an award at honours level 8 or above.

The data encompasses full-time research staff who are engaged specifically in designated research centres.

Legislative Criteria	How MTU Meets the Criteria
S28.1(c) of the full-time academic staff of the applicant institutes engaged in the provision of a programme that leads to an award to at least honours bachelor's degree level—	Full-time academic staff (including academic management or management specifically engaged in programme development), contracted on a permanent whole-time, temporary whole-time or contract of indefinite duration with an FTE of 1, delivering at level 8 and above = 546.
(i) at least 90% hold a masters degree or doctoral degree,	Currently 93.22% of staff hold a masters or a doctoral degree or their highest qualification attainment is the highest achievable in their primary qualification degree or masters track. Thus, the criterion has been met.
(ii) at least 45% hold—	Currently, 47.44% of staff possess a doctoral degree or equivalent. Thus, the criterion has been met.
(I) a doctoral degree, or	Currently, 39.19% of staff possess a doctoral degree.
(II) subject to subparagraph (iii), a terminal degree, as well as sufficient practical experience gained in the practice of a profession to which the programme relates, such that the degree and experience together can reasonably be viewed by the advisory panel as equivalent to a doctoral degree,	Currently, 8.24% of staff hold a qualification to at least honours degree within the framework together with a professional membership or a qualification that is the highest achievable in their profession deemed equivalent.
and	
(iii) not more than 10% hold only the qualifications referred to in subparagraph (ii)(II);	Only 8.24% per cent hold only the qualifications referred to in subparagraph (ii)(II); Thus, the criterion has been met.
(d) the applicant institutes have a plan that demonstrates, to the satisfaction of the advisory panel, that they would have capacity, as a technological university, to increase, within 10 years of the date of the making of an order under section 36, from at least 45 per cent to at least 65 per cent, the proportion of their full-time academic staff referred to in paragraph (c)(ii);	MTU is required to put in place a strategic plan within six months of designation. This plan will include the trajectory which will satisfy our forward criteria for research in 10 years. (See below). Thus, the criterion has been met.

Legislative Criteria	How MTU Meets the Criteria
 S28.1(e) of the full-time academic staff of the applicant institutes engaged in both of the following, at least 80 per cent hold a doctoral degree — (i) the provision of a programme that leads to an award at doctoral degree level, and (ii) the conduct of research; 	 (i) Currently, 94% of such full-time academic staff hold a doctoral degree. (ii) Currently, 94% of such full-time academic staff hold a doctoral degree. Thus, the criterion has been met.
S28.1(f) each of the full-time academic staff of the applicant institutes engaged in the supervision of students registered on a programme that leads to an award to doctoral degree level—	
(i) holds—	
(I) a doctoral degree, or	Currently, 94% of such full-time academic staff hold a doctoral degree.
(II) a terminal degree, as well as sufficient practical experience gained in the practice of a profession to which the programme relates, such that the degree and experience together can reasonably be viewed by the advisory panel as equivalent to a doctoral degree,	Not applicable
and	
 (ii) has a record of continued conduct of research in an area relevant to the programme; 	Currently 100% of full-time academic staff engaged in the supervision of PhD students have a record of continued conduct of research in an area relevant to the programme.
	Thus, the criterion has been met.

Table 7: Staff profiles

MTU Trajectory Research Student Plan

CIT/ITT currently meets criteria of 45% for level 10 or doctoral degree equivalent qualified staff. As MTU this will increase to 65% within 10 years at a rate of 2% per year, through the following measures:

- > Enhancement of the staff doctorates programme;
- > Recruitment and retention of talented researchers;
- Ensuring that educational programmes are predicated on research excellence and, reciprocally, that research excellence is reflected in educational programmes;
- Supporting graduate student success while optimising existing resources;
- > Providing and sustaining a high-quality research environment that enables and nurtures the expertise and aspirations of researchers;
- > Enabling existing and emerging dynamic research capabilities;
- Increasing the quantity and quality of research grant applications;

- Supporting new collaborative research initiatives in response to emerging opportunities;
- > Providing the best possible governance of research.



Research Activity Criteria

Overview

Using the SRS HEA data return (March 2018), a filter applied to the ISCED code returned the field of research undertaken by candidates of programme type category 27.

Legislative Criteria	How MTU Meets the Criteria
S28.1(g) in respect of not less than three fields of education-	
(i) the applicant institutes provide programmes that lead to awards to doctoral degree level, and	Programmes leading to doctoral degree level are provided in the following broad ISCED fields of education:
 (ii) the academic staff and students of the applicant institutes conduct research; 	01 – Education
	02 – Arts and Humanities
	04 – Business, Administration and Law
	05 - Natural Sciences, Mathematics and Statistics
	06 – Information and Communication Technologies
	07 – Engineering, Manufacturing and Construction
	09 – Health and Welfare
	Thus, the criterion has been met.
S28.1(h) in relation to a programme referred to in paragraph (g), the applicant institutes demonstrate, to the satisfaction of the advisory panel—	
(i) that they carry out innovation activity and conduct research to a high standard, and	CIT/ITT is compliant with associated procedures relating to quality assurance regarding the provision and award of doctoral degrees as required by QQI. See Chapters 3, 5 and 8.
	Thus, the criterion has been met.
(ii) that the innovation and research have positive social and	Evidence to support this is contained within Chapter 7 and SED 10.
economic effects on business, enterprise, the professions, the community, local interests and other related stakeholders in the region in which the campuses of the applicant institutes are located;	Thus, the criterion has been met.
28.1(i) all programmes provided by the applicant institutes that	CIT/ITT are currently compliant.
lead to an award to doctoral degree level comply with any policy relating to doctoral education as may be agreed from time to time between An tÚdarás and the Qualifications and Quality Assurance Authority of Ireland following consultation with bodies representing the interests of an institute, a technological university or a university specified in paragraphs (a) to (d) of section 4 (1) of the Universities Act 1997;	Thus, the criterion has been met.
28.1 (j) the applicant institutes have a plan that demonstrates to the satisfaction of the advisory panel that they would have capacity, as a technological university to increase within five years of the date of the making of an order under section 36, from at least three to at least five, the fields of education referred to in paragraph (g);	Programmes leading to doctoral level (PhD Level 10) are provided in seven fields of education as outlined in S28.1 (g) and will continue to grow as MTU develops. Thus, the criterion has been met.

Table 8: Research activity criteria

Engagement and Governance Criteria

Overview

Legislative Criteria	How MTU Meets the Criteria
28.1(k) the applicant institutes demonstrate to the satisfaction of the advisory panel that the applicant institutes have, at the time they apply under section 29 for an order under section 36, the capacity to effectively perform the functions of a technological university and in particular demonstrate —	
(i) that they have integrated, coherent and effective governance structures in place concerning academic, administrative and management matters,	MTU's governance structures will consist of an integrated Executive, Governing Body and Academic Council which will ensure integrated governance of academic, administrative and management matters.
(ii) that they have strong links with business, enterprise, the professions, the community, local interests and other stakeholders in the region in which the campuses of the applicant institutes are located,	Evidence to support this is contained in the SED 11.
(iii) that they have, under section 28 of the Act of 2012, established procedures in writing for quality assurance in relation to which $-$	
(I) no notice has been furnished by the Qualifications and Quality Assurance Authority of Ireland under section 36(1) of thse Act of 2012, or	CIT/ITT are QQI compliant and have current QA procedures approved by QQI.
(II) approval has not been withdrawn under section 36 of that Act,	QQI approval has not been withdrawn. CIT/ITT is in compliance with the Qualifications and Quality Assurance (Education and Training) Act 2012.
(iv) that they develop, and have procedures in place to further develop programmes that respond to the needs of business, enterprise, the professions, the community, local interests and other related stakeholders in the region in which the campuses of the applicant institutes are located,	MTU will develop programmes under the direction and support of its Governing Body and Academic Council. The programmes will respond to the needs of the community (business, enterprise, professions and other stakeholders) in the regions of each campus location.
(v) that they —	
 (i) provide opportunities for staff and students of the applicant institutes to teach, learn or conduct research at institutions that provide higher education outside the State, or to obtain relevant work experience outside the State, 	CIT/ITT currently provide opportunities for staff and students to teach, learn or conduct research at institutions that provide higher education outside the State, or to obtain relevant work experience outside the State. These policies will continue at MTU.
(ii) provide opportunities for staff and students of institutions that provide higher education outside the State to teach, learn or conduct research at the applicant institutes, and	CIT/ITT currently provide opportunities for staff and of institutions that provide higher education outside the State to teach, learn or conduct research at the applicant institutes. These policies will continue at MTU.
 (iii) collaborate with institutions that provide higher education outside the State, including on joint research projects and for the purpose of provision of programmes; 	CIT/ITT currently collaborate with institutions that provide higher education outside the State on projects of joint research and for the purpose of provision of programmes. These policies will continue at MTU.
(I) that they develop and promote and if an order is made under section 36 have procedures in place to further develop and promote, as a technological university, strong social and cultural links, and links supporting creativity, between the technological university and the community in the region in which the campuses of the technological university will be located.	MTU will as part of its strategic plan develop and promote and have procedures in place for strong social and cultural links, and links supporting creativity, between MTU and the community in the region in which the campuses of the technological university are located.

Table 9: Engagement and governance profiles

SECTION II THE FUNCTIONS OF MTU



CHAPTER 5 | TEACHING AND LEARNING

Chapter Overview

The aim of this chapter is to provide further detail of the provision of teaching and learning in MTU, the flexible curriculum model, its delivery and the MTU view of graduate attributes and characteristics.

"The designation of the CIT and ITT consortium as Munster Technological University is due recognition of the leading role this consortium is fulfilling in teaching and learning, research, enterprise and community engagement. It paves the way for enhanced resourcing under the Technological Universities Act to expand their mission regionally, nationally and internationally."

Mr Tim Lucey, Chief Executive, Cork County Council

Provision of Teaching and Learning

MTU will be an exemplar of good practice in professional education. It will pursue this goal through the ongoing adoption of best practice in teaching and learning as follows:

- Active and collaborative student-centered learning which engages the student's desire to learn;
- Challenging students to take ownership of their learning experience;
- Providing a relevant and flexible career-focused curriculum developed in close partnership with enterprise;
- > Exposing students to a range of pedagogical styles;
- > Offering research methods which deliver a range of skills including creativity, inquiry, problem solving and innovation.

These are developed further below.

Programmes

The suite of academic programmes of MTU will reflect the differentiated mission of a technological university, including the creative and performing arts, humanities and business, alongside science and engineering. The goal is to accentuate what CIT and ITT already do well. Both institutes have a dynamic portfolio of programmes highly focused on technical and professional areas, with many programmes recognised by relevant professional bodies. As a new technological university, MTU has the ability and responsibility to build on this solid portfolio.

The enhanced capacity and capability brought about by MTU will enable further development of high quality and relevant programmes of study. Programmes offered by MTU will be, above all else, responsive to the needs of students, employers, the regional and national economy and the broader society. Reflecting close links with business and public agencies, the career-focused, work-based programmes will be developed in response to employer skill needs and will play a pivotal role in meeting the needs of the skills economy. MTU will embed within the curriculum and foster within the university the skills, values and attitudes that are needed to form just and inclusive citizens. MTU will seek to strike a balance between providing programmes which attract sufficient numbers of students, ensuring that those students are employable upon graduation, and providing a suitably qualified workforce to support the various sectors of the economy.

In line with the overall commitment to ensure that the academic provision is responsive to market forces, MTU will continue provision at all levels of the NFQ, including levels 6 and 7. The latter programmes are an excellent route for those not yet ready to embark on a full degree, for mature learners who want to take only a limited amount of time out of the labour market and for employers looking to address specific skills shortages.

At MTU, the current ongoing development of postgraduate provision will be increased, particularly in taught programmes, driven by market forces. There is strong demand from students for such programmes due to the perceived impact of a postgraduate qualification on future employability. MTU planning scenarios predict this to continue. Demand for such programmes is also driven by employers and those in employment, with the goals of enhancing the skill set of the workforce and continuing professional development respectively.

Both CIT and ITT have a significant track record in terms of collaboration and cooperation with partner higher education institutes (HEIs) within the region and nationally, including joint provision of programmes, joint research projects, shared procurement and shared services. The joint programme provision between CIT and University College Cork (UCC) in biological sciences, physical sciences, art education and architecture involve the sharing of academic delivery, facilities and joint awards. Such joint awards were the first of their kind within the Irish higher education sector (SED 12).

MTU's president and executive will work closely with the new Academic Council and together they will develop a strategic plan, to be approved by the Governing Body, which will address the needs of the region, reflect an internationalised approach and meet the needs of stakeholders.

NFQ Levels

MTU will ensure that there are clear progression opportunities between programmes to allow learners to pursue their educational goals irrespective of where, or how, they commence their engagement with higher education. This approach will allow learners who complete a bespoke staff development programme at their place of work to use that learning towards an accredited MTU award and will provide all MTU graduates with opportunities to pursue further studies.

Table 10 presents the current profile (September 2018) of CIT and ITT students by NFQ level. This gives a broad indication of the number of students who will be enrolled at MTU from September 2019.

NFQ Level	Distance/ E-Learning	Full-time	Part-time	Total
Level 6	63	334	1,711	2,108
Level 7	120	4,133	735	4,988
Level 8	71	6,071	773	6,915
Level 9	130	397	454	981
Level 10		103	16	119
Total	384	11,038	3,689	15,111
Occasional students (excluded from SRS return)		80	324	404

Table 10: MTU student profile by NFQ level

MTU will maintain the commitment to continuing the provision in the areas of specialist music and drama training, and craft apprenticeships recognising the importance of this provision to the region and beyond and accepting the responsibility and leadership role of MTU in relation to this provision. The Cork School of Music (CSM) has over 3,000 part-time enrolments for music and drama as part of the part-time Conservatory provision of the School (SED 13). This will be an important and continuing feature of MTU's function of serving the community and public interest. This will be reinforced by the MTU delivering programmes across the main discipline areas, from level 6 through to level 8 on the NFQ, across the MTU campuses.

Apprenticeship programme providers in Ireland have experienced a period of very significant change from 2006 to 2018 as a consequence of economic events, which have had a profound impact on all areas of business activity and development in Ireland. In addition to the significant changes in demand, the Government announced a review of apprenticeship training in Ireland in 2013.

The Technological Universities Act 2018 states that one of the functions of a technological university will be to "support the development of a skilled labour force including, where appropriate, engaging in the education and training of apprentices". MTU will be ideally placed to address this increasing demand as CIT/ITT have long invested in the development of craft apprenticeship capacity and capability. MTU will be the only entity of its type in Ireland to have created a dedicated centre of excellence in craft studies. CIT/ITT have catered for a doubling of craft apprenticeship allocation over the last three years. MTU will adopt the current apprenticeship policy for both CIT and ITT of 'Adapt and Grow' as part of its ongoing strategic development (SED 14).



A Modern Approach to Apprenticeships – Liebherr Container Crane (LCC) Ltd

This programme has been developed collaboratively between the Department of Technology, Engineering & Maths (TEM) at ITT and members of senior management at Liebherr. Its purpose is for apprenticeship students to progress academically along a pathway of lifelong learning. The learning outcomes are mapped against the Higher Certificate in Engineering Technology.

Liebherr recruits approximately 25 new apprentices each year. It is mandatory for each to undertake this programme. These apprentices include electricians, fitters and fabricators. Each stream will be reflected in programme as follows:

- > Electrical technology stream for apprentice electricians
- > Mechanical technology stream for apprentice fitters
- > Material technology stream for apprentice fabricators

The structure of the programme is as follows:

- > Four-year duration
- Each student will take three five credit modules per year at ITT
- > Each student will also undertake an apprenticeship programme (with Liebherr and Solas) during those four years.

The level 6 Higher Certificate in Engineering Technology has been initially designed for Liebherr apprenticeship students but in time this programme could be rolled out to other students working in different industries. Students who do not take the apprenticeship programme with Solas but complete the modules will be eligible for a minor award in engineering technology.

The apprenticeship students started the programme in 2015 taking modules on a single subject certification basis. It was requested by Liebherr to expand the offering towards a formal qualification allowing the students to simultaneously complete their apprenticeship training. The revised programme is currently going through final validation and it will be approved early in 2019.

Flexible Curriculum

Programmes will be tailored to the needs of learners through flexible credit-based, modular design and through their mode of delivery, thus allowing the learner to control the pace and timing of their learning. Credit-based module design will also provide a responsive mechanism for work-based clients and employers including locating provision in the workplace.

This flexibility for the student is further facilitated by MTU's proposed admissions policies which will include provision for Recognition of Prior Learning (RPL), whether that learning has been gained through formal, in-formal or non-formal settings. In MTU this will continue to be a key enabler in ensuring equity of access, opportunities for progression and facilitating lifelong learning.

While policies and practices to support RPL can be challenging in higher education settings they are fundamental to a diverse and inclusive system. Given the experience of both institutes, MTU will remain committed to quality assured responsive and responsible policies, flexible entry into and progression from programmes of learning. This will enable continuing support for the regional and national skills agenda through initiatives such as Springboard+ and the Regional Skills Forum. Building on over two decades of scholarship and practice, MTU will continue to contribute through research and practice to the evolving national and broader European discourse on RPL validation.

As part of the national approach to internationalisation, MTU will support the mobility of students across international borders both within and beyond the European Higher Education Area. This necessitates engagement and support to ensure that the experience of international students is comparable to domestic students.

In MTU an embedded work-based component will feature in all programmes of study. These will enhance learners' career prospects. Well supported work experience will enhance both the interpersonal and practical skills of the learner. Additionally, employability development activities such as professional practice, networking events and enterprise linked projects will be integrated into programmes of learning. Thus, MTU will ensure that learners have the attributes required to contribute in the workplace immediately upon graduation and along their chosen career paths.

The capacity of the enterprise partners for relevant work focused curriculum development and innovative approaches to programme delivery is illustrated by the relationships with Jaguar Land Rover in the development of the MSc in Artificial Intelligence. The programme modules were developed, and in some instances will be delivered, by leading international experts.

Industry Partnership in Action – MSc in Artificial Intelligence

Building upon the long-established strong partnership between the Department of Computer Science and leading technology companies; the Master of Science in Artificial Intelligence (AI) programme was developed, launched and welcomed its first cohort of learners in September 2018.

The CIT curriculum team tasked with the design of the MSc consisted of research active staff with a strong track record of peer-reviewed publications in the area of AI. To create and co-design the programme, the development team engaged in extensive consultation with senior management in local/ regional industries and organisations. Senior managers and technical staff from a range of leading industries, including Johnson Controls, IBM, McKesson Ireland, Cork Internet eXchange, Jaguar Land Rover, UTRC and Bluemetrix actively contributed to the development of the programme and taught modules. The close collaboration between the department and industry experts has contributed to the development of a quality industry-focused programme, which is at the forefront of AI education. The MSc in AI was primarily developed to address the critical skills shortage in this area, which has been regularly highlighted by the IDA and other industry commentators. This programme will provide a pipeline of skilled and competent AI professionals to address this skills deficiency.

"As always it is great to see CIT at the cutting edge of new technologies and building skill sets to support future needs. I think it very important that Ireland educate people in this area, both to support continued upskilling of the workforce to support higher value activities and to promote technology development with a global reach."

Robert Byrne, IDA Ireland, South-West region

"These skills are becoming more prevalent and there is a shortage of available talent on the Irish market which results in companies either hiring people from overseas or being unable to fill the vacancies in Ireland. This type of master's helps to make Cork/Ireland more competitive."

Shauna Flavin, Manager, EMEA Agile team, OpenText

Students have the option to study the programme full-time on campus by day or part-time online at night. For online delivery, all lectures are streamed live over the internet facilitating direct engagement with students. Subsequently, each session is captured and stored in the cloud for later retrieval by students. This facilitates lecture review and revision and enables students to access lectures and labs by simply using a web browser.

Private clouds in CIT's datacentre are deployed to support remote student labs. These state-of-the-art systems, combined with sophisticated learning environments, enable each student to achieve the measurable learning outcomes in the most flexible way possible.

MTU's programmes of study will be the foundation of its strategic goals and future success. Building upon existing policies and processes it will strive for the highest international standards. MTU will develop policies and processes based upon CIT/ITTs' current practices and enhance them with the highest interaction of best practice based on QQI and professional body guidelines, including validation, monitoring and periodic review. Furthermore, the programmes will remain relevant to the learners' needs and are made accessible through flexible and open provision.

In MTU, the research centres within MTU will inform the teaching and learning activities of the university as well as underpinning the academic curriculum to ensure that best practice is being employed and that up-to-date techniques and technologies are central to the learning process. Direct links with industry will continue to ensure that leading-edge practices are incorporated into the development and delivery of programmes.

Teaching and Learning Processes

It is recognised that currently learners expect to learn in a variety of different ways. MTU will build on the approaches of CIT/ ITT and will continue to consider how digital technologies can enhance teaching and learning. Embedding digital technologies into a range of learning models, from traditional lectures, blended learning through to fully online, will remain a strategic goal. A Technology Enhanced Learning department will provide educational opportunities for students who, for whatever reason, cannot commit to coming to the physical campus. To improve opportunities and facilitate lifelong learning MTU will continue to develop and provide a wide range of sustainable and successful online distance education offerings aligned to workplace and student needs. Universities are changing, and the growth of new technologies means that the key to engaging with staff and students across six campuses is through the 'Smart Campus' offering a range of digital channels. From mobile services, including mobile student ID, wireless printing, e-books, digital information boards to online lectures; MTU aspires to implement smart technologies that focus on sustainable, smooth, efficient digital operations and technological integration. The MTU Digital by Default 2030 Strategy aims to design and deliver digital self-service supports to staff, students and alumni of MTU (SED 15). MTU aims to offer a unified, collaborative and connected learning experiences through the cloud. Both institutes currently offer a suite of world-class online programmes. In addition, some programmes are delivered in a flexible blended format, which combine online delivery and support, with some traditional face-to-face elements such as classes, labs, workshops or placements. Programmes are also offered in blended mode to facilitate learning objectives that are seen as being particularly challenging to support, outside of a particular physical context or geographic location. Technology plays a key role in a responsive learning environment.

MTU plans to leverage and extend the existing cloud infrastructure to drive innovation and the fast turnaround of new digital capabilities, services, software and systems. Learning technologies such as Blackboard, Canvas, Adobe Connect and virtualised lab infrastructures are just some of the systems that are used to deliver innovative programmes. This offers great flexibility to students as they can access their lectures and labs any time, anywhere, on any device, irrespective of their physical location or working status.

Staff

Students will directly benefit from lecturing staff who, as well as being strong academically, will be experts in the practical application of their knowledge. Additionally, highly skilled professional staff will continue to support students through their learning journey. Human resource policies will be designed to ensure that MTU staff will be appropriately qualified with relevant experience. The technological university will encourage and assist them to continue to work and research collaboratively with enterprise and the professions.

Drawing on CIT/ITT experience, staff will be afforded the opportunities to develop professionally through a Teaching and Learning Unit, with the remit of enhancing pedagogical development.

Students

MTU aims to provide students from all backgrounds with an outstanding education. It will build upon, and expand on, CIT/ITT experience, the curriculum imperatives and digital developments outlined above to equip students with the knowledge, professional skills, and personal qualities to achieve their ambitions. MTU will enable students to develop the key graduate attributes and characteristics expected of its students on completion of their studies.

The MTU student will:

- Have a broad range of relevant discipline-specific knowledge, skills and competencies;
- Exhibit personal and professional efficacy and integrity, enabled by the development of a broad range of competencies including interpersonal and communication skills, teamwork, ethics and social responsibility;
- > Be motivated and empowered to be a lifelong learner with a passion for learning which is underpinned by the essential skills of inquiry and scholarship;
- > Have the ability to create and apply knowledge in a variety of professional contexts, having participated in an educational programme which fosters problem solving, knowledge discovery, research and the use of knowledge in real-world situations.





CHAPTER 6 | SUPPORT FOR STUDENT DEVELOPMENT AND STUDENT OPPORTUNITIES

Chapter Overview

In this chapter we outline the support given to students to develop as rounded individuals. We briefly describe the practical support functions, the student-centred opportunities, and the social and cultural opportunities available to MTU student development.

"My qualification and experience from ITT has afforded me the opportunity of a leading and impactful career in a globally competitive landscape. I wholeheartedly welcome and support MTU and look forward to co-creating its expanding and significant impact on the South-West region at an academic, social and economic level. Together we will continue to position the region as a key place to work and live and extend its leading contribution to the wider global economic environment."

Mr Jason Hawkins, CEO, Carbery Group (ITT graduate)

As a first step towards ensuring that there is an effective student experience at MTU, staff and students from both institutes have co-designed an MTU 'student journey' to be used as a template for the strategic development of the students' experience at MTU (SED 16). It will define MTU's internal processes and make the services delivered more person-centred and effective. As part of the process of 'acting as one', the MTU 'student journey' was co-designed by CIT/ITT staff and students together, to create a foundation upon which to develop and enhance the student experience, to maximise their development and opportunities. This approach has provided a structure to assess and improve the quality of existing programmes, identifying processes and services which impact on the student experience and in turn develop new services and programmes. A number of projects have been identified to align, re-design and deliver MTU student support services across the entire student experience.

Practical Support Functions

MTU will support students holistically not just academically or in terms of future career progression. This holistic development of the student will continue to be an integral part of the student experience, ensuring that MTU graduates will contribute not only to the world of work but to society in general (See further details in Chapter 9). All learners at MTU will have access to a wide array of student services helping to address academic and non-academic day-to-day issues. MTU will provide a comparable student experience on all campuses with a focus on integration and improvement of existing student services. Projects have been identified to align key student services. A framework is being developed to ensure a common approach to the development of services in each area.

- > Admissions Office: MTU admissions policy will outline and maximise the entrance opportunities for current and future students onto programmes of learning.
- Induction: MTU will make a positive first impression on all new students through an effective induction programme developed to support students in their transition to higher education. An integrated multi-campus cross-university programme of induction will ensure that all new students receive an equivalent introduction to MTU.
- Access and Disability Service: MTU will ensure widened enrolment from under-represented groups and deliver a range of pre-entry, entry and post-entry support programmes for mature students, students with disabilities, students from linked schools and ethnic minorities, including national programmes such as HEAR and DARE.
- Library Service: MTU will provide a comprehensive digitally connected approach to library services ensuring appropriate access to learning support domains supporting opportunities of learning and research for MTU students.
- Examinations and Assessment: MTU will facilitate appropriate and varied assessment of learning for students. The Examinations Office will support the provision of transcripts and the verification of awards.
- Student Support Service: MTU will provide a range of confidential and professionally run student support services including pastoral care, counselling and health services.
- Careers Service: MTU will provide students with opportunities to leverage their translational and discipline specific skills to maximise their potential career opportunities.
- Accommodation Office: MTU aims to help students find safe, affordable and suitable local accommodation.
- Sports and Societies: The MTU sports and societies strategy will analyse existing offerings and agree an overarching approach, including facilities, funding, sports scholarships and awards.
- Student Development and Alumni Office: MTU will support and engage a growing graduate community. The office will support the transformative student experience building relationships between students, alumni and employer communities.

- > Arts Office: The office offers students an opportunity to engage and develop skills, interest and connections outside of their chosen area of study.
- Students' Union: MTU will create a supportive environment for a unitary Students' Union, to represent all students across all campuses. MTU will encourage the Students' Union in implementing their democratic structures to ensure the student voice is heard.



Student-Centred Opportunities

Student-centred opportunities at MTU are designed to enhance student development. Emphasis will be placed on giving students autonomy and empowering them to manage their pace of learning and the nature of their programme of study (SED 17). As part of the modular credit-based curriculum at MTU each student will develop a Personal Development Plan (PDP) encouraging them in co-designing their learning experience in order to achieve their personal development goals. The PDP is centred on student learning and development and helps students to become more effective, independent and confident self-directed learners.

MTU will also provide opportunities for feedback to and from students. The purpose of such feedback is to provide rich information to help students develop as self-regulated learners, who make objective decisions about the quality of their work and self-correct with student colleagues via group and peer processes. Through training provided by the MTU Teaching and Learning Unit, the practice of feedback during the teaching and learning of a module, will be enhanced.

MTU's commitment to practice will be evident across all activities and provide significant opportunities for students to meet their goals. Teaching will be research informed and practically based. Work placements will allow students to immerse themselves fully and apply and practice their learning in a real-world environment (SED 17). Graduate internships are an invaluable way for MTU graduates to develop industry knowledge and get a hands-on working experience. On-campus co-location with SMEs and start-ups and proximity to regional industry and community means that students will be exposed to 'real life' scenarios, case studies and guest lectures throughout their studies. Work placement creates a positive unique learning experience for students, which in turn prepares them for their future career opportunities. Work placement forms part of the curricula in numerous programmes in CIT/ITT and in recent programmatic reviews many programmes have introduced or expanded work placement in their curricula e.g. work placement is now offered on all programmes in CIT's School of Business. An embedded work placement on all undergraduate programmes will be developed at MTU. CIT/ITT offer both academic and sports scholarships to full-time registered students who display a high level of achievement, commitment and dedication to their chosen field or sport. These are awarded across a wide range of discipline areas to support the holistic development of the student and a significant number of these are reserved for first year students.

Both CIT and ITT have student enterprise programmes, Student Inc. at CIT and Discover ITT at ITT, which afford undergraduate students the opportunity to investigate their business ideas, write a business plan and in some instances speak to potential investors. The enterprise programmes foster the development of entrepreneurial graduates, who while completing their programmes of study can investigate the feasibility of their business ideas and potentially get their businesses started. In CIT, the entrepreneurial mind-set of the students is fostered from first year undergraduate level through the Creativity, Innovation and Teamwork module where circa. 900 students per annum get enterprise support and feedback from the Rubicon team and CIT Enterprise Interns. MTU will build upon the entrepreneurial ethos amongst students, champion new ways of thinking and create an environment of innovation to support the region and beyond. CIT is the most successful HEI in Enterprise Ireland's Student Enterprise Awards, having won the title for a third time in 2018 from over 1000 entries. ITT holds a European award for its Design4SMEs post graduate research commercialisation programme, which provides student researchers with a framework for exploration of the commercial application of RDI outcomes within the SME sector. Thus, MTU will have an outstanding pedigree in regard to entrepreneurship, enterprise development and innovation upon which to build an effective future impact upon the region and more widely.

Empowering Student Entrepreneurship - Student Inc and Discover ITT

Student Inc. and Discover ITT facilitate and support CIT/ITT students to explore self-employment. Both programmes have collaborated with CIT/ITT alumni in their combined support of over 300 business/community/social ideas since 2011. CIT has successfully led a join application with ITT and UCC for national funding of over €1m to expand Student Inc. in the South-west region.

The Student Inc. Programme in CIT provides students with an experiential enterprise learning opportunity to start a business. The Summer programme is open to all CIT students regardless of year or area of study. The students are based in the on-campus incubator Rubicon Centre, for the months of June, July and August. They work full-time on their business idea side by side with other entrepreneurs based in the Centre. Over the three months they receive training, mentoring, serviced office space, access to the Rubicon Centre Team and the other entrepreneurs in the Centre, as well as seed funding of €4,000. The programme is accredited by the Hincks Centre of Entrepreneurship in CIT, with students receiving five ECTS level 8 credits on successful completion of the programme. Some students continue developing their business after the programme working with the local LEO or participation on New Frontiers or Ignite start-up programmes. While not all Student Inc. participants will continue with their business idea, the skills and experience they gain are invaluable for future career prospects.

Discover ITT led by CEED (Centre for Entrepreneurship and Enterprise Development) is a boot camp style accelerator programme offered to ITT students during the EU recognised annual Kerry Month of Enterprise (SED 17). Students use design driven innovation, LEGO Serious Play and industry led mentorship to scope out the commercial potential of their business/social/community idea. Prototype concepts are further explored with the ITT research centres. They pitch their commercial plans to a mixed discipline panel at the end of the week with the winner receiving six dedicated one-to-one mentor sessions.

MTU will use CIT/ITT alumni in its teaching process. Building upon CIT/ITT experience MTU will capitalise upon the invaluable contribution, insight and guidance through mentoring, guest lectures and practical assignments that alumni are uniquely positioned to offer. Developmental opportunities through a joint mentorship programme will match MTU students with professionals from a wide range of sectors to exchange business experience, knowledge, expertise and career advice. An MTU Development and Alumni Office will provide access to a network of regional, national and international alumni, who will serve to develop and encourage the growth of these opportunities for students.

As part of their development as students and effective citizens, MTU will provide opportunities for students to engage in a diverse range of activities, including representation on MTU committees, involvement in Students' Union activities and influencing programme development and enhancement. Methods of providing students with the opportunity to develop these skills through participation will include, at MTU, staffstudent fora, STEM ambassadorships, Students' Union activity and class representation. MTU students will actively participate in Governing Body, Academic Council, course boards and programmatic reviews to encourage open dialogue and collaboration amongst students and staff and to provide skills of communication and debate.

Social and Cultural Opportunities

Taking a person-centred, holistic approach to student development, MTU will draw on the traditions of CIT/ITT and will encourage student involvement in social, cultural and sporting activities on campus and within local communities (further details are provided in Chapter 9). Both campuses have excellent sporting facilities and have established good partnerships with local and national sporting bodies such as, FAI, IRFU, GAA and Sport Ireland. This ensures that students can develop their highest desired level in areas such as coaching, sports administration, participation and competition. The sporting opportunities offered to students at MTU will be considerably enhanced compared to that offered as two separate institutes, since the indoor and outdoor facilities are complementary and therefore a wide range of opportunities will be available to MTU students. These facilities include the Kerry Sports Academy, CIT Athletics Stadium and a selection of outdoor playing pitches.

The arts and cultural scene at CIT/ITT will provide MTU with a firm foundation, giving opportunities for music, drama and other cultural activities on campus and within the community. Again, there is complementarity in the provision offered, so that MTU students will benefit from wider availability through the facilities, including access to the National Folk Theatre of Ireland (Siamsa Tíre) and visual arts spaces such as the James Barry Exhibition Centre, The Gallery and Pause (CSM). Performance spaces including the 120-seat Rory Gallagher Theatre, the 120-seat black box Stack Theatre and the 385-seated Curtis Auditorium with both live and studio capabilities are utilised by both students and

invited performers. Music studios, rehearsal halls, theatre space, a music library, recording and dance studios all support and host a wide range of cultural events. Collaborations with a range of professional arts organisations will reinforce MTU's commitment and capacity to forge successful partnerships in and through the arts. MTU will develop a strategy to facilitate student movement between campuses for social, cultural and competitive sporting purposes.

CHAPTER 7 | ENTREPRENEURSHIP, ENTERPRISE DEVELOPMENT AND INNOVATION

Chapter Overview

Engagement will underpin the culture of MTU. This chapter will present how MTU will build upon CIT/ITT history of supporting entrepreneurship, enterprise development and innovation in the South-West region, aligning it to the four characteristics of MTU.

"Supporting entrepreneurial activity will be central to MTU's mission. Both CIT and ITT have an established track record in supporting enterprise development and championing many initiatives both nationally and internationally. The potential of MTU to add further value to this activity is embedded in the collective drive of both organisations to prioritise and support initiatives in this space."

Mr Frank Fleming, Founder of Verifish, Cork Chamber Emerging Company of the Year 2019

Introduction

MTU will build upon the entrepreneurial, innovative and creative culture and community that currently exists at CIT/ITT in support of an inspiring student and staff experience. It will build on CIT/ITT support of innovative and entrepreneurial thinking in its teaching, learning and research activities, providing graduates and staff who are confident of achieving their ambitions in a global competitive marketplace. Engagement with the wider community (business, social or cultural) will be firmly embedded in MTU from the outset and aligned with sector and regional needs.

CIT/ITT exist in a region which has a wide geographical spread, and which has an urban and rural mix with a wide range of community and social stakeholders spanning private and public sectors. These range in size from micro businesses to SMEs to large multi-national corporations. The food, pharmaceutical, fintech, biopharmaceutical, agri-tech, manufacturing, tourism and ICT industries are active in the South-West region. Leading global companies within these sectors located in Cork/Kerry include Kerry Group Plc, Boston Scientific, Fexco, PFH Technology Group, Pfizer, Dairymaster, JRI America, TrendMicro and the TLI Group (Transition Links Ireland). The South-West region contains some of the world's most productive dairy producing land and the second largest natural harbour on the globe. It remains a world-class travel destination for tourists and contains several educational and research hubs of international importance. MTU together with its many stakeholders in the region will work together to support the development of the region into the future.

According to the Project Ireland 2040 National Planning Framework²⁴ the big challenge for the South-West region in the period to 2040, will be to position its cities as more significantly scaled, while also more compact and attractive, acting as metropolitan drivers for the region as a whole and as effective complements to the economic strength of Dublin. Ensuring a balanced approach in activating and realising much underutilised potential in wider rural towns and dispersed communities will also be a priority.

The South-West regional area consists of counties of Cork and Kerry. Located beyond the Cork City functional area, North and West Cork share similarities with neighbouring County Kerry, being more rural in character, with extensive coastline, supported by a variety of large and small towns with global reach. Many of these towns have a high degree of self-containment, operating as significant local employment and service centres for a large rural hinterland.

Project Ireland 2040 identifies a number of place-making policy priorities for the South-West region. These include preparation and implementation of a regional rejuvenation priorities' programme harnessing the potential of the region across the technological spectrum, along with measures to support the integrated development of remoter parts of this region. MTU will work with its many stakeholders to respond to these challenges and priority areas through its teaching and learning, research and engagement.

MTU Engagement Strategy

MTU will develop engagement as a key pillar in the MTU knowledge ecosystem and this will be achieved through the creation of an overarching MTU Engagement Strategy and through the development of an integrated multi-campus engagement infrastructure. In order to maximise its impact on the region, MTU will create an engagement infrastructure that will build on CIT/ITT collaboration between its staff, its students and its regional, national and international partners. It will build on the multi-stakeholder partnerships established by CIT/ITT. A more detailed description of the diverse range of these partners is presented in SED 18. MTU will build upon CIT/ITT stakeholder engagement to inform its teaching and learning and research activities in support of the economic development of the region. Some of these collaborative examples to date include:

- Contribution to programme of study design, delivery and assessment; (SED 17, 18)
- Contribution to programme delivery through visiting lecturers; (SED 17, 18)
- > Co-developed programmes; (SED 4, 6)
- Involvement in quality assurance processes; (further explored in chapter 5)
- > Mentoring in the workplace; (SED 18)
- Use of MTU facilities for cultural, social and development purposes; (SED 13, 19)
- > Knowledge transfer; (SED 20)
- > Spin-outs and spin-ins; (SED 20)
- Incubator units; (SED 18)
- > Consultancy (both ways); (SED 18)
- > Conferences; (SED 18)
- > Joint research projects; (SED 18)
- > Joint funding bids. (SED 18)

MTU's strategy towards entrepreneurship, enterprise development and innovation will be underpinned by the technological university's quality assurance policies. Experience within the HEI sector recognises that quality assurance is a complex process in relation to the more innovative aspects of a technological university's engagement with external partners. Partnerships, work-placements, staff exchanges and flexible provision create issues over and above those normally associated with quality processes. MTU will draw upon the expert guidance of QQI and the relevant professional bodies to put in place innovative and effective processes to ensure the quality of its provision and of the student experience.

MTU Regional and National Engagement

The Government's Expert Group on the Future of Higher Education have highlighted a number of significant challenges facing higher education in Ireland²⁵. CIT/ITT recognise the role that MTU will play in the future Irish higher education strategy in support of entrepreneurship, enterprise development and innovation. MTU will be well positioned to meet the challenges presented by the economic social and cultural imperatives in the South-West region. The Regional Skills Forum is one of the channels by which CIT/ITT have engaged with business and industry. MTU will continue to work in partnership with this organisation to meet this key strategic goal of supporting entrepreneurship, enterprise development and innovation. This collaboration with regional industry has proven to be highly effective in developing new and enhanced programmes to meet the needs of business, industry and the professions. MTU will draw upon the existing CIT/ITT modalities of delivery and enhance them to support engagement with external organisations to develop graduates fit for practice.

Both CIT/ITT have a track record in supporting start-ups and entrepreneurs. Engagement with Government agencies, such as the Industry Development Agency (IDA) and Enterprise Ireland (EI) is strong. In Kerry, ITT shares the campus with the Kerry Technology Park which enables it to support business from incubation to full international economic performance with the concomitant impact on the regional economy. Similarly, at Cork the IDA and EI share the campus with CIT providing a conduit between the professional expertise of the staff and external stakeholders. Thus, they have a long history of partnership in leveraging funding to support new business development and international growth.

In the past four years, over 105 start-up companies have been housed in the Tom Crean Business Centre (ITT) and Rubicon Centre (CIT) incubation centres at any given time. An estimated €110m was raised by private funding between both centres in the last 10 years. The quality of the support given to the incubating companies is evident from the demand from those who wish to secure a place on programmes run by the incubation centres, the numbers applying for office space in the centres and the many awards won by companies based in the incubators (SED 18).

MTU will continue to build on CIT/ITT policies on work-based learning, the credit-based flexible curriculum and teaching and learning processes to support the strategic goal of meeting the skill needs of the region. Through MTU's academic staff and informed by the learners' needs, MTU will develop tailor-made programmes of study providing agile and context sensitive responses to current and emerging workplace needs.

MTU will work with strategic stakeholders in the region to respond to the regional policy challenges and priorities through its programmes of study, research and engagement strategies. MTU will build upon CIT/ITT provision of research centres and their smart specialisation focus to provide solutions to South-West Ireland regional issues. Additionally, MTU will provide opportunities for staff and students to generate knowledge transfer activities building upon the existing strengths of CIT/

https://www.education.ie/en/The-Education-System/Higher-Education/Higher-Education-Optimising-Resources-in-Irish-Higher-Education-Discussion-Paper-2-.pdf

ITT. The recent performance of staff and students in generating knowledge transfer is particularly strong. Since 2014 researchers in CIT/ITT have generated 88 Invention Disclosures and 21 LOAs (Licenses, Options and Assignments), filed eight patents and had seven patents granted, and established five spin-out companies.

MTU International Engagement

MTU's responsibility to the continuing economic development of the region and beyond necessitates a strong international focus as an integral component in its activities.

Recognising Excellence in Entrepreneurship and Enterprise – European Entrepreneurial Region (EER) Status

Kerry was awarded the prestigious title of European Entrepreneurial Region (EER) of the Year in 2011 by the EU Committee of the Regions (CoR). The EER label recognises that 98% of small/medium sized enterprises are key sources of growth, jobs and innovation with strong socio-economic attachments to their local area. County Kerry was selected based on a number of criteria. These included its approach to implementation of the Small Business Act for Europe, clustering and collaboration with other EU regions. Other criteria included the impressive variety of activities used to promote entrepreneurship and innovation along with the promotion of public private partnership (PPP) initiatives in Kerry. Ten EER Regions were selected in 2016 to bid for circa €2.5m for iEER; an Interreg Europe funded flagship project. ITT represented the Kerry region as the international learning manager in the successful iEER application. It was tasked with researching and implementing defined smart paths and solutions to boost regional entrepreneurship ecosystems supporting young entrepreneurs. It provided the opportunity for all the multi-stakeholders to review practices and indicate how they as EER regions continue to learn and improve succession plans for growth in their regions. More specifically it produced the following outputs https://www. interregeurope.eu/ieer/:

- > 50 models of best practice in entrepreneurship across
 10 EER partners on how to stimulate and grow young entrepreneurship in the regions;
- An interactive e-book illustrating regional profiles and examples of models of best practice;
- > 10 regional reports including a SWOT analysis, good practice review and socio-economic profiles of the entrepreneurial ecosystems in each of the participating regions;

- > 10 regional action plans on how to further develop their entrepreneurial ecosystems;
- Development of a concept of an online growth grid tool that could be used to measure the impact of EU funding within these regions and beyond.

Brexit poses the most immediate global challenge for the South-West region and Ireland as a whole. The Expert Group on Future Skills Needs is examining the skills needs arising from Brexit's potential trade implications, and it is expected that the study will help with the development of talent and cross-sectoral skills. These skills can help Irish enterprise navigate a potentially more complex and diverse trading environment post-Brexit. MTU will recognise the increasing demand for international education, the adoption of English as the global language of education, the globalisation of business and the ready availability of information and communications technologies. The pressure for HEIs to increasingly self-fund has positioned internationalisation centrally in the strategic thinking of many institutions²⁶.

MTU will create a culture of inclusivity (see Chapter 9 for further details). It will recognise the value of diversity. All students regardless of whether they travel to study or work with our international partners will have the experience of an international learning environment. This will be achieved by engaging with our international students across the technological university through student societies, international culture days, shared academic and research projects. Engaging with our international companies through work placement, guest lectures, panel members and joint research will also add to the 'international experience at home' across all the campuses of MTU.

MTU will continue the work of CIT/ITT with its regional stakeholders to identify the needs of the region and beyond supporting its development and growth through engagement with relevant international academic, industry (commercial and social), community, research and policy making partners. Being embedded in the region means MTU can react to these challenges in a number of ways. It will build on CIT/ITT initiatives to date which include upskilling a workforce through labour activation initiatives such as Springboard+, bespoke programmes and executive education; student entrepreneurship (SED 17), enterprise support or innovation through the provision of teaching and learning and research supports. MTU will continue to support a culture of informed engagement among staff and students, enabling innovative solutions in the region, nationally and internationally through access to MTU expertise and facilities.

²⁶ Irish Educated, Globally Connected, an International Education Strategy for Ireland 2016-2020



CHAPTER 8 | RESEARCH

Chapter Overview

This chapter will present MTU's approach to research, MTU's research strategic objectives, research principles and key thematic areas of focus. It will outline MTU's research supportive environment, structure, research career framework and how it will measure the research performance and impact of MTU.

"My qualification from CIT has helped me to establish and grow a strong professional identity which has benefited me hugely in securing senior leadership roles within a global corporation. I look forward to seeing CIT building on its strengths, experience and passion for research and education, with the creation of MTU. The South-West region and its stakeholders will benefit significantly from delivering enhanced innovative and applied research performance capabilities with scope for increased scale, quality and global impact."

Ms Mary Good, Vice-President of Global Manufacturing, PepsiCo (CIT graduate)

MTU's Approach to Research

MTU uses the OECD definition of research as 'characterised by originality, has investigation as a primary objective, has the potential to produce results that add to humanity's stock of knowledge (theoretical or practical) and is deemed so by public scrutiny by being challenged and tested through peer appraisal'.²⁷ MTU research will be built upon the foundations of an existing research and innovation ecosystem which connects the research community with external stakeholders at a regional, national and international level, as required by the Technological Universities Act 2018. CIT/ITT combined research pursuits provide deep-rooted foundations for the future success of the globally engaged MTU. Examples of achievement to date include:

- > Largest funding allocation from Horizon 2020 in the IoT sector.
- Largest percentage of research expenditure derived from Industry in Ireland in 2017²⁸.

- Excellence in Scholarly Outputs (20% of CIT/ITT journal publications in the 10% most-cited journals).
- CIT was the national leader for converting research into innovation, including KTI Spin Out of the Year Winner 2016²⁹.

Technology Transfer in Action – Aventamed

Aventamed is an award-winning CIT spin-out company set up by researchers within the Medical Engineering Design and Innovation Centre (MEDIC). Co-founders Olive O'Driscoll and John Vaughan identified a problem with the procedure to insert tympanostomy tubes in children's ears to treat middle ear infection. Working with clinicians they developed a hand-held device which simplifies the implantation process, reduces costs and improves patient outcomes. An initial feasibility study was carried out in 2012 using Enterprise Ireland feasibility grant. Follow on commercialisation fund technology development grants funded the protype development, regulatory assessment and the preparation of the business plan. This allowed the development of a business plan, regulatory assessment and prototype development. A preliminary patent was filed in 2012 with the European Patent Office (EPO), followed by National applications filed in Australia, Canada, China, Europe and the US in 2015. Seed funding of €1.3m secured in September 2015 from Enterprise Ireland and the HBAN Angel syndicate (Medtec, Irrus & Boole) has allowed the company to achieve ISO-13485 certification and the first patient trial was completed in 2016. The device now has FDA approval, is on the market in the US and is being used currently in medical practice.

MTU will represent a technological university where innovative ideas will be synthesised, and knowledge will be exchanged to yield technological and societal impact. MTU's research strategy will align with government policy as prioritised in Innovation 2020³⁰ and the Guide to Research and Innovation Strategies for Smart Specialisation³¹. Table 11 summarises the combined thematic research areas (TRAs) in CIT/ITT and their associated research centres and groups. The reporting structure is clear, but independent for each centre and group. SED 21 provides a summary of these TRAs and their associated centres and groups.

²⁷ OECD 2018 https://stats.oecd.org/glossary/detail.asp?ID=2312

²⁸ https://www.knowledgetransferireland.com/About_KTI/Reports-Publications/KTI-Review-and-Annual-Knowledge-Transfer-Survey-AKTS-2017.pdf

²⁹ https://www.knowledgetransferireland.com/Events/KTI-Impact-Awards/f

 $^{^{\}rm 30} \quad https://dbei.gov.ie/en/Publications/Publication-files/Innovation-2020.pdf$

³¹ http://ec.europa.eu/regional_policy/sources/docgener/presenta/smart_specialisation/smart_ris3_2012.pdf

Thematic R&I Area	ISCED	R&I Centre	R&I Group	Technology Gateway
ICT	06	Nimbus (Internet of Things)	Sigma (High performance computing) Riomh (Distributed computing)	TEC (Internet of Things) IMaR (Mechantronics and RFID)
Photonics	05	CAPPA (Photonics)	Blackrock Castle Observatory Labs (Astrophysics)	CAPPA (Photonics)
Lifesciences/Food	05	BioExplore (Bioactive)		Shannon ABC
Maritime, Energy and Sustainable Environment (MESE)	07		 MeSSO (Optimisation of system performance) SIRIG (Sustainable structures) Clean technology Centre (Resource efficiency) Halpin Maritime research (Maritime Operations and Maritime Mechantronics) 	
Health and Well-being	09	UNESCO chair	Spraoi (Early Childhood Activity)	
Entrepreneurship, Competitiveness and Innovation	04		 Hincks (Entrepreneurship) CEED (Entrepreneurship) V-Linc (Clustering) IAHT (Hospitality/Tourism) 	
Education and Learning	01		Educational Technology Enterprise Engagement and Experiential Learning	
Creativity and Performing Arts	02		Individual and group activity	

Table 11: CIT/ITT combined research structure

MTU's Research Strategy

MTU's research strategy will be based on critical mass, competitive advantage, connectivity and clusters, and collaborative leadership. Key strategic objectives for MTU research will include:

- Enhancing the connection between research and other elements of the technological university's mission, notably teaching and learning, whilst being cognisant of the need to ensure that research remains sustainably funded;
- Protecting and enhancing the quality of research and innovation outputs and building a reputation nationally and internationally for impact in prioritised research and innovation areas;
- Advocating for support structures, including a more robust funding model for research and innovation, which are linked to appropriate organisational structures;
- Meeting targets that have been set down in the Technological University Act 2018 in a sustainable way;

- Expanding large scale research activity into areas which currently do not have delegated authority, including areas in the humanities, arts and business;
- 6. Attracting, retaining and growing a diverse cohort of students, faculty and staff regionally, nationally and internationally.

MTU's Research Principles

MTU will perform research and innovation that will span the continuum from fundamental research to that of the practical and commercial needs of enterprise in the region and beyond. The technological university will maintain an emphasis on solutionsdriven research and innovation that will have impact and generate benefits. MTU's emphasis on impact for its research will be relevant nationally and internationally.

The principles that will underpin research in MTU are:

> Researchers: MTU will adopt the current practices embedded in CIT/ITT Research Career Framework (RCF). This will support the career development of all academic staff and contract researchers and recognise the benefits of facilitating their participation in wider research groups and centres where they can profit from a well-supported research environment.

- Focus: MTU's thematic research areas (TRAs) will align with the National Research Priority Areas and at the same time be cognisant of changes to policies at national and international level. MTU will seek to build research and innovation activities of demonstrable scale, supported by access to world-class infrastructure either across its campuses or through strategic collaborations and agreements³².
- Integrity and Openness: MTU will support research through integrity, ethics, professionalism and respect and will strive to provide the highest quality leadership. It will fully subscribe to the National Statement on Ensuring Research Integrity in Ireland³³, supporting the forthcoming NORF statement on open science³⁴.
- > Collaboration: MTU researchers will collaborate with external stakeholders to achieve the maximum impact from its research and innovations activities.
- > Teaching and Learning: Research and innovation will enhance the connection in MTU between research, teaching and learning at all levels enabling critical-thinking graduates and encouraging the development of leading and entrepreneurial mindsets.
- Knowledge Exchange: MTU will strengthen CIT/ITT already well-established and highly successful knowledge transfer, commercialisation and entrepreneurship activities, continuing to integrate both institutions' research and innovation with industry, the needs of society and for the public good.

Research Supported Environment

Contrary to the national trends published by the HEA in 2018³⁵, the numbers pursuing postgraduate research programmes at CIT/ITT have increased over the last five years. Support for postgraduate education in CIT/ITT has been significantly enhanced in recent years by the introduction of a School of Graduate Studies in CIT, a dedicated Research Office in ITT, funding for postgraduate research scholarship programmes, structured PhDs and training for supervisors. Collectively this provides a rich and empowering environment for students, supervisors and collaborators. In addition, the majority of postgraduate students across both institutions are supervised from within one of the recognised research groups or centres. MTU will have significant capabilities, infrastructure and resources

to grow its postgraduate research degree portfolio in the next five years.

The Research Office, Development Office, HR Office, School of Graduate Studies, Innovation & Enterprise Office, Finance Office, Library and Extended Campus are key enablers that work together to support the research and innovation ecosystem. The MTU Research Office will build on this model.

The MTU Research Office will support staff to engage in research and consultancy with industry, to advance their innovation and entrepreneurial activities, and to generate spin-out companies.

MTU will build upon the existing School of Graduate Studies model and will oversee the quality assurance and relevance of postgraduate research study and will support students, research supervisors and their wider Department and Schools throughout the lifecycle of each student's master or PhD degree programme.

Membership of the regional Bridge Network Technology Transfer Consortium will continue. The Network is Ireland's largest technology transfer consortium. It comprises the technology transfer offices of UCC, CIT, ITT and Teagasc (Agricultural and Food Development Authority, Ireland). The consortium facilitates knowledge transfer expertise to be shared amongst partners on all aspects of intellectual property management including licensing of technologies and the creation of spin-out companies. MTU Knowledge Transfer activities will focus on maximising the economic and societal impact of research and innovation through commercialisation of new products and processes.

Researcher Careers

In accordance with the research principles outlined above, MTU will support people, through the comprehensive Researcher Career Framework (RCF) which will be aligned with national and international policy developments informed by to the Government's 'Innovation 2020' strategy and the European Commission 'Charter and Code'³⁶. Key elements of the RCF will include clearly defined roles, responsibilities, salaries and conditions for researchers, a Personal Development Plan; a Performance Achievement metric and a career track that takes account of the researcher's personal career ambition. The RCF was key to CIT receiving the HR Excellence in Research badge in 2016 from the EU Commission, one of only 11 institutions in Ireland to have been awarded the badge.

³² Dept. of Business Enterprise & Innovation (2018) Research Priority Areas 2018 to 2023.

Available at: https://dbei.gov.ie/en/Publications/Publication-files/Research-Priority-Areas-2018-to-2023.pdf

³³ National Policy Statement on Ensuring Research Integrity in Ireland.

https://ec.europa.eu/research/openscience/index.cfm

³⁴ http://norf-ireland.net/

³⁵ http://hea.ie/2018/02/22/postgraduate-research-factsheet

³⁶ https://euraxess.ec.europa.eu/jobs/charter

MTU will employ a structured PhD programme aligned with the 'National Framework for Doctoral Education'³⁷. This will provide broader professional development and skills training in parallel with advanced discipline-specific training. MTU will encourage mobility of staff and post-graduate students, aimed at exposing them to different research environments where they will acquire complementary expertise. Mobility not only enhances student job prospects, be it in the academic or industrial sectors, but also widens horizons and supports the growth of researchers into better global citizens.

Research Structure

CIT/ITT have acted on opportunities to build their research capacity by establishing several thematic research areas (TRAs) over the past 15 years. TRAs are differentiated from each other by the primary research disciplines in which they operate. Each TRA may contain larger-scale entities referred to as 'Centres', which are of long-term strategic importance, and smaller-scale entities referred to as 'Groups' which have a narrower research discipline focus. This structure will be carried forward in MTU research structures. MTU will host four of the 15 national Technology Gateways (TEC, IMaR, Shannon ABC and CAPPA). The National Technology Gateway Network is run by Enterprise Ireland in partnership with the Technological Higher Education Association (THEA) to deliver expertise and solutions to industry in Ireland. Through the Technology Gateway Network, all Irish companies irrespective of their size, have access to research expertise, specialist equipment and facilities and research funding supports across THEA. CIT/ITT research centres/groups are linked to the relevant academic units, thus ensuring research informed academic programme development and delivery.

MTU will build on CIT/ITT current affiliated membership of Science Foundation Ireland (SFI), (SED 22). SFI is of increasing importance to MTU researchers as a source of funding that supports a broader range of metrics than other funding agencies, including scholarly outputs (knowledge generation), PhD students (early-stage researchers), contract researchers (from post-doc to senior fellow) and international networking initiatives (for example, the US-Ireland fund), along with supports for engagement with industry. Prioritising SFI as a key source of research funding also supports MTU's alignment with Innovation 2020 summarised as Excellence, Talent, Impact.

Research Performance and Impact

MTU will use a range of quantitative and qualitative metrics to enable it to oversee the quality and input of its research performance. The metrics will include: funding, scale and quality of journal publications, student enrolment, completion and time scale at master's and PhD levels, knowledge transfer outputs and independent published data.

In addition, MTU will make use of the external independent published data (Best Young University, Multirank global league tables) to allow benchmarking against other peer universities. In the research careers framework and structured PhD programme, personnel performance measures will be adopted in line with MTU's people-centered principle.

In 2017, CIT/ITT combined, secured 16% of their total research expenditure from industry, significantly exceeding the percentage industry expenditure of every other university, technological university consortia and IoT in Ireland³⁸.

CIT/ITT combined are the second highest performing higher education institutions in Ireland on total number of collaborations, innovation vouchers and consultancy service agreements with industry³⁹. CIT/ITT's combined direct financial drawdown from Horizon 2020 in August 2017 was €5.91m from the total Horizon 2020 consortium value of projects at €66.7m. This will position MTU as a higher education institution in the THEA sector with significant success participating in Horizon 2020⁴⁰.

The future success of research in the newly designated MTU will build on the work of both past and present staff and students at CIT/ITT. Future MTU success through the MTU Research Working Group will be built on the operation of a dynamic organisational structure that will be capable of responding to changes in both the internal and external landscapes.

³⁷ http://hea.ie/assets/uploads/2017/04/national_framework_for_doctoral_education_0.pdf

³⁸ https://www.knowledgetransferireland.com/Reports-Publications/KTI-Annual-Review-and-Annual-Knowledge-Transfer-Survey-2015.pdf

³⁹ Data extracted from Knowledge Transfer Ireland, 2017, Review and Annual Knowledge Transfer Survey p51 Appendix 1 Sections A.1 and A.2

⁴⁰ Data released by the European Commission in the Sixth Interim Report of the Irish Involvement in Horizon 2020 the European Union Framework Programme for Research and Innovation in August 2017



CHAPTER 9 | SERVE THE COMMUNITY AND PUBLIC INTEREST

Chapter Overview

This chapter aims to define MTU's contribution to the community and public interest by and through its people and activities. MTU will be in the region, of the region and for the region.

"The higher education sector plays a critical role in supporting the society in which we live, work and play. The contribution from such organisations and their staff in shaping and directing our society is profound and influential. The proposed focus by MTU on supporting and influencing societal change is welcomed. The benefits of this focus will also influence the development of MTU students and their societal and civic awareness."

Mr Micheál Ó Muircheartaigh, Broadcaster

Introduction

The expansion of higher education in Ireland is widely regarded as one of the key factors that enabled the Irish economy to grow strongly in the decades since the 1950s. It has made a hugely positive contribution to Ireland's development into a modern economy and society. It is important to recognise that through much of that period it was the enhanced and expanded undergraduate education that underpinned this development.

The expansion of higher education has enhanced social mobility through providing equality of opportunity. It provides graduates with skills for life and leads to better social and well-being outcomes and increased civic engagement. Higher education is widely viewed as having a critical role in enriching Ireland's cultural life, nurturing an understanding of the national identity and that of other cultures and belief systems. Increasingly, higher education is viewed as a key tool in combating social exclusion and marginalisation.

One of the functions highlighted in the Technological Universities Act 2018 is to serve the community and public interest. CIT/ ITT have a track record in developing and promoting strong social links in the region and have fostered close relationships with many organisations representing the social, creative and cultural interests of the local communities. MTU is committed to strengthening these links. MTU will both promote and support civic engagement through fostering opportunities for collaboration, knowledge exchange and social empowerment.

Definition of Community and Public Interest

MTU defines its community and public interest role as a symbiotic relationship based on a respectful partnership involving; inclusion, accessibility and responsibility.

This will be achieved by developing and expanding communitybased learning in the technological university's curriculum, continuing to encourage volunteering and support social entrepreneurship through Enactus and other initiatives.

While MTU will bring significant economic benefits to the region, the impact on society and culture cannot be underestimated as a regional multi-campus technological university. The advantage that a technological university brings to the region is the ability to address – through research and outreach – issues that have longterm implications and which require institutional capacity. The role of MTU in the region's society will bring about changes that will last for generations to come.

Inclusion

Higher education is increasingly viewed as a key tool in combating social exclusion and marginalisation. Although significant progress has been made to address this, greater participation of learners from disadvantaged backgrounds is needed⁴¹.

It is recognised that addressing current inequities in access is challenging and resource-intensive. MTU will be ready to face this challenge through its commitment to the South-West region through its access, and admissions policy. Thus, MTU will promote access to learning opportunities for economically or socially disadvantaged persons, persons who have a disability and persons from sections of society which are significantly under-represented in the student body.



⁴¹ http://hea.ie/assets/uploads/2017/06/National-Plan-for-Equity-of-Access-to-Higher-Education-2015-2019.pdf

UNESCO chair for 'Transforming the Lives of People with Disabilities through Physical Education, Sport, Fitness and Recreation'

The United Nations Educational, Scientific and Cultural Organisation (UNESCO), in recognition of expertise and ongoing commitment, signed an agreement with ITT to establish a chair "Transforming the lives of people with disabilities, their families, and community through Physical Education, Sport, Recreation and Fitness". The chair reinforces and internationalises institutional commitment to the fields of inclusive practice and universal access. The chair builds bridges between academia and civic society, policy makers and legislators. The chair leads a global partnership working in the domains of quality inclusive physical education, sport, recreation and fitness as part of a broader intersectional human rights agenda focused on the social inclusion of marginalised groups.

The chair works both vertically and horizontally exploring the critical inclusion issues for people with disabilities and looking broadly at how society can better serve all its citizens. The chair is working towards a society that recognises the rights of all, 'inclusivises' practice and ultimately mainstreams diversity. The chair is very proud to have as its chairholder Dr Timothy Shriver, chairman of Special Olympics International and nephew of the late US president John F. Kennedy. In 2018 ITT UNESCO's team presented to 37 different country representatives at the United Nations Convention on the Rights of Persons with Disabilities. This is the first time any Irish organisation presented at this conference.

MTU will value inclusion and diversity, will embrace difference and seek to nurture a connected, safe and respectful community. It will be supportive of the cultural diversity of students and staff, ensuring a welcoming, safe and supportive environment thus enabling them to realise personal, academic and career success.

MTU will welcome students from a broad range of learning abilities to the full suite of academic programmes, recognising that individual students with learning difference have different needs. In keeping with MTU's person-centred approach it will consider each student as an individual with his or her own learning history and provide appropriate supports.

MTU will adopt the Gender and Diversity Statement⁴² for higher education institutions which was launched in August 2018 and which states that "the technological higher education sector will act positively to ensure equal opportunities for all persons, regardless of gender, ethnicity, or sexual orientation, to access higher education and advance their careers".

Gender equality is a key issue for higher education nationally; as part of its strategic plan MTU will create an executive-level position with responsibility for equality, diversity and inclusion. MTU will be committed to progressing gender equality and to create a fair and equitable environment. CIT/ITT adopted the Athena SWAN principles in 2017 and are represented on the National Athena SWAN Implementation Committee (SED 23). CIT/ITT have formally commenced the Athena SWAN Bronze Application process, and this will be continued in MTU.

Accessibility

MTU aims to be open and accessible across all its campuses, through its programme provision, open days, public lectures, arts, cultural and sporting events, community events, festivals and visitor days. CIT and ITT Libraries are open to the public and hold several key collections of artefacts stored in the Special Collections category which are available to the public and community. CIT/ITT have close relationships with their local communities which are regularly invited to attend functions on campus. Local school and community groups frequently organise events and use the on-campus facilities. This will continue at MTU (SED 23).

Art, music and sport are three areas in which MTU can and will interact with the public in especially meaningful ways. Through its Cork School of Music (CSM) MTU will continue to host publiclyaccessible concerts, recitals and other events. It will continue the Artists-in-Residence programme whereby distinguished professional artists are recognised for their association with CSM. These range from individual performers to chamber ensembles, both instrumental and vocal, who perform regularly at CSM, sharing their expertise and artistry with the public. Staff, students and alumni will continue to be to the fore in all kinds of music and choral festivals across the region (SED 13, 23). The Crawford College of Art and Design (CCAD) has many links with visual arts organisations and networks, which contribute to the development of programmes and activities which are aligned with industry and the community. Together with partners such as the National Sculpture Factory and the Crawford Gallery, each year CCAD organises workshops, talks, conferences and exhibitions by practitioners, specialists and graduates. These activities contribute enormously to CCAD's practice and engagement ethos and will continue as part of MTU's strategy of community engagement. CCAD's 'The Gallery' located at 46 Grand Parade in the heart of Cork City centre, is a creative and welcoming space which inspires recognition of creative expression within all creative disciplines and encourages learning within the community. Academic programmes including Special Purpose Awards in Arts, Participation & Development and Arts in Group Facilitation are deeply involved with youth and community groups.

The completion of the Kerry Sports Academy in 2019 will see Comhaltas Ciarraí (the largest national group involved in the preservation and promotion of traditional Irish music) take up residency in a dedicated performance space within the academy building. This will provide for regular on campus concerts, performances and rehearsals, deliver increased community access and provide a dedicated cultural resource. Outside of CIT/ ITT clubs and societies, many students are involved with local clubs and organisations in the community across a diverse range of cultural interests. CIT/ITT Students' Unions organise a wide range of entertainment events both on and off campus.

MTU's Arts Office will also continue to commit to its mission of bringing arts and cultural activities to all students and local communities, across all campuses and through a wide range of art forms.

MTU staff, students, alumni and local communities will have the opportunity of engaging in a wide range of sports and healthrelated activities across the various campuses. The Kerry Sports Academy will provide a particularly inclusive focus on enabling persons with a disability to participate in sporting activities (SED 23). CIT's outdoor sports facilities become home each June to the largest sporting event for children in Europe through the Cork School Sports. CIT/ITT host local school sports days each spring, and these events bring children, teachers and families onto the campuses. CIT also hosts the Cork City International Sports which brings elite athletes from all over the world on campus (SED 19). A collaborative and inclusive approach to shared facilities will be adopted by MTU, partnering with local government organisations and athletics governing bodies to continue to provide and develop international standard track and field facilities, enabling MTU to host international sporting events.

Responsibility

MTU will change the landscape of the South-West region with a planned capital investment of \in 137m over the next 10 years, providing a long-term commitment to the South-West. Such capital projects are not only about expansion, but centred on opening the campus up as physical and social space for the wider community.

As an outward facing technological university, along with enhancing the region's economy, MTU staff and students will contribute to the vitality of their communities and help develop a tolerant and inclusive society. MTU will enhance employment opportunities by providing graduates with skills for life which will lead to better social and well-being outcomes and increased civic engagement.

Encouraging students of MTU to reach out beyond the campus boundaries, through a number of civic engagement initiatives, will help to make a real difference to the region. Initiatives and giving back through volunteer groups, charitable and non-profit organisations, to help those in need will improve the quality of life for people in the South-West region. CIT/ITT are already involved in many partnerships and initiatives such as the Older Persons Alliance with Cork County Council⁴³, which support the voice of the older person (SED 23). CIT/ITT were signatories on the Campus Engage initiative⁴⁴, which aims to nurture a spirit of community engagement among staff and students of Ireland's higher education institutions. One example of this is CIT's recent and ongoing engagement with Cork Prison Services, with a number of CIT staff volunteering to deliver taster programmes to inmates of Cork Prison, with supports also provided to prisoners' families. These approaches will continue at MTU.

CIT/ITT are part of the national student volunteer programme⁴⁵ which connects students with civil society organisations providing volunteering opportunities, locally, nationally and internationally. Volunteering enables students to have the opportunity to enrich their personal development and employability skills, have a fun experience, meet new people, and give back to their community.

- ⁴⁴ http://www.campusengage.ie
- ⁴⁵ https://www.studentvolunteer.ie/

⁴³ Authority responsible for local government in County Cork

MTU will continue the current support opportunities available for local and overseas volunteering, in some cases offering financial support to students who wish to volunteer overseas e.g. EIL Explore, SERVE and The Hope Foundation⁴⁶ (SED 23).

MTU staff, through Staff Social Committees, have engaged and will continue to engage in charitable activities, organising social functions to raise funds for local charities. Individually, staff engage in numerous other charitable activities which are often supported by colleagues. MTU will also support the Students' Union in its endeavours to raise funds for local charities.

MTU will recognise its public interest responsibility towards the environment. CIT/ITT have a green campus enterprise and sustainability strategy upon which MTU will build upon. CIT/ ITT have a co-ordinated energy management programme and have energy teams working with all stakeholders to reduce energy consumption. ISO 50001 certification⁴⁷ is in place, this is a response to statutory requirements for the public sector in meeting energy reduction targets⁴⁸. MTU will champion this programme of sustainability.

Reducing the use of material, water and energy resources has resulted in environmental and economic benefits and an improved working environment. CIT/ITT have a number of internal energy projects which have been realised with the partnership of a variety of internal departments and external research partners collaborating with a shared goal of reducing energy consumption on all campuses and sharing findings internationally.

The role of MTU in the region and serving the community and public interest has been thematic throughout this document and this will be an important and continuing feature of MTU's function. MTU will continue to:

- Improve and change lives by providing inclusive access to educational opportunities;
- Offer vital services to surrounding communities including access to cultural amenities and sports facilities;
- Ensure a person-centred approach in all its activities and endeavor to create a culture that is inclusive, diverse, forwardfocused and passionate for change for all stakeholders;
- Commit to collaboration with regional and local organisations, SMEs, social enterprises, schools, alumni and entrepreneurs;

- > Ensure that all students will have an international experience by integrating the 70-plus nationalities at MTU through international cultural, social events and societies;
- > Provide in the areas of specialist music and drama training, and craft apprenticeships recognising the importance of this provision to the region and beyond;
- > Develop and provide a wide range of sustainable and successful online distance education offerings aligned to workplace and student needs offering great flexibility to students so that they can access their lectures and labs any time, anywhere, on any device, irrespective of their physical location or working status;
- Support and engage a growing graduate community and support the transformative student experience building relationships between students, alumni and employer communities;
- Provide opportunities for under-represented groups through national programmes such as HEAR, DARE and Springboard;
- Encourage student involvement in social, cultural and sporting activities on campus and within local communities;
- > Provide opportunities for the arts and cultural scene which will give opportunities for music, drama and other cultural activities on campus and within the community;
- Develop a strategy to facilitate student movement between campuses for social, cultural and competitive sporting purposes;
- Build upon existing entrepreneurial, innovative and creative culture and community at CIT/ITT;
- Engage with the wider community (business, social or cultural) from the outset and align with sector needs;
- > Work with its regional stakeholders to identify the needs of the region and beyond supporting its development and growth through engagement with relevant international academic, industry, community, research and policy making partners;
- Support staff to engage in research and consultancy with industry, to advance their innovation and entrepreneurial activities, and to generate spin-out companies.

⁴⁶ EIL Explore funds overseas intercultural learning adventures which challenge participants to become global citizens. SERVE is a development and volunteering organisation committed to tackling poverty in the majority world. The Hope Foundation is dedicated to promoting the protection of street and slum children in Kolkata and the most underprivileged in India.

⁴⁷ Energy Management Systems Standard

⁴⁸ EU Energy Efficiency Directive

SECTION III THE IMPACT OF MTU



CHAPTER 10 | THE FINANCIAL AND ECONOMIC IMPACT OF MTU

Chapter Overview

This chapter will outline the economic context of the South-West region and present the expected economic impact of MTU for the region. In doing so this chapter will outline the financial case for MTU by presenting the integration costs and financial benefits of MTU. The Governing Bodies of both institutes have discussed and approved the financial case which is based upon two key studies undertaken by PwC and Dr Matthew Fannin for CIT/ITT over the period 2016-2018. What follows in this chapter is a distillation of material contained in these reports which are available in full on request.

"While both CIT and ITT individually make a significant impact on the regions they serve, the future combined economic output of the new technological university will deliver far greater benefits than the individual institutes could ever hope to achieve on their own. The ultimate benefactor of MTU is the region it will serve. The case as presented for MTU demonstrates real and tangible economic benefits where the combined efforts of both organisations within a new structure will provide excellent synergistic opportunities."

Mr Pat O'Leary, Managing Director, Liebherr Ireland

Introduction

Ireland is unique in Europe: it has a large, growing and highly educated population of young people. Demand for education expanded during the recent economic crisis and is set to grow further over the coming decade. According to HEA figures there are now 225,628⁴⁹ students in Irish universities and institutes of technology (IoTs) with 25,265 from the Cork and Kerry region. This is set to grow by a third in the next decade as the number of secondary school students continues to increase.

According to the Expert Group on Future Funding of Higher Education (2015)⁵⁰: **"There can be little doubt that investment** *in higher education has been key to enabling the Irish economy to grow in recent decades. We know that graduates' knowledge and capabilities enhance economic productivity. Universities and IoTs are key centres of research and knowledge generation and engines of regional and local economic development. In overall terms the State – through higher tax contributions and lower calls on welfare – benefits significantly from its investment."* MTU will contribute to the economic prosperity of the region building upon the foundations of CIT and ITT. The programme provision, research capacity and quality of the student learning environment as well as the unique characteristics of MTU, as also outlined in Chapter 3, will provide an attractive destination for students both domestically and internationally, leading to increased prosperity across the region.

The Financial Case for MTU

CIT/ITT have been working together to ensure that the financial resourcing and viability of the MTU project is robust (in line with the requirements of Sections 30 (b) and 34 (2)(c) and (d) in particular of the TU 2018 Act).

As responsible institutes CIT/ITT Governing Body members have had a risk assessment of the business case undertaken including student number projections, capital requirements and financial performance and have put in place contingency plans to mitigate these risks.

The annual financial projections for CIT and ITT submitted to the HEA in May 2018 (the '2018 Programmes and Budgets projections') have formed the key input to the financial case analysis. The detailed financial case projections for MTU have been developed by CIT and ITT with input from the vicepresidents for finance and administration and corporate affairs at CIT and ITT, the presidents of CIT and ITT, the MTU project directors, and the MTU Programme Oversight Board, with additional input from other finance and academic staff. These financial projections were approved by the CIT Governing Body and ITT Governing Body prior to submission to the HEA.

Student numbers are the key driver of the various income categories. The projections in the first academic cycle have been developed in conjunction with senior academic staff based on a detailed analysis of projected student numbers by course and by year of study and reflect the relevant demographic trends. Pay costs, which account for the majority of expenditure, are projected based on a detailed analysis of staff numbers. Non-pay costs are projected based on an analysis of the relevant cost categories.

The financial case for the proposed merger of CIT and ITT to create MTU considers the projected financial benefits and costs of the merger and technological university designation. The financial case for MTU considers the projected financial costs and benefits of the merger over a period of two academic cycles (eight years) from the date of merger on 1 September 2019 (i.e. from AY19/20 to AY26/27).

⁴⁹ HEA – Key Facts and Figures: Higher Education 2016/17

⁵⁰ https:/education.ie/en/The-Education-System/High-Education/

Estimated integration costs associated with the merger are projected at c. €12m over an eight-year period (i.e. over the two academic cycles). It should be noted that the financial case does not reflect any assumptions around indexation or inflation of income or expenditure over the eight-year forecast period. Income and expenditure does not include the capital requirements for MTU, nor the funding requirement for same.

A summary of the physical environment strategy and capital expenditure plans for MTU is set out later in this chapter.

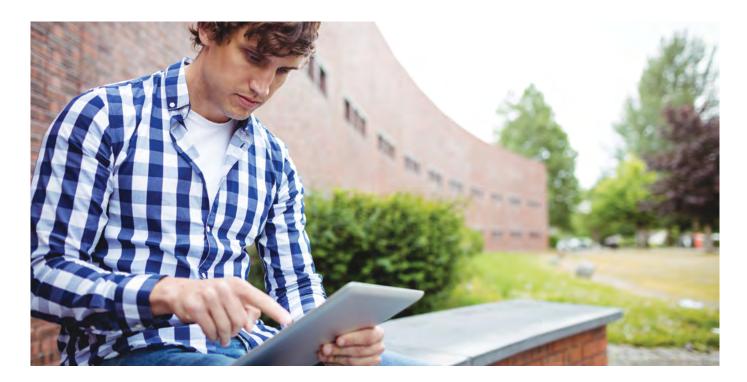
Based on the assumptions underlying the financial case for MTU, a summary of projected financial performance over the two academic cycles post-merger is presented in the table below:

		First acade	emic cycle		Second academic cycle			
€000s	AY19/20	AY20/21	AY21/22	AY22/23	AY23/24	AY24/25	AY25/26	AY26/27
Student numbers (FTE)	13,756	14,209	14,611	15,081	15,363	15,650	15,942	16,241
Income	151,977	157,010	162,845	167,172	168,682	171,757	174,907	178,135
Expenditure	(149,711)	(154,657)	(159,462)	(163,505)	(166,198)	(169,031)	(171,932)	(174,959)
Income less expenditure	2,266	2,353	3,383	3,667	2,484	2,726	2,976	3,175

Table 12: Projected financial performance of MTU over two academic cycles

Technological university designation is assumed to result in an uplift in student numbers of 5% over the first academic cycle and this is projected to generate both additional state grant funding and addition student income in the form of student fees and contributions. The associated costs (pay and non-pay) of such increase in student numbers has been considered and reflected in the financial case. A fundamental assumption underlying the financial projections for ITT and for the MTU merger is that the moderator for the State grant will be protected in ITT.

Increased research activity of 5% is also assumed as a result of technological university designation and the associated additionality and increased scale of MTU, to reflect an increased focus in research, innovation and tech transfer. The associated costs (pay and non-pay) of such an increase in research activity has been considered.



Financial Benefits of MTU

The four principal financial benefits of the creation of MTU are:

1. Additional growth in student numbers

This will be over and above the growth which both institutes could expect on a standalone basis – student numbers will lead to increased income from the State as well as increased student fees and student contribution. Costs of such an increase in student numbers has been considered in the financial case.

2. Increased research income

Research income is assumed to be 5% higher in the merger scenario, reflecting a higher level of research and innovation activity and an associated enhanced level of interaction with industry in the research area following designation as a technological university.

3. Efficiencies/synergies

It is assumed that student number growth in CIT in the first academic cycle post 1 September 2019 will be delivered within the institute's current staff complement, with some additional pay costs in ITT to deliver the projected 20% student growth. This is reflected in total pay cost metrics for MTU (reducing from 78.7% pre-merger to 77.4% by the end of the first academic cycle). Efficiencies that may be realised due to the creation of MTU may also take the form of a reinvestment of resources into new developing areas such as increased internationalisation and potential student growth areas.

4. Access to a borrowing framework

Subject to rules in the Technological Universities Act 2018, MTU would be permitted to draw down loan funding to finance capital investment (e.g. investment in infrastructure to accommodate increasing student numbers). Any such borrowings would be one element of a broader funding package. MTU's capacity to borrow will be governed by its financial capacity to service the repayment of debt from operating surpluses and by the commercial terms under which it could borrow (i.e. interest rates, tenure of loans, etc). Given projected capital expenditure for MTU of over €200m over the two academic cycles, this highlights the requirement for a borrowing framework for MTU, in addition to State grants.

Key Assumptions

The key assumptions underpinning the development of the financial case for the creation of MTU are:

Student numbers

Based on the 2018 Programmes and Budgets projections, total student numbers in AY18/19 (the last academic year before the assumed merger date) are projected as follows:

- CIT: 10,516 students, of which 8,107 (77%) are full-time students (excluding non-EU students).
- ITT: 2,864 students, of which 1,947 (68%) are full-time students (excluding non-EU students).

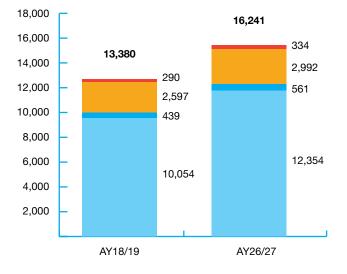
Combined CIT and ITT student numbers in the merger scenario are estimated to grow by c. 7% in the first academic cycle (AY19/20 to AY22/23) and by c. 8% in the second academic cycle (AY23/24 to AY26/27).

Demographic growth of c. 12% is expected in the first academic cycle and c. 22% in the second academic cycle (37% in total over the two academic cycles.) These figures are based on published census data of total births recorded in the Cork and Kerry region⁵¹.

Additional growth in student numbers in the merger case is based on a 5% uplift over the first academic cycle, driven by designation as a technological university. It is assumed that this 5% uplift is achieved over the first academic cycle, in the four years post-merger. Total growth of c. 21% over the two academic cycles (including the 5% uplift assumed in the merger scenario) appears prudent when compared to the demographic growth of 37% within the Cork and Kerry region over the same period.

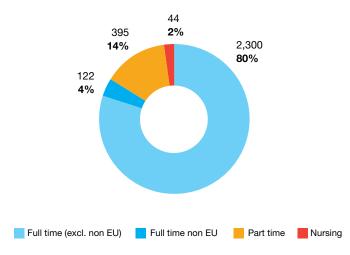
Figure 5 illustrates the growth in student numbers between the academic year immediately preceding the first year of the MTU merger (AY18/19) and the final year of the second academic cycle post-merger (AY26/27).

⁵¹ Census 2016 Profile 2 and Regional Population Projections 2016-2031 (Central Statistics Office)



Merger case - student number analysis (FTEs)

Increase in student numbers by category AY18/19 to AY26/27



In AY18/19, student numbers are projected to be 13,380 on an FTE basis. This is projected to increase by c. 21% to 16,241 FTEs in AY26/27. Of this increase, 80% (2,300 FTEs) is attributable to growth in full-time students (excluding non-EU students), as shown in Figure 5.

Income

Based on the 2018 Programmes and Budgets projections, State grant and student income in AY18/19 are projected as follows:

Institute	State Grant	Student Income
CIT	c. €52.0m	c. €36.1m
ΙΤΤ	c. €12.2m	c. €9.0m

Table 13: State grant and student income in AY18/19

It is assumed that an additional 5% of research income (via grants and contracts) will be obtained in MTU, over and above the combined non-merger case, as a result of gaining TU status.

A bridge from total income in the year immediately preceding the proposed merger (AY18/19) to MTU income projected by AY26/27 in the merger scenario is presented below. This indicates that by the end of the second academic cycle postmerger, annual income is projected to be \in 7.8m higher than if the merger did not go ahead. On a cumulative basis over two academic cycles the value of MTU income uplift is projected to be \in 54.8m.

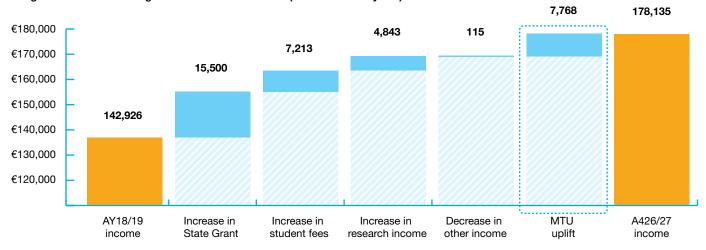


Figure 5: Student number analysis

Figure 6: Merger case – income bridge from AY18/19 to AY26/27 (two academic cycles)

Merger case - income bridge from AY18/19 to AY26/27 (two academic cycles)

Expenditure

Staff pay costs account for the majority of expenditure in both institutes. Based on the 2018 Programmes and Budgets projections, pay and non-pay expenditure in the year immediately preceding the proposed merger (AY18/19) is projected as follows:

Institute	Pay Expenditure	Non-Pay Expenditure
CIT	c. €77.6m	c. €26.7m
ІТТ	c. €23.9m	c. €6.9m

Table 14: Pay and non-pay expenditure in AY18/19

Increase in pay costs in the first academic cycle post-merger are primarily as a result of pay restoration and additional posts, as a result of changes to national agreements, as well as some pay cost increases associated with student number growth.

Organisational integration costs AY19/20 to AY26/27

It is assumed in the financial projections that the impact of national agreements such as the restoration of pay and the redesignation of hours will be fully funded by way of an increase in the State grant.

Pay costs in the second academic cycle are generally assumed to increase in line with increasing student numbers.

Integration costs

It is estimated that the organisational integration costs associated with the establishment of MTU will be c. €12m over an eight-year period (i.e. over the two academic cycles). We are confident that these costs will be specifically funded by the State in addition to the normal State grants⁵². These integration costs are projected to be c. €3.5m in AY19/20 reducing to c. €0.5m per annum from AY24/25 to AY26/27.

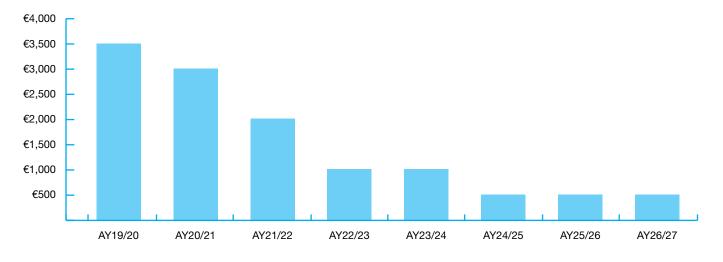


Figure 7: Organisational integration costs AY19/20 to AY26/27

Based on data published on third-level mergers in Scotland⁵³, it is envisaged that the merger cost categories for MTU would be:

- > Staff costs/project management;
- > IT hardware/software;
- Marketing/branding/stakeholder relations;
- > Professional advisers and legal costs;
- > Organisational development and change management.

⁵² At the time of writing joint meetings with DES/HEA and CIT/ITT are in place to discuss capital and financial resourcing

⁵³ Impact and success of the programme of college mergers in Scotland (Scottish Funding Council 2017)

>> >> >> MTU – Munster Technological University

Development costs

A number of potential development projects have been identified for the MTU. Potential upside, costs and synergies / efficiencies that may be realised from such development projects are not included in the financial case. An overview of potential development projects and cost for MTU is presented below in Table 15 and Table 16.

MTU Development Projects	
Governance & Administration in a Multi-Campus University	Operational modelling, organisational design (high level design and detailed design) will be undertaken, along with identification of relevant workstreams to develop options, evaluation and selection.
Defining the MTU Graduate	MTU will offer an enriching student experience and will empower students for a successful future in a globalised world. MTU will ensure that its portfolio of programmes are relevant to learners' needs and will embrace digital learning enhancements, greater flexibility in programme delivery and workplace experience. MTU will continue to develop and foster the talents of students in a supportive environment which challenges them to succeed and prepares them to make a positive contribution in their chosen careers and as members of society.
Developing the University Staff	MTU is committed to flexible approaches to work, learning and work-life balance. MTU will empower staff by developing new and enhancing existing staff development programmes. MTU will support organisational, team and individual learning by providing high quality learning and development opportunities to academic and professional services and support staff. MTU will develop a culture and an environment that inspires and supports people. Peer learning networks, staff induction and staff mentoring programmes, in addition to building learning communities, will enhance the inclusive culture of MTU. Through institutional leadership and development programmes MTU will empower all staff to embrace MTU's values.
Digital by Default	The MTU digital strategy will enhance and support MTU students and staff in their teaching and learning, research, engagement, innovation and work practices. MTU aims to design and deliver high quality digital self-service supports to students and staff. Adopting a user-centred approach, MTU will develop and deliver robust, well-integrated systems that will enhance the student and staff experience. MTU will embrace digital communication and collaboration across a multi-campus, geographically dispersed university.
An International TU	Support for global reach activities will be central to promoting an international and culturally diverse technological university. MTU will focus on strengthening and adding to existing links and agreements across the world. MTU will implement a strategy to strengthen existing relationships as well as forge and facilitate new links with the international community including academia, research and industry.
Equality, Diversity & Inclusion	MTU will provide educational opportunities which will empower all motivated individuals to pursue personal, intellectual and professional enhancement. MTU will ensure and promote a culture of inclusion, diversity and equality where students and staff are respected and valued across the university. MTU will appoint an individual to champion diversity, inclusion, access and equality. MTU will support the Athena SWAN initiative to enhance gender equality, increase access provision, engage with the community and enhance apprenticeship provision.
Nurturing the Research Ecosystem	To grow research activity MTU will provide targeted studentship/ scholarship initiatives for existing, new and developing research disciplines. MTU will support staff as they begin their research activity through a range of initiatives including: support for undertaking research, first-time doctoral supervision and preparation of funding applications. MTU will enhance the existing Researcher Career Framework to attract and retain researchers and provide professional development at each stage of a researcher's career path. MTU will develop the supports and resources needed to grow innovation and entrepreneurship activities.

Table 15: MTU Development Projects

€m	HEA	MTU	Total
Multi-Campus University Governance & Administration	€1.2m	€0.4m	€1.6m
Defining the MTU Graduate	€1.3m	€2.4m	€3.7m
Developing the University Staff	€5.5m	€2.0m	€7.5m
Digital by Default (4 year)	€1.6m	€1.5m	€3.1m
An International TU	€1.1m	€1.5m	€2.6m
Equality, Diversity and Inclusion	€1.1m	€1.6m	€2.7m
Nurturing the Research Ecosystem	€1.4m	€0.6m	€2.0m
Total	€13.3m	€9.9m	€23.2m

Table 16: Estimated cost of MTU development projects

Institute	Development	m²	Cost
Cork	Learning Resource Centre (PPP)	6,800	€21m
	Sports Arena	3,300	€10m
Kerry	STEM (PPP)	9,000	€30m
	Sports Academy	8,400	€19m
	Total	27,500	€80m

Table 17: Projects in development

MTU Physical Environment Strategy

A multi-campus, geographically distributed delivery platform is a fundamental cornerstone of the MTU. The Cork and Kerry campuses are different, not alone in terms of student numbers and size, but also in terms of the social spaces and facilities that exist for students. Both the Cork and Kerry campuses have unique attributes and it is important that these are treasured and built upon in the new entity. One of the key objectives of the new entity is to ensure a 'Single Stakeholder Brand Experience' for the MTU. It is recognised that there are several pressing strategic campus developments in Cork and Kerry which will have to be progressed in parallel.

The key strategic focus for the Kerry campus will be to consolidate all its activity on the Dromtacker North Campus, including the completion of the Sports Academy and STEM (PPP) buildings which are in progress. A further development is planned to provide a student hub. The Kerry campus masterplan also includes the development of a Research Building and an extension to the existing Tom Crean Business Centre. The challenge of physical infrastructure in Cork to accommodate growth in student numbers is greater and a key objective will be the upgrading of the current 1974 building (31,000m²) within the Bishopstown campus. Significant capital additions will be required on this campus, including the completion of the Sports Arena and the Learning Resource Centre (PPP), which are both currently in progress. Further new buildings are required to support the anticipated demographic-led growth in student numbers over the next decade. Planned developments include the Engineering Learning Factory (TELF), the Centre for Science Education (CASE), two business/humanities facilities (the Track Boulevard and Gateway Building). An investment is also required to provide for the Centre for Excellence in Apprenticeship (CEA), a project already brought to design and planning phase before the downturn in apprenticeship registrations post 2008. One further key project is the development of the Art, Design and Media (ADAM) project to consolidate the activities of the Crawford College of Art & Design into a purpose-built, city centre location.

Institute	Development	Student Capacity	New Space m ²	Cost
Cork	The Engineering Learning Factory (TELF)	750	6,750	€21m
	1974 Building Refurbishment (31,000m ²)			€10m
	Centre for Excellence in Apprenticeship (CEA)	600	6,000	€18m
	Centre for Science Education (CASE)	400	4,000	€14m
	Business/Humanities (Track Boulevard)	400	4,000	€12m
	Art, Design & Media (ADAM)	1,000	10,000	€30m
	Gateway Building	375	3,000	€10m
	Research Extension	100	2,000	€7m
	Total	3,625	35,750	€126m
Kerry	Student Facilities Hub		3,940	€11m
	Research Building	120	4,000	€9m
	Extension to Tom Crean Business Centre		1,000	€3m
	Total	120	8,940	€23m
	Total proposed developments	3,745	44,690	€149m

Table 18: Total cost of proposed developments

It is assumed that capital projects identified or already under development will be fully funded.

In addition to the proposed developments above, the masterplans for both campuses identify the potential for development of on-campus student accommodation which is essential to address demand, support international student activity and address mobility issues in the wider campus areas (1000-2000 student beds over the next 10 years). Access to a borrowing framework will be required to progress such developments.

MTU Risk Analysis

Key financial risks to the MTU project are summarised below:

Funding

- Moderator impact on ITT state grant to continue to be protected;
- > Funding of capital deficit in ITT (estimated to be €4.5m);
- > Funding of projected current year deficit in ITT (projected to be €1.5m) and any historical deficit;
- > 100% funding of pay restoration costs (CIT and ITT);
- > MTU funding of €1.5m per annum in first academic cycle;
- > Funding of €12m integration costs (over two academic cycles);

- Funding of €229m projected capital expenditure (includes current projects);
- Dependence on a borrowing framework (e.g. including access to EIB facilities and funding for student accommodation).

Student Numbers

- > 20% student growth in ITT over five years (of which 7.8% is projected in the current year (AY18/19);
- > 5% MTU uplift in student numbers.

Other

- > ITT UNESCO chair funding (circa €300k per annum);
- > Net operating costs in the Kerry Sport Academy (circa €50k per annum).

Sensitivity Analysis

Sensitivity analysis of MTU financial performance has focused in particular on the key student number assumptions underlying the financial case – student number growth in ITT to the end of the first academic cycle and the uplift in student numbers associated with TU designation.

Sensitivity Analysis (€000's)	AY19/20	AY20/21	AY21/22	AY22/23	AY23/24	AY24/25	AY25/26	AY26/27
CIT income less expenditure	2,009	1,900	2,603	2,671	2,742	2,814	2,889	2,966
ITT income less expenditure	(1,500)	(1,500)	(1,500)	(1,500)	(1,500)	(1,500)	(1,500)	(1,500)
MTU overlay	1,703	1,847	2,033	2,208	737	762	788	812
Revised MTU income less expenditure	2,212	2,247	3,136	3,379	1,979	2,151	2,177	2,278
Annual Impact v MTU Base Case Projections	(54)	(106)	(247)	(288)	(505)	(575)	(799)	(898)

Table 19: Impact of ITT Deficit continues at €1.5m per annum

Sensitivity Analysis (€000's)	AY19/20	AY20/21	AY21/22	AY22/23	AY23/24	AY24/25	AY25/26	AY26/27
CIT income less expenditure	2,009	1,900	2,603	2,671	2,742	2,814	2,889	2,966
ITT income less expenditure	(1,446)	(1,394)	(1,253)	(1,213)	(995)	(850)	(702)	(603)
ITT income less expenditure	(1,446)	(1,394)	(1,253)	(1,213)	(995)	(850)	(702)	(603)
MTU overlay	1,633	1,705	1,797	1,884	399	413	427	439
Revised MTU income less expenditure	2,196	2,211	3,147	3,342	2,146	2,377	2,614	2,802
Impact v MTU Base Case Projections	(70)	(142)	(236)	(325)	(338)	(349)	(362)	(373)

Table 20: Impact if MTU student number uplift is 2.5% rather than 5.0%

Economic Contributions and Impact of MTU

The MTU Economic Impact Study (EIS) follows on from a similar study commissioned in 2014 as part of the Stage 2 submission (the then process for technological university designation). The latest study reveals an improved outlook for the planned MTU. The 2018 study demonstrated that MTU will deliver and create a substantial, positive economic impact to the region, over a 10-year period, characterised by:

- A net economic impact to the region of between €156m and €224m;
- > A platform for increased research investment which will create a regional GDP increment of between €26m and €52m in the South-West region;
- Increased educational attainment which will increase regional productivity;
- A flexible approach for graduates to engage in the workforce, including through entrepreneurial activities and traditional employment structures;
- Increased geographical access to flexible learning opportunities, which will drive knowledge and skill growth;

- Significant access opportunities that will realise sustainable regional household income;
- > A more attractive place in which to live, study, work and do business.

Both CIT and ITT are shown to make sizeable contributions to the overall economies of the Cork-Kerry region. These include a number of existing contributions as well as potential new economic impacts that will accrue to the two-county region when the merger and conversion to MTU is achieved.

Measuring the Economic Contribution of MTU

The economic contribution focuses on expenditure demands created from the existing capacity of the two institutes to merge. It focuses on the economic activity generated in the region from the existing expenditures affiliated with CIT and ITT. All contributions are based on analysis using the 2016-17 academic year. These contributions include:

- > From operational activity spending of the IoTs;
- > From the spending of enrolled students at the IoTs;



- > From the spending at special events at the IoTs;
- From the spending on capital investments in facilities at the loTs;
- > From the present value of lifetime earnings of graduates.

The total economic contribution of CIT and ITT to the Cork-Kerry regional economy exceeded €414m in the 2016-17 academic year. This included over €188m in initial spending related to the operations, student enrolment, special events, and capital investment spending.

The largest economic contribution came from the operations of the institutes themselves. Over €25m was spent initially by the institutes in their day-to-day operations. Another €80m of this total was spent on wages and salaries of staff. Approximately 87% of these wages and salaries went to employees residing in the two-county region.

Almost €11m of capital investment spending occurred through construction of facilities across the two campuses. With the additional indirect multiplier effects of this investment, total

economic contributions from these capital expenditures totalled €19.7m. Finally, student expenditure contributed another €184m to total economic activity.

Future Economic impact of MTU

The purpose of separating the economic contribution of the institutes of technology from the economic impacts of MTU is to identify the separate effects and additionality impacts on the regional economy specifically due to the merger of the institutes. The economic impacts of MTU that will accrue to the regional economy of Cork and Kerry include:

- > Additional operating expenditures;
- > Student spending from additional enrolled students;
- > Additional special event spending;
- > Capital investment spending;
- Increased productivity due to the integration and increased focus of research in the new technological university;
- > The present value of earnings of MTU graduates.



The student enrolment growth expected after the creation of MTU will contribute a further €5m in additional related spending to push student spending to €202m, based on expected student spending profiles.

It is expected an additional €46m in capital investments in two facilities will be constructed due to the merger. When including additional indirect spending effects, the total economic impact of these capital expenditures on the Counties of Cork and Kerry will exceed €84m.

Based on productivity from investments of research incomes earned, the combined increase and scale of research linked with designation as a technological university will add between \notin 26m and \notin 52m to total GDP of the South-West region. This GDP is equivalent to a total economic output impact range between \notin 62m and \notin 124m in 2019/20. When counting additional operating expenses and capital investments needed under a merged MTU, each €1 invested in the merger should generate between €3.36 and €4.67 of benefits to the South-West region. These benefits do not include the additional positive externalities that accrue to GDP of other regions in the Republic from MTU research productivity or earnings of MTU graduates of regions outside of Counties Cork and Kerry.

Joint Contribution and Impact Assessment of MTU on the Cork-Kerry Economy

A summary and comparison of the economic contributions and impacts of MTU on the joint economies of Cork and Kerry are presented in Table 21 below.

The economic contributions of CIT and ITT are highlighted for the 2016-17 academic year. The main contributions of the two institutes are presented as well as the economic impact of merging the two institutes to form MTU 2019/20.

2016/17	Initial Effects	Indirect/Induced	Total Effects
Total Contribution (ITT/CIT) (Excludes Research)	€188,765,450	€226,106,326	€414,871,776
Discounted Graduate Lifetime Earnings Contribution			€416,977,158
2019-20 (Merger – MTU)			
Gross Economic Impact (Low)			€565,263,866
Gross Economic Impact (High)			€632,713,975
Discounted Graduate Lifetime Earnings Contribution			€513,051,859

Table 21: Summary and comparison of economic contributions and impacts of MTU on the joint economies of Cork and Kerry

Based on additional expected enrolment growth as well as increased research revenue, the projected economic impact of CIT and ITT merging and creating MTU range between €565m and €632m. This results in a net economic impact increase of between €156m and €224m. Please note this does not consider the additional positive externalities that spill over to other regions of Ireland from research productivity of MTU or earnings that benefit other counties and regions in the Republic from MTU graduates that work in those counties.

Errors and omissions excepted

CONCLUDING REMARKS

The Technological Universities Act 2018 has created the opportunity to add a new and exciting dimension to the Higher Education landscape in Ireland. This sectoral change will result in a more dynamic and systematic engagement with business, enterprise and the wider community, creating significant regional, national and international impact.

The creation of the Munster Technological University presents a unique opportunity to combine two established higher education institutions to realise a new technological university. The MTU will build upon the legacy of CIT and ITT, further fostering collaborations and innovations which will come into being through the deep integration of the founding Institutes. The resultant MTU will present a larger entity, with greater resilience and resources, well positioned to deliver a sustainable operational model for the future.

We look forward to continuing to work together with confidence and ambition, with a clear focus on placing our stakeholders core and central to the delivery of our vision for the MTU. Our success will be measured by the quality of the teaching and learning experience, the work readiness of our graduates, success of our alumni and our impact in the areas of research, enterprise and innovation.

We recognise and appreciate our staff and their commitment to the creation of the MTU. It is through the professionalism, commitment and ambition of our colleagues across ITT and CIT that both founding partners of the MTU are successful entities in their own right. Through synergistic collaborations it is our staff who will drive the success of the new MTU along with our student body, past and current. This submission represents a significant milestone in a lengthy process further enhancing interactions and collaborations across our students, staff and respective Governing Bodies. Together we have crystallized our shared vision of the MTU, within the expansive criteria of the TU Act 2018, to delineate a trajectory which will ensure a national and international profile and presence for the new institution.

As we make this submission, we also recognise that this is the beginning of a new phase of the MTU journey. This journey will require strong governance and leadership, delivered in a spirit of teamwork and common purpose, which in turn will establish a unique and respected ethos that will identify and shape the MTU. We will collectively strive to ensure that MTU will deliver on its ambitious mission and in so doing will enhance opportunities for the students, staff and communities whom we serve.

Barry U Connor

Dr Barry O'Connor President CIT

Oliver Musephin

Dr Oliver Murphy President ITT





