

The Role of the Institutes of Technology in Enterprise Development

Profiles and Emerging Findings

June 2007



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Introduction

In the context of the essential role of the Institutes of Technology in Ireland's social, cultural and economic development, Forfás and the HEA agreed to undertake jointly a review of the capabilities and capacities of the Institutes with particular regard to their role in underpinning enterprise growth.

The profiles set out in Section I of this report build a picture of activity in each of the Institutes of Technology relevant to enterprise development. The information contained is based on information provided by the Institutes: through their questionnaire returns and the review site visits conducted in autumn 2006¹, as well as some of their web site material.

Profiles for each of the Institutes were drafted and agreed by Forfás and the HEA. They were sent back to the Institutes to clarify a small number of points and to ensure that each was satisfied with their particular text (as interpreted from material provided).

Each is drawn up according to a similar template and covers (more or less) the following:

1. *Strategic planning*
 - Current strategic plan
 - Strategic planning process
2. *Education and training*
 - Student population in 2004/5 by level and by field of study
 - Full-time versus part-time split
 - Activity within Schools
 - Sources of students
 - Apprenticeships
 - Graduates and destinations
 - Any non-accredited training
 - Plans for the future
3. *Research*
 - Research priority areas
 - External research funding secured
 - Delegated authority at Levels 9 and 10
 - Staff involved
 - Outputs in 2005
 - Research strategy
4. *Collaboration*
 - With enterprise
 - With others, e.g. other higher education institutions, hospitals, enterprise development agencies

¹ With the exception of IT Sligo which was completed over summer 2006 as a pilot for the review exercise.

5. *Company formation*

- Entrepreneurship programmes
- Incubation support

6. *Resources*

- Staffing
- Financial
- Physical

The regional overviews are sourced from the work currently being carried out by Forfás on the 2007 Regional Strategic Agendas which builds on CSO data, Forfás Annual Employment Surveys plus a number of other sources.

Additionally this exercise identified a number of issues for further consideration for the enhancement of the Institutes' role in enterprise development. These include:

- Recognition of the totality of the Institutes' potential spectrum of engagement with the industrial base, including graduate recruitment, training for company personnel, R&D and spin-off activities;
- The need to improve Institute flexibility in meeting industry requirements;
- The need for a more strategic approach to ensuring industry input to Institute planning processes, and the critical role of the enterprise development agencies in this;
- The policy requirements for how best to support Institutes' evolution to meet the growing educational needs of the employed while continuing to address the needs of the more traditional student base.

These key findings are set out in Section II in greater detail under the following themes:

- a) The Relationship between the Institutes and Enterprise
- b) Education and Training
- c) Research and Development
- d) Company Formation

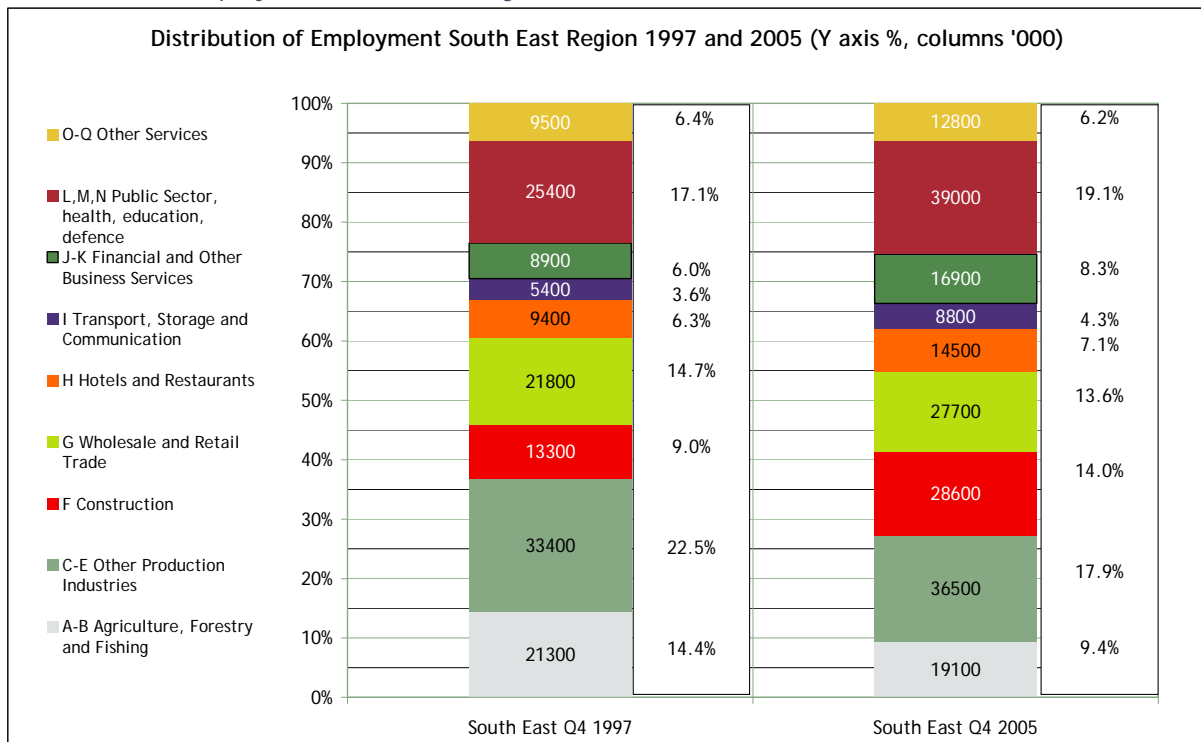
Section I - Profiles

South East Region

The South East region comprises the counties of Waterford, Wexford, Kilkenny, Carlow and South Tipperary and according to the 2006 census has a combined population of 460,474 or 11% of the national population. Waterford has been designated as the regional gateway under the National Spatial Strategy, with Wexford and Kilkenny designated hub towns.²

The labour force in the South East is approximately 219,200 with a participation rate of 60.3%. In 2006 the region had the highest unemployment rate nationally at 5.9% and the lowest total number of workers with third level qualifications at 23.8% compared with a national average of 30.7%. The region also has one of the highest levels of population with no formal education or whose highest attainment was primary level at 24%.

Distribution of Employment South East Region

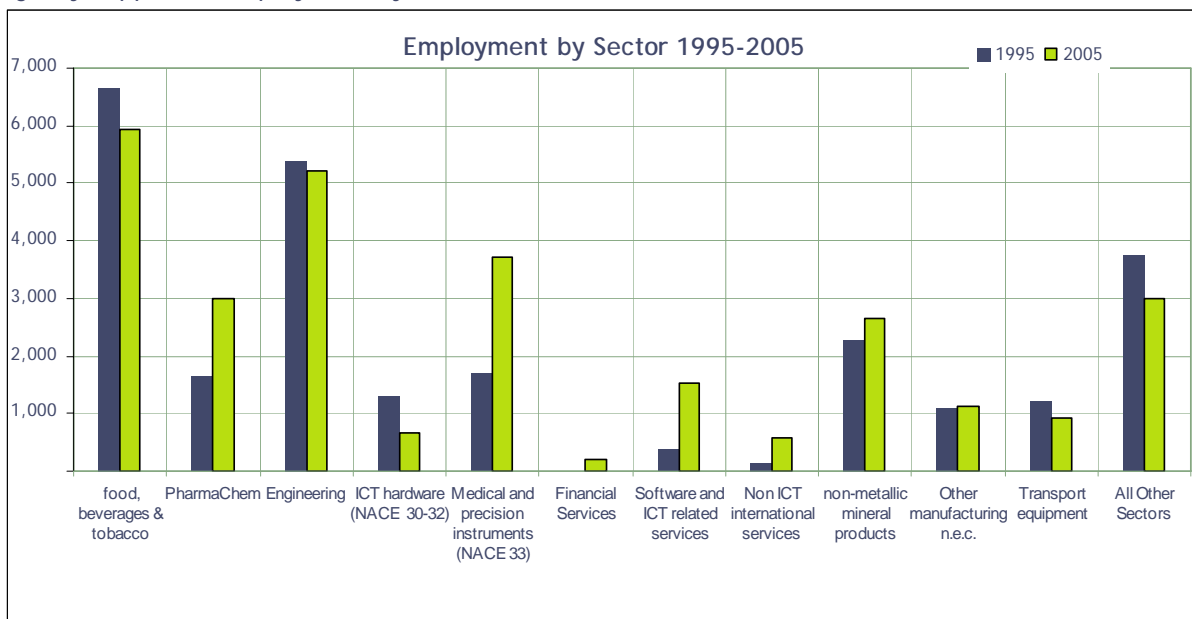


- Key employers in the region include Bausch and Lomb, GlaxoSmithKline, Glanbia, Anglo Irish Meat, Dawn Meats, Waterford Crystal and Pinewood Laboratories.
- Employment in the construction sector has increased its share by 5% with one in seven (14%) in the South East employed in this sector. This compares to 12.8% share for the economy as a whole.

² National Spatial Strategy 2002-2020, Department of Environment and Local Government

- The financial and other business services sector has also increased its share of regional employment by over 2%. Both the agriculture and manufacturing sectors have declined by about 5% each.
- The changing nature of industry in the South East presents challenges for re-skilling people currently in the workforce.

Agency Supported Employment by Sector 1995-2005



- Total agency supported employment across all sectors in 2005 in the South East region was 28,480 up from around 27,000 in 1995. While, there has been significant growth in pharmaceuticals, medical devices and software sectors over the period 1995-2005, the key employers continue to be in the food and engineering sectors (both of which have shown some decline).
- The non-metallic mineral sector shows a relatively high level of employment in this region driven by the glass and crystal manufacturing sector based in Waterford.³
- There are two Institutes of Technology in the region, Waterford Institute of Technology and IT Carlow, which are described in detail below.

³ Non-metallic mineral also includes the manufacture of concrete and masonry products not already accounted for in mining and quarrying subsection.

Institute of Technology Carlow

I. Strategic Development

"The Institute of Technology Carlow is dedicated to excellence in higher education through the provision of programmes leading to internationally recognised awards.

The Institute is committed to ensuring that its learners and other members are afforded the opportunity to develop to their full potential in a professional and supportive environment.

The Institute is committed to research and to enterprise related activities, and to advancing the educational, cultural, social and sustainable economic development of South Leinster and the wider community."

- *Institute of Technology Carlow Mission Statement*

Current Strategic Plan

The Institute's Strategic Plan for 2005-2009 focuses on eight key areas.⁴

1. *Academic Portfolio*

To be recognised as a higher education institute of international reputation and teaching excellence that facilitates learning within a high quality supportive environment.

2. *Learner Population*

To become the third-level applied education and training provider of choice for learners in South Leinster.

3. *Research and Development*

To enhance its reputation as a research-informed educational institute through expansion of its research activities across all primary degree-level specialisms and through the strategic development of its emerging research centres.

4. *Lifelong Learning*

To provide quality educational opportunities for lifelong learning that meet the varied needs and demands of all learners, consistent with the National Framework of Qualifications.

5. *Organisational and Physical Infrastructure*

⁴ IT Carlow Strategic Plan 2005-2009, December 2004

To develop an organisational and physical infrastructure capable of supporting its educational, social and employment needs.

6. Regional Development

To become a key driver for balanced economic development within South Leinster, informed and enhanced by its national and international activities and collaborations.

7. Social and Cultural Development

To continue to contribute to the social and cultural development of South Leinster through interaction and involvement with the wider community.

8. Partnership

To create, through a partnership approach, a quality workplace environment where involvement and contributions of all staff is encouraged and valued in developing and achieving its strategic objectives.

Strategic Review/ Planning

The strategic planning process for the 2005-2009 Strategic Plan was co-ordinated by the Head of Development and involved a two-year period of analysis. Institute-wide workshops were held involving staff, student representatives, governing body members, union representatives and external stakeholders. A Strategic Planning and Review Steering Group has been set up to review progress on an annual basis and address deviations from the plan or make necessary modifications to the plan in light of the changing environment, stakeholder views and external evaluations.

II. Education and Training

Founded in 1970, the Institute operates across three schools:

- Business & Humanities (Business Communications, Management & Humanities)
- Science & Computing (Computing, Networking, Science & Health)
- Engineering (Built Environment, Electronic, Mechanical and Aerospace Engineering)

In addition IT Carlow has been providing courses in Business, Humanities, Engineering and Computing at its Wexford Campus since 1995. In 2004/5 the Wexford Campus had 213 enrolments in courses up to Level 8.

Student Population

In 2004/5, IT Carlow had a total student population of just under 3,800. This can be viewed by faculty and level in the table below:

Dept./ School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by School
		Taught	Research					
Business & Management	0		5	132	538		675	17.85%
Humanities & Design	1		2	225	291		519	13.73%
Engineering	1		3	45	563		612	16.19%
Science & Health	10		12	55	214		291	7.70%
Computing & Networking	3		5	169	218		395	10.45%
Part-Time Students				83	471	735	1,289	34.09%
Total	15		27	709	2,295	735	3,781	100.00%
% of Total Population by Level	0.4%	0.0%	0.7%	18.8%	60.7%	19.4%	100.0%	

Table: Student Population 2004/5 by Faculty and Level (accredited courses⁵)⁶

A number of changes in field and level of study for fulltime students can be noted between 2003/4 and 2004/5:

Department	Numbers 2004/5	Numbers 2003/4	% change on year	Level	Numbers 2004/5	Numbers in 2003/4	% change on year
Business & Management	1,342	1,439	-7%	10	15	5	200%
				9	27	27	0%
Humanities & Design	719	575	25%	8	709	582	22%

⁵ I.e. courses leading to an accredited qualification.

⁶ Excluding those on apprenticeship courses

Note Part-Time figures: Level 8 refers to students on the NUI-accredited BBS, the ACCA DipFM and CPA (Yr 4); Level 6/7 refers to professional bodies whose courses were deemed to be third level by the Institutes Academic Council and HETAC; Level 1-5 refers to professional bodies and third level educational providers whose courses were deemed not appropriate for Level 6 upwards on the Framework by the Institutes Academic Council.

Design			
Engineering	730	730	0%
Science &	363	340	7%
Health			
Computing &	627	764	-18%
Networking			
Total	3,781	3,848	-2%

Table: Changes in Student Population by Department from 2003/4 to 2004/5

7/6	2,295	2,501	-8%
1-5	735	733	0%
Total	3,781	3,848	-2%

Table: Changes in Student Population from 2003/4 to 2004/5

- In 2004/5 the majority of fulltime students were studying at Level 7/6 (73%), while the majority of part-time students were at Levels 1-5 (57%).
- Those studying Business and Humanities on both a full and part-time basis made up approximately 55% of all students while those in science and computing made up 26% and those studying engineering 19%.
- Fulltime students at Level 10 increased from 5 to 15 between 2003/4 and 2004/5. The main increase was in the area of science and health which went from having one student to 10 students at this level.
- In both years, there were 27 full-time students undertaking research masters.
- The number of students at Level 8 increased by 22% between 2003/4 and 2004/5 while those numbers at Levels 7/6 fell by 8%.
- There were no fulltime students at Levels 1-5 in either 2003/4 or 2004/5.
- There were 2,492 fulltime and 1,289 part-time students i.e. 66% fulltime, 34% part-time at the Institute in 2004/5.
- 72% of IT Carlow's intake came through the Leaving Certificate. Of the rest, 12% were international students, 10% were mature students and nearly 6% came through FETAC.
- The Institute also runs a number of apprenticeship courses:

<i>Trades 2004/5</i>	<i>No. of participants</i>	<i>% of Total</i>
Electrical	128	49.8%
Electrical Instrumentation	96	37.4%
Instrumentation	33	12.8%
Total	257	100.0%

Table: Apprenticeship courses participants

Looking at fulltime students within faculties, the following can be noted:

Business and Management

- The number of students at Level 9 increased from 3 to 5 between 2003/4 and 2004/5.
- In 2004/5, there were 132 students at Level 8, this was an increase of one third on the previous year. There was a 14% drop in enrolments at Levels 7/6 in 2004/5.

Humanities and Design

- One student enrolled at Level 10 in 2004/5. The number at students at Level 9 (research) remained unchanged across both years.
- The numbers studying at Level 8 increased by 25% between 2003/4 and 2004/5 while the numbers studying at Levels 7/6 increased by 12%.

Engineering

- There was one student at Level 10 and three at Level 9 in 2004/5, there were no students at these levels in the previous year.
- In 2004/5, there were 45 students at Level 8; this was a significant increase on the previous year which resulted mainly from an increase from 0 to 16 in those studying mechanical engineering.
- Students studying at Level 7/6 remained broadly constant between 2003/4 and 2004/5.

Science and Health

- As noted above there was a significant increase in the number of students at Level 10 from 1 in 2003/4 to 10 in 2004/5.
- There were 12 students at Level 9 in 2004/5, down from 16 in the previous year.
- The number of students at Level 8 increased by approximately 6% from 2003/4 to 2004/5.

Computing and Networking

- In 2004/5 there were 3 students at Level 10 and 5 students at Level 9, a drop of one at each level on the previous year.
- There were 169 students at Level 8 in 2004/5, approximately the same number as the previous year.
- Students at Levels 7/6 fell by 29% on the previous year.

Looking at part-time students the following can be noted:

- The numbers enrolled on a part-time basis dropped by 3% between 2003/4 and 2004/5.
- The majority of students in 2004/5 were studying at Levels 1-5 (57%) while 37% were studying at Levels 7/6, the remaining 6% were at Level 8.
- 52% of those enrolled on a part-time basis were studying Business, 18% were studying Computing, 16% Humanities, and the remainder were studying Engineering and Science.

Graduates

In 2004/5, 2,175 people graduated. These were split evenly between full and part-time students. The table below shows fulltime graduates split across the levels and faculties:

Dept./School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Dept./ School
		Taught	Research					
Business & Management	0	0	3	38	218	0	259	23.7%
Humanities & Design	0	0	0	75	152	0	227	20.8%
Science & Health	3	0	0	32	101	0	136	12.5%
Computing & Networking	0	0	0	79	84	0	163	14.9%
Mechanical & Construction Engineering	0	0	0	14	182	0	196	17.9%
Electronic Engineering	0	0	0	13	44	0	57	5.2%
Wexford	0	0	0	16	38	0	54	4.9%
Total	3	0	3	267	819	0	1,092	100.0%
% of Total Graduates by Level	0.3%	0.0%	0.3%	24.5%	75.0%	0.0%	100.0%	

Table: Total Fulltime Graduate 2004/5 by Faculty and Level (accredited courses)⁷

⁷ Excluding graduates from apprenticeship courses

Part-time graduates by level can be seen in the table below:

Level	Part-time Graduates 2004/5	% of Total Part-time Graduates by Level
10	0	0%
9	0	0%
8	59	5%
7/6	341	31%
1-5	683	63%
Total	1,083	100%

Table: Total Part-time Graduates 2004/5 by Level (accredited courses)

- The total number of graduates increased by 2% or 40 people on 2003/4. Within this, fulltime graduates were down by 2% on 2003/4 while part-time graduates increased by 6%.
- Nearly all fulltime graduates graduated at Levels 7/6 (75%) and Level 8 (24.5%).
- The bulk of part-time graduates graduated at Levels 1-5 (63%) with the remainder graduating at Levels 7/6 (31%) and Level 8 (5%).
- Half of engineering graduates went on to further study, as did two-thirds of business and humanities and science graduates. Across all departments, over 90% were progressing from Level 6→Level 7 or Level 7→Level 8.
- After those going to further studies, the bulk of Institute graduates went into employment.

Future Plans

- According to its Strategic Plan, the Institute is seeking a 15-25% increase in the number of standard CAO applicants over the duration of the Plan and intends to achieve this through new course development and enhanced promotion.
- It is seeking a 3% per annum increase in the numbers of non-standard students with a target of 15% of the student population to comprise international students by 2009.
- During the course of its Plan, IT Carlow intends to develop courses within a multimode framework and deliver courses through flexible methods and will examine the suitability of semesterisation. Modularisation is complete in the School of Business and Humanities and is nearing completion in the other two Schools.
- The Institute is interested in developing courses that are applied in nature and that are linked both to industry requirements and learners' needs, including postgraduate development.
- It is seeking to double the number of apprentices over the next number of years.
- It aims to expand student numbers at the Wexford campus and associated out-reach facilities over 600 by 2009.

III. Research Activity

Research Priorities

The Institute has identified the following research priority areas:

1. *Biotechnology and Molecular Environmental Science*
(incorporating the Molecular Environmental Science, Molecular Ecology and Nematode and Biocatalyst Technology Research Groups in the Department of Science and Health)
 2. *The Networks Research Group*
(School of Engineering)
 3. *The Design Centre*
(Department of Humanities)
- The Institute has been most successful in obtaining funding in the area of Biotechnology and Molecular Environmental Science. Under PRTLII, it was the lead institution for one round of funding totalling €1.2m for a research programme in Biotechnology and Molecular Environmental Science between 2000 and 2004 and a collaborative partner on another project in the same field with total funding of €27m (lead institution UCC) between 2003 and 2006.⁸
 - Other key sources of public funding have come from the EU, TSR funding from DES, IRCSET and SFI.
 - The Institute is developing a specialism within this field in bio-remediation and is also fostering links with other higher education institutions in Ireland such as UCC, NUI Galway and NUI Maynooth.
 - The Networks Research Group is concerned with networks for the provision of multimedia and multi-services. Among others, it has received support from Microsoft (Ireland), one staff member of whom is on IT Carlow's governing body.
 - The Design Centre's activities include research in collaboration with SMEs on sustainable development education tools. Linked to this, it has received funding from the EU to support the WINNOVATE programme, a joint project between IT Carlow and The National Centre for Product Design and Development Research, Wales.⁹
 - The Institute has delegated authority for all courses up to Level 8.
 - Over the period 2000-2005, there has been 43 academic staff involved in research at the Institute along with two post-docs and 69 research assistants. The majority of these have been in science and health.

⁸ HEA
⁹ itcarlow.ie

- IT Carlow had the following research outputs in 2005:

Dept./ School	Publications		Conference/ policy papers	Patents	Other
	Refereed	Non-refereed			
Engineering	2	2	15	2 ¹⁰	
Science & Health	6	10	8		
Computing & Networking	3		3		
Business & Humanities					15 ¹¹

- According to draft financial statements for year ended 31 August 2005, €1.6m in income was sourced from research grants and contracts.

Research Strategy

- In its Strategy Statement for R&D, the Institute asserts its intention to promote its research capabilities so as to enhance the quality and relevance of graduate output and skills, and the academic profile of the Institute as a whole.
- It seeks to attain an appropriate balance between demand-driven R&D and more strategic institutional R&D activities, to ensure that the Institute can further develop its existing research strengths into centres of excellence in a planned manner. To this end, research priorities have been identified as noted above and their development will be pursued. As part of this, the Institute wants to design, construct and equip purpose-designed physical facilities necessary to support its emerging research centres in the areas noted above.
- The Institute aims to increase research income from the private sector and national /international project-based competitive allocation programmes once it has increased its research capacity.
- IT Carlow also intends to develop inter-institutional research collaborations to exploit economies of scale and scope.
- Under its 2005-2009 Strategic Plan, it seeks to encourage the top 10% of students in relevant degree programmes to apply for Embark Research Scholarships.

¹⁰ Tensigraphic drophead and microvolume spectrometer.

¹¹ Applied product design research projects in conjunction with local industry.

IV. Collaboration

With Enterprise

- As noted above, the Institute has not experienced high demand for in-company training, seen largely as a result of the county's industrial context.
- An example of where it has taken place is its collaboration on electrical engineering training with Odlums in 2004/5 involving eight company staff and one Institute member of staff.
- Other types of engagement include consultancy work, e.g. for the engineering firm Iralco, and collaboration on research with Irish Skincare.
- In addition, the work under the Design Centre involves a number of SMEs.
- More broadly, the Institute's External Services Manager has supported, via the County Enterprise Boards, a range of business people through mentoring, consulting and project assessment activities.
- The Institute has increased its staffing to support this area in recent years through the appointment of an Enterprise Development Officer and a Head of Lifelong Learning.

With Others

- The Institute engages with a number of other Institutes of Technology and international higher education institutions on key areas of interest. For example on the latter, it is exploring the development of nursing courses in collaboration with a college in Davenport in the United States.
- With regard to the former, the Institute has linkages with IT Tallaght in the field of pharmaceuticals and on the Enterprise Platform Programme (EPP) and with Waterford Institute of Technology in the area of health sciences.
- Under the Strategic Innovation Fund, it is a partner in a €2m IT Tallaght led project on teaching, innovation and inclusive education.
- IT Carlow is also developing its health sciences links with regional hospitals, e.g. Kilkenny.
- A Level 8 course on Applied Social Studies in Community Care is being delivered on the Wexford campus in conjunction with the HSE.

V. Company Formation

Entrepreneurship Programmes

- IT Carlow previously directed people interested in intensive entrepreneurship support to the South East EPP (SEEPP) in Waterford.
- This year, for the first time, EPP funding has been secured from DES for IT Carlow to run a programme in co-operation with IT Tallaght.

Incubation Support

- IT Carlow's 840m² incubation centre was opened in September 2006. It complements the Campus Innovation Centre which was established in 1992. IT Carlow aims to integrate these centres to provide a feeder stream of new start-up companies.
- The Campus Innovation Centre has supported eight companies over the last five years in areas such as:
 - Environmental testing and solutions
 - IT and software
 - Computer manufacturing
 - Sunscreen manufacturing

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 326 FTE staff. Of these, 14 were in management, 123 in support and administration and the remainder were academic.
- Academic staff can be broken down across department/school as follows:

	Fulltime	Part-time	Total
Health & Science	23	2.82	25.82
Computing & Networking	31	1.31	32.31
Humanities & Design	26	4.66	30.66
Business & Management Studies	20	0.58	20.58
Electrical & Electronic Engineering	27	0.94	27.94
Mechanical & Civil Engineering	29	5.45	34.45
Wexford Campus	13	4.73	17.73
Total	169	20.49	189.49

Table: FTE Academic Staff by Department/School

Financial Resources

IT Carlow's draft financial statements for year ended 31 August 2005 show total funding of €25m of which

- 68% came from DES
- 19% from fee income
- 13% from other sources¹²

Physical Resources

- IT Carlow has 28,000 m² of existing space and 8,000m² planned space broken down into:

	Existing m ²	Planned m ²	Total m ²	% of Total
Teaching	15,000	4,000	19,000	52.7%
Research	400	2,000	2,400	6.7%
Incubation	1,100		1,100	3.1%
Administration	1,500	2,000	3,500	9.7%
Other ¹³	10,000		10,000	27.8%
Total	28,000	8,000	36,000	100.0%

- IT Carlow aims to work towards an overall space ratio of 10m² per whole time equivalent student.

¹² Other income includes: Superannuation Deductions Retained; Exam Fees; HEA IT Fund; Student Assistance/Disability Funds; Post-primary modern languages, EU Office, Sale of Fixed Assets 1,626,000)

¹³ Other space includes the Central Services Building and the Learning Resource Centre.

Waterford Institute of Technology

I. Strategic Development

“Waterford Institute of Technology will apply excellence in teaching, learning and research within an inclusive student centred environment to foster graduates of distinction who are ready to take or enhance their leadership role in business, the professions, industry, public service and society. The Institute will manage its hinterland as a learning region by empowering knowledge generation and knowledge transfer and is committed to the educational development of the region in a way that is reflective of its national and international aspects. The Institute will contribute to the economic, social and cultural development of the Southeast region and beyond.

Waterford Institute of Technology Mission Statement¹⁴

Strategic Plan

The Strategic Plan 2007-2010 is in the process of finalisation and sets out five major priorities for Waterford Institute of Technology (WIT):

1) *Regional Development*

To develop an internationally relevant and vibrant knowledge region that fosters an international exchange of ideas, technology and people.

2) *Governing, Financing and Operating Structures*

To create appropriate governance, financial and operating structures in line with international best practice to ensure the delivery of its strategic aims.

3) *Knowledge Creation and Transfer*

To create new knowledge in partnership with its region and to help its region use new knowledge to the benefit of economic, social and cultural development.

4) *Quality Improvements*

To place quality improvement as the centre of all its activities in an open and transparent manner and to continually review and enhance its operations.

5) *Learner and Graduates*

To create a learner of distinction recognised by the unique characteristics of its graduates and to empower them to develop through lifelong learning.

¹⁴ Waterford Institute of Technology Strategic Plan 2003-2006 Progress and Potential

Strategic Review/Planning

- Responsibility for the approval of the new Strategic Plan 2007-2010 rests with the governing body which includes external stakeholders across educational, social and commercial organisations.
- External stakeholders also feed into the strategic development process at other levels, e.g. involvement in internal committees such as the Research Council, Institute staff participation in committees/ task forces.
- The Institute has established a dedicated Office of Strategic Planning with responsibility for the co-ordination of strategy formulation and implementation across the Institute. It is putting in place an annual strategic planning cycle that entails each unit or section of the Institute reviewing, on an annual basis, a three year rolling plan.

II. Education and Training

Founded in 1970, the Institute operates across six schools:

- Business
- Education
- Engineering
- Health Science
- Humanities
- Science

Student Population

The following table illustrates the third level student population in 2004/5 by level and by field of study:

School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by School
		Taught	Research					
Business	8	56	23	1,189	351	0	1,627	22.7%
Education	0	24	0	442	866	57	1,389	19.4%
Engineering	0	24	0	319	650	0	993	13.9%
Health Sciences	4	0	0	600	269	0	873	12.2%
Humanities	2	0	20	269	1,179	0	1,470	20.6%
Science	11	0	43	202	544	0	800	11.2%
Total	25	104	86	3,021	3,859	57	7152	100.0%
% of Total Pop-ulation	0.4%	1.5%	1.2%	42.2%	53.9%	0.8%	100%	

by Level								
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Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)¹⁵

A number of changes in field and level of study on 2003/4 can be seen below:

Changes by School			
School	Numbers 2004/5	Numbers 2003/4	% change on year
Business	1,627	1,609	+1%
Education	1,389	1,875	-26%
Engineering	993	1,048	-5%
Health Sciences*	873	724	+21%
Humanities*	1,470	1,527	-4%
Science*	800	1,046	-24%
Total	7,152	7,829	-8%

Table: Changes in Student Population by School from 2003/4 to 2004/5

Changes by Level			
Level	Numbers 2004/5	Numbers in 2003/4	% change on year
10	25	26	-4%
9	190	187	+2%
8	3,021	2,596	+16%
7/6	3,859	4,253	-9%
1-5	57	767	-92%
Total	7,152	7,829	-8%

Table: Changes in Student Population by Level from 2003/4 to 2004/5

It can be noted that:

- *There was a phased re-allocation of students in 2004 and 2005 into the newly formed School of Health Science which resulted in student numbers being divided between these faculties.
- The School of Education represents those in part time adult and continuing education across different areas of study.
- In 2004/5, over 40% of students enrolled at WIT were in Business and Humanities. 20% were enrolled on adult education and professional development courses on a part-time basis, while 14% were in Engineering, 12% in Health Sciences and the smallest school was Science with 11% of enrolments (800 students).
- Over half were taking courses at Levels 7/6, over 40% at Level 8 and 3% of students were enrolled at Levels 9/10.
- All of the courses offered by WIT are accredited and modularised.
- Approximately 80% of the Institute's enrolments came through direct entry graduate admissions and 17% through non-standard admissions.
- In addition to the courses noted above, WIT runs a number of apprenticeship courses

Trades 2004/5	Number of Participants	% of Total
Bricklaying	238	31.9%

¹⁵ Excluding those on apprenticeship courses.

Electrical	317	42.5%
Motor Mechanics	95	12.7%
Fitting	96	12.9%
Total	746	100.0%

Table: Apprenticeship course participants

Looking within faculties, the following can be noted:

Business

- There were 8 students at Level 10 in 2004/5, up from 6 in the previous year.
- In both 2003/4 and 2004/5, there were 56 fulltime taught students at Level 9. There were 23 fulltime research students at Level 9 in 2004/5, up notably from 5 in 2003/4.
- There were 1,189 fulltime students at Level 8 in 2004/5, a slight increase on the previous year (1%).
- In the same year, fulltime students at Levels 7/6 fell by 5% on the previous year to 351.

Education and Professional Development

- In 2004/5 there were 24 part-time taught students at Level 9, down from 62 enrolments at this level in the previous year.
- There were 442 part-time students at Level 8 in 2004/5, a dramatic increase on the previous year when there were 118 students.
- Part-time student numbers at Levels 7/6 dropped by 11% between 2003/4 and 2004/5 to 866 students.

Engineering

- There were 24 fulltime taught students at Level 9 in 2004/5.
- In the same year, there were 319 fulltime students at Level 8 and 650 at Levels 7/6. This was approximately the same number at Level 8 and a 7% drop at Levels 7/6 on the previous year.

Health Sciences

- In 2003/4 and 2004/5 there were 4 fulltime students at Level 10 and none at Level 9 in the recently formed School of Health Sciences.
- In 2004/5 there were 600 fulltime students at Level 8, a 40% increase on the previous year, and 269 at Levels 7/6.

Humanities

- In 2004/5 there were 2 fulltime students at Level 10 compared to none in the prior academic year. There were 20 fulltime research students at Level 9 in 2004/5, up from 11 in the previous year.
- 269 students were enrolled fulltime at Level 8 in 2004/5 (down by 6%), while fulltime numbers at Levels 7/6 remained approximately the same in 2004/5 compared to 2003/4 (1,179).

Science

- With the phased re-allocation of students in 2004 and 2005 into the newly formed School of Health Sciences, enrolments in the School of Science naturally fell between 2003/4 and 2004/5.
- In 2004/5, there were 11 fulltime students at Level 10. The number of fulltime research students at Level 9 grew from 25 to 43 on 2003/4, with the majority of these expected to graduate at Level 10.

Graduates

In 2004/5, 3,126 people graduated across the following levels and schools as can be noted in the table below:¹⁶

School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by School
		Taught	Research					
Business	0	65	7	387	176	0	635	20.3%
Education	0	8	0	220	228	79	535	17.1%
Engineering	0	6	5	126	320	0	457	14.6%
Health Sciences	0	0	2	207	154	0	363	11.6%
Humanities	0	0	6	205	398	0	609	19.5%
Science	4	0	15	178	330	0	527	16.9%
Total	4	79	35	1,323	1,606	79	3,126	100.0%
% of Total Graduates by Level	0.13%	2.5%	1.12%	42.3%	51.4%	2.5%	100.0%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)

- 40% of graduates were split evenly between Business and Humanities and the rest were divided among the other four schools.
- 51% of students graduated at Levels 7/6 and 42% at Level 8.
- In 2005 WIT conducted a graduate destination survey. Of the 313 respondents, 56% were in employment, 38% went on to further study, 1% were seeking employment and 4% were unavailable for study or employment.

¹⁶ These figures do not include those completing apprenticeship courses.

Future Plans

- Over the last number of years, WIT's percentage growth in fulltime students has been steady. Looking ahead to the next five years, it is expected that:
 - Major growth will take place at Levels 9 and 10 up to approximately 15-20% of total stock,
 - The numbers at Levels 6-8 will remain level,
 - The Institute's role in apprenticeships will remain steady,
 - In total, an extra 1,500 students are expected.
- In the latter half of 2006, the Governing Body of WIT made a submission seeking university designation. An independent expert has been appointed to conduct a preliminary assessment of the submission with a view to informing Government consideration of whether a formal statutory review should be initiated to consider the application.¹⁷
- Enhancement of Institute capability in blended learning is viewed as important over the coming years.

III. Research Activity

Research Priorities

Waterford Institute of Technology has identified the following as research priority areas:

1. Telecommunications
 2. Bio/Pharmaceutical Science
 3. Health Sciences
- Annual expenditure on research (and consultancy) at the Institute has increased from €0.8m in 1997 to €7.2m in 2005.
 - An internal review on the prioritisation and categorisation of research centres is currently underway. The largest research centre is the Telecommunications Software and Systems Group (TSSG). Founded in 1996, TSSG's main area of research is communications software services encompassing emerging architectures for management of complex telecommunications and Internet systems as well as the next generation service development and deployment. It has 115 staff and students, 26 of whom are involved in basic research, 33 in applied research and 46 working on innovation and commercialisation, with the remainder providing central support.¹⁸ TSSG is the lead partner in the PRTL-funded M Zones Smart Space Management (total funding €5m). Up to March 2006, it had secured approximately €3.5m from Enterprise Ireland in research funding.¹⁹ As of mid-2006, it received €4.5m from Science Foundation Ireland, €3.5m of which comprises support for a joint research programme with Motorola on autonomic communications.

¹⁷ www2.wit.ie/news/NewsEventsArchive/MainBody,8238,en.html (26 January 2007)

¹⁸ www.tssg.org/ (26 January 2007)

¹⁹ Enterprise Ireland

- WIT is also a partner in three other PRTL I initiatives²⁰:

Field	Initiative	Total Initiative Funding
Physical Sciences & Technology	Materials and Surface Science Institute	€15.8m
Environment & Natural Resources	Institute for Bioengineering & Agroecology	€5.5m
Social Sciences & Humanities	National Institute for Regional & Spatial Analysis	€2.7m

- It has received further funding from Enterprise Ireland in the region of €2.5m up to March 2006, including €1.25m for Materials Characterisation and Processing under the Applied Research Enhancement Initiative.
- In addition, the Institute's research groups have won significant tranches of funding from a wide range of other national sources, including €2.6m from 2001 to 2005 (inclusive) under DES's TSR Strands I and III²¹, and €1.9m from Failte Ireland in 2005 for a collaborative project with Cork Institute of Technology on Country-based Tourism Learning Networks.
- Internationally, WIT received total funding of €4.4m under the EU's Sixth Framework Programme (FP6), 95% (€4.2m) of this went to information society technologies and the remainder to human resources and mobility (€0.2m).²² It also secured €1.4m in the area of mathematics and computer sciences under the European Union's eTEN programme.
- The Institute has delegated authority for all taught programmes at Level 9 and for Level 9 research programmes in the Schools of Business, Humanities, and Science and in the areas in Mechanical Engineering and Electronic Engineering. WIT has delegated authority at Level 10 for programmes in the School of Science.
- There are 270 staff engaged in research activity at WIT. The majority of these are in the School of Science (138), followed by the School of Humanities (51) and the remainder are split between the other schools.

²⁰ HEA

²¹ DES

²² Forfás database as of 9 January 2007

- The Institute produced the following outputs in 2005:

	Refereed Publications	Conference/ Policy Papers
Business	21	18
Education & Professional Development	12	3
Engineering	0	8
Health Science	10	12
Humanities	31	21
Science	47	35
Library/Careers	2	4
Total	123	101

Research Strategy²³

- WIT has a dedicated School of Research and Innovation, whose head operates at Executive level within the Institute. Its Research Support Unit provides assistance to researchers who are directly engaged in funded research projects.
- The Institute's research strategy and objectives can be summarised as follows:
 - To identify and promote areas of strategic research importance where the Institute has the potential to take a leadership role at national and international level.
 - To create an environment in which internationally accredited high quality research is encouraged and supported through the availability of appropriate facilities and support systems.
 - To enhance the reputation of the Institute as a leading international education establishment through quality publications, successful access to competitive funding, international research partnerships and knowledge transfer.
 - To attract leading academic researchers, excellent young post doctoral researchers and quality postgraduate students from across the world.
 - To create regional economic impact through the transfer of knowledge and technical know-how.
- It is currently finalising the details of its 2007-2010 strategy. Part of the Institute's plan over the coming period will be, as has been achieved with TSSG, to reach critical mass in identified niche areas, e.g. separation science.

²³ /www2.wit.ie/Research/ (26 January 2007)

IV. Collaboration

With Enterprise

- The Industry Services Office within the School of Research at WIT promotes and facilitates interaction between the Institute and external organisations.
- WIT collaborates with a wide range of companies on Enterprise Ireland-supported Innovation Partnership projects.
- As mentioned above, TSSG is working, supported by SFI, with Motorola, Inc., research laboratories in Chicago in the area of autonomic communications. In addition the TSSG are collaborating on research nationally and internationally with a range of companies including Ericsson, Nokia, O2 Communications (Ireland) Limited and BEA Systems, Inc.
- The Separation Science research group has research collaborations with Merck Sharpe Dohme Ireland and Glaxo SmithKline.
- In addition to collaborative research, the Institute engages with firms on training needs. It is estimated 65% of all WIT part-time students are company funded.
- For example, the Department of Chemical and Life Sciences delivers a Higher Certificate and a Bachelor of Science Degree in Good Manufacturing Practice and Technology on a part-time basis for employees from companies including Dawn Meats Group, Glanbia plc, Bausch & Lomb, Inc., Genzyme Corp., IVAX Corp., GlaxoSmithKline plc, Guidant Corp. and Merck Sharpe & Dohme Ireland.
- The School of Business has developed a Level 8 course in Business (Management) in collaboration with AOL.
- In a similar manner, the Department of Computing Maths and Physics has put together a Level 8 course in Business Systems Analysis specifically for SunLife. This programme has been delivered to a total of 16 company personnel.
- Student placements are a core element of WIT's degree programmes with 25 courses in 2005/6 containing a work placement element and one being included in the majority of all new courses being developed.
- WIT has established a number of Advisory Boards comprising of representatives from industry and commerce, e.g. the Foundation Board, The School of Business Advisory Forum and the Advisory Board for the Research & Innovation Centre.
- Sam McAuley, of McAuley Chemist Group, was appointed the CEO in Residence at the School of Business in January 2007. Running for a two-year period, his role will focus on developing closer working partnerships with industry practitioners and involvement with students on a range of issues.²⁴

²⁴ www2.wit.ie/news/NewsEvents/MainBody,8549,en.html 26 January 2006

With Others

- WIT engages with a range of other actors on research, training and regional issues.
- It has multidisciplinary links with the Health Services Executive (HSE), e.g. its research training programme to healthcare workers and its co-ordination of a series of master classes for HSE hospital managers on healthcare management.
- In collaboration with Teagasc, WIT has developed a Postgraduate Diploma in Farm Financial Management that is delivered over 2 years in block sessions, both on campus and in a number of locations throughout the country.
- Researchers at WIT are working with Waterford Regional Hospital (WRH), e.g. the Macular Pigment Research Group collaborates with researchers from WRH and researchers in the School of Engineering have links with WRH orthopaedic consultants examining materials for biomedical applications.
- The Institute, in particular in the School of Humanities and the School of Business, works with Fáilte Ireland. Staff from the WIT Waterford Crystal Centre for Marketing Studies are currently engaged in a three year research and training initiative with Fáilte Ireland (€1.8m contract) aimed at developing and delivering a business development programme to 140-160 tourism providers each year in the South East and South West regions.
- It also engages with other agencies, e.g. regular reviews of activity with Enterprise Ireland.
- The School of Education and Professional Development collaborates with Enniscorthy Enterprise Support Unit to deliver a range of further and higher education programmes in Wexford. The Centre Manager, a WIT employee, co-operates with Wexford County Enterprise Board and County Wexford Partnership to deliver education and training programmes for SME owners and industry in the Wexford area. WIT also collaborates at regional level with the South East Regional Authority, SEBIC, IBEC, the County Development Boards, Chambers of Commerce and the County Enterprise Boards (CEBs).
- Furthermore, it is part of the Special Task Force set up to aid economic development in the county. As part of this, in 2006 the Institute began delivering its Executive MBA programme in Waterford County Council Offices to over 20 people.
- Starting in 2002, WIT has delivered a conference series throughout the region on topics relating to regional development and the knowledge economy.

V. Company Formation

Entrepreneurship Programmes

- The Centre for Entrepreneurship at WIT runs a number of programmes supporting business start-up, development and growth.²⁵
- The South East Enterprise Platform Programme (SEEPP) is run by the WIT Centre for Entrepreneurship in conjunction with Enterprise Ireland and Tipperary Institute. From 2002-2004 there were 54 participants on the SEEPP, 32 of whom secured Enterprise Ireland CORD funding. In 2005 there were 20 participants, 8 of whom secured Enterprise Ireland CORD funding.
- The Enterprise START Programme, run in conjunction with Enterprise Ireland, was due to commence in October 2006 with participants eligible for FÁS funding.
- The [Female Entrepreneurship](#) Programme (FEIW), a programme for women in business, commenced in September 2005 with 20 participants. It is run in partnership with the University of Aberystwyth with funding under INTERREG.
- WIT also delivers a part-time Higher Certificate in Business Studies in Business Enterprise Development in conjunction with Wexford, Laois and Wicklow CEBs. There were 330 participants on this programme across 2003/4 and 2004/5. In 2005/6 there were 124 participants.
- WIT's Postgraduate Certificate in Teaching Enterprise is designed for secondary school teachers teaching enterprise. The programme, run in conjunction with Celtic Enterprises Wexford, was delivered on a part-time basis to 22 participants in 2005.

Incubation Support

- WIT's Research & Innovation Centre was opened in 2005 and comprises nearly 1,500m² of space. The centre also has an additional 650m² of space separately funded under PRTLTI to host the TSSG.
- As of mid-2006, there were 8 occupant companies (i.e. 65% occupancy rate) with 15 employees and 10 personnel contracted from the TSSG. The companies operate in areas such as
 - Software development tools
 - e-Commerce
 - e-Learning
 - Data management
 - Telecommunications
 - Business systems
- It is estimated that 40% of companies originated in TSSG and 50% came through SEEPP.

²⁵ www2.wit.ie/SchoolsDepartments/SchoolofBusiness/CFE/EnterpriseProgrammes/ 26 January 2006

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 765 FTE staff, four of whom were in management and 280.5 of whom were in support and administration.
- Academic staff can be broken down across faculties as follows:

	Fulltime	Part-time	Total
Business	85.78	0.55	86.33
Education	17.26	25.17	42.43
Engineering	85.27	2.21	87.48
Health Sciences	45.51	1.89	47.4
Humanities	120.25	5.18	125.43
Science	89.85	1.39	91.24
Total	443.92	36.39	480.31

Financial Resources

For the financial year ended 31 August 2005, WIT's total funding amounted to €63m, of which

- 45% came from DES
- 20% from fee income
- 16% from research and self-financing activity²⁶
- 2% from the Health Service Executive
- 17% from other²⁷

²⁶ Income sources include: International activities; EU research programmes; national research programmes; and, consultancy.

²⁷ Income sources include: Student Registration Charge €4.4m; Superannuation Deductions Retained €2.2m; Sales Disposal €3.3m; Bank Deposit Interest €115,000; Exam Administration Income €134,000; Higher Education Authority €45,000; Sale of Class Materials €51,000; Secondment costs €10,000; Adult Education Project Related Income €45,000; Sundry Income €269,000.

Physical Resources

- WIT has just over 50,000m² of existing and planned space broken down into:

	Existing m ²	Planned m ²	Total	% of Total
Teaching	15,722	4,351	20,073	40%
Research	1,150	0	1,150	2.3%
Incubation	1,750	0	1,750	3.5%
Administration	1,140	75	1,215	2.4%
Other	22,759	3,234	25,993	51.8%
Total	42,521	7,660	50,181	100%

- WIT is progressing its move to its 170-acre Carriganore campus. This will house its corporate headquarters, research and innovation activities and graduates along with a student village, and sports and recreation facilities.²⁸ The Research & Innovation Centre is already located at Carriganore. It is intended that once this second campus is completed, the current one will house all undergraduate student activities.

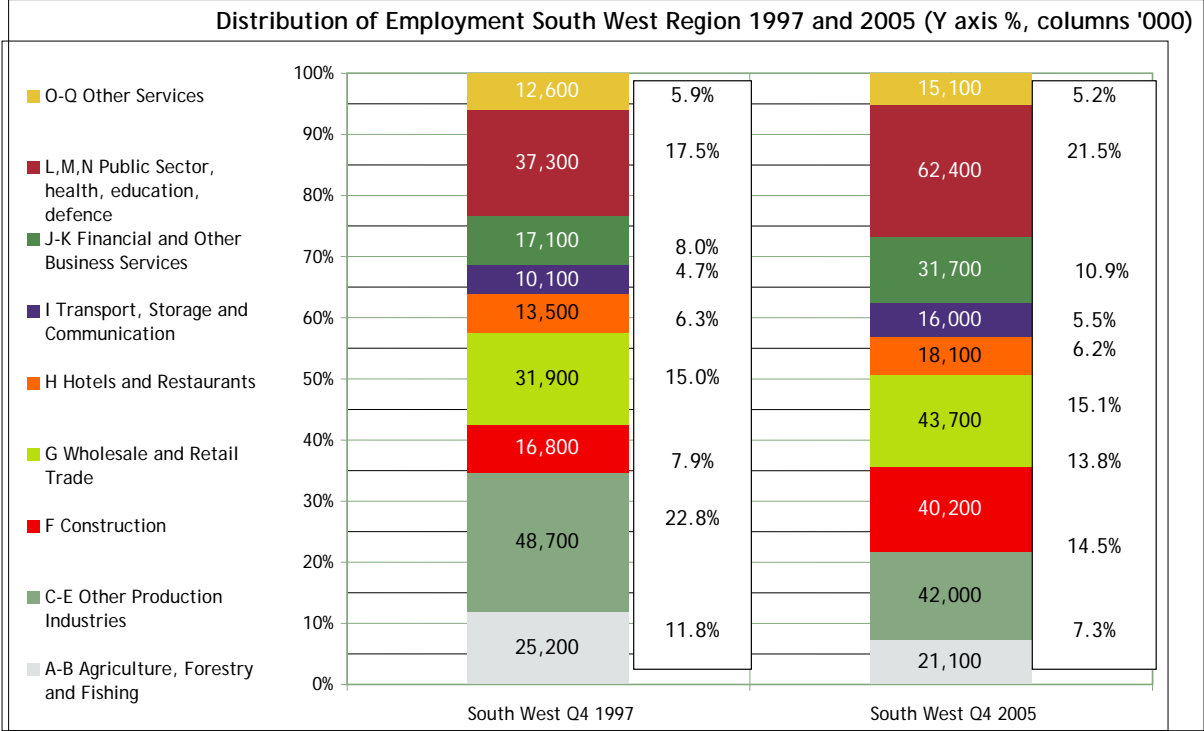
²⁸ www2.wit.ie/AboutWIT/MoreaboutWIT/ (29 January 2007) and WIT meeting 20 October 2006.

South West Region

The South West comprises counties Cork and Kerry. Cork has been designated as a Gateway city in the National Spatial Strategy and, with a population of 119,143, is the second largest city in the Republic after Dublin. Other urban centres designated as Hubs in the region are Tralee and Killarney in County Kerry and Mallow in County Cork.

Some points of note:

- The labour force numbers some 301,000, and unemployment as at Q4 2005 was among the lowest in the country at 3.6%, considerably below the national average of 4.4% for the same period.
- In 2003, the South West generated €24,208m (or 19.4%) of national Gross Value Added (GVA), making it the second most productive region that year after Dublin, and giving its inhabitants the highest GVA per capita in the country at €41,129²⁹. Manufacturing and construction contributed 57.3% to the region’s total GVA, the services sector 39.9%, while agriculture, fishing and forestry provided the remainder of 2.8%. The respective contributions of the services and manufacturing sectors represents a reversal of the national position, reflecting the stronger position of manufacturing in the region relative to the national average. This can be explained to a large extent by the predominance of major pharmachem facilities in the area.
- Regarding educational attainment, the South West comes in just fractionally below the national average. In terms of the workforce, 30.08% of those employed in the South West hold a third level qualification, compared to 30.6% nationally.



²⁹ The extremely high value-added nature of some of the industries based in the region may skew this figure somewhat.

Agency supported employment in the region fell from 18.1% of the total in 1995 to 15.9% in 2005, reflecting the national trend over the same period. This can be accounted for by strong increase in sectors not usually supported by the agencies, such as construction and the public sector.

Key growth industries supported by the development agencies in the region include pharmachem, medical devices and software, although the food, beverage and tobacco industries employ the highest number in real terms. Since 2005, the region's enterprise base has increased in diversity with the emergence of more service oriented activities including shared services centres, technical support centres and financial services. Key employers include multinational companies such as Pfizer, EMC, Apple Computer, Boston Scientific and Schering Plough, and indigenous players including Kerry Group, Dairygold, Goldenvale and Fexco.

In terms of higher education, the South West hosts one university in Cork and two Institutes of Technology, one in Tralee and one in Cork.

University College Cork (UCC) had a total student population of some 15,500 in 2005. This figure includes almost 3,000 postgraduate students. Teaching staff number 764, while another 710 are employed in a research capacity. The University offers courses in a broad range of subjects. Major research areas include Pharmacology, Biological and Analytical Chemistry, Biosciences, Informatics and Environmental studies. These fields support the industrial base of the region. The University is the recipient of a large amount of research funding, and last year it raised €62.4 million from public and private sources. The University's flagship research centre is the Tyndall Institute, which employs approximately 275 research staff working in areas such as 'photonics, electronics, materials and nanotechnologies'.

The two Institutes of Technology in the region are profiled in detail below.

Cork Institute of Technology

I. Strategic Development

“To provide student-centred education with a career focus for the benefit of the personal, intellectual and professional development of the student and for the benefit of the whole of society”

- *Cork Institute of Technology Mission Statement*³⁰

Current Strategic Plan

Cork Institute of Technology’s (CIT) Strategic Plan 2005-2010 sets out the following strategic goals:

1. To develop and enhance CIT and its academic programmes while ensuring inclusive access to learning opportunities; that development is in line with regional and national needs; and that the unique range of programmes and disciplines within CIT are maintained.
2. To further develop and enhance the role of CIT in the economic, social and cultural life regionally, nationally and internationally.
3. To build productive partnerships and strategic alliances based on mutual understanding and cooperation with selected local, national and international partners.
4. To foster and develop excellence in teaching and learning which will underpin CIT’s leadership in the provision of student-centred, career-focused education.
5. To further develop the research, innovation and technology transfer activities of CIT through the creation of a carefully focused research and development strategy. This strategy intends to ensure that these activities are sustainable, productive and impact positively on the teaching and learning activities of the Institute.
6. To increase awareness of CIT, its programmes and its other activities through effective promotion and advocacy of CIT. To enhance the service provided to staff, students, and others, supported by effective communication and consultation.
7. To foster a culture of quality through effective initiatives and systems.

Strategic Review/ Planning

Preparation for the 2005-2010 Strategic Plan began in September 2004 and the process was divided into the following four phases:

1. General consultation and framework document,
2. Strategic planning workshops (18 held),
3. Draft strategic plan and final consultation,
4. Governing body approval and strategic plan launch.

³⁰ Cork Institute of Technology Strategic Plan 2005-2010

There will be a mid-term review and revision of the Strategic Plan in 2007. This will review the progress of implementation of all the strategic objectives and determine if there should be modifications to existing objectives and if any new objectives need to be added to the plan.

II. Education and Training

With its early origins in the Royal Cork Institute (established 1803), CIT developed from the Crawford Municipal Technical Institute (1912) which became Cork Regional Technical College in 1974 and then amalgamated with the Cork School of Music and the Crawford College of Art and Design going on to become Cork Institute of Technology in 1997. It operates across six faculties and colleges:

- Art (Crawford College of Art & Design)
- Business and Humanities
- Engineering
- Music (Cork School of Music)
- Nautical Studies (National Maritime College of Ireland)
- Science

Student Population

In 2004/5, CIT had a total student population of just over 10,200 enrolled on courses at NQF Level 6 and upwards as well as just over 4,000 studying music part-time whose courses are in the process of being placed on the NFO between Levels 1 and 5: giving a total of just over 14,513. This can be viewed by field and level in the table below:

Dept./ School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by Faculty/College
		Taught	Research					
Art & Music	1	84	4	78	266	4,161	4,594	31.7%
Business & Humanities	2	2	7	617	3,926	0	4,554	31.4%
Engineering	17	0	39	559	3,324	0	3,939	27.1%
Science	18	27	37	301	1043	0	1,426	9.8%
Total	38	113	87	1,555	8,559	4,161	14,513	100.0%
% of Total Population by	0.3%	0.8%	0.6%	10.7%	58.9%	28.7%	100.0%	

Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)³¹

³¹ These figures do not include those completing apprenticeship courses.

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Changes by Faculty/College			
Department	Numbers 2004/5	Numbers 2003/4	% change on year
Art & Music	4,594	4,620	-1%
Business & Humanities	4,554	4,145	+10%
Engineering	3,939	3,791	+3%
Science	1426	1,383	+ 3%
Total	14,513	13,939	+4%

Table: Changes in Student by Faculty/ College from 2003/4 to 2004/5

Changes by Level			
Level	Numbers 2004/5	Numbers in 2003/4	% change on year
10	38	23	+65%
9	200	150	+33%
8	1,555	1,393	+12%
7/6	8,559	8,129	+5%
1-5	4161	4,244	-2%
Total	14,513	13,939	+4%

Table: Changes in Student Population by Level from 2003/4 to 2004/5

- There were over 4,000 part-time students and just over 6,200 fulltime students at Levels 6 and above, i.e. 39% part-time and 61% fulltime in 2004/5.
- Nearly 85% of these students were studying at Levels 7/6.
- Almost 45% of them were studying Business and Humanities (over 4,500), with 52% studying Science and Engineering (over 5,300). The remainder were studying Art and Music.
- As noted above, the Institute had in the region of a further 4,000 students studying music part-time whose courses are currently being placed on the NFO at Levels 1-5.
- The Nautical Studies Department in CIT moved to the new National Maritime College of Ireland in October 2005. This constituent College of CIT is the designated national centre for non-military education and training of personnel for the Irish Navy and the Merchant Navy.
- The numbers studying at Level 10 in 2004/5 increased by 65% on the previous year. This was mainly due to a strong increase in Engineering Level 10 enrolments (from 6 to 17).
- The majority of CIT full-time students came through the CAO system.

In addition to the above courses, the Institute also runs a number of apprenticeship courses:

Trades 2004/5	No. of participants	% of Total
CERT/Hospitality	406	14.7%
Heavy Vehicles	96	3.5%
Motor Vehicles (Light)	138	5%
Construction Plant Fitter	96	3.5%
Carpentry/Joinery	384	13.9%
Plumbing	384	13.9%
Painting/Decorating	96	3.5%
Plastering	95	3.5%
Cabinet Making	96	3.5%
Brickwork	96	3.5%
Electrical	385	14%
Refrigeration/AirCon	48	1.7%
Welding/Fabrication	298	10.8%
Fitting/Turning	140	5%
Total	2,758	100.0%

Table: Apprenticeship courses participants

Within Faculties, the following can be noted:

Art & Music

- In 2004/5 there were 89 students at Levels 9/10, 84 of whom were undertaking taught masters (63 on a fulltime basis and 21 on a part-time basis). This was an increase of 170% on 2003/4 (33 on a fulltime basis at Level 9).
- All 78 students at Level 8 were studying on a fulltime basis, a drop of 11% on the numbers at this level in the previous year.
- The 4,161 students noted at Levels 1 to 5 are - as discussed above - studying music part-time.

Business and Humanities

- In 2004/5 there were two students at Level 10 both studying on a part-time basis, there was one student studying on a fulltime basis at this level in the prior year.
- There were 9 students at Level 9 in 2004/5 and 2003/4.
- There were 617 students at Level 8 (60% fulltime, 40% part-time) in 2004/5, an increase of 7% on the previous year.
- There were 3,926 students (86% of total Business and Humanities students) at Levels 7/6 in 2004/5, a 10% increase on the prior year. In both years, enrolments were broadly evenly split between full-time and part-time.

Engineering

- In 2004/5 there were 17 fulltime students at Level 10 which was a 183% increase on the prior year.
- There were 39 fulltime research students at Level 9 in 2004/5, an increase of 3 on the previous year.
- 559 students were enrolled at Level 8 in 2004/5; 50% of whom were part-time. The numbers studying at this level on a fulltime basis increased by nearly 35% on the previous year while those studying on a part-time basis increased by 28%.
- Around 85% (3,324) of total Engineering students were studying at Levels 7/6 in 2004/5 and just over 37% of these were studying on a part-time basis.

Science

- There were 18 fulltime students at Level 10 in 2004/5, an increase of two on the prior year.
- In the same year, there were 37 fulltime research students at Level 9, an increase of 16% on the previous year, and 27 studying for a taught masters.
- There were 301 students at Level 8 in 2004/5, approximately the same number as in the previous year, most of whom were studying on a fulltime basis.
- 75% of the 1,043 students at Levels 7/6 were fulltime enrolments in 2004/5. The number of full-time students at this level dropped by 5% on the prior year. However, the number of part-time students at this level increased by 48%.

Other Training Activity

- The Institute provides training opportunities for those in employment and this is recognised as a growing area of activity for it.
- Courses are marketed at both individuals and companies, with the Institute identifying three broad routes to education for people in the workforce:
 1. Driven by individuals
 2. Educational requirement identified by company/ group of companies
 3. Contract course, i.e. very bespoke training
- In addition to the enrolments noted above, professional body qualifications are provided. For example, the Business Department delivers chartered accountancy training and the Engineering Department offers Society of Manufacturing Engineers qualifications.
- Other courses include the Maritime College's course in Proficiency in Survival Craft and rescue boats for Irish Ferries.

Graduates

In 2004/5, 3,292 people graduated across the following levels and faculties as can be noted in the table below:

Dept./School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Level
		Taught	Research					
Science	6	14	5	394	154	0	573	17.4%
Business & Humanities	0	0	8	922	561	0	1491	45.3%
Engineering	1	0	15	427	407	0	850	25.8%
Art & Music	0	44	3	183	148	0	378	11.5%
Total	7	58	31	1,926	1,270	0	3,292	100.0%
% of Total Graduates by Level	0.2%	1.8%	0.9%	58.5%	38.6%	0.0%	100.0%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)³²

- This was up by 18% or just over 500 people on 2003/4.
- The bulk of graduates came from Business and Humanities (45%) and Engineering (26%). Most students graduated at Level 8 (59%) and Levels 7/6 (39%) in 2004/5, somewhat the opposite to the previous year when 64% graduated at Levels 7/6 and 33% at Level 8.

Future Plans

- Under the Strategic Plan 2005-2010 it is projected that the total number of students registered will grow by 30%.
- The Institute is in the process of introducing semesterisation and modularisation.
- This is an important element of its growing focus on education for the employed, as is its accreditation of prior learning (APL) policy development.
- To enhance flexibility in its delivery methods, it aims to develop programmes and structures for open and distance learning and e-learning.³³ For example, off-site training in business courses up to degree level is being delivered at Clonakilty Technology Park.
- In addition, it states its objective under the Strategic Plan 2005-2010 that programmes and courses be developed in line with regional and national skills needs as defined by government and that external stakeholders' input to course development and review be increased.
- The Institute also intends to develop programmes and courses so that each third level student is afforded the opportunity to obtain an honours degree at a minimum.
- It aims to facilitate student and staff participation in mobility programmes and to increase recruitment of overseas students.³⁴

³² These figures do not include those completing apprenticeship courses.

³³ Strategic Plan 2005-2010

III. Research Activity

Research Priorities

The Institute has identified the following strategically important research clusters:

1. Wireless System Technologies
 2. Food Technology
 3. Photonics
- Its Adaptive Wireless Systems Group undertakes both applied research in collaboration with industry (such as Motorola, Siemens and Nortel Networks) and more fundamental research in conjunction with Waterford IT, Trinity College Dublin, University College Dublin and a number of international universities. It has been successful under Enterprise Ireland's Applied Research Enhancement Initiative (for embedded computing) and the agency's industry-driven research network (in co-operation with UCC).
 - CIT has also achieved notable results in PRTL. It is the lead partner for one round of funding totalling €2.4m (2001-2004) for ecotoxicology and waste production research.³⁵ It is a collaborative partner on PRTL projects in
 - Environmental Research Institute (total funding €27m, 2001-2004, led by UCC),
 - Smart space management (total funding €4.9m, 2002-2006, led by UCC)
 - The National Nanofabrication Facility at Tyndall National Institute (total funding €27.7m, 2002-2006, led by UCC).³⁶
 - Under FP6, CIT received total funding of €411,000 (as of 9 January 2007), €393,000 of which went to information society technologies.³⁷
 - The Institute's activity in biotoxins and proteomics has grown out of its work in analytical chemistry. It specialises in the isolation of new toxins and the development of new analytical protocols for the determination of micro-organic contaminants in the environment and food.³⁸ This work has now been extended to include researchers from the Department of Biological Sciences.
 - It has delegated authority up to Level 9 in all areas except for Tourism and Catering where a Level 8 qualification is currently being developed. It has delegated authority for Level 10 in
 - Science (Biology, Chemistry and Physics)
 - Electronic Engineering
 - Mechanical and Manufacturing Engineering
 - In addition to the research priorities identified above, the Institute assesses opportunities for development in new and emerging areas, e.g. in business and humanities and maritime studies. It has also been successful in a range of other research funding initiatives, both national and international, e.g. SFI, IRCSET, DES/TSR and the EU Framework Programme.

³⁴ Ibid.

³⁵ HEA

³⁶ Ibid.

³⁷ Forfás database as of 9 January 2007

³⁸ www.cit.ie

- On an FTE basis, 56 staff are engaged in research activity, with 27 in engineering the majority of which are in electronics engineering (14), 22 in sciences, and 7 in business and humanities.
- The following outputs in 2005 can be noted:

School	No. of Publications	No. of conference/ policy papers	No. of patents	Other
Engineering	8	30	2	18
Science	27	33	1	18
Business & Humanities	14	14		6

- 6% (€4.7m) of total income for year ended 31 August 2005 came from research and development, consultancy and commercial training from both commercial and state sources.

Research Strategy

- The development of a sustainable research programme is a key element of CIT's Strategic Plan 2005-2010.
- A priority of the Strategic Research Plan to 2010 is to strengthen the teaching and learning impact of all research activity.
- Graduate education programme modules are being developed with HETAC using Strategic Innovation Fund (SIF) support. These will provide accredited taught modules for postgraduates initially in the area of transferable skills and later in subject-specific skills.
- Having established a Research Office and Head of Research position in September 2005, CIT's ongoing objectives include:
 1. Identifying and consolidating new and emerging research areas.
 2. Prioritising both internal interdisciplinary research collaborations and collaborations with other research institutions in Ireland and overseas.
 3. Establishing a programme of research and postgraduate studies in each school.
 4. Recognising contributions to the research performance of the Institute by developing appropriate incentives for research active staff.
 5. Establishing a system to record and recognise research output other than peer-reviewed publications.
 6. Developing supports for research activity including guidance on research proposal preparation, project management, supervision and administration.
 7. Supporting the establishment of spin-off and start-up enterprises based on the Institute's research activities.
- The Institute's plan for these is currently in the implementation phase.

IV. Collaboration

With Enterprise

- CIT collaborates with a range of firms across a spectrum of areas, including training, research and undergraduate placement.
- For example, it has designed courses in collaboration with FÁS to meet the upskilling and qualification needs of the pharmaceutical and medical device companies in Munster.
- An example of research collaboration is the engagement, as noted above, of the Adaptive Wireless Systems Group with a number of firms.
- The Institute's Clean Technology Centre undertakes a number of consultancy and training assignments with industry in relation to licensing regulations and waste minimisation.
- Students participate in work placement programmes with companies and a number of undergraduate projects are carried out in partnership with industry. This placement activity is seen by companies as an important link into the Institute.

With Others

- CIT collaborates actively with other higher education institutions, both in Ireland and abroad, in several fields of study. It is the lead institution for a €2.6m SIF collaborative project on Education in Employment.
- UCC is a critical higher education partner. As well as several research collaborations, the institutions are developing others areas of mutual interest, for example a joint architecture degree course has been launched. There are plans for collaboration on a centre for architectural education and biomedical engineering education.
- Linked to this relationship, it engages with the Tyndall Institute and the two institutions now have a Memorandum of Understanding in place to formalise collaboration.
- The Institute works with Enterprise Ireland with particular regard to entrepreneurship, applied and collaborative research, and with the IDA primarily on inward itineraries. Regular meetings are held between CIT, Enterprise Ireland, IDA and UCC to discuss mutually relevant matters.
- As part of the Strategic plan 2005-2010 the Institute intends to deepen its partnership with UCC to generate new programmes and facilitate the creation of a critical mass of research activities. It is also seeking to
 - Develop and expand links with other higher education institutions locally, nationally and internationally,
 - Further develop its primary schools initiative
 - Develop closer links with FÁS and Fáilte Ireland.

V. Company Formation

Entrepreneurship Programmes

- CIT partners with UCC, IT Tralee, Enterprise Ireland, CorkBic, Udarás Na Gaeltachta and the Enterprise Boards on the Genesis Enterprise (Platform) Programme. From 2002-2004 there were 50 participants on the Genesis Enterprise Programme and 17 participants in 2005.
- It operates an Enterprise Start Programme with funding from FÁS and Enterprise Ireland and in the region of 60 participants have been through this programme.
- It also offers the CIT Prize for Innovation: an annual competition sponsored by South Cork Enterprise Board for students and staff with innovative business ideas.

Incubation Support

- The Institute's incubation centre - the Rubicon Centre - comprises of 1,250m² of space. An additional 800m² of space became available in January 2007.
- As of mid-2006, the centre had 24 occupants employing 80 people (i.e. a 100% occupancy rate) in areas such as
 - Software
 - Sensory research
 - Communications
 - Document management and storage
 - Semiconductor design
 - Venture capital
 - Bio-science
 - Waste management
 - Multimedia services
- It is estimated that 75% of the companies came through the Genesis Enterprise Programme, 12% were established by CIT staff and the remainder from other sources.

VI. Staffing and Resources

Staffing Levels

- As of end 2005, the Institute had 887 (FTE) staff. 41 were in management, 192 in support and administration and the remainder were academic staff.

- The latter can be seen as follows:

Faculty	Full-time	Part-time
Science	91	30
Business & Humanities	101	59
Engineering	205	45
Colleges of Art and Music	78	45
Total	475	179

- Under the Strategic Plan 2005-2010 some of CIT's staff development objectives include
 - Providing career development opportunities for all staff
 - Encouraging and facilitating staff exchanges within and beyond CIT
 - Developing a formal system of incentives and supports for staff engaged in approved projects.

Financial Resources

- For the financial year ended 31 August 2005, CIT's draft financial statements showed funding sources amounting to €76m, of which
 - 68% came from DES
 - 14% from fee income
 - 6% from industry³⁹
 - 11% from other sources⁴⁰

Physical Resources

- CIT has 73,000m² of space at present broken down into:

	m ²	% of Total
Teaching	57,064	78.2%
Research	1,250	1.7%
Incubation	2,050	2.8%
Administration	4,821	6.6%
Other	7,815	10.7%
Total	73,000	100.0%

- An additional 16,550m² of teaching space, 415m² of research space and 1,535m² of administrative space is either approved or under construction and a further 15,071m² teaching space is planned.

³⁹ Includes: All R&D, Consultancy, Commercial Training (funded by a commercial or state body)

⁴⁰ Other income included: Student Capitation, Interest Income and Student Registration Charges.

Tralee Institute of Technology

I. Strategic Development

"To excel in teaching, research and development work, for the benefit of students, industry and the wider community."

*Tralee Institute of Technology Mission Statement*⁴¹

Current Strategic Plan

IT Tralee's Strategic Plan 2004-2007 sets out the following eight strategic goals:

1. <i>Learners</i>	To attract and retain a diverse range of learners, including those undertaking programmes on a fulltime and part-time basis, and those currently under-represented at third level.
2. <i>Programmes</i>	To provide a suite of internationally recognised modular programmes, including those of an interdisciplinary nature, available on a flexible basis to learners.
3. <i>Staff development</i>	To provide continuing development opportunities to staff; to provide a quality service to Institutes stakeholders; and to adapt successfully to changing environments through the use of a partnership process.
4. <i>Research</i>	To develop centres of excellence with national recognition in key areas and to encourage staff to actively participate in research activity in a supportive and resourced environment.
5. <i>Funding</i>	To reduce its dependency on DES funding by diversifying and obtaining alternative sources of funding through sponsorship, fund-raising and recruitment of fee-paying students.
6. <i>Learning environment</i>	To provide a quality and supportive learning environment for all its learners.
7. <i>Quality improvement</i>	To continuously improve all aspects of its operations.
8. <i>Management and operations</i>	To plan and manage the resources of the Institute in an efficient and effective manner and to ensure that the Institute maintains good relations and communications with its staff.

⁴¹ Ibid.

Strategic Review/Planning

- In 2000, through consultation with its staff, IT Tralee developed its first strategic plan to run for a six-year period to 2006.
- A widespread consultation process took place in 2003 when the Institute applied to HETAC for delegated authority. Following this and in recognition of the evolution of the college since 2000, it was decided to draw up a revised version of the original strategic plan for the period 2004-2007 detailing the above goals.
- This present plan reflects the individual plans of the Academic Departments and Central Services.

II. Education and Training

Founded in 1977 as Tralee Regional Technical College, the college was re-designated as an Institute of Technology in 1997. IT Tralee operates across three schools:

- Business and Social Studies
- Engineering and Construction Studies
- Science and Computing

Student Population

In 2004/5, it had a student population of just over 2,800. This can be viewed by school and level in the table below:

Dept./ School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by School
		Taught	Research					
<i>School of Business and Social Studies</i>								
Business Informatics	0	0	0	153	167	0	320	11.4%
Business Studies	0	0	6	111	465	0	582	20.7%
Hotel, Catering & Tourism	0	0	0	21	279	0	300	10.7%
Humanities	0	0	0	55	136	0	191	6.8%
<i>School of Engineering and Construction Studies</i>								
Agricultural Engineering	0	0	0	10	52	0	62	2.2%

Civil Engineering/Construction	0	0	0	36	243	0	279	9.9%
Manufacturing Engineering	0	0	1	0	65	0	66	2.3%
<i>School of Science and Computing</i>								
Chemical & Life Sciences	0	0	4	20	70	0	94	3.3%
Computing	0	24	3	114	77	0	218	7.7%
Health & Leisure	0	0	0	60	174	0	234	8.3%
Nursing	0	9	0	377	84	0	470	16.7%
Total	0	33	14	957	1,812	0	2,816	100.0%
% of Total Population by Level	0.0%	1.2%	0.5%	34.0%	64.3%	0.0%	100.0%	

Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)⁴²

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Changes by School/Department			
School/Department	Numbers 2004/5	Numbers 2003/4	% change on year
<i>School of Business and Social Studies</i>			
Business Informatics	320	259	+24%
Business Studies	582	697	-16%
Hotel, Catering & Tourism	300	282	+6%
Humanities	191	118	+62%
<i>School of Engineering and Construction Studies</i>			
Agricultural Engineering	62	70	-11%

Changes by Level			
Level	Numbers 2004/5	Numbers in 2003/4	% change on year
10	0	0	0%
9	47	57	-18%
8	957	764	+25%
7/6	1,812	1,994	-9%
1-5	0	0	0%
Total	2,816	2,815	0%

Table: Changes in Student Population by Level from 2003/4 to 2004/5

⁴² These figures do not include those on apprenticeship courses.

Civil Engineering/Construction	279	270	+3%
Manufacturing Engineering	66	99	-33%
<i>School of Science and Computing</i>			
Chemical & Life Sciences	94	135	-30%
Computing	218	242	-10%
Health & Leisure	234	233	0%
Nursing	470	410	+15%
Total	2,816	2,815	

Table: Changes in Student Population by School from 2003/4 to 2004/5

- 50% of students were in the School of Business and Social Studies, 36% were in School of Science and Computing and the smallest school was Engineering and Construction Studies with 14% of all student enrolments (over 400).
- Nearly two-thirds of students were taking courses at levels 7/6 and just over one-third were taking courses at Level 8 in 2004/5. In the same academic year a small percentage were at Level 9 (1.7%).
- There were 2,509 fulltime and 307 part-time students, i.e., 89% fulltime, 11% part-time at the Institute. The majority of part-time students were in Nursing (73% or 224 students).
- 79% of new entrants came through the Leaving Certificate, while the remaining 21% had 'non-standard' qualifications, e.g., FETAC certifications and mature students. About 100 ERASMUS students attend IT Tralee annually.
- In addition to the courses noted above, the Institute runs two apprenticeship courses:

Trades 2004/5	Number of Participants	% of Total
Agricultural Mechanics	97	27.5%
Carpentry & Joinery	256	72.5%
Total	353	100.0%

Table: Apprenticeship courses participants

Looking within schools, the following can be noted:

Business and Social Studies

- In 2004/5, there were 6 fulltime research students at Level 9 in Business Studies, down from 19 students in the previous year.

- In the same year, there were 340 students at Level 8, 35 of whom were studying Humanities on a part-time basis. This was a 16% drop (47 students) on the numbers studying at this level in the previous academic year.
- There were 1,047 students at Levels 7/6 in 2004/5 approximately the same number as in 2003/4. Of those at Levels 7/6 in 2004/5, 20 were studying Humanities on a part-time basis.

Engineering and Construction Studies

- In 2004/5, there was one fulltime research student at Level 9 in Manufacturing Engineering compared to 6 in this department at this level in 2003/4.
- There were 46 fulltime students at Level 8 in 2004/5, an increase of 9 students on the previous academic year.
- In 2004/5 there were 360 at Levels 7/6, 10 of whom were part-time mechanical engineering students. This was a 9% drop (36 students) on the numbers studying at this level in the previous academic year.

Science and Computing

- In 2004/5, there were 40 students enrolled at Level 9.
- There were 571 students (131 of which were part-time nursing students) at Level 8 in 2004/5, a 32% increase on the numbers studying at this level in the previous academic year.
- The increase in Level 8 was broadly matched by the drop in Levels 7/6, at which there were 405 students (84 of which were part-time nursing students) in 2004/5.

Other Training Activity

- IT Tralee also provides a number of non-accredited training options. In 2004/5, 344 studied at IT Tralee in this manner, 206 of whom were enrolled for business and 26 for engineering.
- A broadly similar number of people (329) participated in such training in 2003/4.

Graduates

In 2004/5, 1,101 people graduated across the following levels and departments as can be noted in the table below:⁴³

Dept./ School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by School/ Dept.
		Taught	Research					
<i>School of Business and Social Studies</i>								
Business Informatics	0	0	0	59	92	0	151	13.7%
Business Studies	0	0	2	113	206	0	321	29.2%
Hotel, Catering & Tourism	0	0	0	11	26	0	37	3.4%
Humanities	0	0	1	6	37	0	44	4.0%
<i>School of Engineering and Construction Studies</i>								
Agricultural Engineering	0	0	0	0	37	0	37	3.4%
Civil Engineering/ Construction	0	0	0	13	96	0	109	9.9%
Manufacturing Engineering	0	0	2	0	23	0	25	2.3%
<i>School of Science and Computing</i>								
Chemical & Life Sciences	0	0	0	7	34	0	41	3.7%
Computing	0	10	0	38	45	0	93	8.4%
Health & Leisure	0	0	0	27	92	0	119	10.8%
Nursing	0	4	0	101	19	0	124	11.3%
Total	0	14	5	375	707	0	1,101	100.0%
% of Total Graduates by Level	0.0%	1.3%	0.5%	34.1%	64.2%	0.0%	100.0%	

Table: Total Graduate 2004/5 by School/Department and Level (accredited courses)

⁴³ These figures do not include those completing apprenticeship courses.

- Of these, 158 were part-time students and the remainder were fulltime. Two thirds of the part-time graduates were from nursing.
- Half of total graduates came from the School of Business and Social Studies.
- The vast majority graduated at Levels 7/6 (64%) and Level 8 (34%).
- 46% of graduates across the range of levels in 2004/5 went on to further studies, 48% into employment and the remaining 6% were seeking employment as of mid-2006.

Future Plans

- Under its 2004-2007 Strategic Plan, IT Tralee plans to evaluate its programme portfolio to determine new areas for programme development and to assess the viability of current provision on a departmental and inter-departmental basis and on a collaborative basis with other institutions.
- With regard to course delivery, semesterisation and modularisation are under way at the Institute. In addition, it plans to promote technology-enhanced delivery (e.g. WebCT/e-learning and video-conferencing) and to incorporate 'International Friendly' and 'Life Long Learning' friendly options into programme development procedures.
- Also under its current Strategic Plan, it has a stated objective of working towards obtaining Delegated Authority at Level 9 for awarding postgraduate degrees by research.
- In terms of sources of students, it is seeking to attract greater numbers from non-Leaving Certificate avenues in the future, e.g. mature students, international students.

III. Research Activity

Research Priorities

The Institute has identified the following research priority areas:

1. Mathematics and computer sciences
 2. Biological sciences
 3. Social sciences
- Under PRTLTI, IT Tralee is a collaborating partner on the Environmental Research Institute (lead institution UCC, total funding €27m).⁴⁴
 - It has collaborated with firms on a number of applied research projects in the area of mathematics and computer sciences, using the support of Enterprise Ireland's Innovation Partnerships Initiative, e.g. Hewlett Packard, Altobridge Ltd.
 - For the same area it has received funding of approximately €0.8m since 2000 from a range of external sources, including €0.5m from INTERREG to support research into the use of RFID technologies in SMEs.
 - Over the same period it has secured in the region of €0.25m for research in biological sciences.

⁴⁴ HEA

- It also provides smaller scale internal support to research projects across a range of areas, including those noted above plus agriculture, educational sciences and economics.
- IT Tralee has delegated authority to award taught Level 9 programmes.
- 67 staff are currently engaged in research activity at the Institute. The majority of these are in science (35, one of whom was in the process of being recruited as of February 2007) and business (22) with four in engineering and the remaining six across other disciplines.
- The following research outputs were produced across the Institute in 2005/6:

School	Publications		Conference/ policy papers
	<i>Refereed</i>	<i>Non-Refereed</i>	
Business	16	3	13
Engineering	7	0	5
Science	5	5	24
Total	28	8	42

Research Strategy

- The Institute of Technology Tralee Research Institute (ITTRI) was established in January 2007. It is intended that ITTRI will facilitate interdisciplinary research programmes and will act as the governance infrastructure and executive function for all research performed under the auspices of IT Tralee.
- Under the Strategic Plan 2004-2007 IT Tralee stated a number of objectives in relation to its research activities:
 - Funding three Governing Body postgraduate research scholarships per annum and ten pilot research grants (biannual allocation). Its aim is to achieve an annual sustained postgraduate research cohort of 80. It is intended that this will be made up of approximately 20% of each final year cohort and, an intake of 40 students annually to include 10 international (non-EU) students. It is hoped that the ratio of part-time to fulltime postgraduate researchers will be 1:2.
 - To obtain Delegated Authority at Level 9 for awarding postgraduate degrees by research.
 - It also set the following goals:

<i>Strategic Plan Target</i>	<i>Status</i>
Income of €250,000 over the period of the plan to fund postgraduate research from competitive, industry or benevolent sources	Achieved 2006.
Funding of €250,000 over the period of the plan on a stand-alone basis or in collaboration with other Institutions for a strategic research project.	Achieved 2006.
Six interdisciplinary research projects by 2006.	4 interdisciplinary projects in operation by 2006

IV. Collaboration

With Enterprise

- Collaboration with firms takes place mainly through Kerry Technology Park (Shannon Development) with whom the Institute has developed a joint strategy.
- In 2005, IT Tralee collaborated with Altobridge Ltd. on both research and training, and with Kerry Bioscience, CyberColloids Ltd. and, Astellas Pharma Co., Ltd (Ireland) on research. It also collaborates with Brandon Products Ltd. providing technical expertise in chemistry, botany and marine science.⁴⁵
- 1% (€420,000) of total income for year ended 31 August 2005 came from industry.

With Others

- IT Tralee collaborates with various other higher education institutions on course development and delivery. Examples include the following:
 - MSc in Computing delivered jointly with DKIT via videoconferencing;
 - Bachelor Degree/BSc in General Nursing developed in conjunction with Tralee General Hospital and the Southern Health Board;
 - MA in Advanced Health and Social Care in partnership with the University of Teeside;
 - Graduate Diploma/MSc in Computing in Education delivered through franchised arrangements with CIT
 - Higher Certificate in Community Studies delivered through a franchise arrangement with DKIT.
- Where programmes have been franchised from other institutions, IT Tralee has a formal Memorandum of Understanding to ensure the quality of the programme, including arrangements in relation to delivery and assessment.⁴⁶
- IT Tralee is involved in various networks, particularly on training with, for example, Kerry Soft (promoting the ICT sector in Kerry), Kerry Education Service and FÁS.
- The Institute also interacts with the range of development agencies operating in the region, e.g. Shannon Development (primarily on Kerry Technology Park) and Údarás na Gaeltachta (a representative of which is on the Board of Governors of IT Tralee).

⁴⁵ brandonproducts.com (24 January 2007)

⁴⁶ Institute of Technology Tralee Strategic Plan 2004-2007

V. Company Formation

Entrepreneurship Programmes

- IT Tralee partners with UCC, CIT, Enterprise Ireland, CorkBic, Udaras Na Gaeltachta and the Enterprise Boards on the Genesis Enterprise (Platform) Programme. From 2002-2004, IT Tralee supported 9 participants and a further 3 in 2005 on the Genesis Enterprise Platform Programme.
- It has also run a range of other initiatives on entrepreneurship as part of its lifelong learning programme.

Incubation Support

- The Tom Crean Business Incubation Centre was opened in December 2004 and comprises of 1,100m² of space.
- As of mid-2006, the centre had 17 occupant companies (i.e. a 90% occupancy rate) with 30 employees in areas such as
 - Software development
 - E-commerce
 - Nutraceuticals
 - Graphic design
 - Web marketing
 - Innovative foods
 - Interactive media
 - Telecoms systems analysis
- It is estimated that 13% of occupants came through entrepreneurship assistance programmes and 10% were IT Tralee graduates.
- The Institute has close links with Kerry Technology Park and this relationship is being enhanced as the North Campus and the Park are located beside each other. The progression of incubation centre participants into the Park is encouraged by all involved.

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 322 staff, 3 of which were in management, 108 were in support and administration and the remaining 211 were academic staff.
- Academic staff can be broken down across faculties as follows:

	Fulltime ⁴⁷	Part-time ⁴⁸	Total
<i>School of Business and Social Studies</i>			
Business Informatics	13	8	21
Business Studies	40	6	46
Business Humanities	9	4	13
Hotel & Catering	9	1	10
<i>School of Engineering and Construction Studies</i>			
Agriculture & Manufacturing	11	0	11
Civil Engineering & Construction	16	4	20
Mechanical, Electronic & Manufacturing	16	0	16
<i>School of Science and Computing</i>			
Chemical & Life Sciences	18	0	18
Computing	17	4	21
Health & Leisure	11	3	14
Nursing	15	3	18
<i>Central Services</i>			
Development	0	3	3
Total	175	36	211

⁴⁷ Full-time includes Permanent Whole-Time and Temporary Whole-Time.

⁴⁸ Part-Time includes Casual Part Time (under 150 hours a year), Pro-rata Part-Time and Contract Indefinite Duration.

Financial Resources

- For the financial year ended 31 August 2005, IT Tralee's total funding amounted to €30.2m, of which
 - 61% came from DES
 - 13% from fee income
 - 1.4% from industry
- - 3% from Department of Health and Children (for nursing)
- - 21% from other sources⁴⁹
- Under the Strategic Plan 2004-2007, IT Tralee hopes to diversify its funding sources, generating funds of a minimum of €0.5m from alternative sources and obtaining international student tuition fees income of a minimum of €0.3m.⁵⁰

Physical Resources

- IT Tralee currently operates across two campuses (North and South Campuses). It has nearly 27,000m² of space at present with an additional 3,500m² of space planned broken down into:

	Current Physical Infrastructure m ²	Under construction/ planned m ²	Total	% of Total
Teaching	21,432	0	21,432	70.3%
Research	790	0	790	2.6%
Incubation	1,100	0	1,100	3.6%
Administration	3,622	350	3,972	13.0%
Learning & Information Resource Centre	0	3,173	3,173	10.4%
Total	26,944	3,523	30,467	100.0%

- A key priority for the Institute under its Strategic Plan is the movement of all activities to the North Campus as the Institute is not on a scale to support the operation of dual campuses.

⁴⁹ Other includes: Exam Fees (€119,000), Miscellaneous Income (€35,000), Interest Income (€52,000), Student Support Funding (€197,000), Superannuation deductions retained (€1,142,000), Student Registration Charges (€1,737,000) and Transfer from Capital (€3,056,000).

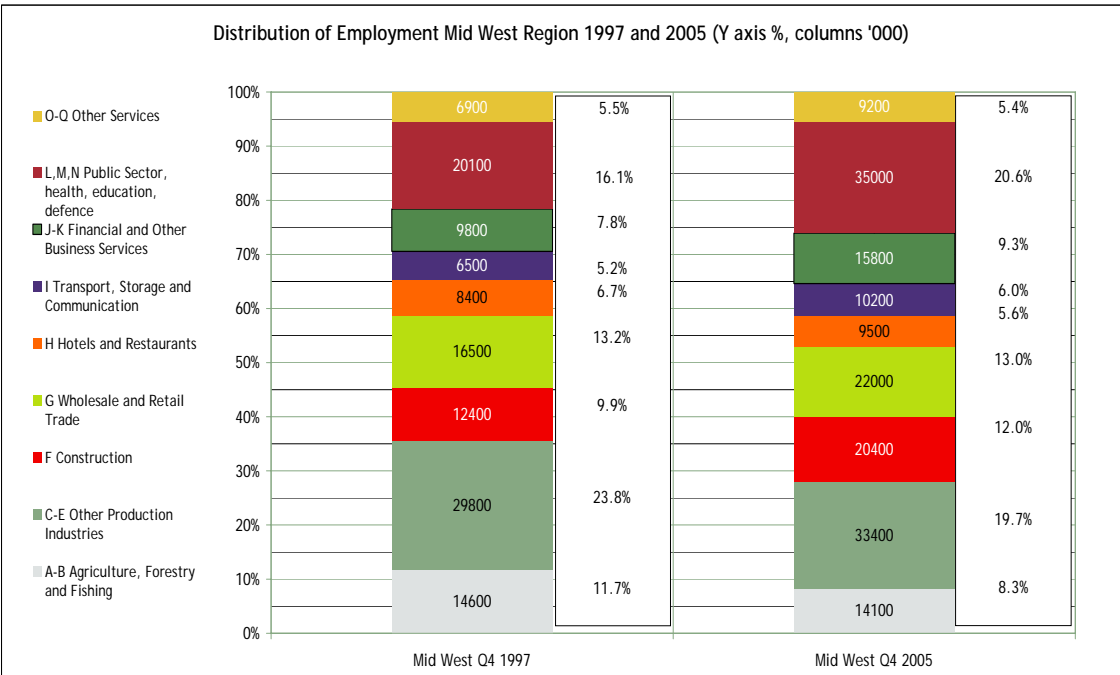
⁵⁰ Institute of Technology Tralee Strategic Plan 2004-2007

Mid West Region

The Mid West region comprises the counties of Limerick, Clare and North Tipperary with an approximate combined population of 360,650 or 8.5 % of the national population.⁵¹ The region hosts one National Spatial Strategy (NSS) regional gateway (Limerick/Shannon) and hub town (Ennis). Tralee, in North Kerry, is designated as a linked hub with Killarney as part of the NSS.

In 2006, the unemployment rate in the Mid West was approximately 4.8 %, and was in line with national averages. 26.7 % of the workforce possesses a third level qualification compared with a national average of 30.7 %.

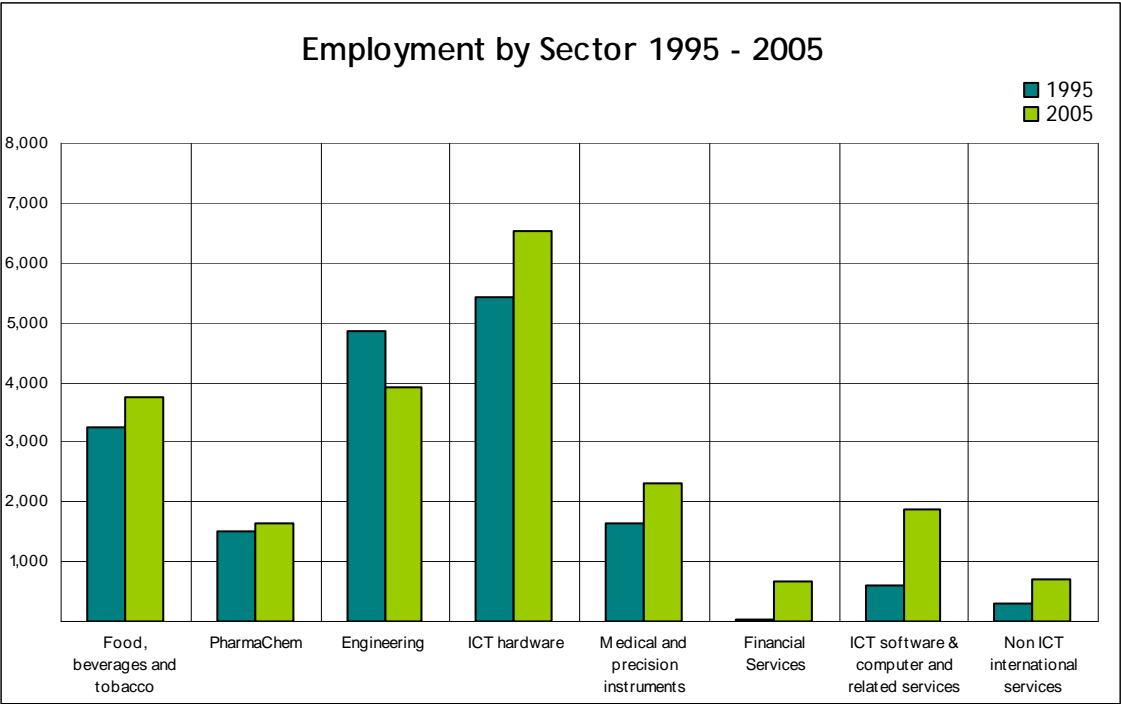
Distribution of Total Employment in the Mid West Region



- Non agency supported sectors (e.g. domestic retail, locally traded services, construction, etc.) have grown stronger in the region relative to manufacturing and internationally traded services.
- Employment in the construction sector has increased from 10% to 12% since 1997.
- The Agriculture & Fisheries sector and the Other Production Industries sector (which includes mining, and manufacturing) have experienced the greatest decline in percentage share over the period.

⁵¹ It should be noted that North Kerry is included in the Mid West Region for Agency purposes only. CSO data on the Mid West does not include the North Kerry area.

Agency-Supported Employment by Sector 1995 - 2005



Overall employment in agency supported companies in the Mid West region in 2005 was approximately 17% down from 22% in 1995. The ICT Hardware sector is by far the most important sector of employment in the region, with enterprises such as Dell, Analog Devices and Sercom located in the Limerick area. The engineering sector and the food and beverage sector are also vital sectors for the region. Engineering has experienced a modest decline over the past decade, although analysis shows that while MNCs in the engineering sector have reduced employment by over 50%, indigenous firms have shown modest growth. The pharmaceutical and medical technologies sectors have experienced modest increases in employment over the decade. The software and computer related services sectors have expanded significantly over the past decade, establishing some scale. The financial services and non-ICT services sectors have also expanded rapidly, albeit from a small base.

In terms of higher education, there is one University in Limerick and two Institutes of Technology, Limerick Institute of Technology and IT Tralee. Tipperary Institute also provides tertiary education.

Based on analysis by PACEC Consulting, the Mid West region has a relative concentration of the workforce with qualifications in the areas of Engineering & Architecture, Medical Sciences, Education, and Business Law & Social Sciences. By contrast, the region has a relative lack of persons employed with qualifications in the fields of Mathematics & Statistics, Life Sciences, and Agriculture & Forestry.

Limerick Institute of Technology

I. Strategic Development

“LIT prepares learners for fulfilling and challenging futures, fostering the professional, intellectual, social, cultural and personal development of the individual. The hallmark of our educational philosophy is active learning through a fusion of theory and practice. We provide third and fourth level education, training and research, playing a pivotal role in the economic and socio-cultural development of our region.”

*Limerick Institute of Technology Mission Statement*⁵²

Current Strategic Plan⁵³

Limerick Institute of Technology’s (LIT) Strategic Plan 2006-2010 sets out the following ten strategic goals:

<i>1. Educational Philosophy</i>	Practical application, active learning and state-of-the art knowledge and facilities are intended to be the cornerstones of LIT’s pedagogical approaches.
<i>2. Development and Growth</i>	To consolidate its market position where it is already strong or where there is scope for strengthening it. To advance it where there is untapped potential. To closely align LIT’s programmes, services and delivery to the identified needs of industry, the community and wider stakeholders in the region.
<i>3. New Learner Groups</i>	To continue to offer a wide range of relevant and viable courses to learners. To take initiatives to encourage wider participation by non-traditional segments.
<i>4. Qualifications Levels and Quality Assurance</i>	To offer access and intermediate progression routes in its major discipline areas for qualification of Levels 6 and up, within the context of the NQAI Framework and the European Framework of Qualifications.
<i>5. Research</i>	To further develop and nurture research capacity in niche areas, selected for being innovative and relevant. To seek external funding to enhance and expand research opportunities for its staff and students.
<i>6. A Partnership Culture</i>	To have its strategy firmly grounded in the dynamics of both the internal and external environment, with the aim that its strategy is transparent, achievable and endorsed by key stakeholders.
<i>7. Environmental Monitoring</i>	To monitor macro and meso developments and assess their relevance to

⁵² Limerick Institute of Technology, Strategic Plan 2006-2010

⁵³ Ibid.

	LIT as a whole as well as to individual departments.
<i>8. Human Resources</i>	To further develop a culture where individual staff and teams of staff working together will take responsibility for making a distinct contribution to the educational mission and philosophy of LIT.
<i>9. Infrastructure</i>	To develop into one of Ireland's leading facilities, in terms of the variety, quality and relevance of the physical resources and facilities provided for its students, staff and other stakeholders.
<i>10. Resources</i>	To adopt a proactive approach to maximise all available funding in order to achieve the goals set out in the Strategic Plan.

Strategic Review/Planning

- The Strategic Plan 2006-2010 is the result of consultation meetings over the period October 2004 to March 2006.
- During this time, a wide range of internal and external stakeholders provided input and feedback on the plan's development. They included
 - Internal stakeholders such as staff, unions and the student union;
 - External stakeholders in the mid-west region, e.g. Shannon Development, Limerick City Art Gallery;
 - Other external parties at national level, e.g. DES, HEA, Forfas;
 - The Governing Body of LIT (including industry and other representatives).
- The Institute is now preparing to review its Strategic Plan against agreed benchmarks with the involvement of external stakeholders.

II. Education and Training

Limerick Institute of Technology can trace its origins back to 1852 when the Athenaeum Society opened a School Of Arts and Fine Crafts in Limerick. It was established as a Regional Technical College in 1993 and designated as Limerick Institute of Technology in 1998.⁵⁴

The Institute operates across four schools:

- Art and Design
- Built Environment
- Business and Humanities
- Science, Engineering and Information Technology

⁵⁴ Limerick Institute of Technology Annual Report 2003-2004

Student Population

In 2004/5, there were nearly 4,500 students enrolled at LIT on accredited courses. The full-time students can be viewed by faculty and level in the table below:

Dept./ School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by Dept./ School
		Taught	Research					
Art & Design	0	0	1	144	440	0	585	16.1%
Built Environment	0	0	0	610	382	0	992	27.4%
Business/ Humanities	0	0	1	370	455	0	826	22.8%
Science, Engineering & IT	0	8	10	353	853	0	1,224	33.7%
Total	0	8	12	1,477	2,130	0	3,627	100.0%
% of Total Population by Level	0.0%	0.2%	0.3%	40.7%	58.7%	0.0%	100.0%	

Table: Fulltime Student Population 2004/5 by Faculty and Level (accredited courses)⁵⁵

A number of changes in field and level of study can be noted between 2003/ 2004 and 2004/5:

Changes by Department				Changes by Level			
Department	Numbers 2004/5	Numbers 2003/4	% change on year	Level	Numbers 2004/5	Numbers in 2003/4	% change on year
Art & Design	585	576	+2%	10	0	0	Not Applicable
Built Environment	992	1,039	-5%	9	20	27	-26%
Business/ Humanities	826	698	+18%	8	1,477	1,411	+4.7%
Science, Engineering & IT	1,224	1,326	-8%	7/6	2,130	2,201	-3%
				1-5	0	0	Not Applicable
Total	3,627	3,639	-0.3%	Total	3,627	3,639	-0.3%

Table: Changes in Fulltime Student Population by School from 2003/4 to 2004/5

Table: Changes in Fulltime Student Population by Level from 2003/4 to 2004/5

⁵⁵ These figures do not include those completing apprenticeship courses.

In 2004/5, the Institute had nearly 900 part-time students enrolled on accredited courses across the Schools as follows:

School	Number	% of Total Part-time Students
Art & Design	36	4%
Built Environment	131	14.7%
Business & Humanities	39	4.4%
SEIT	685	76.9%
Total	891	100%

Table: Part-time Students on Accredited Courses 2004/5 by Field of Study⁵⁶

It can be seen that:

- 34% of fulltime students were in Science, Engineering and IT (over 1,200), 27% were in Built Environment (nearly 1,000) and approximately 20% were in Business/Humanities (over 800). The smallest faculty was Art and Design at 16% of all student enrolments (nearly 600).
- 99.4% of fulltime enrolments were at Levels 6-8 (40.7% at Level 8, 58.7% at Levels 7/6). The remaining 0.6%, i.e. 20 students, were at Levels 9/10.
- Over three quarters of part-time enrolments were in the School of Science, Engineering and IT.
- LIT also runs a number of apprenticeship courses predominantly in construction-related trades:

Trades	Number of Participants	% of Total
Bricklaying	80	9.3%
Carpentry & Joinery	192	22.3%
Electrical	350	40.6%
Mechanical Fitter	144	16.7%
Motor Mechanics	48	5.6%
Plastering	32	3.7%
Tiling	16	1.9%
Total	862	100.0%

Table: Apprenticeship courses participants 2004/5

⁵⁶ These figures do not include those completing apprenticeship courses.

Looking within faculties, the following can be noted:

Art & Design

- In 2004/5 there was one full-time research student at Level 9 compared with 10 in the previous academic year (6 taught, 4 research).
- There were 144 full-time students at Level 8 and 440 at Levels 7/6 in 2004/5 (a 5% and 3% increase respectively).
- There were also 36 part-time students enrolled.

Built Environment

- 61% of full-time students in the School of the Built Environment in 2004/5 were enrolled at Level 8 and the remainder were at Levels 7/6.
- In addition to this, there were 39 part-time enrolments.

Business and Humanities

- In 2004/5 there was one full-time research student at Level 9 compared with 3 research students at that level in the previous academic year.
- All other full-time students were enrolled at Levels 6-8: approximately 45% at Level 8 and 55% at Levels 7/6.
- 131 students were enrolled on a part-time basis in 2004/5.

Science, Engineering and Information Technology

- All but two of the Institute's fulltime Level 9/10 enrolments in 2004/5, i.e. 18 students, were in this School, all at Level 9. This compares to 14 at Level 9 in 2003.
- 70% of enrolments were at Levels 7/6 and 29% at Level 8.
- There were 685 part-time enrolments on accredited courses in 2004/5.

Other Training Activity

- LIT ran a range of non-accredited courses and courses accredited by professional bodies such as the IPA with a total of 862 participants in 2004/5.
- The largest proportion, by School, studied under Science, Engineering and Information Technology (77% or 667 participants).
- From September 2006, all part-time/ evening programmes are accredited as special purpose awards under delegated authority status granted by HETAC.

Graduates

In 2004/5, 1,661 people graduated across the following levels and departments as can be noted in the table below:

Dept./School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Dept./ School
		Taught	Research					
Art	0	0	1	139	129	0	269	16.2%
Built Environment	0	0	1	163	227	0	391	23.5%
Business/ Humanities	0	0	1	150	302	0	453	27.3%
Science, Engineering & IT	0	0	12	192	344	0	548	33.0%
Total	0	0	15	644	1,002	0	1,661	100.0%
% of Total Graduates by Level	0.0%	0.0%	0.9%	38.8%	60.3%	0.0%	100.0%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)⁵⁷

- This was down by 4% or nearly 70 people on 2003/4.
- The majority of graduates were fulltime students.
- One-third came from Science, Engineering and IT, 27% were from Business/Humanities and 24% were in Built Environment while the smallest percentage graduated from Art and Design at 16%.
- Over half of those graduating across the levels from Science, Engineering and IT (58%), Business and Humanities (54%) and Art and Design (51%) went on to further study, while 43% in Built Environment did so. Of the remaining graduates in each school, the majority went into employment, and less than 2% in each school were seeking employment.

Future Plans⁵⁸

- The process for course design at LIT has been changed recently so that new courses are based on more in-depth market research.
- In addition, some courses are being re-branded while retaining their basic skill components, e.g. pharmaceutical and forensics analysis: pharma + molecular biology. This is intended to increase the course attractiveness without diminishing its content.
- With regard to course delivery, the Institute is developing a compendium of learning strategies that will include templates for case studies, support for work placements and for blended

⁵⁷ These figures do not include those completing apprenticeship courses.

⁵⁸ Limerick Institute of Technology, Strategic Plan 2006-2010

learning. As part of this, e-Learning is being explored and approximately 50 lecturers are undergoing training to enable them to operate in a “Virtual Learning Environment”. Linked to this, LIT aims to progressively increase its staff development expenditure to 3% of its payroll budget by the end of 2010.

- Also under the current Strategic Plan, it is intended to increase the PC to student ratio to 1:5 over the period of the Strategic Plan. Opening hours, access and use of facilities outside of term time are to be examined.
- This is also intended to support the Institute’s objective of significantly increasing enrolments by non-traditional learners, e.g. through course modularisation and also through course adaptation for new market segments where there is evidence of sustainable demand.
- Under the HEA’s recent Strategic Innovation Fund, the Institute won €100,000 to develop work-based learning programmes for the Shannon Region.⁵⁹ It is also a partner in the Shannon Consortium for Higher Education which has received funding recently for innovations in teaching and learning, access and retention and postgraduate training, as well as for the development of a digital education information system.
- Linkages with second level are strongly encouraged, as was evidenced by the 160 school-Institute visits in 2005. In addition, AIB recently donated €0.5m in funding to target specifically disadvantaged second-level students on the Northside of Limerick.

III. Research Activity

Research Priorities

The Institute has identified the following centres as research priority areas:

1. Bio sciences, e.g. research into nutraceuticals
2. Renewable Energy Control Systems
3. Internationally Traded Services

- LIT is a collaborative partner with Sligo IT on the PRTL-funded Biosolids Research Programme Centre (total funding €3.2m, lead partner IT Sligo).⁶⁰
- It has collaborated with UCD on two projects on waste treatment (one of which also included Cork County Council) with total funding of €45,000 from the Environmental Protection Agency.
- The Institute has delegated authority for all taught programmes at Level 9 and for Level 9 research programmes in Applied Control for Renewable and Environmental Systems.
- From 2000 to March 2006 it secured nearly €0.4m from Enterprise Ireland in research funding (the bulk of which was in the areas of engineering and science)⁶¹ and just under €0.5m between 2001 and 2005 from DES under TSR Strands I.⁶²
- On an FTE basis, 10 staff (1 post-doc and allocations of hours spread over 40 academic staff) are engaged in research activity predominantly in the School of Science, Engineering, and IT.

⁵⁹ HEA

⁶⁰ HEA/DES

⁶¹ Enterprise Ireland

⁶² HEA/DES

Research Strategy

- Under its Strategic Plan, the Institute aims to achieve Delegation of Authority for Level 9 research programmes and for Level 10 awards in subject areas where there is evidence of sustainable demand and existing staff expertise. It is intended that these are of a strategic and selective nature in targeted areas reflecting national or regional priorities. LIT's criteria for determining these areas are:
 - the opportunities for cooperation across academic departments;
 - relevance for regional industry and the community;
 - differentiation from other third-level providers or cooperation with them; and
 - benefits to existing undergraduate programmes.⁶³
- It views collaboration on a number of levels as key to its future activity - and success - in research, including
 - With other higher education institutions
 - On national research agendas
 - Across disciplines
- The Institute recently undertook a review of its research quality assurance procedures. In the future, details of research outputs such as publications, patents and licenses arising from research will be recorded by the Registrar's Office annually.

IV. Collaboration

With Enterprise

- The Institute collaborates with industry in the region, both with regard to course design for undergraduate programmes and specific training services for the workforce. For example, in 2005 LIT delivered training services to Stryker Orthopaedic and Aughinish Alumina.
- In the same year, it provided research support to Inisys and research and consultancy services to Marine Informatics.
- Each School Board oversees industry liaison and plans are underway for a contact management system to monitor and track interaction with industry across LIT. An External Services Manager is in place at the Institute with overall responsibility for these activities.
- The Institute Director chairs the IBEC Mid-West subgroup on R&D and Education which aims to improve links between higher education institutions and industry in the region.

With Others

- As noted under research activity, LIT collaborates with other higher education institutions.
- For example, its School of Art and Design works closely with the Limerick City Gallery of Art, e.g. on the Shinnors scholarship for curatorial studies.
- The Institute also engages with enterprise development agencies on mutually relevant issues.

⁶³ Limerick Institute of Technology, Strategic Plan 2006-2010

- Internationally, LIT is partnering with Building Research Establishment Limited, UK, and the University of Limerick to create BRE Ireland: an independent Irish body for sustainability, innovation and enterprise in Irish construction. BRE Ireland's remit will be to provide education, training, consultancy and research services and to facilitate commercialisation. It is intended that BRE Ireland will be operational from early 2007, with its office initially be based at the Enterprise Acceleration Centre, LIT.⁶⁴

V. Company Formation

Entrepreneurship Programmes

- From 2002-2004 there were 20 participants on the Institute's Enterprise Platform Programme.
- In 2005 there were 10 participants on its enterprise development programme supported by EQUAL (an initiative that aims to deliver enterprise supports to improve self employment amongst those experiencing inequality of opportunity within the labour market)⁶⁵ and it has partnered with Point 2 Enterprise and the Paul Partnership on this.
- Its latest Enterprise Platform Programme, LEAP, commences in March 2007.

Incubation Support

- LIT's incubation centre, the Enterprise Acceleration Centre, was opened in March 2006 and comprises of 1,300m² of space or 17 business incubation units.
- As of mid-2006 the centre had one occupant company in industrial automation design with six employees and one involved in web marketing.
- The EPP (LEAP) will locate its ten successful candidates in the centre and BRE Ireland is also due to locate there.
- A key element of the mandate of the Enterprise Acceleration Centre is developing the research commercialisation capability of LIT and 150m² in the centre is dedicated research space.⁶⁶

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 422 staff on an FTE basis, 4 of which were in management, 140 in support and administration and the remaining 278 were academic staff (220 fulltime and 58 part-time).

⁶⁴ bre.co.uk

⁶⁵ equal-ci.ie

⁶⁶ www.lit.ie

Financial Resources

- For the financial year ended 31 August 2005, LIT's total funding amounted to €31m, of which
 - 61% came from DoES
 - 19% from tuition fee income
 - 6% from industry/research/self-financing
 - 14% from other sources⁶⁷
- Under the Strategic Plan 2006-2010 LIT aims to increase the level of recurrent income from non state sources from 3% to 10% by 2010.

Physical Resources

- LIT has almost 38,000m² of space at present broken down into:

	m ²	% of Total
Teaching	23,701	63.0%
Research	300	0.8%
Incubation	2,100	5.6%
Administration	2,412	6.4%
Other	9,100	24.2%
Total	37,613	100.0%

- Under the Kelly Report, LIT has received funding for the full refurbishment of the Clare Street Campus which houses the School of Art and Design and a new Library and Information Resource Centre to be built at the Moylish Campus.⁶⁸

⁶⁷ Other sources of income included student services, student access, bank interest and superannuation contributions.

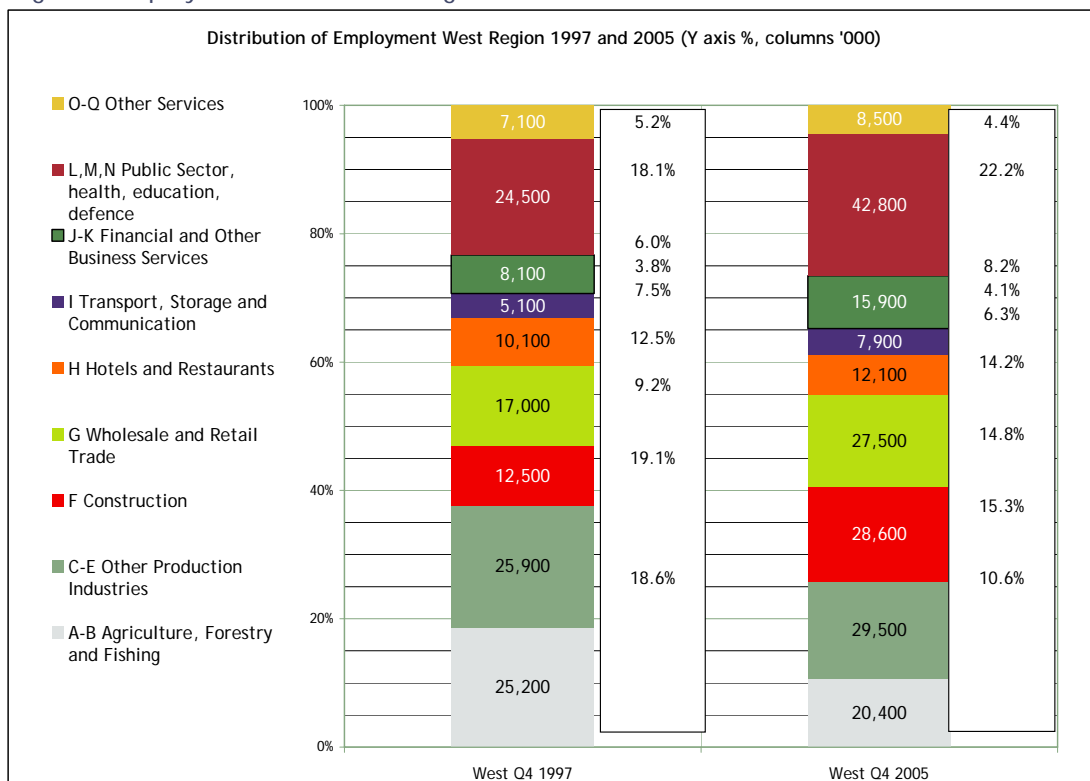
⁶⁸ Limerick Institute of Technology, Strategic Plan 2006-2010

West Region

The West region comprises the counties of Galway, Mayo and Roscommon and according to the 2006 census has a total population of 413,383 or approximately 9.8% of the national population. Galway City was designated as a gateway city in the NSS, while Tuam, Ballina and Castlebar were each classified as hubs.

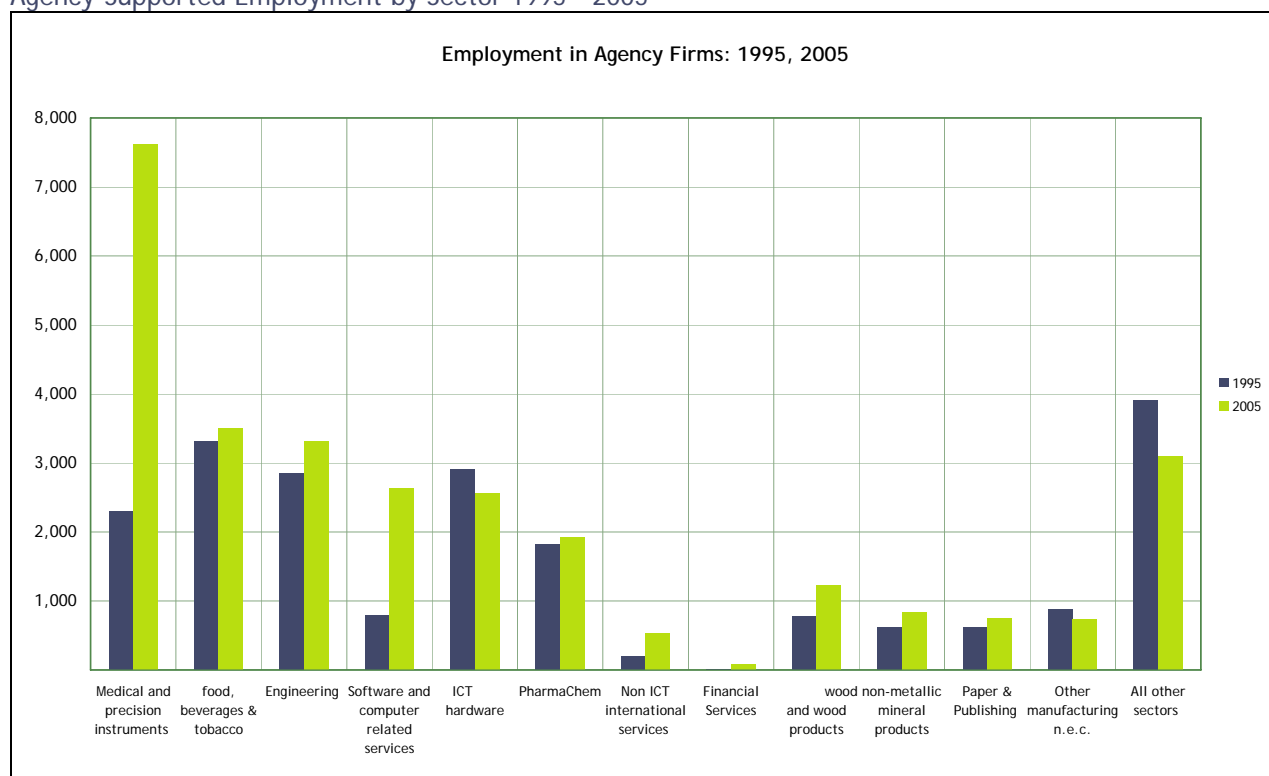
In 2006, the unemployment rate was slightly below the national average at 4.2%. 27.7% of those in the workforce hold a third level qualification compared with a national average of 30.6%.

Regional Employment in the West Region



- All sectors, with the exception of agriculture, fishing and forestry have seen increased employment levels overall. Employment in construction increased 129% from 12,500 in 1997 to 28,600 by 2005, while public sector employment rose by 75% to 42,800 over the same period.
- Agency supported employment in the region fell from 16.63% of the total in 1995 to 14.9 % in 2005, reflecting the national trend over the same period.

Agency-Supported Employment by Sector 1995 - 2005



- The medical and precision instruments sector experienced 232% growth over the period. Medical and precision instruments related industry now accounts for over 7,500 jobs in the region accounting for 25 percent of agency supported employment. Much of the employment resulting from this industry is located in and around Galway City. Industry players based in the region include Boston Scientific, Abbot Vascular Technologies, Medtronic Vascular, Baxter Healthcare and Hollister. The software and computer related services sector has witnessed similarly impressive employment growth of 231% over the period. The sector is now one of the region's key employers accounting for 9 percent of agency support employment. Of the other major sectors, food, beverages and tobacco, pharma and engineering showed growth rates of 5%, 5% and 16% respectively, while numbers employed in ICT hardware fell by 12%.⁶⁹
- With regard to higher education, an analysis by consultants PACEC shows that the region's workforce has a relatively high concentration of graduates in the life sciences and medical and related disciplines compared to the national average. The region is relatively lacking in graduates with degrees in statistics, maths or computing.
- The region has one University, the National University of Ireland, Galway (NUIG) and an Institute of Technology, GMIT, which has a number of campuses, the main ones being located in Galway City and Castlebar, County Mayo.

⁶⁹ In some regions, high levels of growth in the engineering sector (in particular in indigenous companies) have been related to the booming construction industry. Therefore, the 16% growth in engineering employment experienced in the West may not represent sustainable job gains in the longer term.

Galway-Mayo Institute of Technology

I. Strategic Development

“At GMIT we develop life-long learning opportunities through our teaching and research and by supporting regional development.”

*Institute of Technology Mission Statement*⁷⁰

Current Strategic Plan⁷¹

Galway-Mayo Institute of Technology’s (GMIT) Strategic Plan 2004-2009 outlines four strategic drivers:

1. *Students*

GMIT aims to place the student at the centre of the organisation. Its key goal is the flexible provision of life-long and life-wide education to an increasingly diverse student body.

2. *Region*

GMIT intends to promote the development of a learning region by stimulating economic and cultural innovation and by promoting social cohesion.

3. *Staff*

It wants to enable all employees of the Institute to continue their professional development in support of GMIT students’ learning and the region’s growth.

4. *Research*

GMIT intends to integrate research, teaching and regional development and to develop a critical mass of research capacity in targeted areas.

Strategic Review/ Planning

- The strategic planning process for the Strategic Plan 2004-2009 involved consultation with a range of internal and external stakeholders.
- Plenary sessions involving all groups were held and an advisory team was established to advise the Director in order to ensure an integrated approach to the complete on of the plan.
- It is intended that the Strategic Plan 2004-2009 be subject to continuous review and, when appropriate, be reconfigured to meet new opportunities and demands.⁷²

⁷⁰ Galway-Mayo Institute of Technology Strategic Plan 2004-2009 Designing the Future of Learning Developing the Region

⁷¹ Ibid.

⁷² Ibid.

II. Education and Training

Founded in 1972, GMIT operates across a number of campuses which have various schools/departments and specialist areas of study:

- The Galway campuses operate in two locations across five schools:
 - Business
 - Engineering
 - Humanities
 - Hotel and Catering Studies
 - Science
- The Castlebar campus operates across three departments:⁷³
 - Business and Technology
 - Humanities
 - Nursing and Health Sciences
- The [Letterfrack](#) campus runs courses in Furniture Design and Manufacture in partnership with Connemara West.
- Certified courses in Agriculture are offered at Mountbellew in partnership with the Franciscan Brothers' Agricultural College located there.

Student Population

In 2004/5, it had a combined fulltime and part-time student population of over 5,500 on accredited courses. This can be viewed by school/campus and level in the table below:

School/ Campus	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by School/ Campus
		Taught	Research					
Business	0	0	10	328	939	0	1,277	23.0%
Engineering	0	0	19	333	674	0	1,026	18.4%
Hotel & Catering	0	0	2	143	213	0	358	6.4%
Humanities	0	0	0	117	595	0	712	12.8%
Science	2	15	21	125	470	0	633	11.4%
Castlebar Campus	1	0	3	375	917	0	1,296	23.3%
Letterfrack Campus	0	0	1	32	138	0	171	3.1%

⁷³ Castlebar Campus also offers part-time courses leading to a Foundation Certificate and a Bachelor of Arts in Art and Design. www.gmit.ie (30 January 2007)

Foundation Studies ⁷⁴	0	0	0	0	91	0	91	1.6%
Total	3	15	56	1,453	4,037	0	5,564	100.0%
% of Total Population by Level	0.1%	0.3%	1.0%	26.1%	72.6%	0.0%	100.0%	

Table: Total Student Population 2004/5 by School/Campus and Level (accredited courses)⁷⁵

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Changes by School/Campus			
School/Campus	Numbers 2004/5	Numbers 2003/4	% change on year
Business	1,277	1,282	0%
Engineering	1,026	1,144	-10%
Hotel & Catering	358	392	-9%
Humanities	712	713	0%
Science	633	655	-3%
Castlebar Campus	1,296	1,336	-3%
Letterfrack Campus	171	151	+13%
Foundation Studies ⁷⁶	91	68	+34%
Total	5,564	5,741	-3%

Table: Changes in Student Population by School/Campus from 2003/4 to 2004/5

Changes by Level			
Level	Numbers 2004/5	Numbers in 2003/4	% change on year
10	3	9	-67%
9	71	59	+20%
8	1,453	1,297	+12%
7/6	4,037	4,376	-8%
1-5	0	0	0%
Total	5,564	5,741	-3%

Table: Changes in Student Population by Level from 2003/4 to 2004/5

It can be noted that:

- 23% of all students in GMIT were studying Business (nearly 1,300) at the Galway campus and 18% were studying Engineering (over 1,000) at the Galway campus. 13% of those enrolled in GMIT were studying Humanities, 11% Science and 6% Hotel & Catering at the Galway campus.
- 23% of all GMIT students were studying at the Castlebar campus (nearly 1,300) and 3% were at the Letterfrack campus (nearly 200).

⁷⁴ Foundation Studies figures are for the Galway and Castlebar campus combined.

⁷⁵ These figures do not include those completing apprenticeship courses.

⁷⁶ Foundation Studies figures are for the Galway and Castlebar campus combined.

- 2% (nearly 100) of all GMT students were studying Foundation Studies across the Galway and Castlebar campuses.
- Over 70% of students were taking courses at Levels 7/6 and over a quarter were at Level 8. A small percentage were at levels 9/10 (1.4%).
- There were 4,720 fulltime and 844 part-time students, i.e., 85% fulltime, 15% part-time at the Institute. Over half of the latter are studying at the Castlebar campus.
- All first year students operate under a modularised system, roll-out of modularisation throughout GMT is expected to be fully completed by 2009/10.
- Of the 1,366 new entrants in 2004/5, 11% were mature students and 5% came through FETAC.⁷⁷
- 30% of courses have an enterprise/business component.
- In addition to the courses noted above, the Institute runs a number of apprenticeship courses:

Trades 2004/5	Number of Participants	% of Total
Butchers	15	4.0%
Electricians	255	68.5%
Motor Mechanics	102	27.4%
Total	372	100.0%

Table: Apprenticeship courses participants

Looking within faculties, the following can be noted:

Galway Campuses

Business

- In 2004/5 there were 10 research students at Level 9 (9 fulltime, 1 part-time), down by 3 on the previous year.
- Over 85% of those at Level 8 (total 328) and Levels 7/6 (total 939) in 2004/5 were enrolled on a fulltime basis. The numbers at Level 8 increased by 16% and those at Levels 7/6 dropped by 5% on the prior year.

Engineering

- There were no students at Level 10 in 2004/5 while in the prior year there had been 5.
- There were 19 research students at Level 9 (17 fulltime, 2 part-time), this was an increase of 36% on the previous year.
- Nearly all students at Level 8 (333) and Levels 7/6 (674) were studying on a fulltime basis. The numbers at Level 8 increased by 5% while those at Levels 7/6 fell by 17% on the prior year.

⁷⁷ FETAC percentage represents those who were admitted on a FETAC qualification only or on a FETAC qualification where their FETAC score was better than their Leaving Certificate results. In cases where FETAC applicants have better Leaving Certificate results, they do not appear in the FETAC count.

Hotel & Catering

- There were two fulltime research students at Level 9 in 2004/5 compared to none the year before.
- Nearly all students at Level 8 (143) and Levels 7/6 (213) were studying on a fulltime basis in 2004/5. The numbers at Level 8 dropped by 17% while those at Levels 7/6 dropped by 3% on the prior year.

Humanities

- Nearly all of those studying at Level 8 (117) were enrolled on a fulltime basis in 2004/5. The numbers at this level dropped by 13 on the previous year.
- 79% of those at Levels 7/6 (total 595) were enrolled on a fulltime basis in 2004/5. The numbers at this level increased by 2% on the prior year.

Science

- In 2004/5 there were two fulltime students at Level 10 compared to three (2 fulltime, 1 part-time) at this level in the prior year.
- There were 36 students at Level 9 (15 taught, 21 research) an increase of 29% at this level in the prior year.
- In 2004/5 there was a 19% increase at Level 8 to 125 students and a 9% drop at Levels 7/6 to 470 students, on the prior year.

Castlebar Campus

- Just over one third of those studying at the Castlebar campus were enrolled on a part-time basis.
- There was one fulltime student at Level 10 and 3 fulltime research students at Level 9 in both 2003/4 and 2004/5.
- There were 375 students at Level 8 and 917 at Levels 7/6 in 2004/5. This was a 39% increase at Level 8 and a drop of 14% at Levels 7/6 on the previous year.

Galway and Castlebar Campuses

Foundation Studies

- In 2004/5 there were 91 fulltime foundation studies students at Levels 7/6, up a third on the previous year.

Letterfrack Campus

- There was one part-time research student at Level 9 in both 2003/4 and 2004/5.
- There were 32 fulltime students at Level 8 in 2004/5, up from 20 in the previous year. At Levels 7/6 there were 138 students in 2004/5, an increase of 6% on the prior year.

Other Training Activity

- GMIT provides a number of training opportunities that are not accredited across a diverse range of subjects including business, computing, engineering, health and safety, languages, wine appreciation and sport and equine activities.
- In 2004/5 there were 300 enrolled across these programmes (283 at the Galway campuses, 17 at the Castlebar campus).
- In the same year, there were 467 enrolled on Fáilte Ireland programmes in the School of Hotel and Catering on various courses including cookery, hospitality, marketing and travel.

Graduates

In 2004/5, 2,802 people graduated across the following levels and departments as can be noted in the table below:

School/ Campus	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by School/ Campus
		Taught	Research					
Business	0	0	0	268	514	0	782	27.9%
Engineering	2	0	1	87	415	0	505	18.0%
Hotel & Catering	0	0	0	55	68	259	382	13.6%
Humanities	0	0	1	76	155	0	232	8.3%
Science	1	2	3	91	194	0	291	10.4%
HESDN ⁷⁸	0	0	0	1	0	0	1	0.0%
Castlebar Campus	0	0	1	196	331	0	528	18.8%
Letterfrack Campus	0	0	0	14	67	0	81	2.9%
Total	3	2	6	788	1,744	259	2,802	100.0%
% of Total Graduates by Level	0.1%	0.1%	0.2%	28.1%	62.2%	9.2%	100.0%	

Table: Total Graduates 2004/5 by School/Campus and Level (accredited courses)⁷⁹

- Of these, 45 were part-time students and the remainder were fulltime.
- Total graduate numbers are down by 2% or 58 people on 2003/4.
- 19% of graduates had studied at the Castlebar campus and 3% at the Letterfrack campus.

⁷⁸ Higher Education Staff Development Network

⁷⁹ These figures do not include those completing apprenticeship courses.

- 28% of all GMIT graduates came from Business, 18% from Engineering and 14% from Hotel and Catering at the Galway campuses. The remainder graduated from Science (10%) and Humanities (8%) at these locations.
- Over 57% of graduates surveyed from Business, Engineering and Science in 2004/5 went on to further study. Of those in these areas that did so, over 88% graduated at Levels 7/6.

Future Plans

GMIT has a range of objectives under its current Strategic Plan in relation to education and training, including:

- To mainstream the provision of flexible, accredited adult and continuing education programmes, further implement APEL and to promote flexible learning initiatives to improve access and retention.
- To respond to skills shortages through diagnosis with stakeholders, introduction of relevant programmes and targeted marketing.
- To promote the use of the Learning Resource Centre as a regional knowledge base.
- To establish a presence in the international student market and to develop initiatives to promote and support international student and staff mobility.
- To achieve delegated authority at level 10 in a focused number of areas.
- To meet future workforce development needs in a proactive manner and in this context to promote new work and study methods
- To continue to embed innovation, creativity and entrepreneurship in all courses.

III. Research Activity

Research Priorities

The Institute has identified the following three strategic research themes and linked centres:⁸⁰

1. Design and Innovation (Centre: Biomedical device engineering)
 2. Marine, Natural Resources and Sustainability (Centres: Marine, Forestry and Energy)
 3. Tourism, Enterprise and Culture (Centre: West of Ireland Centre for Tourism and Hospitality Research)
- The biomedical area secured €1.2m in 2006 for its medical devices research centre (GMedTech) under Enterprise Ireland's Applied Research Enhancement Initiative.
 - In the previous year under the same initiative, GMIT received €0.75m for research on technologies for the marketing of live shellfish products.
 - Since 2000, the Institute has also received marine research funding from a number of relevant initiatives, including the Marine Institute's Marine Research Technology Development and Innovation funding initiative (€104,000), Bord Iascaigh Mhara (€180,000) and from the National Parks and Wildlife Service (€61,000).

⁸⁰ ns2.gmit.ie/research/Research_Centres/ (30 January 2007)

- It has also secured funding for its engineering research activity from a number of national sources, including IRCSET's Embark Initiative and Enterprise Ireland's Innovation Partnerships Initiative. Internationally, it received €0.8m under the EU's Sixth Framework Programme in June 2006.
 1. In addition, GMIT is a collaborative partner on three PRTL I projects:
 2. The Institute for Bioengineering and Agroecology (total funding €5.5m),
 3. The National Centre for Biomedical Engineering Science (total funding €32.3m)
 4. The National Institute for Regional and Spatial Analysis (total funding €2.7m).⁸¹
- The Institute's research groups also won €1.2m under DES's TSR Strands I and III from 2001 to 2005 inclusive.⁸²
- GMIT has delegated authority for all taught programmes at Level 9 and for Level 10 programmes in the two research fields of
 - Aquatic Science
 - Mechanical Engineering
- There are 23.2 FTE staff engaged in research activity in the areas of Design and Innovation (8.6), Marine, Natural Resources and Sustainability (11.2) and, Tourism, Enterprise and Culture (3.4).
- GMIT is seeking to work closely with SMEs and to develop a 'virtual incubator model' involving close collaboration between the institutes research teams and enterprises. Creganna has a subsidiary based in the Institute.
- The Institute produced the following outputs in 2005:

	Publications ⁸³	Conference/ Policy Papers	Patents
Business, Hotel, Humanities/ Tourism, Enterprise, Culture	4	3	0
Engineering/ Design & Innovation	4	6	1
Science/ Natural Resources & Sustainability	8	4	0
Total	16	13	1

- The patent relates to a medical device patent taken out by the Department of Mechanical and Industrial Engineering jointly with the University of Limerick.
- According to draft financial statements for year ended 31 August 2005, 3% (€1.3m) of total income in that year came from research, consultancy and development.

⁸¹ HEA

⁸² DES

⁸³ 69% are refereed

Research Strategy

In 2004, GMIT appointed a dedicated Head of Research and established a €200,000 Internal Research Development Programme (IRDP) to build on existing research strengths and help “develop a critical mass of research capacity”. Based on the results of the IRDP 2004 and IRDP 2005, a further funding programme was run in 2006 worth €190,000. The specific objectives of the IRDP 2006 included:

- To stimulate new entrants to research.
- To encourage the formation of multidisciplinary research teams.
- To increase the number of Institute research postgraduates at Masters and PhD Level.
- To build on research strengths and help the Research Centres, outlined above, to be defined.
- To focus the contribution of research towards the social and economic development of the region.⁸⁴

IV. Collaboration

With Enterprise

- In 2005, under Enterprise Ireland’s Innovation Partnership’s Initiative, GMIT collaborated with Thermo King Europe Ltd. on engineering research and also with Dunstar Ltd.
- In the same year, the Institute worked with Connaught Electronics Ltd. on research funded under European Commission’s Leonardo da Vinci programme.
- With regard to collaborative marine research, it is involved in research funded by Bord Iascaigh Mhara and the Marine Institute that involves various companies.
- GMIT hosted a number of sectoral fora during 2005 for the IT, biomedical and manufacturing sectors. These led to the formation of three industry focused networks aimed at disseminating research findings and acting as a forum for scoping research and development projects:
 1. Building Innovation Capacity in the West Accel Training Project
 2. Furniture and Wood Products Accel Training Project
 3. Tourism Learning Network⁸⁵
- On the training front, GMIT collaborated with a number of biomedical companies on the development of a Certificate in Engineering in Medical Device Manufacturing. An honours degree in medical devices engineering was then developed from this. In 2005 the following companies had participants on the honours degree programme: Abbott Vascular, Boston Scientific, Medtronic, Tyco Healthcare, Star Guide.
- The Department of Enterprise, Trade and Employment (with funding under the European Social Fund) is supporting GMIT to deliver enterprise modules from its degree programmes to eight industrial clients over a two-year period up to end December 2007.

⁸⁴ Internal Research Development Programme 2006 (IRDP 2006)

⁸⁵ ns2.gmit.ie/research/IFNets/ (1 February 2007)

With Others

- GMIT is actively involved in the Lónra network with other higher education institutions in the BMW region.
- It secured €400,000 under the Strategic Innovation Fund for internship development in the region in co-operation with Athlone and Dundalk Institutes of Technology.⁸⁶
- In addition to the linkages mentioned above surrounding medical devices, GMIT is part of the TransAtlantic Technology and Training Alliance (TA3) Medical Devices Cluster.
- It also has ongoing interactions various agencies, including FÁS and Enterprise Ireland.

V. Company Formation

Entrepreneurship Programmes

- Between 2002 and 2004 there were approximately 22 participants on Enterprise Platform Programmes, 18 of whom received Enterprise Ireland CORD funding.⁸⁷
- In 2005, GMIT collaborated with other Lónra members and with FÁS and Enterprise Ireland to establish the International Enterprise Development Programme. There were five participants from the Galway campus and four participants from Castlebar on this programme, delivered at various locations throughout the BMW region.
- In co-operation with AIT, GMIT has secured TSR Strand II funding from the Department of Education and Science for a 2006/7 Enterprise Platform Programme. Each Institute is placing 10 participants on the programme.
- GMIT also offers a Higher Certificate in Business in Enterprise Development, developed in collaboration other Lónra members and funded under FÁS's 'One Step Up' initiative.⁸⁸
- More widely, it incorporates enterprise modules into a number of its degree programmes.

Incubation Support

Galway Campus

- The Galway campus incubation centre was opened in April 2005 and comprises just over 1,100m² space. The medium-term objective is to reach an overall size of 2,500 m².
- As of mid-2006, the centre had 14 occupant companies (i.e. an 83% occupancy rate) with 38 employees. The companies operate in areas such as
 - Medical device
 - ICT
 - Software
 - Robotics
 - Renewable Energy
 - Bioflavins

⁸⁶ HEA

⁸⁷ Enterprise Ireland

⁸⁸ www.lionrarhen.com (31 January 2007)

Castlebar Campus

- The Castlebar campus incubation centre was opened in March 2006 and comprises nearly 500m² of space.
- As of mid-2006, the centre had 4 occupant companies (i.e. a 22% occupancy rate) in electronics and ICT and four persons occupying 'concept desk' space.
- Three of the companies came through the Enterprise Development Programme.

VI. Resources

Staffing Levels

- As of end 2005, the Institute had nearly 750 staff, 24 of whom were in management and 276 in support and administration, the remaining 449 were fulltime and part-time academic staff.
- Academic staff can be broken down across faculties as follows:

	Fulltime	Part-time ⁸⁹	Total
Business	30	1	31
Engineering	76	8	84
Hotel & Catering	53	8	61
Humanities	62	13	75
Science	63	10	73
Adult Education Galway	0	37	37
Castlebar Campus	46	14	60
Letterfrack Campus	14	5	19
Other	9	0	9
Total	353	96	449

- Over half of the 96 part-time staff were assigned to adult education between the Galway and Castlebar campuses.

⁸⁹ The 96 part-time staff equate to 13 full time equivalent staff.

Financial Resources

GMIT's draft financial statements for year ended 31 August 2005 show total funding of €46.8m, of which

- 65% came from DES
- 17% from fee income (12% DES, 1% from Department of Health and Children)
- 3% from research, consultancy and development
- 1% from Department of Health and Children
- 15 % from other⁹⁰

Physical Resources

- GMIT has nearly 50,000m² of existing space and a further 6,000m² planned:

	Existing m ²	Planned m ²	Total m ²	% of Total
Teaching	21,600	3,075	24,675	44.5%
Research	650	375	1,025	1.8%
Incubation	1,380	0	1,380	2.5%
Administration ⁹¹	5,705	695	6,400	11.5%
Other	20,165	1,855	22,020	39.7%
Total	49,500	6,000	55,500	100.0%

- The plans comprise a 6,000m² Engineering School with almost 3,100m² of teaching space and nearly 400m² of research space.

⁹⁰ Income sources include: Student registration €3.8m; Superannuation deductions €1.8m; Rent €326k; Interest €75k; Industry €42k; and, Other €0.8m.

⁹¹ Administration space includes academic offices.

North West Region

The North West region comprises counties Donegal, Sligo and Leitrim. The region hosts two National Spatial Strategy regional gateway towns (Sligo and Letterkenny) but no NSS 'hub' towns. Letterkenny has been designated a linked Gateway town with Derry.

The majority of regional statistics prepared by the CSO are presented at a NUTS III level (e.g. Border region). As a result, available economic data specific to the North West region is limited.

- The population of the North West region increased by 7% to 236,650 in 2006 from 221,536 in 2002. The region accounts for 5.6% of the national population.
- Using the Live Register as a crude proxy for unemployment, approximately 6 percent of the population of county Donegal are on the Live Register, compared to approximately 4 percent in Leitrim and only 3.1 percent in Sligo.

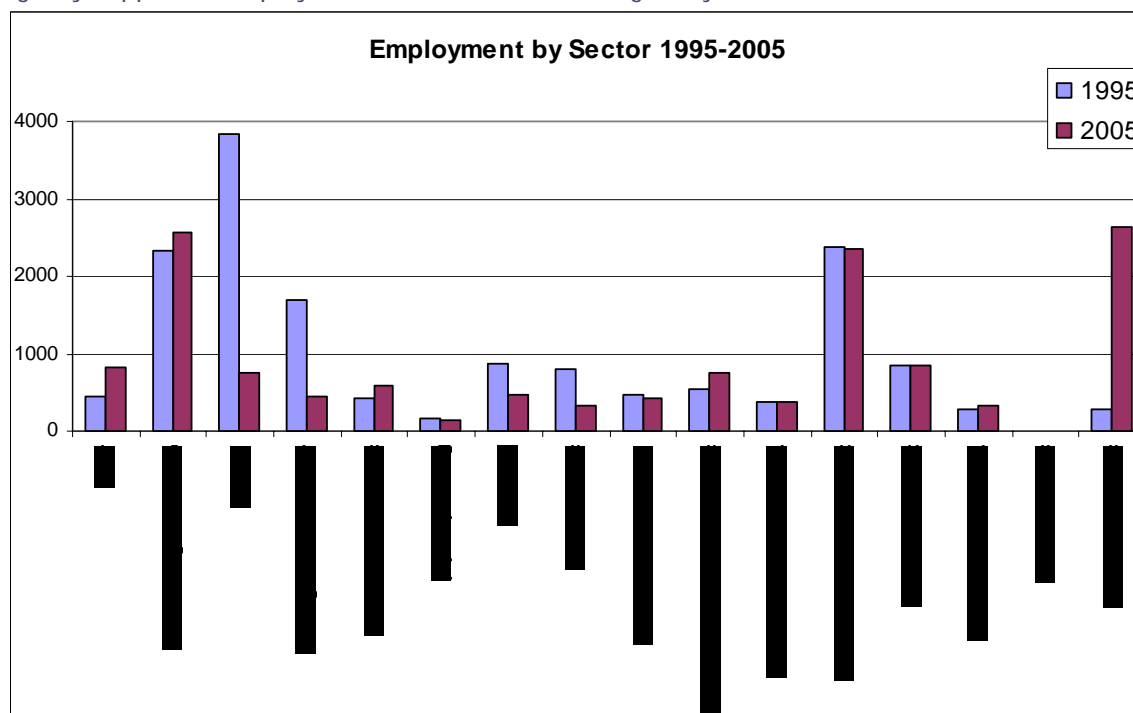
With regard to regional employment trends, the following key developments can be noted:

- There has been an expansion in non-agency supported sectors (e.g. retail & personal services) which have grown stronger in the region relative to Manufacturing and Internationally Traded Services sectors.
- The region has experienced a significant shift in its sectoral base over the past decade. In particular, the clothing and textiles sectors have experienced a dramatic decline, shedding over 4,000 jobs since 1995.

In terms of agency supported employment, there has been a significant increase in the numbers employed by agency supported companies in the International Services sector and to a lesser extent in the Food and Beverage sector. The dramatic increase in the services sector over the past decade has been driven by the attraction of large FDI investments, and the growth of indigenous services firms, particularly in ICT related services. Employment in the Wood and Wood Products sector has also increased over the decade, due in part to the activities of Masonite in Leitrim.

In addition, there is a growing life science sector in the region. The region hosts a number of multinational life science corporations such as Abbott, Zeus and Boston Scientific who mostly undertake manufacturing type operations.

Agency Supported Employment in the North West Region by Sector 1995-2005⁹²



In terms of higher education, based on analysis by PACEC consulting, the Border region has a relative concentration of workers with third level qualifications in the areas of Medical fields, Agricultural, Forestry and Veterinary fields, and in Education. By contrast, the region has a particular lack of skilled workers with qualifications in the fields of Life and Medical Sciences, Mathematics, Physical Sciences and Chemistry, Humanities and Social Sciences (including Business & Law).

There are two Institutes of Technology in the North West: Letterkenny IT and IT Sligo. These are discussed in detail below. Sligo is also home to St. Angela's College, a constituent college of NUI Galway. The North West Institute of Further & Higher Education and University of Ulster Magee are both located just across the border in Derry.

⁹² Forfás Annual Employment Survey, Business Information System

Letterkenny Institute of Technology

I. Strategic Development

“Letterkenny Institute of Technology seeks to continuously develop as an academic institution of international standing and quality which serves national and regional educational needs. In so doing it strives to contribute to the economic, community, technological, sociological and cultural development of Ireland and in particular the North West. The institute aims to produce capable professional graduates, developing innovative strategies and to make itself accessible to students of all ages and backgrounds. It aims to promote a working environment that encourages equal opportunities based on initiative, innovation, teamwork, high standards and integrity.”

Letterkenny Institute of Technology 'Learning for Life' Mission Statement

Current Strategic Plan

Letterkenny Institute of Technology's (LYIT) strategic plan 'Letterkenny Institute of Technology Strategic Plan 2006' (covering 2001 to 2006) sets out the following aims with corresponding pathways to help facilitate their achievement:

1. To ensure that the curriculum portfolio is comprehensive in serving the needs of the Institute's communities, and is structured to allow for the widest access and to support lifelong learning.
2. To ensure that the numbers and calibre of staff are appropriate to meet LYIT's current and future needs.
3. To ensure that Letterkenny Institute of Technology continues to be a student-centred institution.
4. To undertake regularly reviews of the Quality Handbook by the Academic Council for adoption by the Governing Body.
5. To analyse demographic trends both nationally and regionally to assess their impact on student supply to the institute.
6. To ensure a total institute environment which facilitates the on-going development of a learning atmosphere to meet an overall institute purpose.
7. To take tangible and transparent steps to further develop LYIT's social inclusion and equal opportunities policies within existing Institute policy.
8. To play a key role in developing innovative, contemporary strategies to maintain Ireland's native language.
9. To provide leadership and quality management based on executive management within a framework of collegiate participation and the free flow of information.
10. To develop and support an effective communications and external relations culture within the Institute and in LYIT's dealings with the outside world.
11. To develop a broad-based research and consultancy culture and foster a cooperative approach with industrial, commercial and academic partners and state agencies.

Strategic Review/Planning

- This is LYIT's first strategic plan. The strategic planning process for it was initiated in 1998 and involved consultation with staff, students and external stakeholders.
- It is currently under review with a new plan due for publication in 2007. To this end, a scenario planning exercise involving a wide range of stakeholders has been conducted and an external consultant has been engaged to assess the present plan and its impact as well as to give direction to the new one.

II. Education and Training

Founded in 1971, the Institute operates across three schools:

- Business (Business, Law & Humanities, Design & Creative Media)
- Science (Science, Nursing, Computing)
- Engineering (Civil & Construction, Electronic & Mechanical)

Student Population

In 2004/5, it had a student population of just over 2,000. This can be viewed by faculty and level in the table below:

Department/ School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by School
		Taught	Research					
Business	0	14	5	148	657	0	824	40.9%
Humanities	0	0	0	0	0	49	49	2.4%
Design	0	0	0	30	170	0	200	9.9%
Science	0	0	4	16	70	0	90	4.5%
Nursing	0	0	0	263	0	0	263	13.0%
Computing	0	0	1	82	179	0	262	13.0%
Engineering	0	0	0	26	303	0	329	16.3%
Total	0	14	10	565	1,379	49	2,017	100.0%
% of Total Population by Level	0.0%	0.7%	0.5%	28.0%	68.4%	2.4%	100.0%	

Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Changes by Department			
Department	Numbers 2004/5	Numbers 2003/4	% change on year
Business	824	847	-3%
Humanities	49	64	-23%
Design	200	204	-2%
Computing	262	355	-26%
Science	90	133	-32%
Nursing	263	290	-9%
Engineering	329	343	-4%
Total	2,017	2,236	-10%

Table: Changes in Student Population by School from 2003/4 to 2004/5

Changes by Level			
Level	Numbers 2004/5	Numbers 2003/4	% change on year
10	0	0	0%
9	24	16	+50%
8	565	607	-7%
7/6	1,379	1,549	-11%
1-5	49	64	-23%
Total	2,017	2,236	-10%

Table: Changes in Student Population by Level from 2003/4 to 2004/5

It can be noted that:

- Over half of the Institute's enrolments in 2004/5 were in the School of Business. The School of Science made up a further 30%, with most of its students split evenly between computing and nursing. There were 90 students in science (4.5% of the Institute's enrolments). The School of Engineering accounted for the remaining 16% at the Institute.
- Nearly 70% of all students were taking courses at Levels 7/6 and just over a quarter were at Level 8. 2.4% were at Levels 1-5 while a small percentage was at Level 9 (1.2%).
- There were 1,891 fulltime and 126 part-time students i.e. 94% fulltime, 6% part-time at the Institute.
- 70% of LYIT students come from Donegal county and 22% of all full-time enrolments are mature students.
- Enrolments at the Institute are down 10% on the previous year, with the largest drops being experienced in science and computing (see comments under Future Plans).
- There has been an Academic Integration Agreement in place between the Institute and the Tourism College of Killybegs (TCK) since 2001. The recent Institutes of Technology Act 2006 (in force 1 February 2007) has now designated TCK as an additional academic school of LYIT.

Within Schools, the following can be noted:

School of Business

- In 2004/5, there were 19 fulltime enrolments at Level 9 in Business (14 taught, 5 research), up significantly from 3 the previous year (research on a fulltime basis).
- Those enrolled at Level 8 and at Levels 7/6 dropped by 9% and 4% respectively between 2003/4 and 2004/5. 91% of those at Levels 7/6 and almost 100% of those at Level 8 were enrolled fulltime.

- Those studying Humanities, the smallest Department at the Institute, were all enrolled fulltime at Levels 1-5, and their numbers dropped from 64 to 49 between 2003/4 and 2004/5.
- All of those studying design were enrolled on a fulltime basis at Levels 6-8. The numbers studying at Levels 7/6 dropped by 4% from 2003/4 to 2004/5 and the numbers at Level 8 increased by 15%.

School of Science

- In the Department of Science, there were 4 fulltime research students at Level 9 in 2004/5, a drop of one on the previous academic year.
- There were 16 fulltime students at Level 8 and 70 students (2 part-time) at Levels 7/6 in the Department that year.
- In 2004/5 there was one fulltime Computing research student at Level 9 compared to 8 in the previous year.
- The numbers studying computing fulltime at Level 8 and at Levels 7/6 dropped by 26% respectively between 2004/5 and 2003/4, the numbers studying on a part-time basis across these levels remained approximately the same over the period (less than 10).
- In 2004/5 all 263 Nursing students were studying at Level 8 (226 fulltime, 37 part-time). In the previous year there was a total of 290 students, 18 of which were studying part-time at Levels 7/6 with the remainder at Level 8 (224 fulltime and 48 part-time).

Engineering

- There were 26 Engineering students (2 of which were part-time) at Level 8 and 303 at Level 7/6 (14 of which were part-time) in 2004/5, a 37% increase and a 6% decrease respectively on the previous academic year.

Other Training Activity

- The Institute also delivers non-accredited training to companies. In 2004/5, it ran a course in Quality Assurance for a local multinational. There were 9 participants from SMEs on a course in Technology and Innovation and the "Stitch Programme" had 15 participants from 7 companies in the clothing sector.
- In the previous year, there had been a total of 45 on such courses:
 - 10 on Quality Assurance
 - 4 taking a course in Time and Motion
 - 16 attending training in Team Leadership;
 - 15 on a Human Resource Management programme from 15 micro firms.

Graduates

School	Numbers	% of Total		Level	Number	% of Total
Business	490	55%		9	55	6.2%
Engineering	151	17%		8	321	36%
Science	250	28%		7/6	515	57.8%
Total	891	100%		Total	891	100%

Table: Conferring of awards at LYIT 2006

- Over half of LYIT's graduates were from the School of Business and nearly 60% were at Levels 7/6.
- A survey of 2005 graduates revealed that nearly two thirds went on to further study, over 20% went into employment and the remainder were either taking a year out or seeking employment.

Future Plans

- In recognition of the fall in student numbers at the Institute, its Executive Board commenced a strategy of new course development in November 2004 particularly for entry level programmes. This has resulted in the introduction of a suite of new programmes with six new ones introduced in September 2005, additional add-on programmes in September 2006 and it is anticipated that several new entry level programmes will come on stream in September 2007.
- It is also intended that all programmes at LYIT will be semesterised and modularised from September 2007. All schools are to undergo programmatic reviews at the same time which will include industry input with the intention of updating all areas of study simultaneously.
- LYIT is pursuing a number of initiatives with respect to access and retention. It aims to
 - Develop non-Leaving Certificate entry routes,
 - Widen access to life long learning and training
 - Achieve a target of 2% of full-time undergraduate places for students with disabilities. (Target now exceeded: at 5%). This will be supported in part by developing new methods of course delivery and through distance and e-learning initiatives.
- Training for the employed is a major priority for the coming years.

III. Research Activity

Research Priorities

The Institute has identified the following as its research priority areas:

1. Marine Biotechnology
 2. Computing games and digital animation
 3. Electronic and wireless technology
 4. Sustainable and renewable energy
- Since 2000 €2.4m has been secured for research into science and marine from various Departments (Education & Science, Marine, Agriculture) and agencies (IRCSET, SFI, Enterprise Ireland). This includes approximately €0.8m from Enterprise Ireland in 2005 under its Applied Research Enhancement Initiative for the Centre for Applied Marine Biotechnology (CAMbio).
 - The Electronics Production Innovation Centre (EPICentre) initially provided technical support for firms and is now developing its research capability. It is a collaborative venture between the University of Ulster, Magee, the North West Institute for Further Education, Derry and LYIT.⁹³ LYIT has received funding of €1m under the INTERREG IIIA programme for the EPICentre.
 - Since 2000, the School of Engineering has received a further €0.2m in research funding from Enterprise Ireland and Inter *Tradel* Ireland and the Department of Computing has been awarded €175,000 also from these agencies.
 - In the same period, the School of Business has received €320,000 from the BMW Regional Assembly under its Regional Innovative Actions Programme and €150,000 under TSR Strand I.
 - The Institute has delegated authority up to Level 8.
 - On a FTE basis 34 staff are engaged in research activity, half of whom are in science with an additional seven in computing and the remainder split between business (six) and engineering (four).
 - In terms of 2005 outputs, the Department of Science issued 15 non-refereed publications, the Department of Computing produced 4 refereed publications and 9 conference/policy papers, while the School of Business Studies issued 4 non-refereed publications.

Research Strategy

- Under the Strategic Plan to 2006, LYIT's aim is to develop a broad-based research and consultancy culture and to foster a cooperative approach with industrial, commercial and academic partners and state agencies.
- This includes ongoing development of research and consultancy on an inter-disciplinary basis, facilitating and encouraging involvement by its staff in R&D and liaising with state agencies to ensure economic development while forging stronger links with cross-border institutions.
- The Institute's R&D policy statement includes the following objectives:
 - To inform and benefit the Institute's teaching programmes in achieving excellence and relevance,

⁹³ lyit.ie

- To train its students in the research process,
 - To pursue and disseminate new knowledge and the applications of knowledge,
 - To promote an academic and intellectual ethos within the Institute.
- These are reflected in its Research Charter.

IV. Collaboration

With Enterprise

- As noted above, LYIT has collaborated with a number of companies on non-accredited training needs.
- It also delivers a Higher Diploma in Financial Services, developed in collaboration with Pramerica and Northbrook Technologies.
- In addition, the Institute engages with companies with the support of public initiatives such as Innovation Partnerships (Enterprise Ireland) and Fusion (Inter *Tradel* Ireland).
- According to draft financial statements, 0.1% (€39,000) of total income for the year ended 31 August 2005 came from industry.

With Others

- As referred to above, LYIT has a range of cross-border collaborations, e.g.
 - Its work with the University of Ulster, Magee and the North West Institute for Further Education, Derry at the EPICentre,
 - The development of an MSc Innovation in Public Management in conjunction with the University of Ulster.
- It collaborates with other higher education institutions and development agencies in Ireland, e.g. in its work on marine biotechnology.
- It is a partner in six Strategic Innovation Fund projects which cumulatively amount to €15.5 million. They include initiatives in workforce development, entrepreneurship, teaching and learning, access, outreach activity and the development of a regional assessment and resource centre⁹⁴.
- In addition, it is a member of the Lionra network of higher education institutions in the BMW region whose current priority areas are:
 - Lifelong learning
 - Entrepreneurship
 - Research
- Internationally, LYIT is part of the European network of incubation centres under the European Gate2Growth Initiative.

⁹⁴ www.lyit.ie

V. Company Formation

Entrepreneurship Programmes

Run in conjunction with IT Sligo and with the support of a number of agencies, the CEIM enterprise development programme provides intensive support for entrepreneurs at LYIT. The Institute had ten participants on it in 2005 and nine prior to that.

Incubation Support

- The Institute's 1,100 m² Business Development Centre (BDC) opened in 2000.
- As of mid-2006 the centre had 16 occupant companies (i.e. 90% occupancy rate) in areas such as
 - Software Development
 - Alternative Energy
 - Digital Media
 - Electronics
- 40 people were employed across these companies.

VI. Resources

Staffing Levels

As of end 2005, the Institute had 278.32 FTE staff, 23 of whom were in management, 121.57 in support and administration, while the remaining 133.75 were academic staff.

Financial Resources

Draft financial statements for the financial year ended 31 August 2005, show that LYIT's total funding amounted to €29.8m, of which

- 75% came from DES
- 15% from fee income
- 10% from other⁹⁵

Physical Resources

- LYIT has nearly 22,400m² of space of which 1,100m² is in the BDC, 3,512 m² is used for nursing studies, approximately 420m² for research and the remainder being split between teaching, administration and support and recreation.
- An extension to the BDC is currently being planned. This will provide an additional 400m² of research space and 700m² of business development space by early 2009. The extension is being funded by Enterprise Ireland and the Department of Education and Science with assistance from LYIT through the revenue generated from its existing BDC to date.

⁹⁵ Other income includes; Room Rental; Project & Research Income; Research overhead contribution; Industry Income; Materials Test Centre; Canteen Income; Superannuation Income; Multi Purpose Centre Income; Udaras na Gaeltachta.

- The Institute has developed a land acquisition strategy with a view to its long-term strategic development which aims to secure any adjoining lands that become available over time. Funding has been approved for the acquisition of an adjoining site and it is anticipated that this deal will be completed shortly.

Institute of Technology Sligo

I. Strategic Development

"The Institute of Technology Sligo aims to provide educational opportunities to the maximum sustainable extent through high quality teaching, research and development. It is a regional higher education institution with a national dimension and international perspectives. It has a particular duty to support the development of its region in economic, social and cultural terms. Recognising the history and traditions of its region, it is founded on moral and ethical values and the principles of equality, justice and academic freedom."

- *Institute of Technology Sligo Mission Statement*

Current Strategic Plan

The Institute's Strategic Plan 2002 to 2007 sets the following objectives:

1. To become the premier Institute of Technology as a place of study for all learners and in so doing to increase the learner population of IT Sligo over the lifetime of the Strategic Plan.
2. To further increase the academic credibility of IT Sligo amongst higher education institutions nationally and internationally.
3. To enhance IT Sligo's reputation in the area of research and postgraduate studies.
4. To be recognised by staff as the premier Institute of Technology as a place of work.
5. To ensure that IT Sligo becomes an integral part of the social, cultural and economic life of the city of Sligo and its surrounding region and in so doing to help the region develop socially, culturally and economically.
6. To continue to enhance the physical facilities of the Institute, in a probable climate of reducing Exchequer funding for capital developments, and thus support the above objectives.

Its implementation was driven by an action plan with specific actions under the following headings:

- (i) Teaching and learning
- (ii) Research
- (iii) Business, community and public engagement
- (iv) Information and communications
- (v) Standard setting, review and evaluation
- (vi) People

Included in these are a number of targets pertaining to the Institute's strategic planning process:

- The undertaking of a full mid-term review of the Strategic Plan
- The establishment of a 'mini' protocol to allow annual measurement of the Institute's achievements against its targets
- The establishment of a planning framework to allow development of a Strategic Plan for the period 2008 to 2012⁹⁶.

Strategic Review/ Planning

The Institute's mid-term review group which included external participants completed its review in April 2005. It concluded that the Strategic Plan 2002-2007 had met or would meet/ exceed its targets.

The Institute is currently preparing a new Strategic Plan for 2007 to 2012 and is using a process agreed by the Governing Body (most of whom are external to the Institute), the Academic Council and the staff Common Forum. The work is being undertaken by four sub-groups who are dealing with:

1. The external environment
2. The internal organisation
3. The student
4. Research and scholarship

As part of the process, two external meetings have been held (by July 2006) and a widespread consultation process with organisations external to the Institute (HEA, HETAC, DES, EI, IDA, CEBs, Chamber of Commerce, VECs, etc.). The plan was adopted by the Governing Body in December 2006.

II. Education and Training

Founded in 1970 as RTC Sligo, the Institute operates across three Schools:

- Business and Humanities
- Engineering
- Science

⁹⁶ Targets relevant to other thematic areas are noted in those sections

In 2004/5, it had a student population of nearly 4,000. This can be viewed by faculty and level in the table below:

Dept./ School	PhD	Masters		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by Faculty
	(Level 10)	(Level 9)						
		Taught	Research					
Business & Humanities	-	24	9	624	1641	15	2,313	58.5%
Engineering	2	-	4	155	784	-	945	23.9%
Science	4	22	7	231	429	-	693	17.5%
Total	6	46	20	1,010	2,854	15	3,951	100%
% of Total Population by Level	0.2%	1.2%	0.5%	25.6%	72.2%	0.4%	100%	

Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)⁹⁷

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Changes by School				Changes by Level			
School	Numbers 2004/5	Numbers 2003/4	% change on year	Level	Numbers 2004/5	Numbers 2003/4	% change on year
Business & Humanities	2,313	2,223	4%	10	6	6	0%
Engineering	945	782	21%	9	66	94	-30%
Science	693	802	-13.6%	8	1,010	878	15%
Total	3,951	3,807	3.8%	7/6	2,854	2,816	1.3%
				1-5	15	13	15%
				Total	3,951	3,807	3.8%

The following can be noted:

- The bulk of enrolments in 2004/5 were in Business and Humanities (over 2,300), 945 were in Engineering while the smallest School was Science with 693 students.
- Nearly three quarters of students studying at IT Sligo in 2004/5 were at Levels 7/6 and one quarter at Level 8. The remainder were at the further ends of the NQF spectrum: 1.9% at Levels 9/10 and 0.4% at Levels 1-5.

⁹⁷ Excluding those on apprenticeship courses

- There were nearly 3,500 fulltime students and the remainder (465) part-time, i.e. 88% fulltime, 12% part-time.
- Approximately half of the 21% increase in the engineering faculty enrolments in 2004/5 came from an additional 88 part-time students.
- Similarly, the nearly 14% drop in the Science faculty numbers is attributable to the change in part-time enrolments: this time a fall (of 109). Full-time enrolments remained the same for the two years.
- A large part of the fall at Level 9 can be attributed to the fall in numbers studying for a science masters on a taught part-time basis (49 fewer students).
- 81% of IT Sligo's students came through the standard second level route. 12% were deemed non-standard, e.g. mature, and the remaining 7% came through further education. Flexible modes of delivery, e.g. podcasting, are being developed at the Institute to cater for the growing learner diversity.
- In addition to the courses noted above, the Institute also operates a number of apprenticeship courses:

Trades 2004/5	No. of participants	% of Total
Carpentry/ Joinery	732	70.3%
Toolmakers	86	8.3%
Electricians	223	21.4%
Total	1,041	100%

Table: Apprenticeship course participants

Within Departments, the following can be noted:

Business and Humanities

- In 2004/5, there were 9 students undertaking a research masters on a fulltime basis and 24 enrolled in a taught masters on a part-time basis (compared to 16 and 0 respectively in the previous year).
- At level 8, there were 561 full-time students and 63 part-time students in 2004/5.
- 1,641 were studying Business and Humanities at Levels 7/6, making up 42% of the total student population in IT Sligo in the 2004/5 academic year.
- 15 people were taking a course at Level 5 entitled "Training for Success", a pre-employment training course designed especially to meet the needs of people with epilepsy.

Engineering

- In 2004/5 the bulk of engineering students were at Levels 7/6 (784 out of 945 or 83%) and 155 were at Level 8, 35 of whom were part-time.
- In 2003/4, a similar proportion was at Levels 7/6, while 134 were enrolled (full-time) at Level 8.
- There were 6 students above these levels in 2004/5 (2 working on PhDs and 4 on research masters) all on a full-time basis and there were no students below Level 6.

Science

- Within science, the majority (429 out of 693 students) were at Levels 7/6 in 2004/5. Only 2 of these were part-time.
- One-third of science students were studying at Level 8, a higher proportion than those studying at this level in engineering or business and humanities (16% and 27% respectively).
- At Level 9, 22 people were undertaking a taught masters, of which 10 were part-time. The latter figure is down substantially on 2003/4 when it stood at 59. 7 people were enrolled on a research masters on a part-time basis.
- There were 4 PhD students, all but one of whom were fulltime.

Other Training

A number of non-accredited courses were also delivered during this period. 54 students took these courses each year, of which 44 (from Abbott and Baxter) studied analytical techniques and the remainder underwent Environmental Management System training.

Graduates

In 2004/5, 1,691 people graduated across the following levels and schools as can be noted in the table below:⁹⁸

School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Faculty
		Taught	Research					
Business & Humanities	-	10	4	343	704	12	1,073	60%
Engineering	1		2	19	411	-	433	24%
Science	1	28	5	101	146	-	281	16%
Total	2	38	11	463	1,261	12	1,787	100%
% of Total Graduates by Level	0.1%	2.1%	0.6%	26%	70.1%	0.7%	100%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)⁹⁹

- Of these, 70 had been part-time students and the remainder fulltime.
- The bulk of them came from levels 7/6 (70%) and level 8 (26%).
- The number of graduates is virtually the same as the previous year.
- 70% across all levels went on to further study, 28% into employment (35% of that within the region and 62% in Ireland more widely), while the small remainder were either still seeking employment or unavailable for further study/ employment.

⁹⁸ These figures do not include those completing apprenticeship courses.

⁹⁹ Excluding those on apprenticeship courses

Future Plans

- Under its 2002-2007 Strategic Plan, the Institute aims to develop one completely new part-time programme (leading to a full award) in each school. According to the April 2005 mid-term review, this has been achieved in all Schools.
- The plan also contains a proposal to create a system for identifying and delivering training and education needs of individuals, groups and organisations within the region. This is a key component of the Institute's ongoing lifelong learning agenda.

III. Research Activity

Research Activity

The Institute's priority research areas are identified as:

1. Environment
 2. Mechanical and Manufacturing Engineering
 3. Socio-economic research
- It is the lead partner in the PRTL-funded Biosolids Research Programme Centre for Sustainability that started in 2001 (total funding €3.2m; other partners NUI Galway, UCD, UL, LIT, TCD).
 - It also secured funding (total €1.4m) in 2004 from INTERREG for the Robotics in Integrated Manufacture for the 21st Century (RIM-21) in co-operation with the North East Institute in Ballymena.
 - The Applied Design Centre has three staff members and funding from Enterprise Ireland (under the Applied Research Enhancement Initiative) of €1m over a three-year period. Current industry partners include Masonite and Ansamed.
 - Under FP6, IT Sligo received total funding of €70,000 (as of 9 January 2007).¹⁰⁰
 - The Institute has Level 9 and 10 research degree awarding status in the areas of environment and mechanical/ manufacturing engineering. It has taught degree awarding status to Level 9 for all of its programmes.
 - According to its financial statements for year end 31 August 2005, the Institute received €1.039m in research grants and contract funds in that year (3.4% of the Institute's total funding sources for that year).
 - In 2005, the Institute had 15 publications, 13 of which were refereed. In addition, it produced 37 conference/ policy papers.
 - 43 research projects were underway as of mid-2006, 13 of which were started during 2006.
 - There are 13 research staff on contract with the Institute involved in research initiatives and an average of 1 research student plus 0.13 FTE research supervisor per research project.

¹⁰⁰ Forfás database as of 9 January 2007

Research Strategy

Under the Institute's Strategic Plan 2002-2007, research-related objectives include:

Strategic Plan Target	Status according to April 2005 Mid-Term Review
Appointment of a dedicated Head of Research.	Achieved.
Development of a 'small sums' research funding programme to encourage staff members not previously involved in research.	Scheme agreed and implemented by the Research Committee.
Development of a Research Methods programme for delivery to all new postgraduate students.	Achieved.
Completion of a Research and Development building.	Completed summer 2006.

IT Sligo's research management strategy (currently being re-drafted) sets out the Institute's underpinning objectives, e.g. support for the active dissemination of research findings, and the process by which research projects are identified and processed within the Institute.

IV. Collaboration

With Enterprise

The Institute's predominant engagement with industry is on training. Its three main collaborations in 2005 were with:

- *Coca-Cola*
The course (a global training contract) was delivered over a two-week period (8 hours per day) and graduates received a single subject Level 6 qualification in analytical techniques. In terms of Institute resources, it involved 7 lecturers, 3 technicians and 1 administrator.
- *Masonite*
A Level 7 course in Manufacturing Management has been delivered over a two-year period with contact time varying between four and eight hours per week. It involves 5 lecturers and 1 administrator.
- *Abbott*
Company training (non-accredited) on analytical techniques was provided over a two-week period (8 hours per day) involving 4 lecturers.
- With a view to enhancing its engagement with firms, IT Sligo has recruited a Commercial Projects Manager (reporting to the Industrial Liaison Manager) to work with companies in developing firm-specific programmes.
- In the area of research, IT Sligo is a member of the consortium selected to operate the National Institute for Bioprocessing and Training (NIBRT). Based in UCD and with other partners TCD and DCU, IT Sligo is co-ordinating the training component and will also take part in some research activity. IT Sligo's current staff commitment to this is 1.25 FTE.

With Others

- A Memorandum of Understanding has been signed between the Institute and Sligo General Hospital and at any one time 2-3 collaborative research projects are underway. The Institute Director is Chair of the hospital's Research and Education Foundation. The Institute also collaborates on research with the Health Services Executive.
- In addition, it has secured a contract with the Health Services Executive to deliver a BA (Level 7) in Applied Social Studies over a three-year period.
- In addition, it has recently put in a submission to provide training for the Prison Service.
- Research collaborations are ongoing with Irish universities, a number of Institutes of Technology and some international colleges.
- It is the lead institution for a €295,000 project under the Strategic Innovation Fund for the development of a graduate research alliance.
- The Institute has collaborated with several other actors, including a number of Institutes (Leterkenny, Athlone, GMIT), Enterprise Ireland, WestBic, to deliver programmes to support business start-ups in the region.
- On an all-island angle, it is linking in with the North East Institute in Ballymena on RIM 21 which enables company training in robotics and other aspects of engineering.

V. Company Formation

Entrepreneurship Programmes

- The Institute has assisted entrepreneurs through CEIM - its enterprise development programme. This is supported by PEACE II and some participants receive assistance from either Enterprise Ireland or Udarás na Gaeltachta.
- Run in co-operation with IT Letterkenny, it had 12 participants in both 2004 and 2005.

Incubation Support

- First opened in 1989, the Institute's incubation centre was extended in 1998 and again in 2006. The most recent expansion brings its overall size to 2,777 m².
- There were 13 occupant companies with 32 employees at the end of 2005.¹⁰¹
- The main areas of activity in the centre are:
 - Web design
 - Software development
 - Chemical/ environmental analysis
 - Telecommunications
 - Presentations and conference solutions

VI. Staffing and Resources

Staffing Levels

- As of end 2005, the Institute had 486 staff (FTE), of which 7 were management, 143 in administration and support and 336 were academic members of staff.
- Within the latter, the breakdown among schools was as follows:

School	Full-time	Part-time	Total
Business & Humanities	84	63	147
Engineering	77	26	103
Science	33	53	86
Total	194	142	336

¹⁰¹It should be noted that due to the construction works, a number of occupants were displaced so figures are not necessarily representative.

Financial Resources

For the financial year ended 31 August 2005, the Institute's funding sources totalled €30.8m, of which

- 60% came from DES
- 29% from fee income
- 1.3% from industry
- 3.4% from research grants and contract funds, and
- 6.3% from other sources

Physical Resources

IT Sligo has nearly 32,000m² of space at present and approximately a further 4,200m² planned, broken down as follows:

	Existing (m ²)	Under construction/ approved for construction (m ²)	Total	% of Total
Teaching	15,083	-	15,083	42%
Research	232	700	932	2.6%
Incubation	1,490	1,072	2,562	7.2%
Admin	1,081	-	1,081	3%
Other	13,716	2,414	16,130	45%
Total	31,602	4,186	35,788	100%

North East

The North East region comprises the counties of Louth, Cavan and Monaghan. It hosts one National Spatial Strategy regional gateway town (Dundalk) and two NSS 'hub' towns (Cavan and Monaghan).

The majority of regional statistics prepared by the CSO are presented at a NUTS III level (e.g. Border region). As a result available economic data specific to the North East region is limited.

The North East region has a population of 230,671 persons, roughly equating to 5.4 percent of the national population. The population of the region has grown strongly by 9.3 percent since 2002, ahead of the national rate of growth for the period of 8.1 percent.

Using the Live Register as a crude proxy for unemployment, approximately 6 percent of the population of county Louth are on the Live Register, compared to approximately 4 percent in counties Cavan and Monaghan. It should be noted however that the numbers on the Live Register in Louth have fallen steadily in recent years, as compared to the static level experienced in Cavan and Monaghan.

The key sectors of employment in the region are

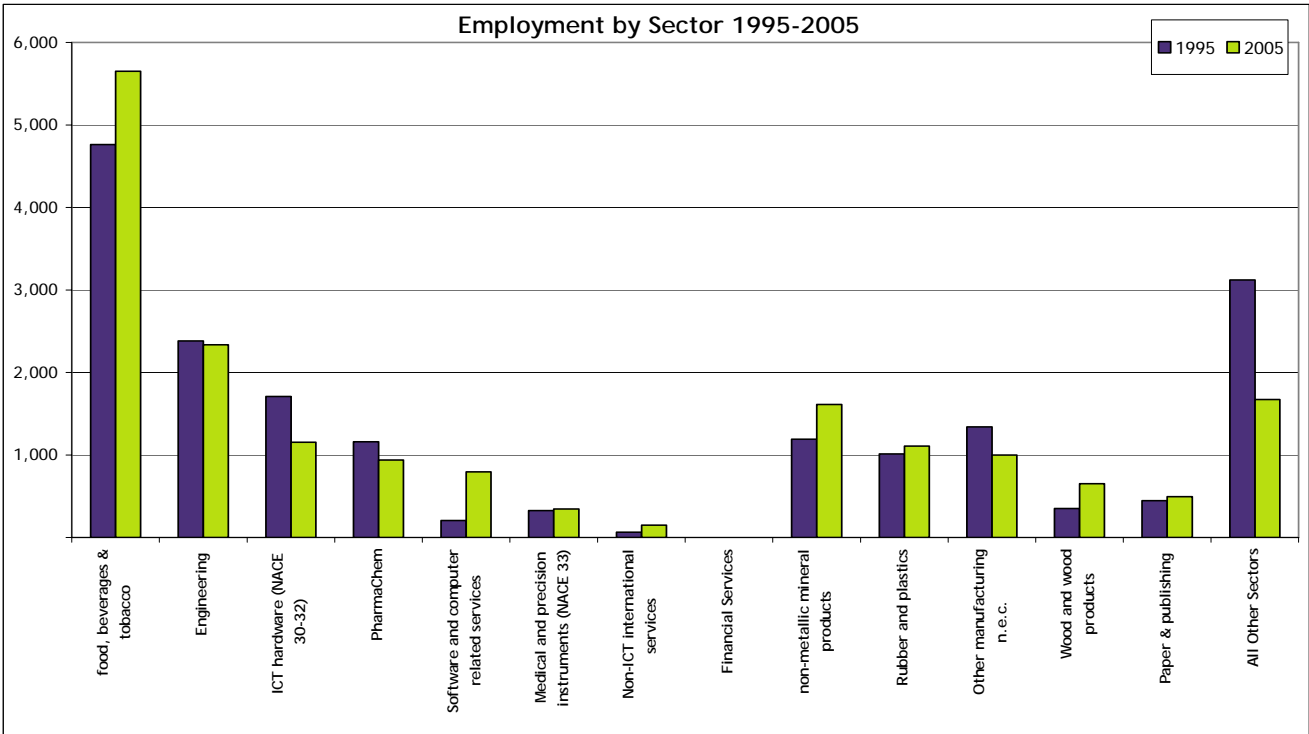
- (i) The food, beverage and tobacco sector,
- (ii) The engineering sector, and
- (iii) The non-metallic mineral processing sector.

The past decade has seen a number of distinct changes in the pattern of sectoral employment within the region. There have been sharp declines in the numbers employed in the ICT Hardware, 'other manufacturing'¹⁰² sectors over the period, representing difficulties experienced at Xerox, Penn Racquet Sports, Thorsman, etc. Meanwhile there has been strong employment growth in the food, beverage and tobacco sector, the software and computer services sector (albeit from relatively low base), and in the non-metallic mineral processing sector.

Overall, the food, beverage and tobacco sector is both the largest sector of employment, and the sector that has experienced the most significant employment gain over the period. Looking forward, there is a nascent but rapidly growing cohort of enterprises in the software and computer services sector (e.g. Vesta Corp and Pillar Data Systems), and in the financial and back office services sectors (e.g. Quinn Direct, Bank of Scotland, and IFS).

¹⁰² This classification includes companies involved in the manufacture of furniture, Jewellery, sports equipment, toys, etc.

Agency-Supported Employment by Sector 1995 - 2005



With regard to higher education, based on analysis by PACEC consulting, the Border region has a relative concentration of workers with 3rd level qualifications in the areas of Medical fields, Agricultural, Forestry and Veterinary fields, and in Education. By contrast, the region has a particular lack of skilled workers with qualifications in the fields of Life and Medical Sciences, Mathematics, Physical Sciences and Chemistry, Humanities and Social Sciences (incl. Business & Law).

The region contains no Universities but is home to an Institute of Technology in Dundalk (DKIT) which is profiled below.

Dundalk Institute of Technology

I. Strategic Development

“To provide the community with quality third level education and services, relevant to the economic social and cultural development of the region in the national and international context. It aims to promote personal responsibility among all its students and enhance the professionalism of all its members in a supportive, inclusive and productive environment.”

- *Dundalk Institute of Technology Mission Statement*¹⁰³

Current Strategic Plan

DKIT's Strategic Plan 2006-2011 sets out the following six strategic objectives:¹⁰⁴

1. To transform the teaching and learning process of the Institute so as to create a learner-centred and empowering process in which students take responsibility for their own learning and in which the staff-student relationship is based on equality and mutuality.
2. To develop an Institute-wide culture of collegiality based on academic autonomy, self-direction and personal responsibility.
3. To develop a research and scholarship culture which can foster a vibrant postgraduate programme and underpin the undergraduate programme in the Institute, to ensure delegation of authority at Levels 9 and 10 and to secure a national and international reputation for excellence in a select number of strategic research areas.
4. To develop the Institute as the Educational, Cultural, Economic and Social hub of the North East region so as to underpin the ongoing economic and social development of the region. The Institute is also committed to supporting education and developmental initiatives of benefit to other regions.
5. To continue the development of the campus to ensure that it is capable of meeting the educational and extra-curricular needs of its staff and students, meets their extra-curricular requirements and is aesthetically attractive and environmentally friendly and safe.
6. To build the organisation capability of the Institute to respond and adapt to change.

Strategic Review/Planning

The Strategic Plan 2006-2011 succeeds the Institute's first strategic plan (covering 2000-2006). The Institute's Strategic Planning Group was responsible for drawing up the plan and their work included consultation with external stakeholders including the IDA, Enterprise Ireland, the Chamber of Commerce and local industry. External facilitators were engaged to support and oversee the process in order to promote maximum participation by the Institute community and external stakeholders in developing and refining the plan.

¹⁰³ Dundalk Institute of Technology Strategic Plan 2006-2011

¹⁰⁴ Ibid.

II. Education and Training

Founded in 1970, the Institute currently operates across four schools:

- Business and Humanities
- Engineering
- Informatics, Music and Creative Media
- Nursing, Midwifery, Health Studies and Applied Sciences

Under its 2006-2011 Strategic Plan, it proposes to re-structure its schools and departments as outlined below. The objective is to reduce the average size of departments while growing full-time student numbers, with the consequent effect that the number of academic departments will go from 10 to 16.

<i>School</i>	<i>Constituent Departments</i>
Business	Business Studies Hospitality & Catering Management & Financial Studies Lifelong Learning
Humanities & Social Sciences	Humanities Social Sciences
Engineering	Infrastructural & Environmental Studies Building & Surveying Mechanical Electronic & Electrical Apprentice Sections
Informatics, Music & Creative Media	Computing & Mathematics Music Creative Media
Nursing, Midwifery, Health Studies & Applied Sciences	Nursing Health Studies Midwifery Applied Sciences

Table: Proposed School and Department Structure (DKIT Strategic Plan 2006-2011)

Student Population

In 2004/5, DKIT had a student population of nearly 4,600. This can be viewed by faculty and level in the table below:

Dept./ School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by School
		Taught	Research					
Business	0	53	4	493	804	264	1,618	35.3%
Computing	0	6	5	68	374	156	609	13.3%
Engineering	0	30	0	192	513	199	934	20.4%
Humanities	1	14	1	117	347	299	779	17.0%
Science & Nursing ¹⁰⁵	0	0	0	409	129	105	643	14.0%
Total	1	103	10	1,279	2,167	1,023	4,583	100.0%
% of Total Population by Level	0.0%	2.2%	0.2%	27.9%	47.3%	22.3%	100.0%	

Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)¹⁰⁶

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Department	Numbers 2004/5	Numbers 2003/4	% change on year	Level	Numbers 2004/5	Numbers in 2003/4	% change on year
Business	1,618	1,700	-5%	10	1	1	0%
Computing	609	582	+5%	9	113	92	+23%
Engineering	934	831	+12%	8	1,279	1,117	+15%
Humanities	779	663	+17%	7/6	2,167	2,370	-9%
Science & Nursing ¹⁰⁷	643	663	-3%	1-5	1,023	859	+19%
Total	4,583	4,439	+3%	Total	4,583	4,439	+3%

Table: Changes in Student Population by School from 2003/4 to 2004/5

Table: Changes in Student Population by Level from 2003/4 to 2004/5

- Over half of the students enrolled were in Business and Humanities. Engineering accounted for 20% while the remainder was split almost evenly between Science and Nursing and Computing.

¹⁰⁵ School of Nursing, Midwifery, Health Studies & Applied Sciences.

¹⁰⁶ Excluding those on apprenticeship courses.

¹⁰⁷ School of Nursing, Midwifery, Health Studies & Applied Sciences.

- 47% of students were taking courses at Levels 7/6 and 28% at Level 8. Over 20% were studying at Levels 1-5 and the remaining 2% at Level 9 with the majority of them in taught programmes.
- In 2004/5 there was a drop of nearly 10% in those studying at Levels 7/6 and an increase of 15% in those studying at Level 8. At the further ends of the spectrum, those studying at Levels 1-5 increased by 19% while those at Level 9 increased by 23%. Within the latter, it is worth noting that fulltime students increased from 29 to 69 while part time (all within the School of Business) fell from 63 to 44.
- There were 3,235 fulltime and 1,348 part-time students enrolled at DKIT in 2004/5, i.e. 71% fulltime, 29% part-time. 64% of part-time students were studying at Levels 1-5 making up nearly 85% of all students at Levels 1-5.
- In addition to the courses noted above, the Institute operates a number of apprenticeship courses with total enrolments of 1,050 in 2004/5:

Trades	No. of participants	% of Total
Carpentry and Joinery	214	20.4%
Electrical	531	50.6%
Motor Mechanic	90	8.6%
Plumbing	215	20.5%
Total	1,050	100.0%

Table: Apprenticeship courses participants

- Approximately two thirds of the Institute's intake comes directly through the CAO from the Leaving Certificate.

Within departments, the following can be noted:

Business Studies

- In 2004/5 there were 57 students at Level 9, down from 71 in the previous year primarily because of the drop in part-time enrolments.
- The numbers studying at Level 8 remained broadly the same across the two years.
- In 2004/5 there was a drop of nearly 10% to 804 of those studying at levels 7/6 and an increase 17% in those studying at Levels 1-5 on the previous year.

Computing

- 11 students were at Level 9 in 2004/5 (6 taught and 5 research) compared to 4 research students in the previous year (all full-time).
- The numbers studying at Level 8 dropped by one-third to 68 in the same period.
- No part-time students were enrolled above Levels 7/6.
- There was an increase of 18% in the numbers studying at those levels while those at Levels 1-5 remained broadly constant across the two years.

Engineering

- 30 fulltime students undertook taught masters at Level 9 in 2004/5 as compared with no students enrolled at Level 9 in the previous year.
- The numbers studying at Level 8 increased by 50% to nearly 200 students.
- Again there were no part-time students enrolled above Levels 7/6, at which there was a fall of 6% on the previous year.
- All 199 enrolments at Levels 1-5 were studying on a part-time basis.

Humanities

- The Institute's one Level 10 enrolment in 2004/5 was in the School of Humanities.
- 15 fulltime students were at Level 9 in 2004/5 (14 taught and 1 research) where there had been 6 fulltime research students in the previous year.
- The numbers studying at Level 8 increased by 63% on the previous year to nearly 120 students in 2004/5. Over 30% of students at this level were studying part-time.
- Those at levels 7/6 dropped by 6% in the same period.
- The numbers studying at Levels 1-5 increased by nearly 40% to approximately 300.

Nursing, Midwifery, Health Studies & Applied Sciences

- There were no students studying at Level 9 in 2004/5, there had been 11 students enrolled on the taught masters in the prior year.
- The numbers studying at Level 8 increased by 35% to just over 400 in 2004/5.
- In 2004/5 there were 129 students at Levels 7/6, this was a drop of nearly 50% on the previous year.
- All of those at Levels 1-5 were studying on a part-time basis.

Other Training Activity

- An ACCA course is run by the Business Studies Department, which had 19 participants in 2004/5.

Graduates

In 2004/5, 1,786 people graduated across the following levels and departments as can be noted in the table below:

Dept./School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Dept.
		Taught	Research					
Business	0	35	1	206	373	30	645	36.1%
Computing	0	0	0	67	186	12	265	14.8%
Humanities	0	0	0	13	66	40	119	6.7%
Engineering	0	0	0	202	244	0	446	25.0%
Science & Nursing ¹⁰⁸	0	0	0	52	166	93	311	17.4%
Total	0	35	1	540	1,035	175	1,786	100.0%
% of Total Graduates by Level	0.0%	2.0%	0.1%	30.2%	58.0%	9.8%	100.0%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)¹⁰⁹

- This was an increase of 11% or 180 people on 2003/4.
- The bulk of graduates came from Business (36%) and Engineering (25%) and graduated at Levels 7/6 (58%) and Level 8 (30%).
- Approximately 80% of graduates had been full-time students.
- Nearly 80% of graduates in Business, Computing and Engineering went on to further study and most of the rest secured employment.
- However, in the case of Science, approximately two thirds of Science graduates went into employment and the remainder on to further study.

Future Plans

- Under DKIT's Strategic Plan 2006-2011, the Institute plans to review and re-design courses to facilitate wider learner access.
- It aims to grow student numbers partly by new course development, but primarily by a more successful retention pattern through a four-year degree programme. It is envisaged that there will be 4,500 fulltime students by 2011.
- It intends to make the concept of lifelong learning a key element of the Institute's mainstream provision. It is envisaged that there will be 2,300 part-time students by 2011.

¹⁰⁸ School of Nursing, Midwifery, Health Studies & Applied Sciences

¹⁰⁹ Excluding those on apprenticeship courses.

- As noted above, it also proposes to increase the number of departments from 10 to 16, aiming for a situation in which no department would have more than 15 academic staff or 300 students.
- The Institute aims to secure delegated authority for Levels 9 and 10 by research in a limited number of areas.
- DKIT aims to increase research and postgraduate student numbers to 250 (95 in 2004/5) over the period of the Strategic Plan 2006-2011 and to ensure that every honours degree programme provides postgraduate options for students.

III. Research Activity

Research Priorities

Based on the review of the Institute's Research Strategy by Indecon Consultants (2006), the Institute has identified the following as future priority areas:

1. *Smooth Muscle Research Centre*

This research is aimed at improving understanding of the basic mechanisms underlying the physiology of spontaneous activity in lymphatic, urethra and erectile smooth muscle.

The centre has received funding totalling €1.9m, €900,000 of which came from the National Institute of Health, USA, €620,000 from Wellcome Trust, €260,000 from the Health Research Board and the remaining €87,000 from Diabetes UK.

2. *Centre for Entrepreneurship Research*

Established in 2001, research areas include entrepreneurship education, female entrepreneurship and innovation in SMEs.

- The Institute is also active in a number of other research areas including:
 - Centre for Renewable Energy (CREDIT)
 - Software Technology Research Centre
 - National Centre for Freshwater Studies
 - Nestling Technology
- DKIT has been successful in securing funding for research from a range of sources including DES, Enterprise Ireland and Atlantic Philanthropies. Cross-border funding is key support with monies coming from Intertrade Ireland, PEACE II and the EU Interreg 3A Programme among others.
- It collaborates with a number of other higher education institutions including NUI Maynooth, Waterford IT, Dun Laoghaire Institute of Art, Design and Technology and Queen's University Belfast.
- The Institute has delegated authority for all taught courses up to Level 9.
- There are 87 academic staff and 16 Post Docs engaged in research activity at the Institute. The majority of these are in the School of Informatics, Music and Creative Media (33) and the School of Engineering (27). The remainder is split almost evenly between the School of Business and Humanities and Nursing, Midwifery, Health Studies and Applied Sciences.

- The following outputs were produced across DKIT research centres in 2005:

Research Centre	Publications	Conference/ Policy papers	Other Published Research
Centre for Entrepreneurship	11	39	15
Smooth Muscle Research Centre	87	26	14
Software Technology Research Centre	8	47	
Centre for Renewable Energy		6	6

- Across the rest of the Institute there were 5 other refereed publications, 19 conference/policy papers, 3 books and 20 other publications.

Research Strategy

- Under its Research Policy Statement, the Institute aims to:
 - “Encourage and support research and scholarly activity in specific strategic areas involving, where appropriate, multidisciplinary teams. The Institute also aims to encourage and promote the development of value-added research networks with other Higher Education Institutions, with Research Centres and with end users on a national and transnational basis”.
- Underpinning DKIT’s pursuit of external (national and international) funding sources, it formalised its internal support measures for research activity in 2003. These include:
 - Research seed funding
 - Secondments
 - Sabbatical Leave
 - Research Centre designation
- Under its Research Strategy (updated in January 2006), the Institute aims to promote a culture where research and consultancy are encouraged by supporting staff who carry out these activities, e.g. through reward, recognition and time allowances.
- DKIT’s research strategy also includes targets to, by 2010:
 - Grow the number of staff with PhD qualifications to 25%,
 - Ensure 20% of staff are engaged in supervising postgraduate research projects,
 - 20% of staff have strong publication credentials.
- DKIT’s Research Strategy is currently undergoing a major review by Indecon International Economic Consultants to consider the Institute’s internal support measures and programmes, assess the impact of research activity, review the management and planning of research and address the areas of intellectual property and research ethics.

IV. Collaboration

With Enterprise

- DKIT engages with firms mainly through Enterprise Ireland's Innovation Partnerships Initiative and IntertradeIreland's Fusion programme.
- While the provision of training to companies has been limited to date, non-accredited skill courses and customised programmes for industry are available.
- Its Regional Development Centre (RDC), established in 1989, acts as the Institute's Innovation Support and Technology Transfer arm.
- The Midas cluster operating out of the RDC involves approximately 20 SMEs within creative and digital media. It is a cross-border initiative (€2.32m over two years) that aims to develop
 - Business-to-business linkages among creative & digital media companies
 - Joint marketing initiatives
 - Increasing levels of export-led growth for creative & digital media SMEs in the East Border Region
 - Increasing opportunities for cross-border technology transfer, innovation and new product development for participating SMEs
- Some examples of other Institute interactions with firms include:
 - Working with Kingspan Ltd. on the development of an on-campus research and demonstration facility,
 - The placement of a dedicated researcher from Airtricity in CREDIT for a period of two years.

With Others

- As noted above, DKIT has engaged with a number of higher education institutions on mutual areas of interest, e.g. with the University of Ulster on nestling technologies.
- It is involved with enterprise development agencies, e.g. Enterprise Ireland on collaborative research projects.
- The Institute has established off-campus incubation facilities in Drogheda, in collaboration with the Drogheda Corporation, Louth County Enterprise Board and Enterprise Ireland and International Fund for Ireland In addition, it is active in a range of cross-border initiatives, including the establishment of its Cross Border Centre for Community Development in 2001.

V. Company Formation

Entrepreneurship Programmes

- Since the RDC's opening in 1989, the Institute has provided assistance to over 350 entrepreneurs through a range of initiatives.
- The North East Enterprise Platform Programme had 42 participants over the period 2002-2004 and 10 in 2005.

- Under the Creative Media Enterprise Support Programme, there were 20 participants during 2002-2004, with a further 20 in 2005. This was funded by Co-operation Ireland and provided in partnership with Queen's University Belfast.
- The Coca-Cola Enterprise Awards initiative had 115 participants in 1997-2003.

Incubation Support

- The RDC includes 2,300m² of incubation space.
- A 160m² off-campus incubator has recently opened at Millmount, Drogheda.
- Its Novation programme provides incubation support to technology/ knowledge-intensive start-ups in their early developmental phases.
- As of mid-2006, the RDC had 15 occupant companies (i.e. 90% occupancy rate) employing 52 employees in areas such as
 - ICT
 - Renewable Energy
 - Games Development
 - Digital Content
 - E-learning
 - Electronics
- It is estimated that 50% of the occupant companies came through the Enterprise Platform Programme.

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 439 fulltime (FTE) staff. 8 were in management, 174 in support and administration and the remaining 257 were academic staff. All 59 part-time staff were academic.
- The academic staff can be broken down across faculties as follows:

	Fulltime	Part-time	Total
Business & Humanities	62	21	83
Engineering	94	4	98
Infomatics, Creative Media and Music	59	16	75
Nursing, Midwifery, Health Studies and Applied Sciences	42	18	60
Total	257	59	316

- The Strategic Plan 2006-2011 contains proposals to build on the Institute's existing staff training and development programme.

- As noted earlier, its Research Strategy has clear targets set out on the qualifications held by existing and recruited staff.

Financial Resources

- For the financial year ended 31 August 2005, DKIT's draft financial statements show total funding of €37.6m, of which
 - 59% came from DES
 - 26% from fee income
 - 10% from research and development
- The Institute intends to develop a strategy to generate substantial extra funds, in addition to those received from the sources above, to allow it to grow and expand.

Physical Resources

- The Institute has nearly 37,000m² of space at present broken down into:

	Existing m ²	% of Total
Teaching	33,000	89.5%
Smooth Muscle Research Centre	492	1.3%
National Freshwater Lab	100	0.3%
Incubation	2,100	5.7%
Administration	1,000	2.7%
Off Campus Incubation facility Drogheda	160	0.4%
Total	36,852	100.0%

- Additional teaching space of 11,000m² is planned.
- The majority of space used by researchers and research centres is accommodated in the incubation facility.
- Under its Strategic Plan 2006-2011, the Institute plans to complete its Campus Master Plan initiated in 2005. This will deliver space for 4,500 full-time students, 2,000 part-time students and approximately 500 staff by 2011.

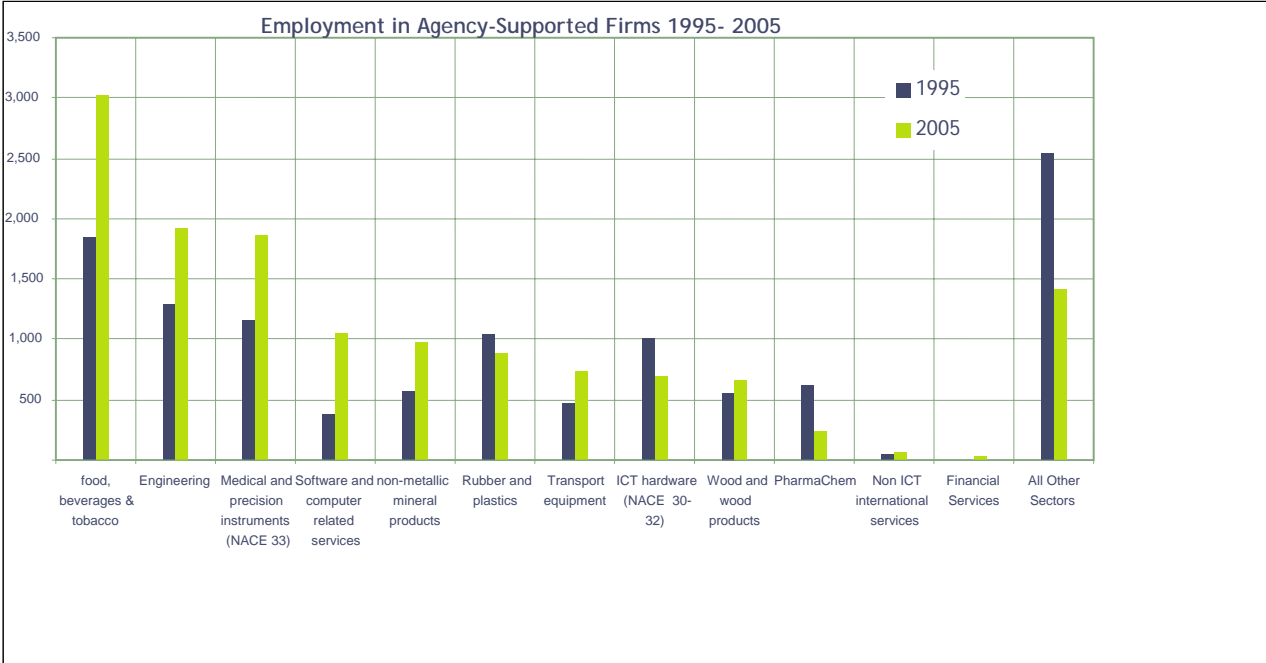
Midlands Region

The Midlands region comprises the counties of Longford, Westmeath, Offaly and Laois and in 2006 had a population of 251,380, which represented an 11.5 percent increase since 2002. Principal towns in the region include Athlone, Tullamore, Mullingar, Longford and Portlaoise. The towns of Athlone, Tullamore and Mullingar (ATM) have been linked together as a single Gateway in the NSS.

The following key statistics can be noted:

- The labour force currently numbers some 124,700, while unemployment remains just below the national average at 4.7 percent.
- In 2003, the Midlands generated €4687m (or 3.8 percent) of national Gross Value Added (GVA), giving it the lowest GVA per capita in the country at €20,350. The services sector contributed 65.3 percent to the region’s total GVA, the manufacturing and construction sector 29.7 percent, while agriculture, forestry and fishing provided the remainder of 5 percent.
- Regarding educational attainment, the Midlands comes in below the national average with 21.7 percent of those in the workforce holding a third level qualification, compared to 30.7 percent nationally.

Total agency supported employment in the region stood at 13,521 in Q4 2005, up from 11,589 a decade earlier.



Food, beverages and tobacco is the region’s largest employer within agency-supported employment. Growth in the sector over the period has been strong, totalling 63 percent. This performance is especially good when compared nationally, where growth in the sector has averaged closer to 12 percent. The main drivers of this employment growth in the region’s food sector have been Irish owned meat processing companies, such as Galtee Meats, Glanbia Fresh Pork, Roscrea Bacon Factory and Carroll Meat Manufacturing.

Engineering, medical and precision instruments, software and computer related services and non-metallic mineral products are the next largest employers, in that order. Each of these has shown strong levels of employment growth. Engineering was the weakest performer of the group in relative terms, registering growth of almost 40 percent, and while software and computer related services was the strongest, having grown by 157 percent, its performance depended heavily on the activities of Ericsson, which employs just under 600 within the region.

Rubber and plastics, pharmachem and ICT hardware and were the only large sectors to incur employment losses. The decline in pharmachem and ICT hardware were particularly marked, being 59 percent and 29 percent respectively. This was largely due to job losses in companies such as Arlington, a detergent manufacturer, and Leoni, a producer of insulated cable and wiring. Elan also lost employees since 2000, but overall the company still employs more than it did in 1995.

In terms of higher education, the region has one Institute of technology, in Athlone (AIT) which is discussed in detail below. Research capacity in the region has recently been added to through the establishment of the Georgia Tech Research Institute for Athlone, with the involvement of the IDA. Its focus will be directed at the IT, biotechnology and energy sectors.

Athlone Institute of Technology

I. Strategic Development

"Athlone Institute of Technology aims to contribute to the technological, scientific, commercial, economic, industrial, social and cultural development of the State, with particular reference to the midland region, through the provision of a balanced education to the highest international standard founded in accessibility, mobility, collaborative links and research excellence."

*-Athlone Institute of Technology Mission Statement*¹¹⁰

Current Strategic Plan

AIT's Strategic Plan 2003-2008 sets out six priority themes under the following headings:

1. *Positioning, context and portfolio*

To be recognized as a major contributor to the educational, economic, social and cultural development of the State and especially the midlands region, by producing graduates with high-level knowledge, skills and research and development capability.

2. *Organisation and infrastructure*

To develop an organisational structure, governance model and environment that is responsive, effective and appropriate to the fulfillment of the vision represented by the strategic plan.

3. *Achieving excellence*

To be recognised by students, parents and employers for the demonstrable quality of its programmes and commitment to continuous improvement.

4. *Teaching and learning*

To provide students and staff with a teaching and learning experience of the highest standard, underpinned by the appropriate use of resources, within a positive atmosphere and a suitable, sustainable environment. It will enhance the formation of life-long learning by allowing students and staff the maximum opportunity to fulfill their potential.

5. *Research, innovation and enterprise*

In recognition of the strategic importance of research activity, AIT intends to re-balance the allocation of resources between teaching and research in order to reflect better the importance of research delivery. It is committed to building, in a logical and incremental manner, a sustainable research activity.

¹¹⁰ Athlone Institute of Technology Strategic Plan 2003-2008

6. International orientation

The Institute places a considerable emphasis on international linkages in education and training activities and aims to be at the forefront in exploring various media for such activity.

Strategic Review/ Planning

In 2006 the Institute commenced a review of the Strategic Plan. Initial consultation has involved internal stakeholders and will expand to wider consultation with industry, community and stakeholders. It is envisaged that, at the end of this process, a plan will be formulated that will drive the direction of the Institute up to 2010 in all areas including academic teaching, research, industry collaboration and enterprise development, while bearing in mind the needs of the region, as well as national and international demands.

II. Education and Training

Founded in 1970, the Institute operates across four faculties:

- Business Studies
- Engineering
- Humanities
- Science

Student Population

In 2004/5, AIT had a student population of just over 3,800. This can be viewed by faculty and level in the table below:

Dept./ School	PhD	Masters		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by Faculty
	(Level 10)	(Level 9)						
		Taught	Research					
Business	0	0	0	471	821	0	1,292	33.9%
Engineering	0	49	20	218	515	38	840	22.1%
Humanities	0	0	0	215	670	245	1,130	29.7%
Science	2	0	10	331	167	37	547	14.4%
Total	2	49	30	1,235	2,173	320	3,809	100.0%
% of Total Population by Level	0.1%	1.3%	0.8%	32.4%	57.0%	8.4%	100.0%	

Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)¹¹¹

¹¹¹ These figures do not include those on apprenticeship courses.

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Changes by Faculty				Changes by Level				
Department	Numbers 2004/5	Numbers 2003/4	% change on year	Level	Numbers 2004/5	Numbers 2003/4	% change on year	
Business	1,292	1,395	-7%	10	2	2	0%	
Engineering	840	873	-4%	9	79	85	-7%	
Humanities	1,130	1,149	-2%	8	1,235	995	+24%	
Science	547	389	+41%	7/6	2,173	2,446	-11%	
Total	3,809	3,806	-	1-5	320	278	+15%	
				Total	3,809	3,806	-	

- 64% of students were in Business (nearly 1,300) and Humanities (over 1,100). 22% (840) were in Engineering while the smallest faculty was Science at 14% of all student enrolments (547 students).
- Nearly 60% of students were taking courses at Levels 7/6 and approximately one third at Level 8. A small percentage was at Levels 9/10 (2.2%).
- There were 3,555 fulltime and 254 part-time students, i.e. 93% fulltime, 7% part-time at the Institute. The majority of the latter were in the faculty of Science (61%).
- 80% of AIT's courses are now modularised and semesterised.
- 84% of the Institute's enrolments came through the Leaving Certificate in 2004/5. It has approximately 250 students from other EU countries.
- In addition to the above accredited courses, the Institute runs a number of apprenticeship courses, predominantly in construction-related trades:

Trades 2004/5	Number of participants	% of Total
Motor mechanics	48	13.04%
Heavy vehicle mechanics	96	26.09%
Plumbing	128	34.78%
Plastering	48	13.04%
Bricklaying	48	13.04%
Total	368	100%

Within faculties, the following can be noted:

Business Studies

- In 2004/5, there were 471 full-time students at Level 8. This is an increase of 23% on the previous year and with a broadly corresponding drop in enrolments at Levels 7/6.

- The faculty had no part-time students during this period.

Engineering

- There were 69 engineering students at Levels 9/10 in 2004/5, 20 of whom were undertaking research masters (10 on a full-time basis and 10 on a part-time basis).
- In the same year, there were 218 fulltime students at Level 8, up 13% on the previous year.
- The bulk of the engineering enrolments (61%) was at Levels 7/6.
- Those studying fulltime at Levels 1-5 remained broadly steady over 2003/4 and 2004/5.

Science

- There was a 41% increase in the number of students in the Science faculty from 2003/4 to 2004/5. This was mainly due to increased numbers taking nursing.
- In terms of levels, the largest proportion of this increase was at Level 8, with numbers going from 217 to 331.
- 2 students were enrolled at Level 10, with ten completing research masters at Level 9 in 2004/5.
- Those studying at Levels 7/6 accounted for approximately 30% of Science enrolments.
- 37 people undertook fulltime studies at Levels 1-5 in 2004/5. There were no part-time students in either this or the preceding year.

Other Training Activity

- The Institute provides a number of training opportunities that are not accredited. It estimates that, of the 1,500 in adult education at the Institute, two thirds are on non-accredited courses. This includes students in the final stage of the professional accountancy examinations for ACCA and CIMA.
- Industry training is carried out in areas such as environment, software and plastics and can be agreed in co-operation with a company.
- For example, the Institute co-operates with Elan to deliver environmental training to approximately 120 company staff annually. The two parties have also collaborated to upgrade technicians to degree level. Starting in 2004, AIT has also worked with the Institute of Technology in Sligo to provide 'pre-opening' training for approximately 400 Abbott staff.

Graduates

In 2004/5, 1,691 people graduated across the following levels and faculties as can be noted in the table below:

Dept./School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Faculty
		Taught	Research					
Business	0	14	1	260	423	0	698	41.3%
Engineering	1	13	5	75	212	0	306	18.1%
Humanities	0	1	0	160	337	49	547	32.3%
Science	0	0	4	68	68	0	140	8.3%
Total	1	28	10	563	1,040	49	1,691	100.0%
% of Total Graduates by Level	0.1%	1.7%	0.6%	33.3%	61.5%	2.9%	100.0%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)¹¹²

- This is down by 12% or 240 people on 2003/4.
- Of these 135 were part-time students and the remainder fulltime. The bulk of graduates came from Business (41%) and Humanities (32%) and graduated at Levels 7/6 (62%) and Level 8 (33%). All graduates at Levels 1-5 were studying on a part-time basis.
- 56% of graduates across the range of levels in 2004/5 went on to further studies, 32% into employment, 1% of which were in part-time employment, 0.2% went in to self-employment. 1.5% was seeking employment while the remainder were not available for employment or their destination was unknown.

Future Plans

- As noted above, approximately two thirds of the Institute's enrolments are in Business and Humanities. The Institute would like to re-orient this to an equal split between Business & Humanities and Science & Engineering.
- Under its 2003-2008 Strategic Plan, the Institute has plans to increase the accessibility of its facilities and services, e.g. through part-time courses and more flexible modes of delivery. Semesterisation and modularisation are fundamental to this.
- It also has a stated objective of collaborating with other institutions. One example of this is its recently signed strategic collaboration agreement with DCU which includes plans to develop joint accreditation of new degree programmes. It is hoped initially to develop 2-3 programmes and a working group will be established to explore further possibilities.¹¹³

¹¹² These figures do not include those completing apprenticeship courses.

¹¹³ www.ait.ie

- Another is its engagement with Chinese universities. For example, it is currently running a Joint Masters in software engineering, from which about 24 people have graduated in the last two years. The Ericsson company presence in both Athlone and Shanghai is important in the building of these relationships.

III. Research Activity

Research Priorities

The Institute has identified the following research priority areas:

1. Nanotechnology and Polymer/Mechanical
 2. Science (toxicology, bio medical, life and physical sciences)
 3. Software Engineering
 4. Social Care
- The former Polymer Development Centre now houses the Institute's Centre for Nanotechnology and Materials Research. This incorporates laboratories (surface analysis, physical and mechanical testing), micro fabrication facilities, clean rooms and a polymer processing hall.
 - Under PRTL, the Institute is the lead partner for one round of funding for the period 2000 to 2004 totalling €2.3m for biopolymer and biomolecular research.
 - It is a collaborative partner on another PRTL project, the National Centre for Biomedical Engineering Science (total funding €32.3m).
 - Other key sources of public funding have been Enterprise Ireland's Innovation Partnerships Initiative and IntertradeIreland's Fusion programme. Industry partners in this include Boston Scientific, Medtronic, Elan and PharmaPlaz.
 - The Institute has delegated authority for all taught programmes at Level 9 and for Level 9 research programmes in
 - Social Care
 - Life and Physical Sciences
 - Mechanical and Polymer Engineering
 - On an FTE basis, 49 staff are engaged in research activity, the majority in science and engineering (18 apiece).

- In terms of research outputs, in 2005 AIT issued the following:

Field	Publications		Conference/ policy papers	Licences
	Refereed	Non-refereed		
Software Engineering	4	1	13	1
Polymer Engineering			18	
Science (Biology/ toxicology)			12	
Nursing	3		6	
Business & Humanities			8	

Research Strategy

- Under the 2003-2008 Strategic Plan, the Institute aims to build sustainable research activity in a logical and incremental manner. To achieve this, it commits to
 - Investing selectively in its priority areas
 - Maintaining a flexible portfolio of research activity
 - Enhancing the level of interaction with industry
 - Allocating up to 2% of its budget to support research
 - Increasing total earned research income to \geq €8m over the duration of the plan to 2008
 - Developing its technology transfer capacity
- In addition to this, each Department has developed individual research plans that align with the overall Institute strategy.
- With regard to the above identified priorities, over the next five years the Institute will seek to increase the number of people involved in Nano research to 80 and also in Applied Software to 80 (at 30 by year end 2006). It is also keen to expand its Level 9 research activity in Nano and Life and Physical Sciences.
- At the same time, it will not discourage researcher-initiated activity, e.g. one member of staff is particularly active in health research.
- As part of its recent strategic agreement with DCU, a new Director of Research position at AIT will be established; the appointee will also be an Adjunct Professor at DCU. The post holder will be responsible for deepening research collaborations between the two institutions, such as the establishment of an industry-linked research centre
- Links are also being developed with Georgia Tech Research Institute.
- The Institute has established a Publications and Ethics Committee.
- The Institute has an IP policy approved by the Governing Body in place and a suite of documentation governing various forms of research collaboration with industry.

IV. Collaboration

With Enterprise

- As noted above, AIT has collaborated with a number of (mainly larger) firms on training needs, e.g. Elan, Abbott.
- Its Competitive Business Intelligence centre offers consultancy services and training in business, management and information technology for companies.
- It has also collaborated with companies on research projects. It is estimated that approximately one third of the Institute's research-active staff are involved in projects supported through either Innovation Partnerships or Fusion.
- An identified objective under its Strategic Plan is to increase significantly the level of interaction with industry, e.g. through one-to-one visits, seminars and other information sharing events.

With Others

- The Institute is in collaboration with a number of other higher education institutions the most notable of which is the signing of its strategic collaboration agreement with DCU to progress matters of mutual interest such as joint programme accreditation and the establishment of an industry-linked research centre.
- It is actively involved in Lionra with other institutions in the BMW region and is developing linkages with the recently established Georgia-Tech Research Institute.
- Under the new Strategic Innovation Fund, it is the lead institute partnering GMIT, NUI Galway, IT Sligo and Letterkenny IT for a €900,000 initiative to establish a Regional Assessment and Resource Centre. This is intended to improve students' access to needs-assessment services. AIT is a participating partner in a further six collaborations under this Fund.
- The Institute is engaged with Enterprise Ireland in entrepreneurship and Innovation Partnerships, and with the IDA primarily on inward itineraries and industry-related research.
- It also has notable levels of interaction with Inter *tradel*reland, Fáilte Ireland and the County Enterprise Boards.

V. Company Formation

Entrepreneurship Programmes

- From 2002 to 2004, programmes to assist potential entrepreneurs were self-funded by the Institute and these supported 18 individuals over the period.
- In 2005, it collaborated with other Lionra members and with FÁS and Enterprise Ireland to establish the International Enterprise Development Programme. AIT had 4 participants on this programme.
- In co-operation with GMIT, it has secured TSR Strand II funding from the Department of Education and Science for a 2006/7 Enterprise Platform Programme. The Midlands and West

Enterprise Programme commences in March 2007 and each Institute is placing 10 participants on the programme.

Incubation Support

- The Midlands Innovation and Research Centre (MIRC) was opened in 2004 and comprises just under 800 m² of space. This may be expanded in the future.
- The centre is close to full occupancy with companies in areas such as
 - Audio visual technology (significant occupant)
 - Process control technology
 - Mobile internet technology
 - Telemetrics/ tracking solutions
 - Wireless pocket applications
- It is estimated that one third of occupants came through the entrepreneurship assistance programmes.
- Under its Strategic Plan, the Institute aims to expand to three per annum the number of technology businesses migrating from the Innovation Centre.

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 375 fulltime staff and 189 part-time staff. Of the fulltime cohort, 5 were in management, 152 in support and administration and the remainder were academic staff. Within part-time, 132 were in support and administration and the remaining 57 were academic staff.
- Academic staff can be broken down across faculties as follows:

	Full-time	Part-time	Total
Business Studies	51	8	59
Engineering	60	10	70
Humanities	61	21	82
Science	46	18	64
Total	218	57	275

- Under the Institute's Strategic Plan, AIT commits to increasing its investment in staff development from 1% to 3% of its budget to facilitate re-training and redeployment.

Financial Resources

- For the financial year ended 31 August 2005, AIT's total funding amounted to approximately €40m, of which
 - 56% came from DES
 - 21% from fee income
 - 8% from industry-related income

Physical Resources

- AIT has just over 34,000m² of space at present broken down into:

	m ²	% of Total
Teaching	13,486	39.3%
Research	2,609	7.6%
Incubation	775	2.3%
Administration	3,923	11.4%
Other	13,501	39.4%
Total	34,294	100.0%

- Arising from the Kelly Report, a new 11,000 m² Engineering building is planned, of which 15% will be allocated for research. The Institute has received planning permission for this and it is expected that building will commence in summer 2007.

Dublin and the Mid-East

Dublin is the administrative and commercial capital of the State, and with a population of approximately 1.19m persons, it is by far the largest city on the island. The scale of the enterprise and population base in Dublin region has impact beyond its own borders, as many of the labour force who work in Dublin live in the greater Mid East region, and vice versa.

The Mid East region comprises the counties of Meath, Kildare and Wicklow, and in 2006 had a population of 475,026, which represents an 11 percent increase on 2002. The main towns in the region include Arklow, Athy, Bray, Maynooth, Naas and Navan. The Mid East is firmly within Dublin's commuter belt, and as a result, development there over recent years has been largely suburban.

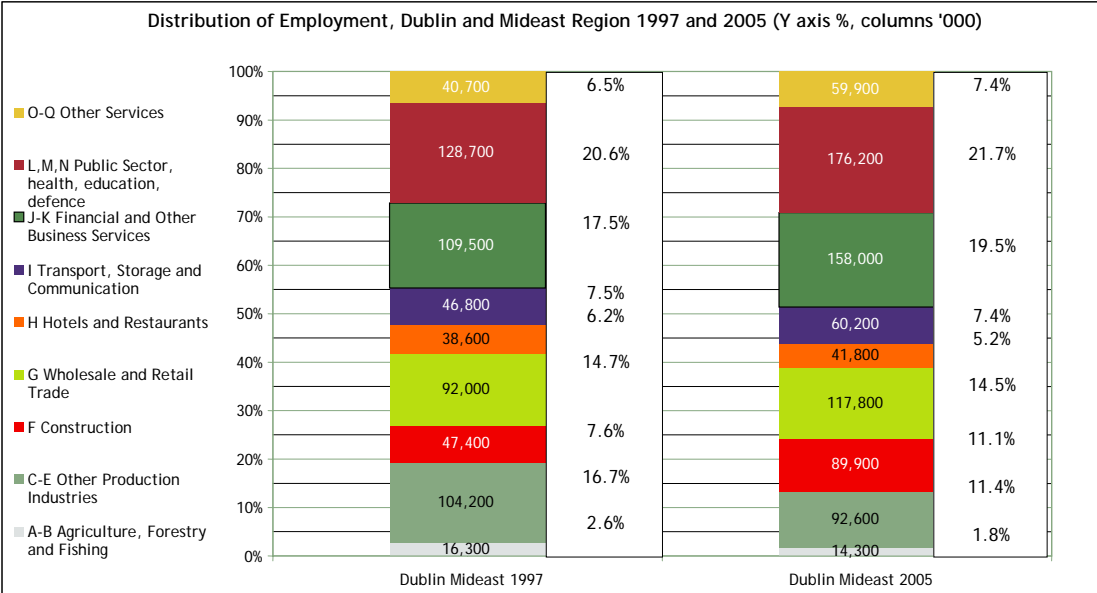
Some points worth noting:

- Dublin County has a population of 1,187,200 which represents approximately 28 percent of the total population in the State. The Mid East has a population of 475,026 which represents 11 percent of the national total. Between 2002 and 2006 the population in the Mid East part of the region has grown by 15 percent, well ahead of the national average of 8.1 percent. By contrast the population of Dublin has increased by only 5.7 percent. This inconsistency in population growth reflects the growth of Dublin's suburban centres beyond Dublin County into the Mid East.
- In 2004, the average economic output per person (as measured by GVA) in the Dublin & Mid East region was €37,996 which is 17% above the national average. Output per person in the aggregated region grew by 140 percent over the past decade, compared to the national increase of 145 percent.
- The services sector (market and non market services) accounts for almost 69 percent of output in the region, while the manufacturing and construction sector accounts for 30 percent of output. The agriculture sector has a negligible contribution to economic output in the region (<1 percent).
- The unemployment rate in Dublin in late 2006 was 4.2 percent, broadly in line the national unemployment rate of 4.1 percent (QNHS Nov 2006). Unemployment in Dublin has declined steadily from over 10 percent in 1997 dipping to below 4 percent in 2000, before stabilising between 4-5 percent since 2001.
- The Dublin & Mid East region has a total labour force of 876,700 persons. There are approximately 33,500 persons unemployed (equating to 4.2 percent) the vast bulk of which reside in Dublin.
- Unemployment in the Mid East as at Q4 2006 was the lowest in the country at 2.9 percent, considerably below the national average of 4.1 percent for the same period.
- In absolute terms, Dublin has the most third level degree holders in Ireland, followed by the Mid East region. The region has a combined total of approximately 273,000 graduates, or 36 percent of the workforce.

As can be seen below, all sectors, with the exception of agriculture, fishing and forestry and other production industries, have seen increased employment levels overall. Employment in construction

increased 90 percent from 47,400 in 1997 to 89,900 by 2005, while public sector employment rose by 37 percent to 176,200 over the same period.

Distribution of Employment, Dublin & Mid East Region 1997 and 2005



Agency employment as a proportion of total employment in the region fell from 16.63 percent of the total in 1995 to 14.9 percent in 2005, reflecting the national trend over the same period. This can be accounted for by strong increase in sectors not usually supported by the agencies, such as construction and the public sector.

Total agency supported employment in the region stood at 120,665 in Q4 2005 (up from 83,488 ten years previous) and is spread across a broad range of sectors. The most important of these in terms of employment levels are:

- (i) Software and computer related services
- (ii) Food, beverages and tobacco,
- (iii) ICT hardware,
- (iv) Financial services and
- (v) Pharmachem.

Between them, these five sectors account for approximately 76 percent of agency supported employment in the Mid-East, as opposed to 56 percent in 1995.

The region has a range of higher education institutions, including four universities and four Institutes of Technology. The latter are discussed in detail below.

Blanchardstown Institute of Technology

I. Strategic Development

“The mission of the Institute is to serve its students and the community by meeting the skills needs in the economy and increasing the level of participation in third-level education and training, particularly in Dublin North-West and its environs.”

- *Institute of Technology Blanchardstown Mission Statement*¹¹⁴

Current Strategic Plan

IT Blanchardstown's (ITB) Strategic Plan 2006 - 2011 sets out the following priorities:¹¹⁵

1 To achieve a more diverse student community and growth in student numbers

It aims to extend educational opportunity and to achieve an economically viable student population. ITB has begun implementing admissions and student support policies to ensure that a relatively high proportion of its students are 'non-standard entrants' such as mature students, applicants without Leaving Certificate qualifications, students with disabilities and students from disadvantaged socio-economic backgrounds.

2 To develop its teaching role - same high standards, new styles and methods

ITB sees the learner and the learning process as key priorities in education. The Institute recognises that it must offer flexibility in the content and delivery of programmes and wishes to develop a reputation for learner-centred excellence in teaching and maximise the flexibility of modular course design and the system of accumulation of credits. Organisational agility, responsiveness to the needs of students from a range of educational and employment backgrounds, and quality of teaching and support are seen as key requirements.

3 To make ITB a vital resource in Dublin North-West

ITB is aware that its presence in the area results in expectations that it will contribute significantly to the economic development and prosperity of the area. Forming collaboration and linkages with education providers, businesses, community organisations and the public sector has been a priority for ITB since its inception and its strategy for the next five years is to build on these relationships and to launch a range of initiatives which will address the needs of each of these stakeholders.

4 To adopt high standards for the use of its resources

ITB aims to optimise the use of all of its existing resources while simultaneously taking steps to acquire more. It intends to develop a diversified funding base and aims to generate up to 10% of current funding requirements from self-financed activity.

¹¹⁴ itb.ie

¹¹⁵ Making Education Accessible - Priorities for the Next Five Years, Strategic Plan 2006 - 2011 Institute of Technology Blanchardstown.

5 To ensure cohesion in its work as a college community

ITB is seeking to achieve a balance between individual needs to grow and develop and the Institute's collective need to deliver on its mission. It recognises that it must be adaptable to changing circumstances in order to meet the challenges of the next five years and to deliver successfully on its Strategic Plan.

Strategic Review/ Planning

The Strategic Plan is informed by the regulatory framework under which the Institute operates, including HETAC requirements, as well as feedback from stakeholders incorporating staff, students, industry and the community. This Strategic Plan is intended to inform the plans to be prepared by each school and support service within the Institute.

II. Education and Training

Founded in 1999, ITB is the youngest of the Institutes and operates two schools:

- Business and Humanities
(Business, languages and applied social care courses)
- Informatics and Engineering
(Computer science, engineering and horticulture courses plus apprenticeship trades)

Student Population

In 2004/5, it had a total student population of just over 1,400. This can be viewed by faculty and level in the table below:

Dept./ School	PhD	Masters		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by School
	(Level 10)	(Level 9)						
		Taught	Research					
Informatics & Engineering	0	0	10	96	578	10	694	49.2%
Business & Humanities	0	12	2	114	558	30	716	50.8%
Total	0	12	12	210	1,136	40	1,410	100.0%
% of Total Population by Level	0.0%	0.9%	0.9%	14.9%	80.6%	2.8%	100.0%	

Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)¹¹⁶

¹¹⁶ These figures include those completing apprenticeship courses.

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Changes by School			
School	Numbers 2004/5	Numbers 2003/4	% change on year
Informatics & Engineering	694	662	+5%
Business & Humanities	716	721	-1%
Total	1,410	1,383	+4%

Table: Changes in Student Population by School from 2003/4 to 2004/5

Changes by Level			
Level	Numbers 2004/5	Numbers 2003/4	% change on year
10	0	0	0%
9	24	12	+100%
8	210	195	-8%
7/6	1,136	1,106	+3%
1-5	40	70	-43%
Total	1,410	1,383	2%

Table: Changes in Student Population by Level from 2003/4 to 2004/5

- Students were split almost evenly between the School of Business and Humanities and the School of Informatics and Engineering.
- 80% of all students were taking courses at Levels 7/6 and 15% at Level 8. Small percentages were studying at Levels 9 (1.8%) and at Levels 1-5 (2.8%).
- In 2004/5 there were 1,096 fulltime and 314 part-time students, i.e., 78% fulltime and 22% part-time. Of the part-time students 70% were studying at Levels 7/6, 13% at both Level 8 and Levels 1-5 and nearly 4% at Level 9. All of those studying at Levels 1-5 were part-time students in both years.
- The 100% increase in those studying at Level 9 in 2004/5 came from 12 part-time students taking taught masters in Business and Humanities where none had in 2003/4. The number of fulltime students at Level 9 in each school remained constant over both years.
- Over 30% of the Institute's enrolments came through non-standard routes in 2004/5. 13% were mature students, 15% came through FETAC and 6% were access/medical.¹¹⁷

¹¹⁷ Access/Medical students refer to students for whom particular arrangements are made regarding entrants requirements and support services when they enrol in ITB.

- ITB runs a number of apprenticeship courses predominantly in construction-related trades. The apprenticeship participants, which are included in the total student population above, are broken down across trades as follows:

Trades 2004/5	No. of participants	% of Total
Brick Laying	93	24.6%
Carpentry & Joinery	96	25.4%
Electrical	94	24.9%
Plumbing	95	25.1%
Total	378	100.0%

Table: Apprenticeship courses participants

Within Faculties, the following can be noted:

Business & Humanities

- In both 2003/4 and 2004/5 there were 2 fulltime students at Level 9 undertaking research masters. As mentioned above, 12 people enrolled for a taught Masters in 2004/5.
- In 2004/5 there were 88 full-time students at Level 8, a 10% increase on the previous year.
- In the same year there were 439 full-time students at Level 7/6. This is an increase of 13% on the previous year.
- The school had 187 part-time students during 2004/5, a 25% drop (taking place at Levels 7/6) on the part-time numbers in this school in 2003/4. Despite this fall, nearly two thirds of part-time students were at Levels 7/6 in 2004/5. The remainder comprised 6% at Level 9, and 14% and 16% at Levels 8 and 1-5 respectively.

Informatics & Engineering

- In both 2003/4 and 2004/5 there were 10 fulltime students at Level 9 undertaking research masters. There were no Level 9 part-time students.
- In 2004/5 81 fulltime students were studying at Level 8 while 15 part-time students were studying at this level. This remained broadly consistent with the previous year.
- There were 476 full-time students at Level 7/6, also steady since the previous year.
- The school had 127 part-time students during 2004/5 almost a 20% increase on the previous year. This growth occurred in those studying at Levels 7/6 which brought the proportion of part-time students in this school at those levels to 80%. Part-time students at Levels 1-5 fell from 35 to 10 between 2003/4 and 2004/5.

Other Training Activity

- ITB has engaged with a number of (mainly larger) firms and tailored training is available.
- Most of the courses, especially those delivered to large manufacturing companies, are accredited. This is in line with the Institute's policy of maintaining students on the NQF.

- Some courses, e.g. for some IT skills, use industry recognised certification, e.g. CompTIA and Cisco training programmes.

Graduates

- In 2004/5, 453 people graduated across the following levels and faculties as set out in the table below:

Dept./School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total
		Taught	Research				
Business & Humanities	0	0	2	95	120	10	227
Informatics & Engineering	0	0	2	42	182	0	226
Total	0	0	4	137	302	10	453
% of total Graduates by Level	0.0%	0.0%	0.9%	30.2%	66.7%	2.2%	100.0%

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)¹¹⁸

- The number of graduates is down less than 3% on 2003/4.
- Of these, 38 were part-time students and the rest were full time. Graduates were evenly split between the two Schools with the bulk graduating at Levels 7/6 (67%) and 30% graduating at Level 8. 50% of graduates at Levels 1-5 were studying part-time.
- 32% of graduates across the range of levels in 2004/5 went on to further study, this was down from 55% in the previous year. This was due to the fact that most graduates in 2003/4 had just completed Level 6 and were going on to degree level. 60% of graduates in 2004/5 went into employment while 4% were seeking employment and 4% were unavailable for employment.

Future Plans

- A key objective of the Strategic Plan is to achieve a steady rate of growth in student numbers up to 2,000 full-time equivalents by 2011. It is envisaged that these additional students will predominantly be in employment and attend ITB on a part-time basis. The aim is to achieve a balance of new admissions between CAO (33%) and non CAO (67%) entrants by 2010.
- Every student entering ITB is offered the opportunity to complete Level 8.
- Central to ITB's mission is the accessibility of third level education to as many people as possible, including work-based students. It plans to utilise e-learning, work based learning and modular programmes in a flexible manner to help achieve this.

¹¹⁸ These figures do not include those completing apprenticeship courses.

- In terms of fields of study, the Institute does not foresee itself branching into any major new disciplines, such as science, in the future.

III. Research Activity

Research Priorities

The Institute has identified the following areas of research interest within its schools:

<i>Business and Humanities</i>	Management of Occupational Road Safety Management Models for specific professions Language education competencies for primary and secondary education
<i>Informatics and Engineering</i>	Intelligent Computing; Graphics & Gaming e-Learning Speech & language processing; networking & ubiquitous computing

- In the computer science area, the Institute has received funding from Enterprise Ireland for two projects since 2000 (€42,000 and €40,000) as well as support from the Department of Education and Science for a number of projects under its Strand 1 (postgraduate researcher support) stream.
- It has also received support from the latter into the areas of electronics and engineering sciences and languages.
- The Institute has delegated authority for all taught programmes up to and including Level 9.
- 21 staff are engaged in research activity, 20 of whom are in the School of Informatics and Engineering.
- In terms of output, in 2005 the School of Business and Humanities had 10 publications (7 refereed, 3 non-refereed) and 7 conference/policy papers, while the School of Informatics and Engineering had 26 publications (17 of which were refereed) and 17 conference/policy papers.
- 1% (€131,000) of total income for year ended 31 August 2005 came from research, consultancy and development.

Research Strategy

- ITB positions itself at the applied end of the research spectrum.
- The recently established Learning and Innovation Centre (LINC) is intended to provide facilities and support for research and development activity in ITB and collaborative applied research projects with industry partners.
- Under its Strategic Plan, it wants to encourage all major subject areas to develop a research presence at a regional level with
 - 25% of academic staff actively involved in research and a commensurate increase in the number of postgraduate research students,
 - The formation of research centres in both Schools with strong industry/ public sector partners.

IV. Collaboration

With Enterprise

- The Institute's recently established Learning and Innovation Centre (LINC) aims to act as a focal point for engagement between companies, funding agencies and ITB academia through support for:
 - R&D activities,
 - Specialised support for SMEs,
 - Facilities and support for the creation of knowledge-based businesses.
- As noted above, the Institute has collaborated with a number of firms on training requirements. In line with this, a number of its courses are offered jointly with local industry.¹¹⁹
- For example, it has worked with Intel to put in place a HDip in Computing and MSc in Computing. In addition, a programme in Mechatronics was launched in 2000 with 21 Intel students graduating with Level 6 awards in 2005, 10 of whom progressed on to Level 7.
- It collaborated with IBM on a System Support course run from 2000 to 2003 (37 students over the three year period). In 2005/6, 15 IBM students undertook a new course in IT Support. IBM has also sponsored Institute students.
- The Institute is involved in the Xilinx Academic Forum of Ireland (a platform for academia and industry to inform on existing undergraduate and postgraduate research into programmable solutions).
- The Institute is also active in Skillnets as a means to engage with other, often smaller, companies.
- A Social Care course is delivered with 50% of enrolments entering through the CAO system and 50% coming from people employed in the social care area. The employers involved release employees for two days a week and the Institute schedules the classes around these times.
- In addition it has collaborated with Sustainable Energy Ireland and several companies in the domestic heating sector on training provision.
- The apprenticeship training area is developing alternative and post-apprenticeship courses in collaboration with FÁS to reflect industry needs in the Greater Dublin area and beyond.

¹¹⁹ Strategic Plan 2006-2011

With Others

- The Institute engages with other higher education institutions on mutually relevant matters.
- For example, it has partnered with IT Tallaght and Nova UCD and DCU Invent to deliver the M50 Enterprise Partnership Programme.
- It has also worked with Enterprise Ireland on the development of this programme and on the development of the on-campus incubation space.
- ITB is involved in three projects with a total value of almost €3m under the recent Strategic Innovation Fund in the areas of enhancing teaching and learning, improving access and lifelong learning.¹²⁰
- A degree programme in horticulture is offered as a result of collaboration with Teagasc, the Salesian College of Horticulture Warrenstown and the National Botanic Gardens.
- It is actively involved with county enterprise boards, chambers of commerce and county councils.
- ITB has also participated in the ICT Ireland Internship programme and the National Learning Network is present on-campus at ITB.

V. Company Formation

Entrepreneurship Programmes

- As mentioned above, ITB is a partner in the M50 Enterprise Platform Programme. Its programme is delivered in the form of clinics with experts in finance, legal matters, etc. engaging with course participants.
- From 2002 to 2004, there were 44 participants on the programme and 23 in 2005.

Incubation Support

- The Learning and Innovation Centre was opened in January 2006 and comprises just under 1,800 m² of space.
- As of mid-2006, the centre had 3 occupant companies employing 8 people (i.e. a 43% occupancy rate) in the areas of logistics and software solutions.¹²¹
- Two of the companies came through the Enterprise Platform Programme.

¹²⁰ www.itb.ie

¹²¹ itb.ie

VI. Resources

Staffing Levels

- As of the end of 2005, the Institute had 162 FTE staff. 17 were in management, 56 in support and administration and the remainder were academic staff.
- Academic staff can be broken down across departments as follows:

	Full-time Equivalent
Business	19
Humanities	16
Informatics	19
Engineering	22
Apprenticeships	13
Total	89

Financial Resources

- For the financial year ended 31 August 2005, ITB's total funding sources amounted to €13.5m, of which
 - 72% came from DES
 - 14% from fee income
 - 7% from student registration
 - 6% from EU, student support, superannuation
 - 1% from research, consultancy and development

Physical Resources

- ITB has just over 21,000 m² of existing space broken down into:

	Existing m ²	% of Total
Teaching & Administration	15,616	73.4%
Research & Incubation	1,756	8.3%
Restaurant & Multi Purpose Building	3,905	18.4%
Total	21,277	100.0%

- Arising from the Kelly Report a teaching facility of 4,000m² is planned for completion by September 2009 subject to funding.¹²²

¹²² Strategic Plan 2006-2011.

Dublin Institute of Technology

I. Strategic Development

“The Institute is a comprehensive higher education institution, fulfilling a national and international role in providing full-time and part-time programmes across the whole spectrum of higher education, supported by research and scholarship in areas reflective of the Institute’s mission. It aims to achieve this in an innovative, responsive, caring and flexible learning environment with state-of-the-art facilities and the most advanced technology available. It is committed to providing access to higher education for students of different ages and backgrounds, and to achieving quality and excellence in all aspects of its work. This commitment extends to the provision of teaching, research, development and consultancy services for industry and society, with due regard to the technological, commercial, social and cultural needs of the community it serves.

*Institute of Technology Mission Statement*¹²³

Current Strategic Plan

DIT operates strategically within its 15-year framework “Strategic Plan 2001-2015: Vision for Development”. Within this, it uses three-year operational plans to guide its actions. The current one (2006-2009) sets out the following four core themes underpinned by six supporting themes:

Core Themes	Supporting Themes
<ol style="list-style-type: none">1. Multi-level learner centred environment2. Strong postgraduate and research arms3. Knowledge and technology transfer4. Broadening the student base	<ol style="list-style-type: none">1. Reputation for excellence2. Supportive and caring ethos3. Flexible leading-edge electronic capabilities4. Entrepreneurial institution5. Finance6. Physical resources

Its operational priorities for the period include:

- To provide seamless access and progression through innovative partnerships with other education and training providers,
- To expand strategic alliances with industry in Ireland and abroad
- To maintain and increase academic distinctiveness by building upon core fields of expertise and through building clusters of cross-disciplinary undergraduate and postgraduate programmes and research
- To achieve university designation to enable better fulfilment of its mission.

¹²³ Dublin Institute of Technology Strategic Plan A Vision for Development 2001-2015

Strategic Review/Planning

- As noted above, within the context of Strategic Plan 2001-2015, the Institute uses 3-year strategic development plans for its operation and development.
- These are further expounded through the annual planning cycle in which faculties/ schools submit their plans for teaching, research and third mission activities to the President's office. A central management team discusses and evaluates such plans and relevant budgets are assigned.

II. Education and Training

Originating in Kevin Street in 1887, DIT was established under the DIT Act 1992 bringing together six Dublin colleges of technology. It operates across six faculties:

- Applied Arts
- Built Environment
- Business
- Engineering
- Science
- Tourism and Food

Student Population

- In 2005, it had a student population of over 17,000, nearly 10,700 of which were enrolled on a fulltime basis with the remainder part-time (6,388).
- The student population can be viewed by faculty and level in the table below:

Faculty	Masters/PhD (Levels 9/10)	Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1- 5	Other ¹²⁴	Total	% of Total Population by Faculty
Applied Arts	348	1,431	797	1,001	10	3,587	21.0%
Built Environment	57	1,193	632	135	0	2,017	11.8%
Business	486	2,056	733	0	808	4,083	23.9%
Engineering	159	991	2,025	213	0	3,388	19.8%

¹²⁴ Other includes:

Fulltime Students 157 Socrates Students.

Part-time Students: Business 74 Institute of Accounting Technicians in Ireland Students, 28 Association of Chartered Certified Accountants Students, 189 Irish Marketing Institute Certificate Students, Diploma and Graduateship in Marketing Students, 39 Advertising Executive Students, 15 Advertising Creative Students, 66 Certificate in Personnel Practice Students, 43 Certificate in Supervisory Management Students, 40 Advanced Certificate and Diploma in Purchasing Students, 18 Certificate in Quality Management and Assurance Students, 52 Retail and Wholesale Management Students, 101 Diploma in Retail Management Students and 18 Airport Retail Students as the awards resulting from these courses are awarded by professional bodies.

Science	225	1,018	592	0	0	1,835	10.7%
Tourism & Food	116	1,137	751	140	22	2,166	12.7%
Total	1,391	7,826	5,530	1,489	840	17,076	100.0%
% of Total Population by Level	8.1%	45.8%	32.4%	8.7%	4.9%	100.0%	

Table: Total Fulltime Population 2005/6 by Faculty and Level (accredited courses)

Changes by Faculty			
Department	Numbers 2004/5	Numbers 2003/4	% change on year
Applied Arts	3,587	3,587	0%
Built Environment	2,017	1,781	13%
Business	4,083	4,151	-2%
Engineering	3,388	3,458	-2%
Science	1,835	1,801	2%
Tourism & Food	2,166	2,138	1%
Total	17,076	16,916	1%

Table: Changes in Fulltime Student Population by Faculty from 2003/4 to 2004/5

Changes by Level			
Level	Numbers 2004/5	Numbers in 2003/4	% change on year
9/10	1,391	1,293	8%
8	7,826	7,326	7%
7/6	5,530	6,023	-8%
1-5	1,489	1,404	6%
Other ¹²⁵	840	870	-3%
Total	17,076	16,916	1%

Table: Changes in Fulltime Student by Level from 2003/4 to 2004/5

The following can be noted:

- DIT has the power to make awards up to NQF Level 10 across all faculties. This comprises both taught and research components of programmes.
- Nearly half of the Institute's overall 17,076 enrolments were in the faculties of Applied Arts and Business (21% and 24% respectively). The third largest faculty was Engineering with nearly 3,400 students (20%). The remaining one-third of enrolments were split almost evenly between Tourism and Food (13%), Built Environment (12%) and Science (11%).
- Approximately 9% of students were enrolled at Levels 1-5 all of which were studying on a part-time basis. 32% were studying at Levels 7/6, 46% at Level 8 and 8% at Levels 9/10 with the remaining 5% enrolled on other courses.

¹²⁵ Other 2003/4 includes:

Socrates Students, Institute of Accounting Technicians in Ireland Students, Association of Chartered Certified Accountants Students, Irish Marketing Institute Certificate Students, Diploma and Graduateship in Marketing Students, Advertising Executive Students, Advertising Creative Students, 66 Certificate in Personnel Practice Students, Certificate in Supervisory Management Students, Advanced Certificate and Diploma in Purchasing Students, Certificate in Quality Management and Assurance Students, Retail and Wholesale Management Students, Diploma in Retail Management Students and Airport Retail Students and Private Aircraft Pilots License Theory Students.

- In 2005, the Institute introduced modularisation and in 2005/6 there were 1,000 modules with an e-learning component across 80% of undergraduate programmes.¹²⁶
- In 2004/5 there was an increase of 7% and 8% respectively in those studying at Level 8 and Levels 9/10 in 2004/5 with a drop of 8% in those studying at Levels 7/6 in that year.
- In addition to the courses noted above, DIT runs a wide range of apprenticeship courses, with 2,856 participants in 2004/5:

Trades	Number of Participants	% of Total
Aircraft Mechanic	86	3.0%
Bakery Practice	3	0.1%
Bookbinding	4	0.1%
Brickwork	95	3.3%
Cabinet making	95	3.3%
Carpentry & Joinery	238	8.3%
Chefs	99	3.5%
Construction Plant Fitting	92	3.2%
Fitting and Turning	96	3.4%
Heavy Vehicle Mechanic	47	1.6%
Light Vehicle Mechanic	90	3.2%
Light Vehicle Body Repair	171	6.0%
Metal Fabricator	88	3.1%
Originators	14	0.5%
Painting & Decorating	94	3.3%
Plasterwork	45	1.6%
Plumbing	336	11.8%
Printing	43	1.5%
Professional Cookery	125	4.4%
Refrigeration	95	3.3%
Sheet Metal Worker	112	3.9%
Standards Based Electrical	665	23.3%
Wood Machinist	48	1.7%
Bartending Supervision	27	0.9%
Meat Apprentice	48	1.7%
Total	2,856	100.0%

Table: Apprenticeship courses participants 2004/5

¹²⁶ DIT Strategic Development Plan 2006-2009.

Looking within faculties, the following can be noted:

Applied Arts

- The numbers studying Applied Arts remained the same across 2003/4 and 2004/5. Within this, there was an increase of 5% in those at Levels 1-5, a drop of 10% in those at Levels 7/6, an increase of 4% in those at level 8 and a drop of 5% in those at Levels 9/10.
- 32% of those in Applied Arts were studying music and 44% of the faculty was studying on a part-time basis.

Built Environment

- In 2004/5 there was a 13% increase on the previous year in those studying in the Faculty of Built Environment. This was made up of an almost 200% increase in those studying at levels 1-5, a 4% increase in those at Levels 7/6, a 10% increase at Level 8 and a 30% increase at levels 9/10.
- 34% of those in the faculty were studying on a part-time basis.

Business

- There was a 17% increase in those studying at Levels 9/10 in 2004/5, a 1% drop in those at Level 8 and a 10% fall in those at Levels 7/6.
- 33% of those studying Business were enrolled on a part-time basis, with approximately 50% of these studying professionally for awards from professional bodies.

Engineering

- There was a drop of 17% and 3% respectively in those studying at Levels 1-5 and Levels 7/6 in 2004/5 with an increase of 5% and 3% respectively in those studying at Level 8 and Levels 9/10.
- 41% of those in the faculty were studying on a part-time basis, three-quarters of whom were at Levels 7/6.

Science

- There was a 2% increase in the numbers enrolled in the Faculty of Science in 2004/5. Those studying at Levels 9/10 increased by 9% while the numbers enrolled at other levels remained broadly constant.
- 28% of those in the faculty were studying on a part-time basis of which approximately 66% were at Levels 7/6 while 30% were at Levels 9/10.

Tourism & Food

- The numbers studying Tourism and Food remained broadly the same across 2003/4 and 2004/5 however there were significant changes in the levels at which students enrolled. There was a drop of approximately 28% of those studying Levels 7/6 and, an increase of 36% and 9% respectively in those studying at Level 8 and Levels 9/10.
- 40% of studying Tourism and Food were enrolled on a part-time basis, three-quarters of whom were studying at Levels 7/6.

Other Training Activity

- In 2004/5 DIT provided non-accredited training to approximately 500 people on both general and more firm-specific courses.
- Generally available courses ranged from quality management through instrumentation and process control to photography.
- Examples of more firm-specific courses include:
 - Laser safety in telecommunications
 - Maintenance technology
 - Information technology fundamentals
 - Tourism training
- The Institute has established a dedicated Corporate Training Unit that supports the development of courses to meet industry requirements (further details on the work of the Unit are set out in Section IV).

Graduates

In 2004/5, 4,143 people graduated across the following levels and departments as can be noted in the table below:

Dept./School	PhD (Level 10)	Masters (Level 9)	Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Dept./ School
Applied Arts	1	219	307	269	0	796	19.2%
Built Environment	0	42	246	170	0	458	11.1%
Business	2	278	76	805	0	1,161	28.0%
Engineering	2	67	302	407	0	778	18.8%
Science	8	37	230	188	0	463	11.2%
Tourism & Food	3	68	199	182	0	452	10.9%
Learning & Teaching	0	35	0	0	0	35	0.8%
Total	16	746	1,360	2,021	0	4,143	100.0%
% of Total Graduates by Level	0.4%	18.0%	32.8%	48.8%	0.0%	100.0%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)

Graduations are down by 4% or 158 people on 2003/4.

- 21% (887) were part-time students and the remainder fulltime. 28% of graduates came from Business with 19% from each of Applied Arts and Engineering. The remainder was almost evenly split between Built Environment, Science and Tourism and Food with 11% graduating from each.
- Nearly half of all students graduated at Levels 7/6 (down from 54% graduating at this level the previous year) and 33% graduated at Level 8 (up from 30% at this level the previous year).
- According to its 2005 First Destinations survey, over half of DIT graduates went into employment, while 41% went on to further study or training.

Future Plans

- The Institute's programmes incorporate industry representation on their validation committees, interview panels include external members from the relevant enterprise sector and there are industry advisory boards in a number of centres and units of the Institute.¹²⁷
- A recent initiative to increase stakeholder involvement in course design involved a group of CEOs from the hospitality sector advising and supporting the School of Hospitality and Tourism in the development and delivery of its offerings.
- Under its 15-year strategic framework, DIT aims to evolve and adapt the nature, level and range of programmes over time, consistent with its broadly-based technological orientation and plans to develop new interdisciplinary courses and research reflecting what is required by the new knowledge society.
- According to the Strategic Development Plan 2006-2009, the targeted fulltime student population is 13,500 for the academic year 2012/13. This will involve broadening the student base through:
 - Community links and access
 - Increasing access for people with disabilities
 - Internationalisation
- Linked to this, while student retention and progression figures have improved with an overall retention rate of 82%, the target is to improve full-time undergraduate student retention figures to 88% by 2009.
- Also under the Plan, the Institute aims to have completed the transformation to modular-based learning for all students and to develop 25 multi-disciplinary programmes across the Institute.
- It also aims to generate €5m in income from international students in 2007/8.

¹²⁷ Ibid.

III. Research Activity

Research Priorities

- Currently there are 18 research and development centres/ units across DIT.¹²⁸
- A strategic planning process is in train at the Institute to prioritise areas of key strength. Initially the following broad areas will be the focus, with further targeting envisaged:
 1. Sustainable Energy / Clean Technologies
 2. Materials
 3. ICT
 4. Business and Social Development
 5. Food, Nutrition & Health Sciences
- As noted above, DIT has the power to make awards up to Level 10 across all its faculties.
- In terms of research funding, it is involved in five PRTL-supported initiatives:

Field	Initiative	Role	Total Initiative Funding
Physical Sciences & Technology	Focas Institute	Lead	€10.4m
	Medilink	Joint Lead	€0.8m
Environment & Natural Resources	Institute for Bioengineering and Agrotecology	Partner	€5.5m
	Environmental Research Institute	Partner	€27m
Social Sciences & Humanities	National Institute for Regional and Spatial Analysis	Partner	€2.7m

- It has been awarded €3.7m from SFI for engineering since 2002 and is a partner in the Centre for Telecommunications Value Chain Research CSET which involves different Irish universities and research institutes including TCD and UCD among others. It has received a further €1.2m in funding from SFI for research into areas including radiation science (€1.0m) and food science (€0.1m).
- Enterprise Ireland has awarded €2.4m to DIT Engineering since 2000 as well as supporting other fields of research, e.g., digital media (€0.5m), optoelectronics (€0.3m) and physics (€0.2m). It has also provided approximately €8m in funding to the National Institute of Transport and Logistics at DIT over the same period.
- Between 2000 and 2005 DIT received €7.4m in TSR funding from DES, of which €2.9m was under Strand I, €2.4m under Strand II and €2.1m under Strand III.
- DIT received total funding of €2.3m under FP6, nearly all of this went to information society technologies.

¹²⁸ www.dit.ie

- There are 150 academic staff at the Institute engaged in research activity, as well as 35 post-doctorates, 32 contract staff and 22 research assistants.¹²⁹
- The following research outputs¹³⁰ were produced across DIT faculties in 2005:

Faculty	Publications ¹³¹	Conference/ policy papers	Patents	Licences
Applied Arts	24	51		
Built Environment	2	17		
Business	5	35		
Engineering	22	40	2	1
Science	61	44		
Tourism & Food	29	9		
Total	143	196	2	1

Research Strategy

- DIT has a dedicated Head of Research and an explicit strategy “DIT Strategy for Research and Scholarship 2005-2010”.
- Under the latter, two prime goals have been identified as follows:¹³²
 1. To advance research and scholarship within DIT, including technology and knowledge transfer, whilst developing the expertise of its staff and students and positively impacting upon and improving the Institute’s educational programmes.
 2. To support Ireland’s requirement for a knowledge-based society by engaging in research and scholarship, including knowledge transfer and thereby making a direct contribution to the needs of Irish industry and the economy while enhancing DIT’s position as a leading higher educational institution.
- The Institute aims to:
 - Attract and retain staff and students who thrive in a ‘research-alive’ environment and want to be part of an ‘entrepreneurial’ university;
 - Foster a research community with strong commercial awareness;
 - Have in place a dynamic campus, with researchers and industrialists working side by side; and space for housing new spin-offs, young knowledge-intensive businesses and units of R&D intensive firms (indigenous and MNCs);
 - Have knowledge creation and transfer as a defining part of who and what DIT is; and,
 - To support and recognise on-going achievement in research and scholarship by creating 60 largely full-time research posts undertaking no more than four hours of teaching. Other staff achieving certain criteria including the teaching and training of research postgraduates would be eligible for a reduction in teaching load of up to eight hours.
- The following key objectives are set out in the strategy to be achieved by 2011:¹³³

¹²⁹ The figure for academic staff is headcount, the other staff are FTE.

¹³⁰ Those recorded on the Expertise Ireland web site (figures may be higher)

¹³¹ The majority of the publications were refereed.

¹³² Dublin Institute of Technology Strategy for Research and Scholarship 2005-2010, June 2005

Research	Technology Transfer
30% of academic staff research active	43 Disclosures
600 Postgraduates	30 Patents Filed
50 Post Doctorates	12 Patents Granted
20% Inter-Institutional research collaborations	16 Licences
Graduate 3 professional doctorates per faculty per annum	32 Collaborative Research Agreements
Create 2 to 3 multidisciplinary research institutes and 1 enterprise institute	160 new ventures of which 12 will be direct DIT spin-outs
€20m externally funded projects per year	

IV. Collaboration¹³⁴

With Enterprise

The Institute's Office of Industry Development oversees and develops its involvement with enterprise. As mentioned above, DIT has established a Corporate Training Unit whose role is to develop DIT's relationship with public and private sector companies and professional bodies.

- Examples of DIT's company training activity include:
 - Certificate in Maintenance Technology delivered countrywide to clients such as IBM, Kerry Foods and Thermo King
 - On-site operational development programme focused on wood machining for MacCann & Byrne Ltd. (timber importer and distributor)
 - Degree programme in Business Studies delivered on-site to Intel
- Companies can also work with Institute staff to develop and deliver their own customised programmes which can be accredited once they meet the standards and criteria demanded. Organisations such as Musgrave Supervalu Centra Group, ESB, RTE, Respond, the Irish Auctioneers and Valuers Institute and the National Film and Television School London have entered into collaborative arrangements with DIT.
- In addition, three DIT centres (the Project Development Centre, Tourism Research Centre and the National Maintenance Centre) are involved in Skillnets training initiatives.

DIT also collaborates with companies on research projects through its specialised units, for example:

- The Institute's Food Product Development Centre provides a range of R&D services to the food and drinks industry, such as sensory analysis and new product development. Clients include Glanbia, Diageo, Bulmers and Kerry Foods;

¹³³ Dublin Institute of Technology Strategy for Research and Scholarship 2005-2010, June 2005 and DIT Survey Return

¹³⁴ DIT + Enterprise partners in innovation (2004)

- The Applied Optoelectronics Centre in the Faculty of Engineering undertakes research, consultancy and training in optical fibre communications and related communications technologies and has worked with companies such as Vodafone, Esat BT, ESB, Siemens and Eircom; and,
- The National Satellite Services Centre is engaged in research and development projects for the satellite, GIS and telecoms industries and clients have included Aepona, Duolog, Logica and Qresearch.

With Others

- As noted above, DIT collaborates with other higher education institutions on research. Another example is its work into early childhood education with St. Patrick's College, Drumcondra.
- The Institute is a partner in the Centre for Telecommunications Value Chain Research CSET and its Marine Research Group has collaborated with the Marine Institute on mutually relevant work.
- Its school of Biological Sciences has developed a customised training programme for the Irish Medicines Board on in-vitro diagnostic testing.
- It also works with national and local bodies on a range of matters, e.g., its current engagement on the Grangegorman Development Agency.
- Internationally, DIT is a member of the European Universities Association who reviewed the Institute's quality assurance procedures in 2005. Follow-up on the emerging recommendations is a key part of the Institute's 2006-2006 Strategic Development Plan.
- It has a number of other international collaborations, e.g., it has franchised its computer science degree programme to Harbin Institute of Technology in China and student study visits/exchanges take place as part of this.

V. Company Formation

Entrepreneurship Support

- The Project Development Centre (PDC) was established in 1983 as DIT's enterprise support unit.¹³⁵ It operates a range of initiatives to assist and promote company formation.
- To date more than 400 companies have been assisted through the PDC including eWare Ltd., Magnetic Solutions Ltd., Century Homes, Realtime Technologies and Phorest Communications¹³⁶.
- It launched its twelfth Enterprise Platform Programme ("Hothouse") in September 2006.¹³⁷ Over the period 2002 to 2004, 107 people participated in the programme, 63 of whom secured Enterprise Ireland CORD funding. In 2005, there were 32 participants on (25 of whom were assisted by Enterprise Ireland).
- In addition, in 2005 the PDC delivered an Enterprise Start Programme (supported by Enterprise Ireland and FÁS) to 6 participants in Waterford.

¹³⁵ pdc.ie

¹³⁶ DIT + Enterprise partners in innovation (2004)

¹³⁷ www.pdc.ie

- It promotes commercial awareness among the DIT research community through its Prospect initiative. It also encourages student entrepreneurship through its student enterprise competition.
- A new initiative is Signpost: a guidance service to potential entrepreneurs (both internal and external to DIT). Currently being piloted as a drop-in centre at DIT Aungier Street, the Institute is looking to develop it on the new Grangegorman campus.

Incubation

- DIT has 1,128m² incubation space within the Docklands Innovation Park. Owned by the Bolton Trust, the property is used by the PDC to provide incubation support to start-up companies there.
- DIT has recently been approved for Enterprise Ireland grant-aid for its own incubation unit at Grangegorman.

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 2,892 staff, 38 of whom were in management, 1,193 in support and administration and 1,661 were academic staff.

Financial Resources

- For the financial year ended 31 August 2005, DIT's total funding amounted to €171m, of which
 - 61% came from DES
 - 13% from fee income
 - 2% from industry
 - 24% from other sources
- According to the 2006-2009 Strategic Development Plan, a unit costing exercise based on the 2004/5 published accounts has commenced. The results of this Institute-wide exercise will be available by the end of 2007 and will form the basis for more effective resources usage.

Physical Resources

- At present, DIT is located across 39 sites across Dublin.
- Plans are underway to relocate to a single 65-acre campus at Grangegorman and these are being progressed through the Grangegorman Development Agency.

	Current Physical Infrastructure		DIT Campus at Grangegorman	
	<i>M²</i>	<i>% of Total</i>	<i>M²</i>	<i>% of Total</i>
Teaching ¹³⁸	57,935	47.6%	85,000	37.5%
Research	3,575	2.9%	10,000	4.4%
Incubation	1,128 ¹³⁹	0.9%	50,000	22.0%
Administration	6,966	5.7%	6,500	2.9%
Other	52,035	42.8%	75,300	33.2%
Total	121,639	100.0%	226,800	100.0%

¹³⁸ Includes library and academic offices

¹³⁹ The current incubation space is provided by Bolton Trust at the Docklands Innovation Park. Additional 2,000 m2 of incubation space is planned.

Dun Laoghaire Institute of Art, Design and Technology

I. Strategic Development

“To be the leading Irish educator for the knowledge, media and entertainment sectors”

Dun Laoghaire Institute of Art, Design & Technology Mission Statement

Current Strategic Plan

IADT sets out the following goals in its 2003 five-year strategic framework:

1. To be recognised as a unique, specialist higher education institution through the quality of its programmes.
2. To achieve ‘Delegation of Authority to Make Awards’ (Level 8 authority achieved in April 2006),
3. To raise IADT’s international profile through student and staff exchanges, research and development and through professional practice in visual and media arts.
4. To support enterprise development.
5. To establish a national centre of excellence in Film and Broadcasting (The National Film School at IADT was launched in 2003).
6. To fully realise the campus development plan, recognising the campus as an asset to its students, staff and the wider social and business community.

Strategic Review/Planning

- Yearly action plans are put in place to complement this overarching five-year framework. These outline in greater detail the activities and responsibilities within each particular planning period. A yearly report is presented to the Governing Body in respect of the action plan.
- The development of the strategic framework involved consultation with key internal and external stakeholders, e.g. IADT staff, government agencies, local bodies.
- The present framework is currently being reviewed and external facilitators are also being brought in to assist in the development of the next five-year plan to run from 2008.

II. Education and Training

Founded in 1997, the Institute operates across three schools:

- Business and Humanities
- Creative Arts
- Creative Technologies

Student Population

In 2004/5, IADT had a fulltime student population of just over 1,400 on accredited courses. This can be viewed by faculty and level in the table below:

Dept./School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by School
		Taught	Research					
Business & Humanities	0	0	4	395	147	17	563	39.5%
Creative Arts*	0	0	0	270	306	0	576	40.4%
Creative Technologies	0	0	0	123	164	0	287	20.1%
Total	0	0	4	788	617	17	1,426	100.0%
% of Total Population by Level	0.0%	0.0%	0.3%	55.3%	43.3%	1.2%	100.0%	

Table: Total Full-Time Student Population 2004/5 by Faculty and Level (accredited courses)

A number of changes in field of study and level can be noted between 2003/ 2004 and 2004/5:

Changes by School			
Department/ School	Numbers 2004/5	Numbers 2003/4	% change on year
Business & Humanities	563	509	+11%
Creative Arts	576	616	-6.5%
Creative Technologies	287	283	1.4%
Total	1,426	1,408	+1.3%

Table: Changes in Fulltime Student Population by School from 2003/4 to 2004/5

Changes by Level			
Level	Numbers 2004/5	Numbers 2003/4	% change on year
9	35	33	-89%
8	788	635	+24%
7/6	617	729	-15%
1-5	17	11	+55%
Total	1,426	1,408	+1.3%

Table: Changes in Fulltime Student Population by Level 2003/4 to 2004/5

* IADT also had 53 part-time students in 2004/5. All were enrolled in the School of Creative Arts, one third were studying for a taught masters and the remainder were at Level 8.

Several points can be noted from the above:

- The Schools of Business and Humanities and Creative Arts each accounted for 40% of the fulltime student population in 2004/5, with the remaining 20% enrolled in the School of Creative Technologies.
- During the same year, 55% of students were taking courses at Level 8 and 43% were at Levels 7/6. 1% of fulltime students were at Levels 1-5 and 0.3% were undertaking research masters at Level 9.
- The Institute has in the region of 800 part-time students on non-accredited courses, e.g. portfolio development, extramural personal interest courses and professional development courses.
- In 2004/5, the majority of IADT enrolments came through the CAO system and there were 228 applications from overseas students. An increasing number of students come through FETAC and the college has established formal links with a number of further education colleges, e.g. Dun Laoghaire Senior College, Colaiste Dhulaigh, Ballyfermot, Rathmines and Ballsbridge.
- IADT does not run any apprenticeship programmes.

Within Schools, the following can be noted:

Business and Humanities

- The School of Business and Humanities comprises the Department of Business and Enterprise and the Department of Humanities.
- 60% of the School's students were in the Department of Business and Enterprise (with courses such as arts management and entrepreneurship).
- Nearly all of its enrolments were at Levels 8 and 7/6 (70% and 26% respectively).
- All those at Level 7/6 were in the Department of Business and Enterprise.
- There were 4 students enrolled above Level 8: all on research masters.
- Between 2003/4 and 2004/5, there was an 11% increase in the School's population.

Creative Arts

- The School of Creative Arts comprises the Department of Art and Design and the Department of Film and Media. It also incorporates the National Film School.
- The School had just under 600 students enrolled on full-time accredited courses, e.g. film/ TV, visual arts, radio, in 2004/5.
- There were 306 studying at Level 8 (270 fulltime and 36 part-time) and the same number at Levels 7/6.
- 17 students were enrolled on a taught masters on a part-time basis in 2004/5.
- There was an increase of 2% on the previous year in those studying Creative Arts.

Creative Technologies

- The Institute's smallest School - of Creative Technologies - comprises the Department of Technology and the Learning Sciences.

- It had 123 and 164 full-time students enrolled on Level 8 and Level 7/6 courses respectively in 2004/5.
- These courses include digital media, multimedia and psychology applied to IT. For example, with regard to the latter, an MSc in Cyber Psychology is planned for accreditation in September 2007.

Other Training Activity

- As noted earlier, IADT runs a range of non-accredited courses including portfolio, extramural personal interest and professional development courses. There were about 800 part-time students attending such courses in 2004/5, split broadly evenly between daytime and evening time attendance.
- A number of IADT staff have been trained as accredited trainers for Final Cut Pro (a professional editing qualification) so that they can offer it to students or provide training for interested companies.

Graduates

In 2004/5, nearly 550 students graduated across the following levels and Schools as can be noted in the table below:

Dept./School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Dept./ School
		Taught	Research					
Business & Humanities	0	0	2	63	59	13	137	25.0%
Creative Arts	0	0	11	101	188	0	300	54.6%
Creative Technologies	0	0	0	58	54	0	112	20.4%
Total	0	0	13	222	301	13	549	100.0%
% of Total Graduates by Level	0.0%	0.0%	2.4%	40.4%	54.8%	2.4%	100.0%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)

- This was up by 13% or 62 people on 2003/4.
- The bulk came from Creative Arts (55%), followed by Business & Humanities (25%) with the smallest proportion coming from Creative Technologies (20%).
- The majority graduated at Levels 7/6 (55%) followed by Level 8 (40%) with the remainder evenly split between Level 9 research (2%) and Levels 1-5 (2%).

- Based upon the 2005 graduate destination survey, approximately 47% of those studying Business and Humanities and Creative Technologies across all levels went on to further study, as did 35% of those studying Creative Arts. The bulk of the remainder went into employment. A significant number of graduates from IADT go on to be self-employed.

Future Plans

- The Institute has set a target to grow full-time student numbers by 50% to around 2,000 - they are currently over 1,600.
- Most accredited courses delivered by IADT are four year degree programmes with exit points at lower levels and accompanying minor awards. This flexibility allows IADT to include aspects such as international exchanges in the programmes.
- Part of IADT's strategy is to develop activities across schools allowing students to develop skills in creative art, technology and business and humanities. The School of Creative Arts exhibits work on a continual basis throughout the Level 8 courses. This is seen by IADT as a feature of the professionalisation of art and design courses and an important business management skill to impart to students. The School of Business and Humanities encourages a practical approach to the acquisition of business and enterprise development skills and this forms part of the continuous assessment of courses.

III. Research Activity

Research Activity

The Institute has identified the following research priority areas:

1. Creative Arts/ Media/ Digital Media
 2. Entrepreneurship
 3. Learning sciences/ assistive technologies
- It is a member of the founding consortium for the National Digital Research Centre. Other consortium members include UCD, TCD, DCU and NCAD. Funded by the Department of Communications, Marine and Natural Resources, the NDRC is based in the Digital Hub.
 - 3% (€614,000) of total income for the year ended 31 August 2005 came from research, consultancy and development.
 - The Institute has delegated authority up to Level 8.
 - Since 2002 there have been seven projects which received total funding of €226,000 under TSR Strand I (six in business and humanities and one in science/technology on assistive technologies).
 - The Institute is the lead partner in an EU-funded collaborative project in assistive technologies.
 - IADT have also partnered with Dundalk IT and Waterford IT on a TSR-funded project NOMAD (Next Generation Wireless Software Services: Modelling and Developing Usable Applications) to develop usable software services for next generation wireless systems.

- Under Enterprise Ireland's Innovation Partnerships Initiative, it has undertaken a collaborative project with the e-learning company Electric Paper on team development in the online environment.
- Over 30 staff members are involved in research activity in a number of ways, e.g. as part of their own upskilling and through collaborating on wider larger projects.
- In terms of outputs, in 2005 the School of Business and Humanities had 3 refereed publications and 19 research papers. The School of Creative Technologies issued 9 publications (4 refereed and 5 non-refereed) and 7 conference/policy papers, while the School of Creative Arts produced 51 conference/policy papers and 7 short training courses.

Research Strategy

- IADT's research strategy integrates the two pillars of strategic research, development and innovation (RDI) and R&D in each School/ Department.
- Its strategic RDI mission is aimed at addressing national priorities through collaboration with others on large-scale projects. Its participation in the NDRC is central to this.
- It assists research activity within the Schools through staff development, an innovation seed fund and support for external grant applications.

IV. Collaboration

With Enterprise

- IADT endeavours to link its students with the needs of appropriate firms, e.g. it engaged with Kaveleer (Irish animation firm) by providing approximately 30 undergraduate animation students to the firm over a summer period.
- It also organises work placements for students, e.g. the 20-week internship component of its Arts Management degree (School of Business and Humanities).
- As mentioned above, the Institute has collaborated with Electric Paper on an Innovation Partnership and it has also worked with Ericsson on a project to incorporate mobile learning into mainstream education.
- IADT works with the Digital Media Forum and is currently developing an MA/ MSc in Digital Media aimed at the needs of this sector.

With Others

- IADT engages with a range of national and local bodies, e.g. IBEC, IMMA, the Irish Learning Technologies Association, the Department of Taoiseach's E-learning Strategy Group and the Dun Laoghaire-Rathdown County Enterprise Board and County Council.
- It is part of the successful consortium of higher education institutions, (DCU, NCAD, TCD and UCD) for the establishment of the National Digital Research Centre. As noted above, it also engages with a number of other institutions on other research projects.
- IADT is lead partner in a consortium with the National Centre for Technology in Education, the Irish Film Institute and Blackrock Education Centre on the FIS: a film/ digital media initiative for primary schools supported by the Department of Education and Science that includes upskilling for teachers throughout the country. It also collaborates with the Digital Hub and the Liberties Learning Initiative to deliver FIS2: a similar programme geared towards post-primary schools in Dublin 8.

V. Company Formation

Entrepreneurship Programmes

- IADT had 11 participants from 2002 to 2004 and 10 in 2005 on CREATE: an Enterprise Platform Programme run in the Digital Depot targeted at digital media.
- The School of Business and Humanities is involved in delivering the Evolve Programme to managers in start-ups in the Dun Laoghaire-Rathdown area and the Enterprise Programme for Visual Artists in the Dun Laoghaire-Rathdown area. These are both funded by in the Dun Laoghaire Rathdown CEB.
- A number of undergraduate programmes have entrepreneurship/ enterprise development modules.

Incubation Support

- The 1,340m² Digital Media Incubation Centre 'Media Cube', supported by Enterprise Ireland, will open in March 2007.¹⁴⁰ It will focus its support on HPSUs in the digital media sector.

¹⁴⁰ iadt.ie

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 181.82 FTE staff, 3 of which were in management, 73.93 in administrative and support roles and the remaining 104.89 were academic staff.

Financial Resources

- For the financial year ended 31 August 2005 (audited statements), IADT's total funding amounted to €17.97m, of which
 - 61% came from DES budget
 - 8% from DES Capital Grant
 - 23% from fee income
 - 3% from research, consultancy and development
 - 3% from superannuation
 - 2% from miscellaneous sources

Physical Resources

	Existing (m ²)	Under construction/ approved for construction (m ²)	Total	% of Overall Total
Teaching	6,750	5,210	11,960	53.2%
Research	15		15	0.1%
Incubation	1,340		1,340	6%
Admin	724	300	1,024	4.6%
Other	3,024	1,950	4,974	22.1%
Library	1,160	1,000	2,160	9.6%
Restaurant	415	600	1,015	4.5%
Total	13,428	9,060	22,488	

- The campus master plan also provides for a further 2,300m² of teaching space. Provision is also included for student residential accommodation on-campus (140 bed-units).

Institute of Technology Tallaght

I. Strategic Development

“The Institute of Technology Tallaght will provide learners with flexible higher education opportunities which are of the highest quality. Our programmes will reflect current and emerging knowledge and practices and will be relevant to the needs of the individual and our region. We will offer accessible programmes, delivered in a professional manner in a friendly and supportive environment.

We will foster graduates who are ready to undertake the roles, responsibilities and challenges available in business, industry, the professions, public service and society.

We are the regional higher education institute of South Dublin County. We aspire to be a major contributor to the social, cultural and economic life of the County, and the surrounding region. We will realise this aspiration by teaching and learning, research and development and providing support for innovation and enterprise.”

Institute of Technology Mission Statement¹⁴¹

Current Strategic Plan¹⁴²

IT Tallaght’s (ITT) Strategic Plan 2005-2008 sets out ten strategic goals with corresponding sets of actions to achieve these. The goals comprise:

<p>1. The academic programme</p>	<p>To ensure that its academic programmes are of the highest quality and are relevant to the needs of current and prospective students, industry and business and society.</p>
<p>2. The learning environment</p>	<p>To ensure that its academic programmes are delivered in a supportive, professional and flexible learning environment, and in a manner that is friendly and enriches the lives of ITT’s students and staff.</p>
<p>3. Student access, diversity and recruitment</p>	<p>To widen access to higher education in its region in both fulltime and lifelong learning modes. To further diversify its student population through national and international recruitment.</p>
<p>4. Retention and progression</p>	<p>To ensure that students are supported and encouraged to pursue their studies to the levels commensurate with their abilities and motivation and at the pace which suits their individual needs and circumstances. To continuously develop and implement measures to improve, retention and progression at all levels.</p>

¹⁴¹ Institute of Technology Tallaght Strategic Plan 2005-2008

¹⁴² Ibid.

5. Lifelong learning	To develop a range of educational initiatives to provide a means for individuals to achieve their lifelong learning goals.
6. Staff development and the working environment	To support all members of its staff in their quest for personal and professional development, and job satisfaction.
7. Research and development	To support R&D and promote its value with government, so as to secure its place as a mainstream activity of ITT with an annual target funding of €2.5m.
8. Innovation and enterprise development	To strive to maximise its economic impact, through its work in innovation, new enterprise development, support for existing enterprise, commercialisation of research and development, technology transfer and services to industry.
9. Governance, management and organisation	To implement best governance practice and to be compliant with legal standards of governance.
10. Campus development	To progress the physical development of the campus in accordance with the Institute's Development Control Plan 2003-2009 and the recommendations contained in the HEA Review and Prioritisation of Capital Projects in the Higher Education Sector.

Strategic Review/Planning

- During the process of developing the Strategic Plan 2005-2008, core themes were identified which evolved into the ten strategic goals set out above.
- Cross-Institute teams developed plans for each of these which were then integrated.
- Further consultation then took place with groups including external stakeholders such as programme review boards, the Industrial Board of the National Pharmaceutical Education Centre, the industrial liaison office and the careers guidance office.

II. Education and Training

Founded in 1992, the Institute operates across three schools:

- Business and Humanities
- Engineering
- Science and Computing

Student Population

In 2004/5, the Institute had a student population of nearly 3,000. This can be viewed by faculty and level in the table below:

Dept./ School	PhD (Level 10)	Masters (Level 9)		Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Population by Dept./ School
		Taught	Research					
Business & Humanities	0	0	0	458	1,155	0	1,613	55.1%
Fáilte	0	0	0	0	163	0	163	5.5%
Engineering	0	0	6	95	401	0	502	17%
Science & Computing	10	21	51	193	405	0	680	23%
Total	10	21	57	746	2,124	0	2,958	100.0%
% of Total Population by Level	0.3%	0.7%	1.9%	25.2%	71.8%	0.0%	100.0%	

Table: Total Student Population 2004/5 by Faculty and Level (accredited courses)

A number of changes in field and level of study can be noted between 2003/4 and 2004/5:

Department	Numbers 2004/5	Numbers 2003/4	% change on year	Level	Numbers 2004/5	Numbers in 2003/4	% change on year
Business & Humanities	1,613	1,691	-5%	10	10	12	-17%
				9	78	33	+136%
Fáilte	163	197	-17%	8	746	682	+9%
Engineering	502	502	0%	7/6	2,124	2,213	-4%
Science & Computing	680	550	+24%	1-5	0	0	0%
Total	2,958	2,940	+0.6%	Total	2,958	2,940	+0.6%

Table: Changes in Student Population by School from 2003/4 to 2004/5

Table: Changes in Student Population by Level from 2003/4 to 2004/5

It can be noted that:

- 55% of students were in Business (over 1,600), 23% were in Science and Computing and 17% in Engineering in 2004/5. Nearly 200 students were on Fáilte Ireland courses.

- Over 70% of students were taking courses at Levels 7/6 and a quarter of students were enrolled at Level 8.
- There were approximately three quarters full-time and one-quarter part-time students at the Institute in 2004/5.
- 7% of students entering the Institute were mature.

Looking within faculties, the following can be noted:

Business and Humanities

- In 2004/5, there were 1,155 students at Levels 7/6 (74% of whom were studying on a full-time basis). This represented over 72% of enrolments in Business and Humanities that year and was a decrease of 9% on the numbers studying at this level in 2003/4.
- There were 458 students at Level 8, nearly 80% of whom were studying on a fulltime basis. This was a slight increase (7% or 31 students) on the numbers studying at this level in 2003/4.
- All Fáilte Ireland students were at Levels 7/6.

Engineering

- In 2004/5 there were 6 research students (5 fulltime and 1 part-time) at Level 9.
- There were 95 students at Level 8 and 401 students at Levels 7/6 in 2004/5. This was an 8% decrease and a 5% increase respectively on the numbers studying at these levels on the previous academic year.
- 77% of Engineering students in 2004/5 were fulltime.

Science & Computing

- All Level 10 enrolments in IT Tallaght in 2004/5 were in the School of Science and Computing.
- There were 72 students at Level 9 in 2004/5 (out of an Institute total of 78), 51 of whom were research students and the remaining 21 were part-time taught students. In the previous academic year all students at this level were fulltime research students.
- There were 193 students at Level 8 and 405 at Levels 7/6 in 2004/5. This was a 27% and 12% increase respectively on the numbers studying at these levels on the previous academic year.
- Approximately two thirds of Science and Computing students were studying fulltime.

Other Training Activity

- ITT provides a number of training opportunities that are not accredited. For example, the School of Business and Humanities provided non-accredited training to 364 students in 2004/5.
- In the same year, the School of Science and Computing had 200 participants on firm-specific, non-accredited courses. Firms involved included Wyeth Biopharma, Wyeth Medica Ireland, Takeda Ireland Group and the Helsinn Group.
- The overall number of people receiving such training from IT Tallaght in 2004/5 is broadly similar to the previous year.

Graduates

Dept./School	PhD (Level 10)	Masters (Level 9)	Higher Degree (Level 8)	Ord. Degree/ Higher Cert. (Levels 7/6)	Levels 1-5	Total	% of Total Graduates by Faculty
Business & Humanities	-	2	283	752	-	1,037	65%
Engineering	-	3	58	199	-	260	16.3%
Science & Computing	-	7	65	226	-	298	18.7%
Total		12	406	1,177	-	1,595	100%
% of Total Graduates by Level		0.8%	25.5%	73.8%	-	100%	

Table: Total Graduate 2004/5 by Faculty and Level (accredited courses)

- The total number of graduates is down 9% on 2003/4 when there were 1,746 graduates.
- Nearly three quarters of those graduating in 2004/5 were at Levels 7/6. In terms of fields of study, approximately two thirds of graduates were from the School of Business and Humanities.
- Of the 500 respondents to the November 2005 graduate destinations survey, 98% went on to further study or into employment. Of those graduating at Level 8, three-quarters were in employment, 14% went on to further study and 3% were seeking employment. Of those who qualified at Levels 7/6, two-thirds went on to further study within ITT, 21% were in employment and 3.4% were seeking employment.¹⁴³

Future Plans

- Under the Strategic Plan 2005-2008 it is intended that ITT will grow to 3,000 full-time students and will also cater for 1,800 part-time and in-company students and over 100 post graduate researchers by 2008.
- Another Institute mission under the period of the Strategic Plan is to review and renew all its programmes in consultation with industry, business, professional bodies, the community, students and graduates.
- As well as course content, the Institute is developing its delivery methods including the implementation of an institute-wide e-learning initiative. Efforts are also being made to “compress” the study time required for part-time students, e.g. the FLASHE Higher Certificate in Electronic Engineering which is based on the principle that students can construct their own timetable around other demands.
- Other targets relevant to education and training include:
 - Increasing the number of schools with which it has formal links by 50% between 2005 and 2007,
 - Increasing the number of mature students admitted to the first year of full-time

¹⁴³ Institute of Technology Tallaght Graduate Survey 2005 Report on research Findings 20 June 2006

- programmes to 7% of entrants,
- To bring to 100 the number of international students registered in the institute annually from 2008,
- To achieve an average fulltime student retention rate of 80% by 2007.

III. Research Activity

Research Priorities

A key element of the Institute's research strategy is the establishment of Institute Research Centres (IRCs) on campus.¹⁴⁴ These are defined by the Institute as sustainable research groups who are capable of attracting external research funding, participating in external research collaborations and raising the research profile of the Institute. To support them in this, IRC co-ordinators receive four hours' additional relief from teaching duties.

- *Nuclear Magnetic Resonance Institute Centre for Spectroscopy (NMRics)*¹⁴⁵
 - This centre for chemical synthesis and analysis was established in 2005. Its team has secured in the region of €1m in research support through a range of sources.
 - The centre also offers an external support service NMR-ITT! to companies in the region.
- *Centre for Research in Electroanalytical Technology (CREATE)*¹⁴⁶
 - CREATE uses synthetic chemistry, electrochemistry and material science to design multifunctional materials.
 - The centre is a partner in the PRTL-funded National Centre for Sensor Research (lead institution DCU, total funding €11m). It has also successfully secured €1.2m from Enterprise Ireland under its Applied Research Enhancement Initiative.
- *Bio-Pharmaceutical and Neutraceuticals Research Centre (BPNR)*¹⁴⁷
 - Founded as an IRC in 2005, the BPNR provides R&D for the generation of novel and improved anti-microbial agents.
 - Its team consists of six fulltime academic staff members and seven researchers.
 - BPNR is a partner in the PRTL-funded National Institute of Cellular Biotechnology (lead institution DCU, total initiative funding €34m). It has also collaborated with Tallaght Hospital and CrossVetPharm (veterinary pharmaceutical company).
- Other Institute Research Centres include:
 - The National Centre Franco-Irish Studies
 - The Centre of Microbial Pathogenesis
 - The Centre of Pharmaceutical Research and Development
 - The Integrated Product and Process Development Centre

¹⁴⁴ Institute of Technology Tallaght Dublin Research Strategy Implementation

¹⁴⁵ it-tallaght.ie/science/nuclearmagneticresonancemr (19/01/07)

¹⁴⁶ it-tallaght.ie/science/electroanalyticaltechnologycreate (19/01/07)

¹⁴⁷ it-tallaght.ie/researchinnovation/researchstrategycentresandfunding/researchcentresircs/bpnr (19/01/07)

- The Institute has delegated authority for all taught programmes at Level 9. It has applied for Level 9 (research) delegated authority in engineering, science and computing, and for Level 10 in chemistry and biology.
- In 2005, 74 staff (on an FTE basis) were engaged in research activity. Approximately one third apiece of these were in engineering and science, with the remaining one third spread across computing, business and humanities.
- The Institute produced the following outputs in 2005:

	Publications	Papers/ presentations	Prizes ¹⁴⁸
Science	15	24	3
Computing	4	5	
Engineering	5	16	
B&H	12		

Research Strategy¹⁴⁹

- In line with its plans for IRCs detailed above, over the period of the Strategic Plan 2005-2008 ITT intends to increase the number of research postgraduate students to over 100 and to target annual research funding of €2.5m.
- The Institute also intends to expand the provision of dedicated research space, e.g., 15% of the new incubation centre allocated specifically to research activity.
- It aims to foster staff involvement in research, e.g., through internal initiatives such as its seed fund and PhD continuation fund, and to involve researchers from external institutions and companies on the R&D Committee of the Academic Council.
- Under its Strategic Plan, the Institute aims to license three or more technologies developed as a result of research carried out in the Institute and, to achieve 10% growth, year on year, in income derived from dissemination of information to industry.

¹⁴⁸ For poster/ oral presentations at research conferences.

¹⁴⁹ Institute of Technology Tallaght Strategic Plan 2005-2008

IV. Collaboration

With Enterprise

- In the latter half of the 1990s, the Institute's main work with enterprise was on training for larger ICT firms. In 1996, the School of Engineering collaborated with Hewlett Packard and Intel on the establishment of the Technician Development Centre to provide training facilities for students and company staff. In 2006, due to changes in demand, the centre was re-designated as an electrical trades centre.
- At the start of this decade, this focus shifted towards pharmaceuticals and, in 2000, ITT received funding of approx €4m under the NDP for the establishment of the National Pharmaceutical Education Centre. This provides training to a number of firms including Takeda Ireland Group, Helsinn Group, Genzyme Ireland Ltd., and Janssen Pharmaceutical Ltd. It also supports research in the area of bio/cell technology. In 2006, the Institute signed a contract with a Cork based pharmaceuticals company for an 18-month course which will be delivered between Cork and Tallaght.
- ITT has collaborated with a number of firms on applied research projects, e.g. in 2005 the Department of Computing with MobileAware Ltd. and the Department of Science with Henkel Loctite.
- 0.6 % (€150,000) of total income for year ended 31 August 2005 came from industry.
- Nearly all of the Institute's part-time student population are company employees.

With Others

- As mentioned above, ITT has collaborated on research with other higher education institutions, e.g. DCU, NUI Maynooth and DIT.
- Two of the Institute's IRCs - the Bio-Pharmaceutical and Neutraceuticals Research Centre and the Centre of Pharmaceutical Research and Development have links with Tallaght Hospital.
- It has secured €2m under the Strategic Innovation Fund for the development of a collaborative network for teaching, innovation and inclusive education. Its partners on this are IT Blanchardstown, IT Carlow and IADT.¹⁵⁰

¹⁵⁰ HEA

V. Company Formation

Entrepreneurship Programmes

- ITT is part of the M50 Enterprise Platform Programme run in partnership with IT Blanchardstown, UCD and DCU.
- From 2002 to 2004, there were 44 participants on the M50 programme and 23 in 2005.

Incubation Support

- IT Tallaght's innovation centre, the Synergy Centre, opened in November 2006. It comprises 14 business units of varying sizes.¹⁵¹

VI. Resources

Staffing Levels

- As of end 2005, the Institute had 335 FTE staff. Of these, 22 were in management 128 were in support and administration and the remainder were academic staff.
- Academic staff can be broken down across departments as follows:

Department	Fulltime	Part-time	Total
Electronic Engineering	23	0.22	23.22
Mechanical Engineering	26	0.33	26.33
Applied Science	28	4.8	32.8
Computing	17	1.1	18.1
Marketing & Business Computing	10	5.5	15.5
Accounting & Professional Studies	8	1.5	9.5
Management	12	3.1	15.1
Humanities	33	11.35	44.35
Total	157	27.9	184.9

¹⁵¹ synergycentre.ie

Financial Resources

- For the financial year ended 31 August 2005, ITT's total funding amounted to €27m (draft figures), of which
 - 90% came from DES
 - 4% from fee income
 - 0.6% from industry
 - 6% from other

Physical Resources

- ITT has nearly 16,000m² of space at present. This is broken down as follows:

	Current Physical Infrastructure m ²	Under construction/ planned m ²	Total	% of Total
Teaching	4,901	0	4,901	29.0%
Research	1,280	122	1,402	8.3%
Incubation	0	472	472	2.8%
Administration	2,464	42	2,506	14.8%
Other	7,225	374	7,599	45.0%
Total	15,870	1,010	16,880	100.0%

- In 2004 the HEA Capital Review and Prioritisation Working Group recommended expenditure of nearly €46m between 2004 and 2008:
 - €7.3m of which was for enabling infrastructure,
 - €12.7m for a building for catering and tourism (3,600m²),
 - €21m for an engineering building (5,210 m²) and
 - €5m for a multi-purpose centre (4,000m²).
- In addition the review recommended that a 5,000 m² (€16.25m) business and humanities building be built between 2009 and 2013.
- The Institute's Strategic Plan 2005-2008 also contains proposals for a 630m² crèche and 925m² research, industrial and educational training suite.

Section II - Emerging Findings

1 The Relationship between the Institutes and Enterprise

1.1 National context

Legal mandate

The Institutes of Technology were established by the Department of Education and Science in the 1970s with the particular mission of contributing to the technological, scientific, commercial, industrial, social and cultural development of the State with reference to the particular region, to provide balanced education to the highest international standard and provide learners with flexible higher learning opportunities.

Under the Regional Technical Colleges and Dublin Institute of Technology Acts 1992, their functions were identified as

“To provide vocational and technical education and training for the economic, technological, scientific, commercial, industrial, social and cultural development of the State with particular reference to the region served by the Colleges”, as well as to:

- Engage in research, development and consultancy work,
- Exploit any research, consultancy or development work,
- Enter into arrangements with other institutions in or outside the State for the purpose of joint programmes in both teaching and research.

The Institute of Technology Act 2006 came into effect on 1 February 2007, with the effect of bringing the fourteen Institutes of Technology under the remit of the HEA.

National policy

The OECD Review of Higher Education in 2004 recommended the preservation of the “differentiation of mission between the university and Institute of Technology sector”. This position is endorsed in the National Development Plan 2007-2013 in which Government strategy is outlined as one “to allow each of our existing universities and Institutes of Technology to be supported in developing and enhancing their roles according to their existing strengths as part of a unified higher education system”.

Changing operating environment

The environment in which the Institutes are operating has altered noticeably over the last number of years:

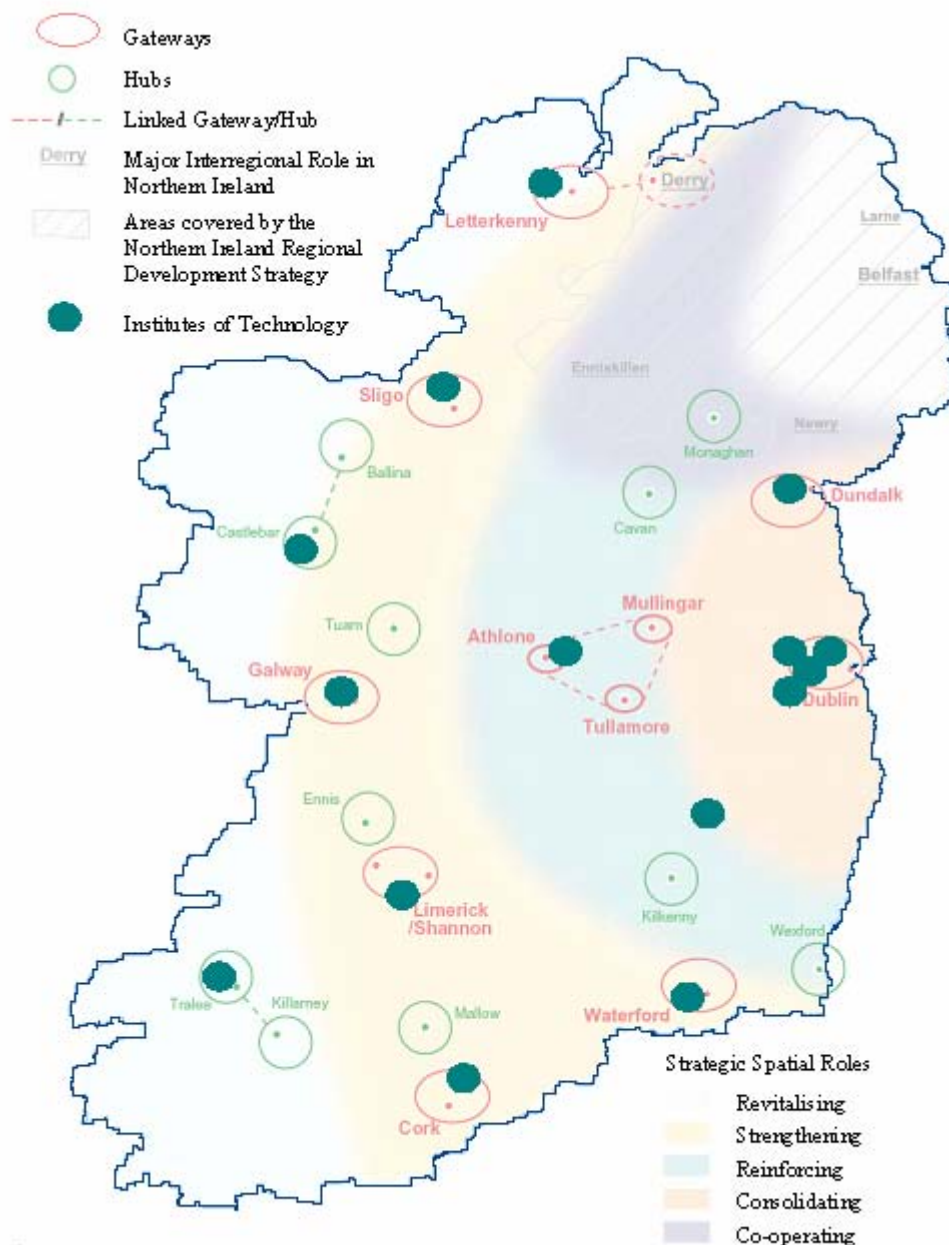
- The impact of changing demographics, particularly falling number of school leavers in recent years;
- Increasing number of employed people in Ireland with training needs;

- Changing industrial structure with an evolving manufacturing base, increasing services industry component, greater focus on technology-intensive firms and use of technology in more traditional sectors;
- Increased national funding for research and S&T-related matters (2007-2013 NDP);
- Increased focus in Ireland on enterprise-academia collaboration (note spectrum of linkages: placement, recruitment, education, research, entrepreneurship).

1.2 Key Findings

Specific Institutional Context

- Each Institute is coming from a **different starting point, has a specific regional context and sometimes different missions**. For example, the Institute of Art, Design and Technology in Dun Laoghaire (IADT) has a specific sectoral remit focusing on art, design and technology. Some Institutes are more research-active than others and even within this there is varying emphasis at different points in the research spectrum. Others are notably active in supporting access to higher education in recognition of the needs of their hinterland, e.g. IT Blanchardstown.
- Linked to this, the regional context of each Institute is important to understanding their activities. Four are located in Dublin alongside four universities, three are located outside Dublin close to universities, while the remaining seven are the main higher education providers in their respective regions. Furthermore, the potential of each Institute to develop and engage with industry is influenced by the specific demographic and industrial characteristics of their region.



Source: The National Spatial Strategy 2002-2020 'Gateways' and 'Hubs'. Notes: GMIT is located across campuses in Galway and Castlebar. IT Blanchardstown, DIT, IADT and IT Tallaght are located in the Dublin area.

- Each Institute, by its very definition as a higher education institution, is primarily concerned with education. The role of the Institutes as educators is evolving and needs to evolve further to reflect the changing environment discussed above, in terms of changing demographics, a need for increased education and training of those in the workforce, and the need for greater enterprise-academic collaboration. Its other functions, e.g. research and development, entrepreneurship, must be aligned with this.
- While there is a need for an overarching policy framework for the Institute of Technology sector, each Institute needs to develop its own strategy reflecting its current strengths, operating context and potential, and be supported in doing this

Enterprise-Institute Linkages

- It is fundamentally important to recognise the **totality of the Institutes' potential spectrum of engagement with the industrial base**, ranging from undergraduate placements, through graduate recruitment, training for company personnel, to R&D and spin-off activities.
- Companies have **varying experiences** of interaction with Institutes of Technology. For example, Masonite has a very strong relationship with IT Sligo for onsite delivery of accredited courses. At the other end of the spectrum, a company that had made notable investment in a Dublin Institute ran into difficulties with one academic, as a result of which the entire relationship ceased - without any follow-up contact on the part of Institute senior management to rescue it.
- There is a **strong appetite and commitment among senior Institute management to engage with industry**. There are resourcing issues as to how to deliver on this in light of their other responsibilities and wider national priorities.
- During the course of discussions with companies, **flexibility in meeting enterprise requirements** emerged as a key issue. On the Institutes' part, the ability to be flexible is often a function of their resourcing structures: financial, human and physical. This will be an important issue to be addressed from an enterprise perspective as the Institutes transition across to the HEA.
- The Institutes need to manage optimally relationships with enterprise and to balance this with care not to overly bureaucratise the situation. A number of companies viewed the effectiveness of relationship management on the part of the Institute as a pivotal factor in the success or otherwise of the interaction. At the same time, if too many rules are imposed, activity will be stifled.
- The **articulation of enterprise requirements and their input to Institute activity** is essential to ensuring that the needs of the industrial base are reflected in the evolving offering of the Institutes.
- In parallel with this, a number of companies consulted were unsure as to how to identify and access expertise in Institutes across the country. An improved system for the **identification and communication of Institute expertise** is needed to assist companies in knowing who to contact for their requirements.

Industry Input to Institute Strategic Planning

- With regard to strategic development within the Institutes, they all prepare strategic plans and have completed strategic planning processes for these with varying degrees of stakeholder consultation.
- Strong examples include Limerick Institute of Technology's very extensive consultation process over October 2004 to March 2006 for its 2006-2010 Strategic Plan. In addition, Waterford Institute of Technology has established a dedicated Office of Strategic Planning.
- The strategic planning processes normally involve some input from industry. A number of companies are also usually invited to input to the five-yearly programmatic reviews that are undertaken and some are involved in other industry advisory committees. Governing bodies typically include industry representation.
- Industry input to Institute strategic planning is vital to ensuring the relevance of the Institute's overall direction to enterprise development. **A systematic and strategic - rather than an "as**

needs arise” - **approach** by the Institutes and enterprise would enhance this. The views of SMEs are an important part of this. At the same time it is recognised that SMEs often do not possess the resources to engage meaningfully in such an activity.

Collaboration with the Enterprise Development Agencies

- Throughout the regions, links between the enterprise development agencies and the Institutes vary. Some interactions with the Institutes tend to be on an ad-hoc basis, while others are more strategic. For example, EI and IDA Cork meet regularly with Cork Institute of Technology and UCC to discuss mutually relevant issues. Under the Strategy for STI and its own 2005-7 strategy, Enterprise Ireland has responsibility to “work closely with the Institutes of Technology [...] to strengthen their ability to support industry at regional level”. The IDA’s interests logically lie within the needs of its existing and potential client base in the region. FÁS has several lines of business in common with the Institutes, for example its partnerships on apprenticeships and its funding for a range of Institute-provided programmes under FÁS’ Services to Business umbrella, and has varying levels of engagement across the regions.
- There is **further potential for the development agencies to enhance strategic relationships with the Institutes**, which would assist the Institutes in planning for emerging opportunities to meet enterprise education, training, research or development requirements.
- Finally, reciprocating the need for industry influence on the strategic development of the Institutes, a greater role for the Institutes in regional and national strategic groups would help to improve dialogue and understanding of issues being faced by many stakeholders.

Summary of issues emerging relevant to Institutes and enterprise development:

- Institute strategic planning to build on identified strengths, operating context and potential of each across range of activities,
- Systematic industry input to Institute planning, including:
 - reflection of totality of spectrum of enterprise engagement with Institutes,
 - role of the enterprise development agencies,
- Institute flexibility to engage with enterprise, including:
 - use of financial resources,
 - deployment of staff,
- Identification and communication of Institutes’ areas of expertise,
- Increased Institute involvement in regional and national strategic groups.

2 Education and Training

2.1 Key Findings

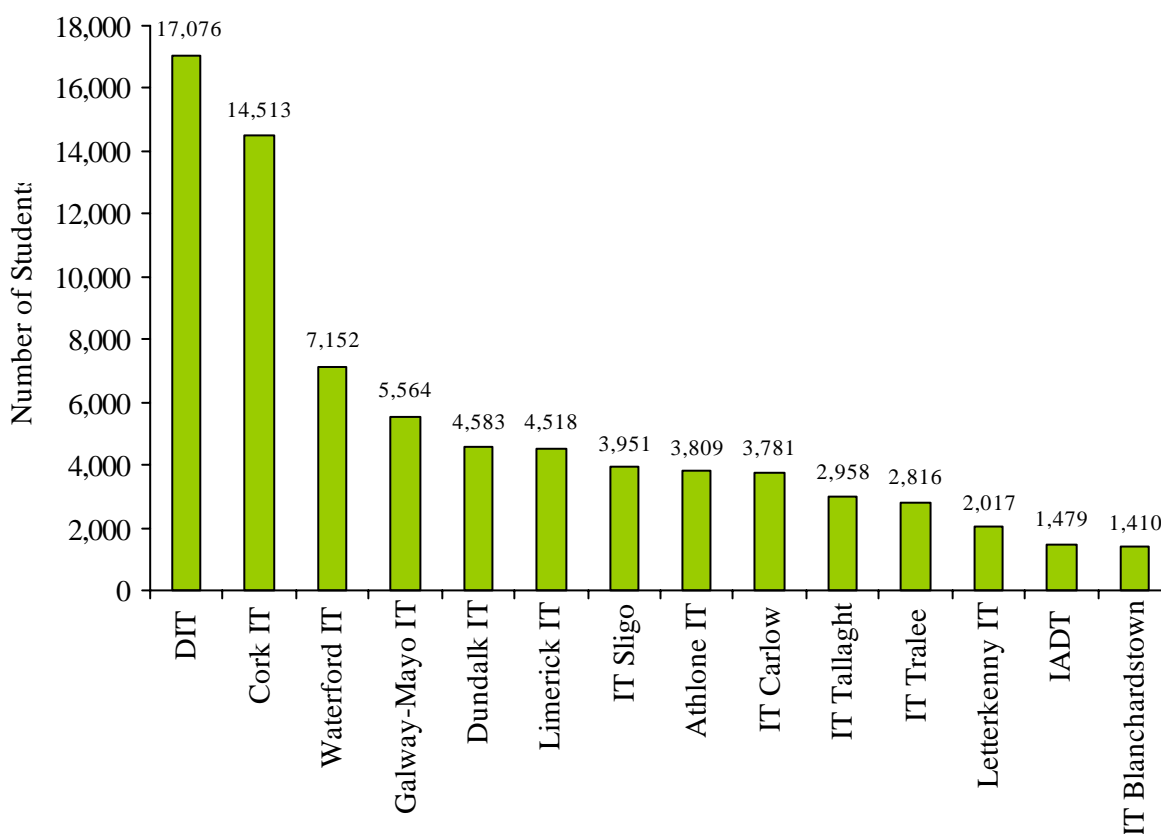
Central to the remit of the Institutes of Technology sector is its role in education and training. The parameters of this have changed significantly and may even more so over the coming period, including:

- Who the Institutes teach, i.e. student needs and profiles are changing,
- What they teach, i.e. course design,
- How they teach it, i.e. course delivery.

Student enrolments

- According to the profiles, there were **approximately 75,000 students enrolled on courses across the Institutes of Technology in 2004/5**. The two largest Institutes in terms of enrolments were DIT and Cork with enrolments around or above the 15,000 level, followed by Waterford with just over 7,000. Six Institutes fell into the 3-6,000 bracket: GMIT, Dundalk, Limerick, Sligo, Athlone and Carlow. Three (Tallaght, Tralee and Letterkenny) had 2-3,000 students enrolled, while the two smallest Institutes in terms of enrolments were IADT (Dun Laoghaire) and IT Blanchardstown.

Table 1: Students enrolled at the Institutes of Technology 2004/5¹⁵²



¹⁵² All figures exclude those on apprenticeship courses except for IT Blanchardstown which includes 378 apprentices.

- The Institutes deliver a range of courses across the spectrum of NQF levels and predominantly broadly split between Business & Humanities and Science & Engineering. While the proportions registered by level vary significantly across the Institutes, approximately 60-70% of enrolments in each of the Institutes in 2004/5 were at Levels 7/6 (ordinary degree and higher certificate). Between 2003/4 and 2004/5, nearly all Institutes saw notable increases at Level 8 (honours degree) and falls in Levels 7/6 enrolments. On average 1-2% of enrolments were at Levels 9/10 (masters and PhD). DIT is a notable exception to the latter with 8% of enrolments at Levels 9/10 in 2004/5. The growth at Level 8 has been taking place for a number of years. According to FÁS SLMRU/ EGFSN (2006), approximately 8,000 students graduated with Level 8 qualifications from the Institutes of Technology in 2004, compared with 3,200 in 1998.
- The recently published National Skills Strategy highlights the **continuing importance of delivering skills at Levels 7/6 and the role of Institutes will be vital to this as they receive approximately 95% of national enrolments at these levels.**

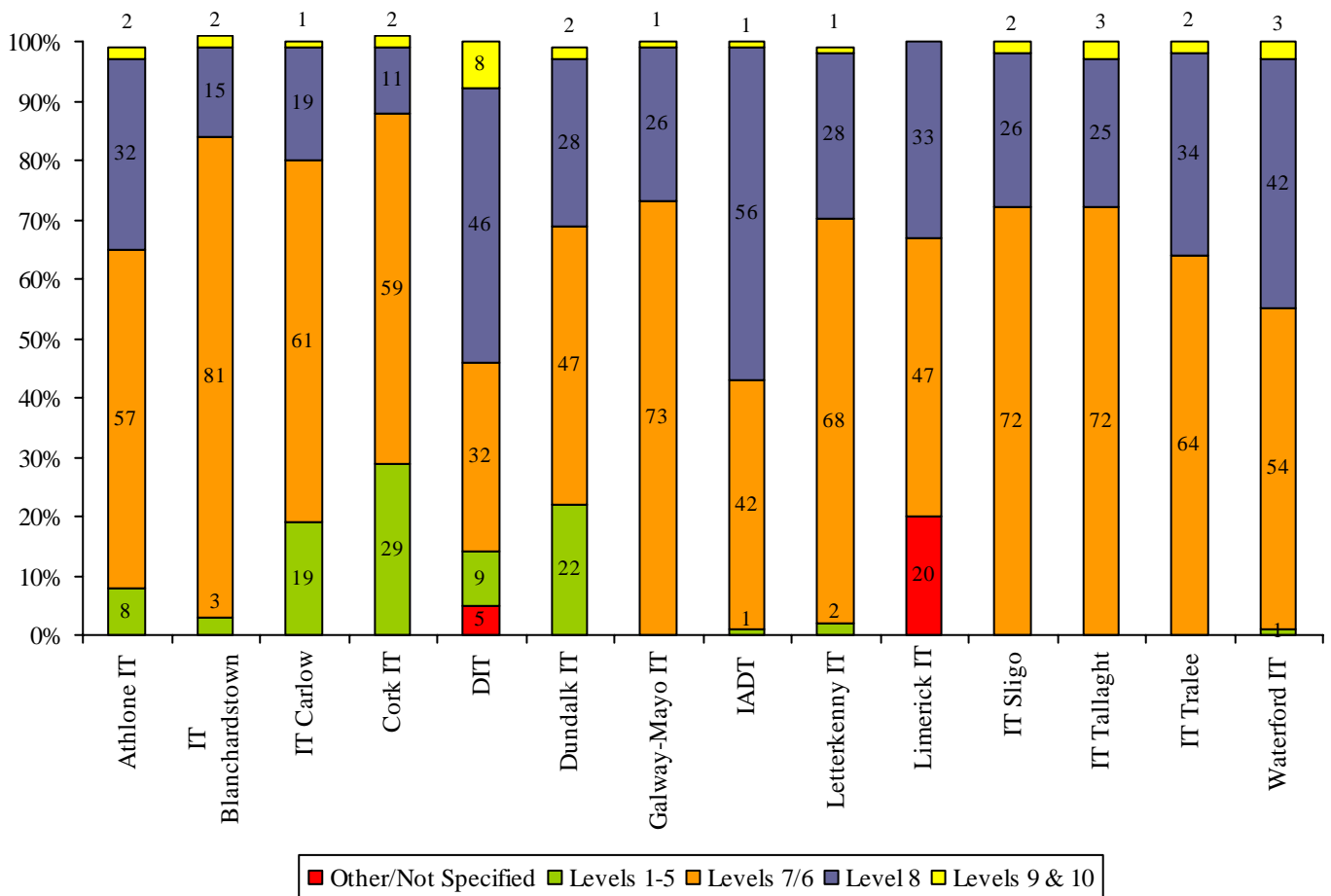
Table 2: Institute of Technology Student Population 2004/5 by Level

	Levels 9/10	Level 8	Levels 7/6	Levels 1-5 ¹⁵³	Other/ Not specified ¹⁵⁴	Total
IoT Sector	2,452	22,866	40,672	7,906	1,731	75,627
% of Total	3.2%	30.2%	53.8%	10.5%	2.3%	100%

¹⁵³ Includes part-time students in music courses at CIT that are currently being aligned with the NQF.

¹⁵⁴ Includes LIT part-time students, DIT Socrates students and DIT students on courses leading to awards from professional bodies.

Table 3: Percentage of Student Population by Level 2004/5¹⁵⁵



Course design

- As noted earlier, **flexibility and industry input** are two critical features of course design from an enterprise development perspective and need further development. For example, IT Tallaght has linkages with several firms in its hinterland, as has DIT through the work of its dedicated Corporate Training Unit.
- Given the **increased imperative for education for the employed**, the characteristics of the Institute's educational role will continue to evolve. Issues arising with regard to this, for example funding for lifelong learning, are addressed extensively in the National Skills Strategy and thus not explored in detail in this paper.
- In parallel with embracing this shifting focus, it **remains critical that those coming from second level directly into third level are equipped** with the appropriate knowledge and skills to secure opportunities within the labour market. In addition, with respect to the traditional 'typical student' base, student retention within an Institute and graduate retention within a region are continuing important issues.

¹⁵⁵ All percentages exclude those on apprenticeship courses except for IT Blanchardstown which includes 378 apprentices at Level 6. In 'Other/Not Specified', LIT's figures include 891 part-time students, DIT's includes Socrates students and those enrolled on courses which result in awards from professional bodies. Cork IT's Levels 1-5 refers to part-time students enrolled in music courses and the Institute is in the process of aligning these with the NQF.

- **Progression between levels** is an increasingly important issue for the learner and this is currently being examined by the NQAI and FÁS. The further development of accreditation of prior learning (APL) policy is important in this context.
- While some Institutes are highly responsive to enterprise requirements for changes to programmes, a number of companies consulted spoke of the bureaucracy involved in Institute course (re-) design. From an education perspective, quality assurance is needed so that the Institutes can stand over what is being delivered and certain procedures must be followed to ensure this.
- All companies consulted saw student placements within courses as a positive element of relations with an Institute, for example between several companies and Cork Institute of Technology, and also as a strong 'interview filter' for potential recruits. This approach could be developed further across the spectrum of courses.

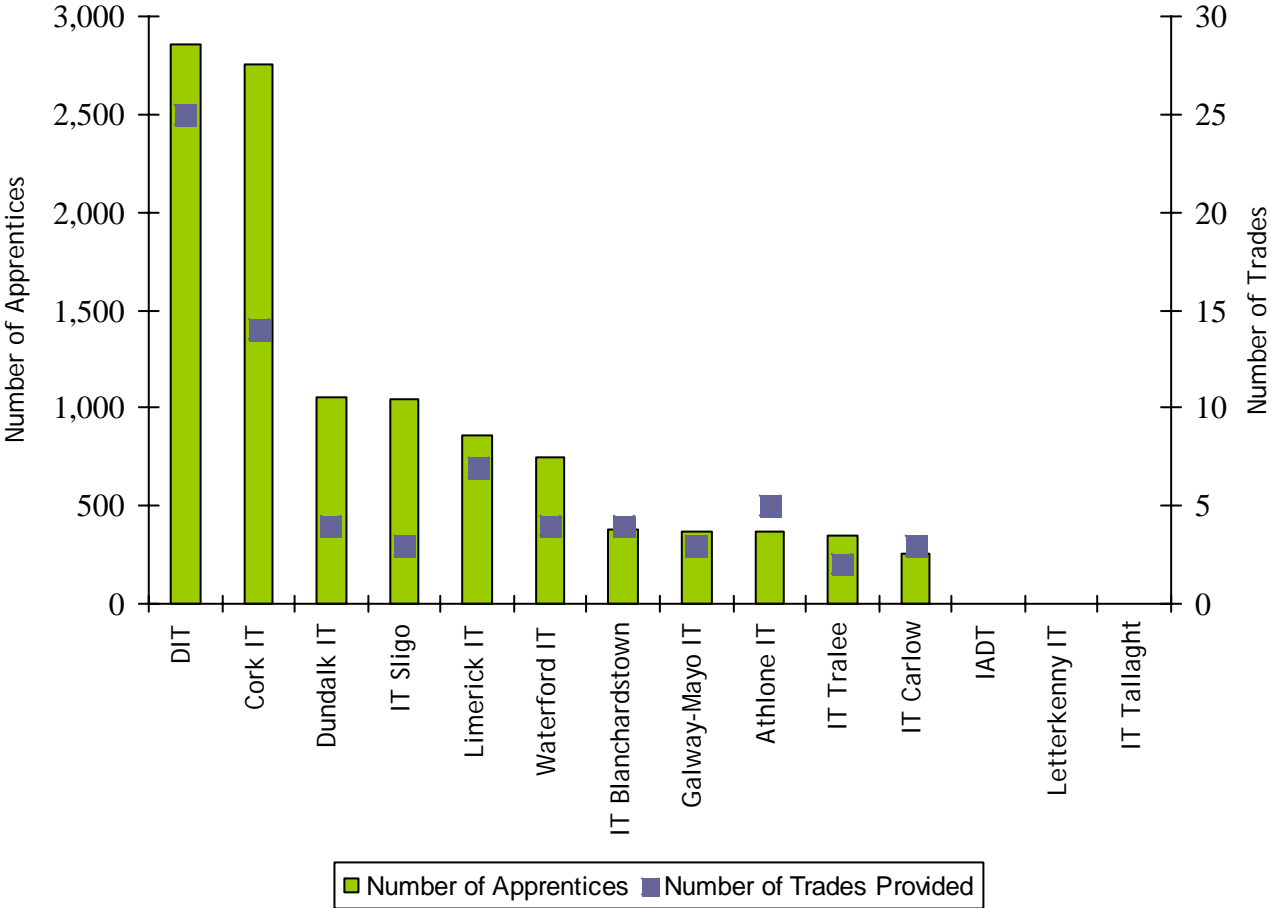
Course delivery

- The Institutes are each looking at innovative course delivery **methods to cater for their changing student population's needs**. Blended learning, e.g. using e-learning, is the approach most commonly being pursued. IT Sligo provides a good example of new methods of course delivery with its podcasting of engineering lectures. Similarly, Dundalk IT and IT Tralee have co-operated to develop an MSc in Computing that is jointly delivered to students at both Institutes using a combination of classroom activity and video-conferencing. Limerick Institute of Technology is compiling a compendium of learning strategies that will include templates for case studies, support for work placements and for blended learning.
- Modularisation is an important element of this and is either complete or in progress across all Institutes.
- Courses are delivered on both a part-time and a full-time basis and the split of each of the Institute's student population differs notably in this regard, ranging from 6% of students enrolled on a part-time basis in Letterkenny to approximately one third in DIT in 2004/5.
- Company release of staff for training was an issue encountered by several Institutes and this may arise under the EGFSN's call for further examination of employer commitment to education and training.
- The **profile of the lecturer**, especially in the context of teaching more mature industry personnel, emerged as an issue in the changed teaching environment for Institutes. From a company perspective, it is important that the person in front of their staff has the experience and credibility to deal with the class. From an Institute perspective, there can be a disincentive for existing academic staff to become involved in lifelong learning because of matters such as evening working hours. Some Institutes have addressed this by contracting in a different cohort of people to deliver courses in the evening time.
- **Flexibility in course delivery will become increasingly important from an enterprise development perspective, in both methods and part-time provision, over the coming period.**

Apprenticeships

- The majority of the Institutes train apprentices, delivering two of the seven modules of the apprenticeship programme. The largest providers, by a significant margin, are DIT and Cork Institute of Technology.
- In terms of participants, the trades studied are predominantly construction-related.
- The 2007-2013 NDP states that FÁS will continue to review the curricula, assessment process and delivery mechanisms for apprenticeships. FÁS is also developing five additional occupations in consultation with stakeholders and is considering a further two for designation.
- During the course of the research, two main issues for future consideration arose with regard to apprenticeship provision from an enterprise development perspective:
 - The development of a **clear and consistent approach to progression between levels**,
 - Possible **re-skilling needs** of apprentices who would be very exposed in the event of a downturn in the construction sector.

Table 4: Number of Apprentices Enrolled and Trades Offered 2004/5



Summary of issues emerging relevant to Institutes and enterprise development:

- Industry input to course design,
- Flexibility in course delivery:
 - delivery methods,
 - lecturer profile,
 - part-time provision requirements, e.g. access to facilities, etc.,
- Incentivising and supporting companies and their staff to engage in upskilling,
- Incentivising and supporting Institutes to meet that need,
- Continuing importance of Institute role in course delivery at Levels 7/6,
- APL policy,
- Student retention within Institute and graduate retention within region,
- Undergraduate placements within industry,
- Future apprenticeship provision, including:
 - approach to progression between levels,
 - planning for re-skilling requirements in event of construction downturn.

3 Research and Development

3.1 National policy context

When compared internationally, Ireland has a young research system. It is only in recent years through initiatives such as Science Foundation Ireland and the HEA's Programme for Research in Third Level Institutions (PRTLTI) that public investment in research has ramped up to any significant extent.

According to the Survey of R&D in the Higher Education Sector 2004 (Forfas 2005), higher education expenditure (HERD) in Ireland climbed to €492m in 2004 (academic year 2003/4), an increase of 44% in real terms on 2002.

Further substantial investments are planned under the 2007-2013 NDP, reflecting the Strategy for STI and the launch of the fourth cycle of PRTLTI. The 'World-Class Research STI' sub-programme has a total planned spend of €3.5bn and this includes initiatives such as PRTLTI, SFI, the Research Councils and the Technological Sector Research initiative. The 'Enterprise STI' sub-programme has a total budget of €1.3bn over the period of the NDP and includes funding for the Applied Research Enhancement Initiative dedicated to the Institute of Technology sector and for technology transfer support to third level institutions. In addition, following the recommendation of the Small Business Forum, an innovation vouchers scheme aimed at SME engagement with higher education institutions has recently been launched and the Institutes are likely to be significant players in this.

The Strategy for STI states that "it is clear that the IoTs can develop into an effective technology resource, focused on collaboration with local industry on the basis of applied research and technology development directed at the challenges facing the company".

3.2 Key Findings

Differing Levels of Research Activity

- According to the 2003/4 HERD survey, R&D expenditure in the Institute of Technology sector grew by 20% between 2002 and 2004 to reach €30.4m, i.e. 6% of HERD in 2004. While the growth in expenditure is notable, they clearly **continue to form the smaller component of HERD** when compared with the universities.
- Linked to this, the amount of time spent by Institute staff on research is (unsurprisingly) far less than those in universities.
- **R&D activity varies significantly across the Institutes.** For details on the extent and fields of research activity, please refer to the individual Institute profiles. The Telecommunications and Software Systems Group at Waterford Institute of Technology is a significant research actor, both nationally and internationally. Athlone IT is active in polymer research.
- Similarly, the right of Institutes to make their own awards (delegated authority) at Levels 9(masters) and 10 (PhD) differs depending on the Institute. For instance, DIT has the right to make awards across all its faculties up to and including Level 10, Cork Institute of Technology

has the right at Level 9 and for specific areas at Level 10, while IT Carlow's delegated authority rests at Level 8 (for further details, please refer to Appendix 1).

- All of the Institutes have research strategies with the broad aim of enhancing their research competence, for example Dundalk Institute of Technology's strategic objective (by 2010) to ensure that 20% of its academic staff are engaged in supervising postgraduate research projects, IT Carlow's aim under its 2005-9 Strategic Plan is to encourage the top 10% of its students in relevant degree programmes to apply for Embark research scholarships.
- Support for future R&D activity needs to reflect the individual Institutes' current strengths, their identified potential taking into account their operating context and wider national research priorities.

Research Prioritisation

- The **prioritisation of research areas is essential** to move towards a critical mass of activity taking place. Overall, there is a favourable disposition towards this on the part of Institute senior management (for further details on research priority areas, please refer to Appendix 2).
- Linked to this, **articulation of enterprise areas of interest** would help to ascertain to what extent these academic research priorities are aligned with the industrial base. This may crystallise more as the industry-driven research networks progress and the competence centre initiative gets underway.

Research Collaboration

- There are seven universities and fourteen Institutes of Technology in Ireland, plus a number of other public research performers. If any level of critical mass is to be achieved, the **trend for inter-institutional collaboration needs to increase**. This is particularly pertinent to the research activity undertaken in the Institutes of Technology.
- A positive trend towards greater collaboration is emerging and the emphasis in initiatives such as PRTL and the Strategic Innovation Fund is supporting this.

Articulation of Expertise

- From an enterprise perspective, in order to be able to access relevant R&D expertise, it would be beneficial to have a **greater awareness of what level of expertise resides where**. Greater promotion of Institutes' expertise/ core competencies, along with the areas in which researchers are willing and able to work with industry, would help companies identify relevant expertise (and also possibly be useful to enterprise development agencies). The Expertise Ireland database could be a helpful starting point for this.
- Linked to this, a number of companies raised the point that the expertise that is of particular interest to them may not necessarily reside at the nearest Institute, and that a **means of accessing R&D capability in more distant Institutes** would be of benefit. Such a portal would be a combination of on-line and personal management/ brokering. This is also relevant to education and training as course delivery methods become more advanced and companies are in a position to source training needs from Institutes around the country.

Technology Transfer

- The amount of technology transfer activity by the Institutes in 2005 was, by and large, limited. A number of Institutes cited lack of resources for this function as a barrier to increased activity. Several companies highlighted the lack of technology transfer competence in the Institutes as an obstacle in their dealings with an Institute.
- Significantly extra resources are being placed into this area nationally through the recently launched Enterprise Ireland TTO Fund and the proposed enhanced provision of centralised support, also through Enterprise Ireland, under the Strategy for STI.
- The initial funding awards under the TTO Fund are predominantly going to the universities as is to be expected given their far higher level of research activity. At the same time, if Institute research competence - particularly as it is to be aimed at working with industry - is to grow over the coming years, their capability to manage any emerging intellectual property and to deal competently in this area with industry partners needs to be enhanced.

Summary of issues emerging relevant to Institutes and enterprise development:

- Institute research strategic planning to reflect particular opportunities/ needs,
- Development of Institute R&D priorities and collaboration with others on these,
- Articulation of enterprise areas of interest,
- Clarity on research funding landscape,
- Accessibility of R&D expertise in Institutes across Ireland,
- Enhanced Institute capability to engage on tech transfer matters.

4 Company Formation

4.1 Key Findings

- The Institutes play an increasing role in company creation through the provision of specific supports such as the Enterprise Platform Programme and incubation space (see below) and other initiatives including the recently launched FÁS/ Enterprise Ireland Enterprise Start Programme.
- In addition, like other higher education institutions, they encourage entrepreneurship more widely in their range of education and training modules.

Enterprise Platform Programme

- The Department of Education and Science provides funding, on a competitive basis, for the Enterprise Platform Programme under Strand II of its Technological Sector Research initiative. This is a one-year intensive programme for entrepreneurs. Enterprise Ireland provides financial support (CORD funding) for those participants who are deemed to demonstrate HPSU potential.
- The EPP is branded differently by the Institutes, e.g. the M50 EPP operates in Dublin between IT Tallaght, IT Blanchardstown, UCD and DCU. Genesis operates in the south of Ireland involving Cork Institute of Technology and IT Tralee. In cases where Institutes have not secured EPP funding, some have developed their own versions, e.g. the CEIM initiative run between IT Sligo and Letterkenny IT.
- The number of EPP programmes can vary year on year (depending on how many institutions secure funding), as does the number of participants. The latter per programme per annum is typically in the region of 10-20 per institution.
- A notable number of EPP participants appear to be spin-ins, e.g. from multinationals, rather than spin-outs from the higher education research system directly.
- While fully recognising the competitive nature of the EPP, it is critical that there is coherent and consistent support for entrepreneurship in the regions.

Incubation

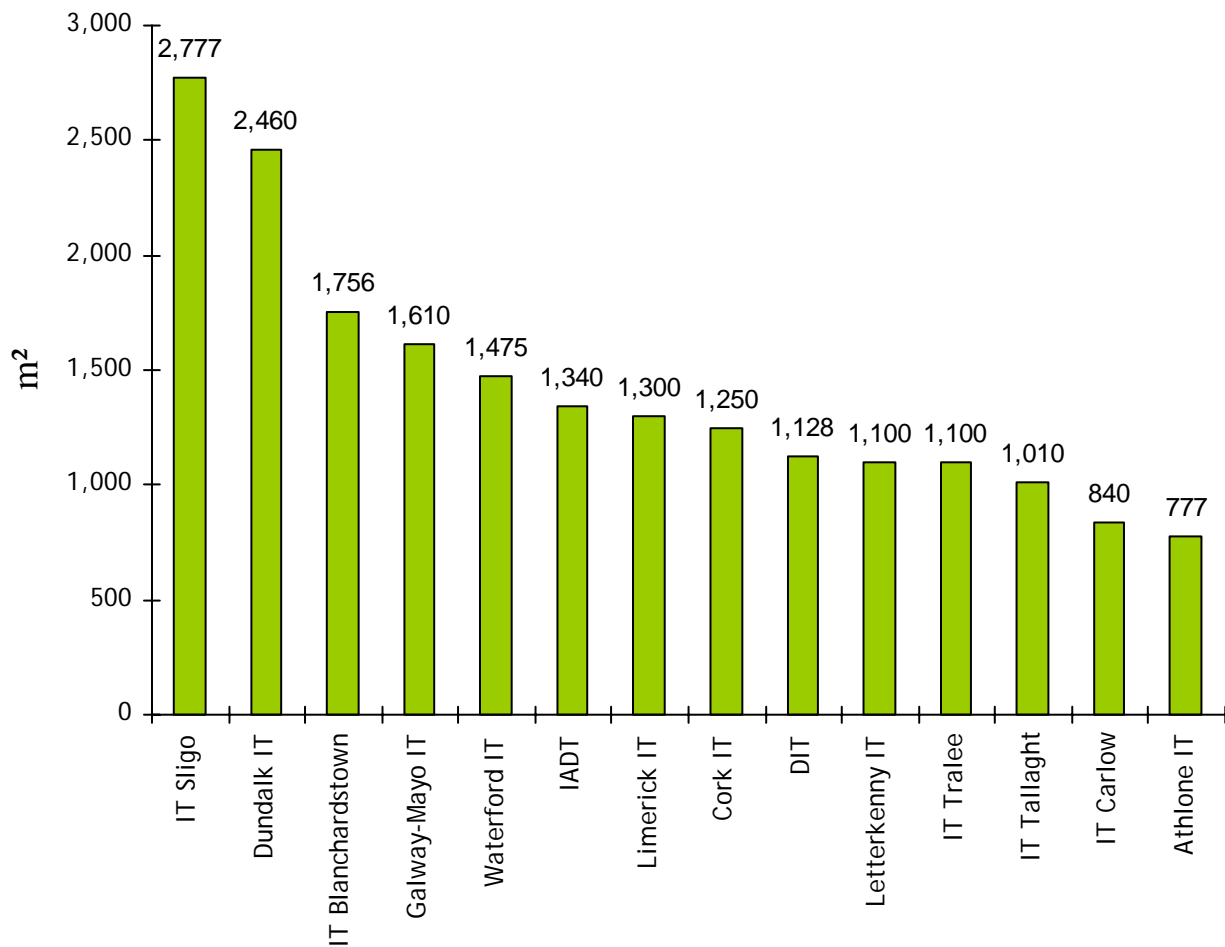
- All Institutes now have incubator centres (with IADT's Digital Media centre due to open imminently) of varying sizes and occupancy rates. The support received while at the centre is a combination of mentoring, networking and office support. Tenants consulted viewed the set-up favourably.
- The possibility that some small inward-investing companies may benefit from access to incubation space was mooted during the research and this may be worth exploring further.

Post-EPP and post- incubation support

- The EPP is a one-year programme. With regard to incubators, the general rule is that a company can take up a tenancy for a period of typically three years on the basis that if they are not able to survive at that stage, their chances of longer-term survival are slim.

- The extent of translation of EPP participants and/or incubator tenants into sustainable and growing companies is variable across the regions and the merit of some form of **post-incubation support with Institute involvement** may be worth exploring further, for instance advisory clinics every six months. Another interesting example is the 'graduation' of companies from the Tom Crean incubation centre at IT Tralee into Kerry Technology Park.

Table 5: Incubation Centres¹⁵⁶



¹⁵⁶ An additional 800m² of space is due to come on stream at Cork IT in early 2007. The DKIT total includes 2,300m² on-campus and 160m² off-campus at Millmount, Drogheda.

Summary of issues emerging relevant to Institutes and enterprise development :

- Next Enterprise Platform Programme: shape, size, objectives, etc.,
- Incubation space:
 - usage,
 - translation of tenants into start-ups,
 - future investment needs,
- Coherence in spectrum of supports available for entrepreneurship in the regions,
- Post-incubation support.

Appendix 1

Institute Research Priorities & Delegated Authority Levels

Institute	Research Priorities	Delegated Authority
Athlone	Nanotechnology and polymer/ mechanical Science (toxicology, bio medical, life & physical sciences) Software engineering Social care	Level 9 Taught all Level 9 Research - Social Care - Life & Physical Sciences - Mechanical & Polymer Engineering
Blanchardstown	Business & Humanities - Management of Occupational Road Safety - Management Models - Language Education for Primary & Secondary Informatics & Engineering - Intelligent Computing - E-Learning - Speech & Language Processing	Level 9 Taught all
Carlow	Biotechnology & Molecular Environmental Sciences The Networks Research Group (Engineering) The Design Centre (Humanities)	Level 8 all
Cork	Science Engineering (Electronics, Mechanical) Computing, Engineering Taught	Level 10 all Level 10 Level 9 Level 9 all
DIT	Sustainable Energy/ Clean Technologies Materials ICT Business & Social Development Food, Nutrition & Health Sciences	Level 10 all
Dundalk	Smooth Muscle Research Centre Centre for Entrepreneurship Research	Level 9 Taught all
Galway-Mayo	Design & Innovation (Centre: Biomedical Device Engineering) Marine, Natural Resources & Sustainability Tourism, Enterprise & Culture	Level 9 Taught all Level 10 - Aquatic Science - Mechanical Engineering
IADT	Creative Arts/ Media/ Digital Media Entrepreneurship Learning Science/ Assistive Technologies	Level 8 all
Letterkenny	Marine Biotechnology Computing Games & Digital Animation Electronic & Wireless Technology Sustainable & Renewable Energy	Level 8 all
Limerick	Bio Sciences, e.g. research into Nutraceuticals Renewable Energy Control Systems	Level 9 Taught all Level 9 Research - Applied Control for

	Internationally Traded Services	Renewable & Environmental Systems
Sligo	Environment Mechanical & Manufacturing Engineering Socio-economic Research	Level 9 Taught all Level 9 Research & Level 10 - Environment - Mechanical/ Manufacturing Engineering
Tallaght	Nuclear Magnetic Resonance Centre for Spectroscopy Centre for Research in Electroanalytical Technology Bio-Pharmaceutical and Nutraceuticals Research Centre (+ 4 other Institute Research Centres)	Level 9 Taught all
Tralee	Mathematics & Computer Sciences Biological Sciences Social Sciences	Level 9 Taught all
Waterford	Telecommunications Bio/ Pharmaceutical Science Health Sciences	Level 9 Taught all Level 9 Research - Business - Humanities - Science - Electronic & Mechanical Engineering Level 10 - Science