



DUBLIN INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA BHAILE ÁTHA CLIATH

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ICT SKILLNET
IRELAND

Postgraduate Diploma/MSc in Technology and Innovation Management

The Skillnets logo, featuring the word 'Skillnets' in a bold, blue, sans-serif font, with a green swoosh above it. Below the name, the text 'Enterprise-led learning networks' is written in a smaller, blue, sans-serif font.
Skillnets
Enterprise-led
learning networks

**PROSPECTUS
2011-12**



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Introduction to the Programme

The Post-Graduate Diploma and MSc in the Management of Technology started in 2006 and aims to fill important human resources gaps in the Irish ICT sector by providing opportunities for technical and engineering graduates to develop a broad set of business, management and interpersonal tools. The intention is that over the life of the programme participants will emerge as engineering leaders with a strategic perspective on organizational and innovation issues and challenges.

Taking account of international best practice and research conducted by ICT Ireland, the programme has been developed specifically to address the needs and interests of individuals with technology backgrounds, in the ICT sector, who wish to pursue management and commercial options in their career paths. It is specifically targeted at those wishing to develop a firmer grounding in the managerial and leadership issues facing today's complex organisations, thereby creating an ideal opportunity to develop practical inter-disciplinary leadership and managerial skills. In this context the objectives of the programme are as follows:

- To provide perspectives, concepts, and tools to anticipate challenges and seize opportunities presented by global technological change;
- To provide graduates from different functional areas and perspectives with understanding of the nature and process of technological innovation;
- To develop a common business language so managers and technologists can work together on technological processes within their organisation;
- To understand cross cultural management perspectives and processes vis-à-vis technology development and innovation;
- To understand and integrate the commercialisation of technology and management of business operations; and
- To utilise the linkages between technologies and organisational strategies to create value for the customer and competitive advantage for the organisation.

Drivers

The challenges faced by firms in the sector are the main drivers behind the programme. These include the fact that fewer students are applying for ICT related degree programmes in Irish Colleges and the threat to the sector arising from the movement of manufacturing to lower cost economies. This requires companies in the sector to increase their focus on critical activities such as innovation and R&D. Current ICT graduates do not have all of the requisite skills in these areas. There is also some evidence of a trend within the sector for graduates to move out of companies after 3-8 years service. Also, only relatively small numbers of technical graduates seem to move up the promotion ladder into senior management positions. This is attributed to their narrow field of expertise – with little or no opportunity to develop broader based business competencies or skills. While ICT graduates have a solid foundation in technical skills they also need to develop interpersonal skills, business and management skills.

Participant Profile

Participants come from a diverse range of companies in telecommunications, software, manufacturing of computer products and digital media and from a diverse range of industrial and professional backgrounds but all from within the broad ICT sector. They are mostly technical graduates with significant experience in their companies who are seeking to move their career path towards management roles. Participants span all age groups and disciplines and apart from having a primary degree, or recognised technical qualification, will not be subject to further entry requirements.

Value for the Participants

Designed to meet the accelerated demands of fast-track professionals, the programme provides many benefits. Participants will:

- Enhance their knowledge and skill of a wide range of management, innovation and operational areas.
- Enhance their prospects of promotion within their organisation.
- Enhance their ability to work effectively as part of a team.
- Interact with graduates from other Irish based companies from diverse professional backgrounds promoting learning from their colleagues and enriching their educational experience.
- Gain a broad business perspective with enhanced management and critical thinking skills they can apply to real-life business situations.
- Receive a fully accredited qualification from an internationally recognised business school, without interrupting their career.
- Take advantage of the collective professional experiences of every participant and the trainers through a rich array of learning methods.
- Experience the real world experience of a wide range of guest speakers who are leading innovations in their business disciplines.
- Apply what they learn to their job immediately. Course discussions serve as a laboratory for solving business issues that they confront daily.

Structure of the Programme

The programme is designed in two distinct stages which may be taken separately. Completion of the first stage results in the award of a Postgraduate Diploma in the Management of Technology. The second stage advances the learning from Stage 1 by adopting strategic and corporate level analysis and learning. Completion of both stages results in the award of a Masters of Science (M.Sc.) in Technology and Innovation Management. Stage 1 (Year 1) consists of eight modules and a major group consulting project. For the purposes of accreditation this consists of 60 ECTS. Stage 2 (Year 2) consists of 4 modules and a major individual project. For the purposes of accreditation this consists of 30 ECTS.

Programme Methodology

While the programme leads to recognised academic awards it also focuses on competence and skill development. A range of learning strategies are employed including action learning, case studies, practice-based assignments, debates, and guest speakers. Project work, including group activities, is an essential component of the programme. In most situations projects will involve active engagement by the programme participant with their workplace. Modules will be delivered from DIT facilities at DIT Aungier Street and from participant company training facilities. Members of the programme delivery team have extensive and relevant experience and are active researchers in their respective areas. They have previously worked in organisations such as AT&T, British Telecom, Hewlett Packard, Intel, Technico and Bank of Ireland.

Programme Schedule

The programme is scheduled for sessions to take place on Thursday and Friday evenings and full days on a Saturday with 16 two-day workshops in Year 1 and 8 two-day workshops in Year 2. Module and assignment scheduling will take account of end of quarter demands on programme participant.

Stage	Module
Stage 1 (Year 1): Postgraduate Diploma in Technology and Innovation Management	Management, Leadership and Organisation Behaviour
	Marketing and Sales
	Project and Team Management Skills
	Technology and Operations Management 1
	Information Research Methods
	Finance for Management Decision Making
	Managing the Knowledge Worker
	Technological Entrepreneurship
	Major Group Consulting Project
Stage 2: (Year 2) (optional) M.Sc. Technological and Innovation Management	Technology and Operations Management 2
	Strategic Management
	Technology Strategy
	Innovation and Commercialisation
	Major Individual Project: Choice of: Emerging Technology Review or Product Development Project

Programme Location

The programme will be delivered in member company premises and at DIT in order to allow the programme participants to become familiar with the DIT learning resources including the Business Information Centre. The Dublin based training facilities are located at DIT Aungier Street, just off Stephens Green, in a purpose built 21,000 m² facility functioning since September 1994. The Faculty of Business now boasts a facility

with excellent teaching and learning resources for students and staff. In addition to the library and computer facilities, the following table illustrates the range of teaching and learning spaces specifically design to facilitate the range of teaching approaches utilised on the course.



Faculty of Business Building at Aungier Street

Of particular relevance to this programme, the Faculty of Business has also created a space dedicated to industry or executive education and training programmes. This space is known as **Management House** and it provides two high quality class room plus additional rooms that represent appropriate break-out work spaces.

The Faculty of Business has successfully used customised intranet sites to facilitate delivery of information to programme participants and promote networking between programme participants. DIT currently uses WebCT as its internet learning tool. The programme will have a dedicated intranet site to support programme communications. Registered participants on the programme will be able to access library web-based material, including all subject databases, from home or their company using an IP authentication and pin-number system.

Learning strategies are also supported by a dedicated intranet site which supports programme communications. The intranet site provides the participant with access to course materials including workshop notes and reading materials. It also offers direct access to other online resources such the extensive online journal databases supported by the DIT library service. DIT Library Services also provide a dedicated programme contact point to facilitate the library requirements of participants on the programme.

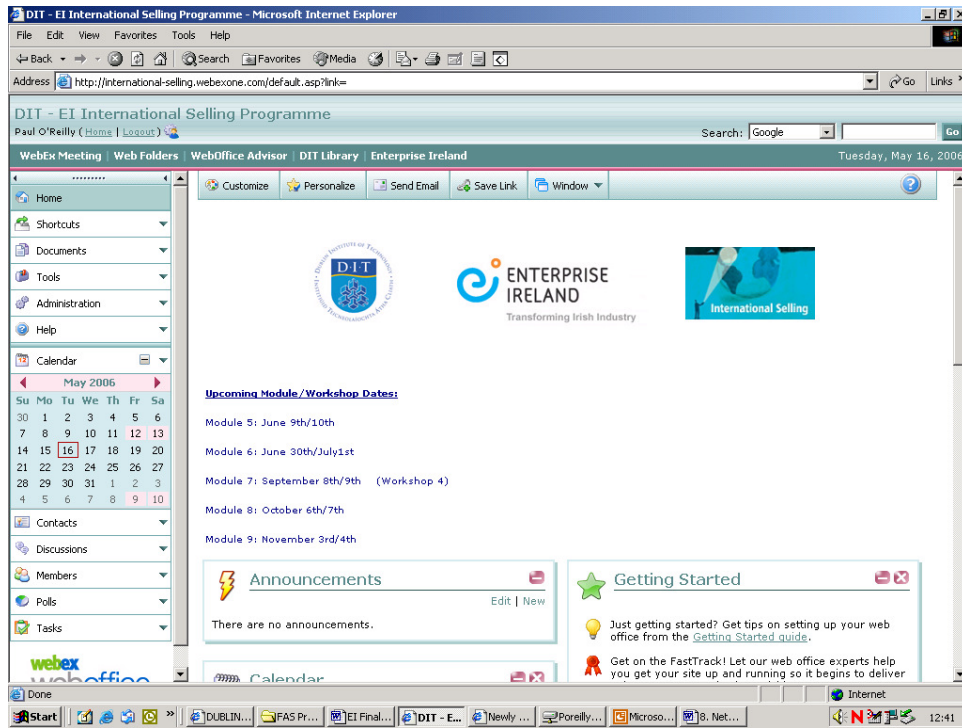


Figure 1: DIT – Enterprise Ireland International Selling Intranet Site

Programme Entry Requirements

Potential candidates seeking admission to the programme will hold a minimum 2.2 award in a primary degree. A suitable candidate, who is not a graduate, but is a corporate member of the Institute of Engineers of Ireland, or of equivalent status in a similar professional engineering or scientific institution, may be eligible for consideration for admission.

Potential candidates who do not have the above qualifications or accreditation but have achieved some third level qualifications and have extensive practical experience may be considered a non-standard entrant to the programme. The programme management team at DIT will advise on the procedures for applicants who are seeking entry to the programme via this route. This may include working with the non-standard applicant to develop a portfolio of their experience which may be used to support their entry to the programme.

Potential candidates who do not have a primary degree or the requisite level of qualifications and experience to qualify as a non-standard programme entrant may also be considered for entry to the programme. This is done through a Continuing Professional Development Diploma in Management of Technology which runs in parallel to the postgraduate diploma programme. Participants on this programme may transfer to the M.Sc. Technology and Innovation programme subject to satisfactory performance on the Continuing Professional Development programme. The programme management team at DIT will advise on the procedures for applicants who are seeking entry to the programme via this route

Programme Assessment and Graduation

Dublin Institute of Technology is one of three awarding bodies (along with HETAC and FETAC) designated within the national qualifications framework of Ireland. DIT is a member of the European Universities Association and has recently been audited by the EUA on behalf of the National Qualifications Authority of Ireland (NQAI). The accredited qualifications will be awarded by the Dublin Institute of Technology under the degree awarding powers made available to the Institute under the provisions of the Dublin Institute of Technology (DIT) Act 1996.

Methods of assessment will be by in-class formative assessment, examinations, and project submission. In most modules the breakdown between continuous assessment and examinations will be approximately 50-50, allowing participants to achieve significant assessment scores prior to taking their examination. Projects will normally be applied in nature where the programme participant undertakes an assignment relevant to their organization. To date many assignments have provided valuable findings for the participant organisation, often resulting in changes in existing practices. This applied nature of assignments is a critical feature of the programme.

The Post Graduate Diploma is awarded by DIT at Level 9 of the National Qualifications Framework. Graduation will take place in November 2009 at Saint Patrick's Cathedral with the main DIT Faculty of Business graduations.



DIT Faculty of Business Graduation at St Patrick's Cathedral

Testimonials

What Past Participants Are Saying About the Programme

"The Post graduate programme was a great experience for me as it gave me

- a broad profile with technical, specialist, project and product management subjects
- an opportunity to gather non technical skills
- a chance to think deeper about product development from different angle (sales, marketing, ...)
- an emphasis on the fact that organisation culture is a key factor in success achievement."

Christian Le Jalle, LM Ericsson

“The programme logistics are good and assist in meeting the challenges of work and life.”

John Commons, Hewlett Packard

“This is a worthwhile and interesting course which requires keeping a close eye on deadlines and managing your time well.”

Colin Clinton, IBM

“The programme is good because of -

- The Modular nature of the lectures enables an intensive and detailed focus on each subject area.
- Good mixture of academic and practical content.
- Calendar is well balanced - weekends that are worked are intensive, but then alternative weekends are free.”

Aidan McDermott, Hewlett Packard

“I have found the course excellent. It gives a good insight into Technology and Innovation Management. The course content and application to my job is very relevant and I have found the overall pace of the course to be excellent. Finally, I have found the lecturers very understanding when it comes to balancing work, study and home life!”

Samantha O’Shea, DIMO Internal Comms

Programme Structure

As previously outlined the programme is delivered over two stages – stage 1 being the Postgraduate Diploma in Management of Technology and Stage 2 being the M.Sc. in Technology and Innovation Management. The modules are delivered by lecturers who have extensive experience working with executive groups and who have academic expertise in their specific areas. All of the lecturers are active contributors to the development of their fields of expertise. The programme team is supplemented by leading international academics who are international leaders in their fields and guest speakers from industry and relevant agencies. Guest speakers are selected on the basis of their expertise in their area and industry recognition of their innovative practices.

The following sections provide a summary detail of each of the modules in Stage 1 and Stage 2.

STAGE 1: POSTGRADUATE DIPLOMA IN MANAGEMENT OF TECHNOLOGY

Module 1: Management, Leadership and Organisational Behaviour

Module Description

This course is designed to provide participants from technical backgrounds with a comprehensive grounding in the key concepts in management, leadership and organisational behaviour. The module is designed primarily from a managerial perspective, with the intention of providing participants with a basis for understanding the human aspects of knowledge work and how organisational interventions can improve business performance. An awareness of management functions, individual and team behaviour and of those methods employed to enhance performance will be key learning outcomes. The contemporary Irish economic context will be a strong point of emphasis throughout the course.

Module Content

- Overview of Organisational Behaviour: Relevance to management and business objectives. Key concepts and challenges in organisational behaviour. Perception, attitudes and personality.
- Fundamentals of Management Historical aspects and contemporary developments, The role of the manager, management identities, effectiveness
- Leadership The nature of leadership, approaches to, and models of leadership.
- Motivation, Commitment and Stress
- Communication in Organisations Interpersonal, managerial and organisational communication. Influence, organisational identity and reputation. Power, conflict and negotiation.
- Groups and Teams Group theory and group dynamics. Issues in team formation and effectiveness, team roles.
- Organisational culture, structure and strategy Approaches to understanding national and organisational culture, organisational configurations, analysing organisational culture , linking the culture concept to strategic planning and organisational goals. Organisational change and development.
- Emerging Issues in Irish Human Resource Management Strategic HRM, recruitment, retention, work/life balance, diversity.

Module 2: Marketing and Sales

Module Description

This module provides a comprehensive introduction to the subject and practice of marketing today, in addition to examining future trends and provides a special focus on understanding the sales function within the technology sector. It provides the learner with a detailed foundation of marketing theory, principles and practice but also builds a practical framework which is further developed in the Innovation and Commercialisation

module, which examines the new product development, market launch and commercialisation strategies for technology-intensive products and processes. On completion of this module, the learner will have gained a comprehensive understanding and appreciation of the role of marketing and in the successful operation of the enterprise and in particular a critical understanding of its role in relation to the enterprise's successful management of technology and innovation.

Module Content

- Introduction to Marketing
- Marketing concepts, Market orientation and R&D, Marketing in the new economy – digitalisation and connectivity, disintermediation and reintermediation, customisation and customerisation, industry convergence.
- Market Opportunity Analysis
- Micro Environmental Analysis, Macro Environmental Analysis, Understanding and analysing business and consumer markets and organisational and consumer buyer behaviour, forecasting future trends and their impact on current or future market offerings. Understanding technology customers. Market research tools in technology markets.
- Responding to the marketing environment
- Measuring market opportunities, Effective market segmentation, bases for segmenting consumer and business markets, evaluating and selecting target markets. Positioning for competitive advantage.
- Designing a Customer Driven Strategy and Marketing Mix
- Marketing Channels
- Integrated Communication Decisions
- The Role of Marketing in developing successful business strategies
- Crafting a compelling customer value proposition
- Customer perspectives on value
- Sales implementation of marketing strategy
- Selling relationship management
- The sale process – understanding the five stages
- Understanding the buying cycle – understanding the customer's needs and building value

Module 3: Project Management and Team Skills

Module Description

This module recognises that many of the programme participants have already developed technical project management skills and focuses on the people management challenges, in particular team management, in the context of the innovative organisation. It refocuses participants through emotional intelligence to think creatively and strategically, to solve challenges, manage multiple tasks, and support each other in an environment of change with the objective of maximising project outcomes.

The module will have a particular focus on the group dynamics of project and team work, including cross-department / discipline / functional group project work, which is considered a key way of working for the management of cross-cutting issues. This module will enable participants to assist groups in achieving their goals and will help people to go beyond basic approaches to facilitation.

Module Content

Project Teams

The Project Manager's role and responsibilities. Selection of a project manager. Fitting Projects into the parent organization. The Project team. Intra-team Conflicts. Multidisciplinary teams. Problem solving. Time Management. Managing the Commitment process.

Project Leadership

Personal leadership styles. Getting commitment in projects. Models of team leadership and management. Power and influence in projects and teams – developing skills to manage key stakeholders. Leadership and change.

Group and Interpersonal Effectiveness

Group and interpersonal effectiveness, cooperativeness, and teamwork. Effectiveness in the organisation, making contributions, leadership potential. Commitment: Aligning with the goals of the project and our team -- how do we achieve this? Initiative: How to create readiness to act on opportunities obstacles and setbacks. Understanding others: Thinking/feeling perspectives. Developing others: Determining others' development needs and bolstering their abilities. Political awareness: Reading a group's emotional currents and power relationships to meet project objectives.

Coaching and Mentoring in Projects and Teams

Principles and psychology of coaching and mentoring. The coaching / mentor relationship. The coaching session. Coaching and performance management. Factors in successful coaching. Coaching challenges. Coaching ethics and good professional practice.

Project Management for Innovation

Team roles in the innovation process. Project Leader as innovator – required attributes – project definition, coalition building, handling interference, and maintaining momentum and continuity. Managing external communications. Participative management styles. Organisational supports for creativity in teams and projects.

The Management of Resources

How to plan for human and financial inputs. Managing time overruns. Ensuring projects stay on budget. Balancing cost/resource utilization issues.

Managing Risk

How to analyse risk...and...how to manage risk on an ongoing basis.

Module 4: Technology and Operations Management 1

Module Description

The key focus of this module is the tools and techniques that help organisations improve in all aspects of technology management and process improvement. The activities contained within the module are designed to give participants a toolkit of technology management and improvement mechanisms for use in a work environment.

The module is presented in two stages – the first stage introduces the participant to the concept of innovation and the second stage provides the participant with a grounding of the concepts of innovation in relation to new product development activities.

This module relates to Technology and Operations Management 2 in the Masters programme where innovation tools and concepts are presented in the context of process and service innovation.

Module Content

- Introduction to technology and innovation management:
- Managing technology and innovation:
- Setting the stage for innovation: The innovative organisation; understanding and building organisation capabilities to innovate; promoting innovation; roles in the innovation process; corporate culture and innovation; the politics of innovation; leadership; organisational features; cross-functionality; managing creativity in work teams; intra-organisational networks; inter-organisational networks.
- The innovation process.

Module 5: Finance for Management Decision Making

Module Description

This is an accelerated course that combines accounting fundamentals and financial analysis tools. The module deals with the analysis and application of financial and management accounting as inputs into the management decision process in general and their relevance in the context of project assessment and development. Emphasis is placed on practical aspects of business finance relevant to the funding of new enterprises and new business management. Knowledge of practical business finance issues and how to address these will be built up through an integrated and applied approach including case based learning.

Module Content

- Objects, Conventions and concepts of accounting

- Financial position – balance sheet
- Financial performance – profit and loss report
- Cash flow
- Analysis and interpretation of financial statements
- Relevant costs and managerial decision making
- Financial Planning
- Investment Appraisal Methods and Application
- Sources of finance
- Equity Finance
- Risk and Return
- Cost of Capital
- Capital Structure
- Working Capital Management

Module 6: Information Research Methods

Module Description

This module is designed to teach information research skills, and to familiarise the student with a variety of available data sources on business and management, including academic papers, consultancy reports, company and governmental data. Qualitative and quantitative research methods are the key research approaches for generating such knowledge, and, as such, participants need to understand its contribution to strategic management. The module focuses on the skills involved in understanding, evaluating and conducting research in the wider management field. It also introduces the participant to the conceptual frameworks and skills required to carry out a successful research assignments. The content is provided within a consultancy framework which includes key approaches and practices necessary for the programme participant with the skills necessary to engage in business research projects in their organisation.

Module Content

The course will explore the areas of: problem definition; the different roles of primary and secondary data collection; the use of exploratory research in developing and testing hypotheses and the selection of appropriate methodologies; research and survey design; sampling; qualitative data collection and data analysis methods; quantitative data collection and data analysis methods; and reporting research results.

Starting the project: developing and choosing a research topic; routes to pursue a business research issue; designing your business research project – research purpose, research strategy; unit of analysis; time dimension; study setting.

Progressing the research project: typical route road blocks to making progress on a business research consultancy project; when to stop writing; the 65 per cent rule; limits

and objectives of the literature review, structuring a literature review, and falsification theory.

Being a research consultant: consultancy role; consultancy expectations and approaches; consultancy cycle; consultancy relationships; client focus; consultancy tools and techniques; communication for consultants; effective consultancy project delivery; professional behaviours and ethics.

Theory building: how do we think; scientific understanding and method; deduction and induction; lateral thinking; fuzzy thinking; theory building; variables; hypotheses; what are theories for? do theories have to make sense? Simplification.

Methodology: common methodological problems; qualitative versus quantitative research; qualitative data collection, six characteristics of qualitative data collection; methods for collecting qualitative data; methods for collecting quantitative data; complementarity of qualitative and quantitative research; sampling and survey design; advantages of sampling; representativeness and randomness; reliability and validity; populations and sampling frames; sampling designs.

Coping with data: statistics are beautiful; the power of statistics; six common statistical fallacies; when is data information? introduction to statistical techniques; data analysis; decision framework for data analysis; statistical tools for data analysis.

Business report writing: bringing data back to theory; how not to write a conclusion; common problems of style; basic rules of writing; the expectations of clients.

Module 7: Managing the Knowledge Worker

Module Description

This course is designed to build on the foundational management and organisational behaviour module delivered in Semester 1, and provides a specialised focus on knowledge work and knowledge workers. As knowledge management is a field in continual evolution it aims to utilize the most up-to-date developments in the KM disciplines to underpin learning on the various perspectives which exist on knowledge work. The course has a focus on managerial and real-life issues and scenarios, and the contemporary Irish economic context will be a strong point of emphasis throughout the course.

Module Content

- Overview of Knowledge Management
- The Knowledge Worker Economic drivers and competitive pressures, Knowledge in organisations and organisational knowledge, knowledge roles and skills, Knowledge teams.

- Fundamentals of Knowledge Work Knowledge Intensive organisations, Intellectual capital, Historical aspects and contemporary developments, KM strategy, tacit knowledge and explicit knowledge, Metrics.
- Leadership and Management Developing human capital, Managing and motivating knowledge workers. Developing knowledge sharing cultures. Social capital, intellectual capital and competitive advantage.
- Building Learning Organisations Learning in organisations and organisational learning, generating knowledge assets
- Knowledge Sharing as Knowledge Work Knowledge sharing, the social ecology of knowledge management, knowledge transfer, communities of practice.

Module 8: Technological Entrepreneurship

Module Description

This module provides the tools for promoting an entrepreneurial orientation at all organisational levels, including indigenous firms, large multinationals and subsidiary operations. The focus is not on start-up companies but on organisations where the business concept is built around the exploitation of technology. To meet the challenges of the international business environment the technology specialist needs to combine professional competence with a fundamental grasp of the entrepreneurial process.

Module Content

- Concepts of Entrepreneurship.
- Strategic Entrepreneurship.
- Behavioural Context of the Organisation.
- Entrepreneurial Capabilities.
- Entrepreneurship and Innovation.
- Firm Level Entrepreneurship.
- International and MNC Entrepreneurship.
- Subsidiary Entrepreneurship.
- Alliances, Networks and Government Policy.
- The Evolution of the Field of Entrepreneurship.

STAGE 2: M.Sc. TECHNOLOGY AND INNOVATION MANAGEMENT

Module 1: Strategic Management

Module Description

Strategic management is concerned with the overall purpose and direction of the organisation, encompassing the decisions and the decision making processes which direct the nature, scope and competitive position of the enterprise. The course emphasizes the need for an holistic perspective of the strategic issues confronting the organisation and of the performance implications of the alternative structures and processes available for implementing strategy.

This module introduces the participant to the main analytical techniques and conceptual frameworks provided by the strategic management and business policy discipline, with particular focus on how these tools apply in a technology environment. The practical application of strategic management and business policy concepts and theories through case work (which will be focused on technology and technology based enterprises) enhances the learner's understanding of the business issues involved in managing organisations, and develops the participant's analytical skills and decision making ability.

Module Content

Basic Concepts of Strategic Management.

Course introduction. Phases of Strategic Management. Challenges to Strategic Management. Basic model of strategic management. Organisational Vision and Mission. Strategy Development Process.

Corporate Governance and Social Responsibility

Role and Responsibilities of Board of Directors. Role of Top Management. Social Responsibility. Influence of Stakeholder groups.

Environmental Scanning and Industry Analysis.

Techniques for identifying external strategic factors. Analysing the Task Environment including Porter's approach to industry analysis. International risk assessment. Strategic groups. Hyper-competition. Competitive intelligence and forecasting. Scenario Planning.

Internal Scanning; Organisational Analysis..

Resource based approach. Value Chain analysis. Basic organisational structures. Corporate culture. Strategic functions including strategic R&D. Strategic Operations Issues. Strategic IS / Technology Issues. Strategic audit.

Strategy Formulation: Situation Analysis and Business Strategy.

Situational analysis (SWOT). Business Strategies. Environmental influences on competitive strategies. Evaluating Strategies and Tactics. Co-operative strategies.

Strategy Formulation: Corporate Strategy.

Strategies for growth including International Entry Options. Turnaround Strategies. Portfolio analysis. Corporate Parenting.

Strategy Formulation: Functional Strategy and Strategic Choice.

Functional Strategies particularly integration of technology strategy with other organisational functions. Optimum strategy selection including constructing corporate scenarios. Process of Strategic Choice. Development of Policies.

Strategy Implementation: Organising for Action.

Implementing strategy: Developing Programmes, Budgets and Procedures and achieving Synergies. Organising for action – Advanced types of Organisational Structure. Re-engineering and Strategy Implementation. International Issues in Strategy Implementation. Managing Corporate Culture.

Contemporary Views on Other Strategic Issues.

Primary measures of Corporate, Divisional and Functional Performance. Strategic Issues in managing Technology and Innovation. Strategic Issues in Entrepreneurial Ventures and Small Businesses. Not for Profit Organisations.

Module 2 Innovation and Commercialisation

Module Description

Innovation covers a range of activities from the development of new product/service offerings through to the improvement of manufacturing and business processes. Successful commercialisation distinguishes innovation from invention through the delivery of customer value. Innovation extends beyond the capability to develop and renew product offerings, to encompass how they are created and delivered to market.

This module focuses on the practical and functional aspects of technology innovation and commercialisation. Through a range of topics, students will understand the complex processes required to commercialise products backed by theoretical models and practical tools. Case studies, readings and examples from a variety of industries spanning low, medium and high technology constitute a major element of the course.

The course aims to provide programme participants with an understanding of innovation and commercialisation such that they will be able to contribute to this area at a management level in any organisation. The student will become familiar with a number of tools used in the commercialisation of innovation, with a focus on best practice methodologies for New Product and Service Development.

The programme participant will acquire a set of tools and frameworks for the development of innovation strategy, and the management of technology innovation for commercial return.

Module Content

Introduction to Innovation Management

- Explain the meaning of innovation management
- Describe the range of innovations – Sustaining, incremental, disruptive.
- Recognise the need to view innovation as a management process

Sources of Innovation

- Sources of innovation
- Ideation
- Innovation in response to market changes

Technology Innovation Management

- The technology adoption lifecycle
- Evolution and diffusion of technology
- The disruptive innovation process

Context of Innovation and the role of the state

- Recognise that innovation is driven by the local and national context and by political and social processes
- Identify the structures and activities the state uses to facilitate innovation
- Leveraging R&D from 3rd level institutions

Managing innovation/commercialisation within the firm

- Examine the need for creativity within organisations
- Recognise the difficulty of managing uncertainty
- Identify the activities performed by individuals in the management of innovation
- Understand the process of Ideation

Managing Intellectual Property

- Examine the forms of protection available for a firm's intellectual property
- Explain why other firm's patents can be a valuable resource
- Explain how the patent system balances the interests of individuals and society
- Leveraging and exploiting Intellectual Property – IP mining.

Marketing Research and New Product Development

- Outside-in innovation
- Optimising commercialisation choices
- Awareness of the productisation/servicisation aspect of all product developments
- "Crossing the chasm".

Module 3: Technology Strategy

Module Description

This module provides a series of strategic frameworks for managing high-technology businesses. The course deals with those decisions that determine future directions of the technology intensive organisations and effective implementation of the directions chosen. The emphasis throughout is on the development and application of conceptual models which clarify the interactions between competition, patterns of technological and market change, and the structure and development of internal firm capabilities.

This course builds on the learning outcomes of the Strategic Management module by dealing with subjects that are directly relevant for technology intensive organisations such as sources of innovation, types and patterns of innovation, resourcing strategies, developing capabilities, collaboration strategies, and protecting innovation.

Module Content

Introduction to Technology Strategy

Connecting technology and strategy: technology and competitive strategy; technology and product-market strategy; technology portfolio and business portfolio.

Technology and the value chain

Design and Implementation of Technology Strategy

Where the organisation wants to position itself; technological evolution; industry context; organisational context; strategic action; strategic positioning.

Putting technology into the corporate plan: dimensions of product acceptability; profiling technology by market segments; technology demand elasticities;

Organisational Technological capabilities

Where the organisation is at: innovative capabilities audit framework

Technology Transfer

Transfer of technology from research to development; absorptive capacity and the dynamics of technology enabled change – how is it going to get there, and how long will it take.

Module 4: Technology and Operations Management 2

Module Description

This module builds on the learning from Technology and Operations Management 1 which is delivered in the first stage of the programme. During this module the focus is on innovation and continuous improvement in operations management, a critical area for ICT companies and professionals operating in ICT roles. Programme participants will learn how to put in place and implement a business performance improvement plan which includes a continuous improvement programme. They will also explore a range of continuous improvement and quality management approaches and models which may be relevant for their work environment.

Module Content

- Operations management
- House of quality
- Quality function deployment
- Total quality management

- Six-sigma
- Business simulation

Projects

Stage 2 programme participants are required to complete an individual project assignment from a choice of two individual work-based projects.

Project 1: Innovation Case Study Report

Project Description

This option in the individual project requires students to undertake intensive research to produce a detailed case study of a product or process development from their organisation. Successful product / process development and innovation is key to survival in today's competitive markets. Many organisations are faced with fiercely competitive environments, characterised by shorter product life cycles, rapidly changing customer demands, rich competitive product offerings, relatively low-cost competitive alternatives and a rush to exploit technological advantage. To survive, technology integration and creating innovative environments is critical.

Students will identify and a suitable case for investigation of a product or process development initiative addressing key issues in the new product / process development process- from idea to commercialisation. This component of the research portfolio is designed to stimulate within students deep insights into the development process, the techniques for moving a product/process from the research and development phase to the commercialisation phase. While many students will review traditional approaches to technology commercialisation and methods to overcome the major obstacles for success.

Learning Outcomes

Students will be able to:

- Demonstrate an ability to conduct academic research and a familiarity with the appropriate skills required.
- Marshal and organise research data and present it within a coherent, rigorous and analytical framework.
- Provide a theoretical rationale for the case study and make appropriate connections between theory and method.
- Have a thorough understanding of business processes and their contribution to successful innovation.
- Present a well-argued and integrated conclusion which relates research findings to the hypotheses and theoretical foundations of the project.
- The focus of the product / process development project integrates the management of engineering, marketing, management, design, and manufacturing functions of the firm in creating a new product or process.

Project 2: Emerging Technology Review Report

Project Description

The dynamics of technology-based competition are driven by unique uncertainties from the market, from technology, and from society. Therefore, technology managers need to be proficient in managing at the interface of technology, business, and society. The Emerging Technologies Review Individual Project provides the student with practical experience in understanding the dynamics of technology-based competition.

This option in the individual project requires the student to undertake intensive review of an emerging technology area taking account of the technology, business and society interface. This will include the student developing a technology roadmap assessment of the potential impact of the target technology in specific business applications.

The component of the research portfolio enables students to conceptualise, develop and realise a significant piece of research including a technology market roadmap for a selected technology area through a process which is largely self-directed and self-motivated, and which is different to the pedagogy encountered to date. While built on the foundation taught courses, it offers the student the chance to gain deep insights into their selected technology area. Students will work closely with tutor/supervisors in the development of research skills and in meeting the demands of a sustained project, which includes organisation, writing up and editing.

Learning Outcomes

Students will be able to:

- Demonstrate an ability to conduct academic research and a familiarity with the appropriate skills required.
- Marshal and organise research data and present it within a coherent, rigorous and analytical framework.
- Have a thorough and systematic understanding of their selected technology area and the range of innovation issues relevant to this area.
- Present a well-argued and integrated conclusion which relates research findings to the hypotheses and theoretical foundations of the project.

The assignment is intended to provide students with the following benefits:

- Competence with a set of tools and methods for preparing long term technology reviews and market roadmaps.
- Confidence in their own abilities to undertake a foresight-type review of a specific area.
- Ability to coordinate multiple, interdisciplinary tasks in order to achieve a common objective.
- Reinforcement of specific knowledge from other courses through practice and reflection in an action-oriented setting.

APPENDIX 1: About Dublin Institute of Technology

An Introduction

Dublin Institute of Technology is a comprehensive higher educational institution, fulfilling a national and international role in providing full-time and part-time programmes across the whole spectrum of higher education. It aims to achieve this in an innovative, responsive and caring learning environment. It is committed to providing access to students of all ages and backgrounds, and to achieving quality and excellence in all aspects of its work. This commitment extends to the provision of teaching, research, product development and consultancy services for industry and society, while continuing to have regard to the technological, commercial, social and cultural needs of the community it serves.

Under the terms of the Dublin Institute of Technology Act (1992), the DIT became an independent statutory body with its own degree awarding powers to Ph.D. level. DIT is one of the largest University level Institutions in Ireland with almost 10,000 whole time registrations and a further 5,000 FTEs. It is the venue of first choice for many Irish school-leavers and business people and it currently records the highest numbers of first preference choices and overall choices in applications for third level places by school-leavers. The reasons for DIT's continued success includes excellent support facilities, an ethos that encourages active learning and dynamic course content, and its tradition of academic excellence alongside professional relevance. With over 300 different programmes delivered through six faculties and twenty-six schools, DIT is in a position to offer a diverse range of specialised programmes, which maximise choices in a rapidly changing world – in some cases these programmes are unique to DIT or the Institute is one of a small number of providers.

Across all of its programmes, DIT is renowned for the applied nature of teaching and learning. Strong links and regular interaction with industry and the professions, including the Irish Sales Institute and the Irish Marketing Institute, allow DIT to tailor its programmes on the latest global trends and needs. It keeps a close eye on job market trends and encourages input from industry partners regarding the design and development of programmes. This close link with the market place is further strengthened through industry training.

DIT, in addition, boasts a flexible 'ladder system' that affords students and programme participants the opportunity to progress from certificate to diploma to degree level. This system actively supports a learner-friendly structure, which opens up access to programmes and offers students the opportunity to progress to higher qualifications.

Continuing professional development (CPD) through part-time degrees and CPD short-course provision remains a strategic priority for DIT and it is currently the largest single volume provider of such education in the Republic of Ireland.

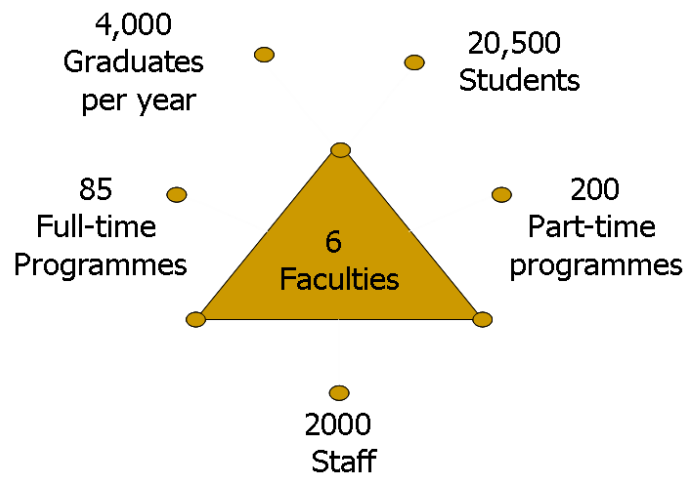


Figure A1: Dublin Institute of Technology at a Glance

Dublin Institute of Technology is one of the three designated awarding bodies (along with HETAC and FETAC) designated within the national qualifications framework of Ireland. DIT is a member of the European Universities Association and has recently been audited by the EUA on behalf of the NQAI. DIT differs from both HETAC and FETAC in that it is both an awarding body and a programme deliverer. DIT currently provides awards at Undergraduate, Postgraduate and Continuing Professional Development for its executive education clients.

About the Faculty of Business at DIT

The Faculty of Business is one of the largest business schools in Ireland, in terms of full-time and part-time student enrolment. There are five Schools, the School of Accounting & Finance, the Graduate Business School, the School of Management, the School of Marketing and the School of Retail and Services Management.

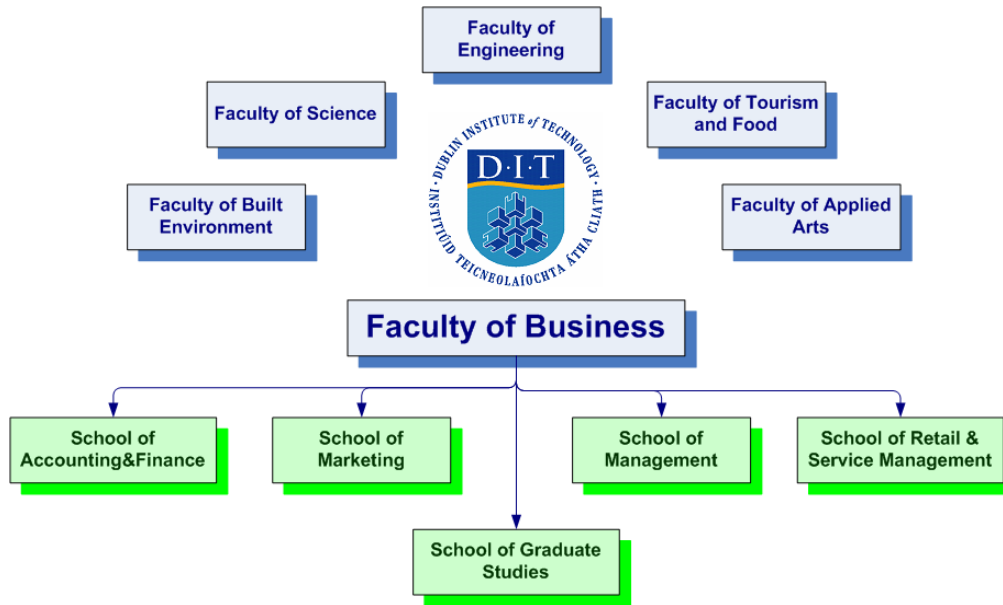


Figure A2: Faculty of Business Structure

Total wholtime enrolments amount to 2,700 students and there are a further 2,400 students registered on continuing programmes at degree, postgraduate and professional level. Current post-graduate enrolments on taught programmes and in research amount to some 200 students. There are approximately 140 whole-time lecturers working in the Faculty of Business. These are supplemented by a number of associate and part-time lecturers who generally deliver modules in specialised areas.

The Faculty of Business developed effective and lasting working relationships with every major professional body in such areas as Accountancy, Direct Purchasing, Personnel Development, Marketing, Management, Retailing, and Transport and Logistics. It has developed policies, structures and student support systems appropriate to its role as leader in the field and has built a reputation for responding through partnership initiatives to emerging business and management skills needs.

The Faculty has also established itself as one of the largest executive education providers on the island. The Faculty of Business, Dublin Institute of Technology has extensive experience in the delivery of corporate and industry programmes, and has both the expertise and the capacity to organise and deliver high quality development programmes. The Faculty is familiar with the challenges of providing specific training for industry-based programme participants from a variety of backgrounds and disciplines. We recognise that trainers must have a high credibility with such programme participants and need to be experienced in using diverse and effective training methods and strategies.

The Dublin based training facilities are located at DIT Aungier Street, a purpose built facility functioning since September 1994. The Faculty of Business now boasts a facility with excellent teaching and learning resources for students and staff. In addition to the

library and computer facilities, the following table illustrates the range of teaching and learning spaces specifically design to facilitate the range of teaching approaches utilised on the course.



Figure A3: Faculty of Business Building at Aungier Street

Of particular relevance to this programme, the Faculty of Business has also created a space dedicated to industry or executive education and training programmes. This space is known as **Management House** and it provides two high quality class room plus additional rooms that represent appropriate break-out work spaces.

DIT Faculty of Business also has on-site caterers in situ to cater for meals and refreshments for programme participants.

Executive Education in the Faculty of Business

At present the Faculty of Business is delivering a number of customised management development programmes direct to DIT clients and has emerged as the largest higher education institution provider of executive education business programmes in Ireland. Corporate clients of the Faculty include Musgraves Group, Intel Ireland, the Irish Aviation Authority, Enterprise Ireland, FAS, Allied Irish Bank, Aer Rianta and InterTrade Ireland. With most of these clients there is or has been more than one programme taking place at any time indicating the ability of the Faculty of Business to manage multiple programmes for individual clients. Figure 4 illustrates the breadth of the executive education activities at DIT including the different clients and levels of awards with each client.



Figure A4: Executive Education at the Faculty of Business DIT

The following sections detail several industry-based management development programmes delivered by the Faculty of Business. DIT has accredited all these courses and has flexible mechanisms for validating such courses.

In the area of technology and innovation management the School of Management has established a management development programme for technologists working in the ICT industry for **ICT Ireland** – a representative group with **IBEC**. Learners on this programme will complete a Postgraduate Diploma in Management of Technology and may transfer to a M.Sc. Technology and Innovation Management.

The School is also delivering a Certificate in Innovation Management for SMEs. This programme is delivered at locations in Dublin, Galway, Limerick and Cork.

The School of Management is also delivering CPD and postgraduate programmes to **Allied Irish Bank**. These programmes are an essential part of the training and development for ICT staff at AIB.

The Faculty of Business delivers a Postgraduate Diploma in International Trade for all graduates undertaking the **IBEC** sponsored Global Orientation Programme. This involves approximately 100 graduates undertaking a postgraduate course through distance learning while they are based in an export market working for an internationally trading company.

In 2005 DIT was successful in the tender process for the **Enterprise Ireland** International Selling Programme. This programme is currently being delivered to chief executives, sales managers and sales practitioners to cohorts of up to 30 companies. The programme is being delivered in partnerships with leading international and Irish sales training specialists, including the Kellogg School of Management Northwestern University, Ashridge, Cranfield School of Management, Manchester Business School, and

Wake Forest University North Carolina. This programme has seen several cohorts, including programmes located outside Dublin, progress to date.

At the beginning of August 2006, DIT was also successful in its tender to **FÁS** for a multi-million euro contract to deliver sales management training for the domestic market was successful. This will involve the delivery of targeted training and coaching support to Irish companies seeking to increase their sales in the Irish market.

Staff from **Musgraves Group** (SuperValu and Centra) and **Aer Rianta** are currently undertaking a Continuing Professional Diploma in Retail Management and a Bachelor of Business Studies (Hons) with DIT. Course management has worked closely with these companies to design and deliver a tailored programme with a focus on managerial skills development for retail managers. Both programmes have experienced considerable success to date and in the case of Musgrave Group there are several cohorts that have either recently completed the programme or are currently undertaking the programme. These programmes are of three year duration. Other Faculty clients in the retail area include the **BWG Spar Group, Irish Cooperative Organisation Society, Hickeys** and **Xtravision**.

Faculty of Business has also delivered the Bachelor of Business Studies (Honours) to **Intel Ireland** staff through on-site delivery at their site in Leixlip, County Kildare. The cohort on this programme consisted mainly of technology graduates.

The Faculty has also been involved in the management and training of an InterTrade Ireland management development programme, **Fusion**. DIT's role was to provide training for these graduates in business and management skills through its Postgraduate Diploma in Management Practice.

DIT has also established the **Lift Off Management Development Programme** in association with the **Irish Aviation Authority**. This programme offers management development training programmes to public and private sector organisations and companies in the aviation industry. The programme is delivered at a number of centres and it will soon be offered internationally in partnership with the Irish Aviation Authority. The Faculty of Business also delivers a customised management development programme to **Aer Rianta**. The programme was designed to meet the needs of an organisation going through a period of extensive change and involves joint delivery of certain modules with Aer Rianta specialists.

The Faculty has also entered a partnership with the **Irish Air Corps** and has accredited a programme that will enable Irish Air Corps to complete studies up to degree level.

The Faculty of Business also has experience delivering programmes in the area of consumer foods for **Enterprise Ireland**. In 1995, in response to direct industry demand from the National Consumer Foods committee, the Faculty designed and delivered a Post-Graduate Diploma in Management Practice (Consumer Foods). The Post-Graduate Diploma formed an integral part of an innovative management development strategy designed to "bridge the gap" between the needs of the Industry's Prepared Consumer Foods sector and the management knowledge and skills of

technology graduates. The Faculty devised this Graduate Diploma and customised it to the needs of the Irish Food Industry. The programme, funded by Enterprise Ireland, provided a combination of intensive workshop modules tailored to meet the graduates learning needs as well as ongoing in-company learning opportunities, where each participant assumed a central and proactive role in his/her management education. Over 80 graduates participated in 4 programmes from such companies as: Green Isle, Glanbia, Golden Vale, Batchelors, Monaghan Mushrooms and Dawn Farm Foods.

In 1996 DIT launched the **Fast Growth Programme** which is targeted at owner managers in Irish companies that are facing the challenges of growth and it provides a range of training and in company business mentoring. Three cohorts with a total of 47 companies have participated in this programme. Results from these businesses show that, on average, turnover had increased by 150%, profit increased by 300% and the number of new jobs created was over 300. In 2000, DIT launched the **Hothouse Programme** which assists owner managers to develop knowledge-based businesses. This start-up programme, based on the renowned Enterprise Development Programme, provides start-ups with the expertise, networks and tools that they need to develop and grow highly successful businesses capable of competing in global markets. This year-long programme consists of a combination of monthly management development training workshops, supported by external business mentors and the provision of incubation space. This programme, funded under the National Development Plan, runs twice a year with a total of 15 companies supported in each intake.

In terms of content and delivery such programmes have a greater practice bias – than is generally the case with the Institute’s traditional programme portfolio. In this context the titles of practice-based programmes are differentiated from existing academic award titles.

Key Features of Executive Education at DIT

The market leadership position achieved by DIT in the executive education market in Ireland has been established on the basis of delivering successful high impact programmes that consistently meet and surpass the training and development objectives of our clients. At the cornerstone of each of all our programmes is a willingness to engage with and understand the needs of our clients. While every DIT executive education programme is distinct, they share the following core elements:

Multiple learning approaches

In the development of our programmes DIT programme designers and training partners leverage multiple training and development approaches when designing programmes. Interactive workshops, field learning, simulations, and peer-to-peer information sharing are just some of the approaches to optimise client learning and development experience. The foundation of the integrated set of learning approaches is to embed best practice, skills and capabilities in the client enterprise.



FigureA 5: Multiple learning approaches

Real-world trainers

DIT understands that in the development and delivery of executive education that theory must be supported with practical application. Trainers on our programmes, including the training team assembled for the ICT Ireland programme, are actively engaged with enterprises through consultancy, research and training assignments, so they bring knowledge of real-world business issues to the classroom and deliver high quality and relevant content as well as business processes that work to their workshops.

Learning implementation through action projects

Ensuring that what is gained in the training workshops is not lost in practice is central to value creation for companies engaging in executive education initiatives. Our project-based approach carefully balances reflection with action, focused brainstorming with efficient decision making, and idea sharing with collective on-the-job implementation. We equip participants with the tools to evaluate and implement the solutions they have elaborated to meet company priorities. This provides the real impact for your organisation - one reaching well beyond the learning in the programme.

High quality programme management

DIT understands that high quality programme management is critical to the delivery of successful programmes. Central to the establishment of market leadership in the executive education space for DIT has been the development of core competences in programme management. This includes high touch customer service and constant monitoring of participant progress.