



Department of Communications, Marine and Natural Resources  
Roinn Cumarsáide, Mara agus Acmhainní Náúúrtha

# Information Systems Division

## Current State Assessment

### ICT Strategy Project

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**Prepared for:** DCMNR  
**Prepared by:** Tadhg Cashman  
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## Table of Contents

<b>1</b>	<b>Executive Summary .....</b>	<b>3</b>
<b>2</b>	<b>Introduction .....</b>	<b>8</b>
<b>3</b>	<b>External Drivers of the ICT Strategy .....</b>	<b>9</b>
3.1	Public Service Modernisation Programme .....	9
3.2	Sustaining Progress .....	12
3.3	Interaction with Bodies under the Aegis .....	12
3.4	Decentralisation.....	13
<b>4</b>	<b>DCMNR Cross-cutting Business Processes .....</b>	<b>14</b>
4.1	Corporate Governance & Regulation .....	14
4.2	Policy Definition & Measurement .....	16
4.3	The Democratic Process.....	16
<b>5</b>	<b>DCMNR Divisional Business Processes .....</b>	<b>18</b>
5.1	Maritime Safety & the Coast Guard – Maurice Mullen .....	18
5.2	Energy – Martin Brennan.....	21
5.3	Communications & Broadcasting – Eamonn Molloy .....	22
5.4	Maritime Transport, EMD, PAD, GSI – Michael Guilfoyle .....	23
5.5	Seafood Sectors and Coastal Zone Management – Cecil Beamish .....	26
5.6	Central Divisions – Sara White .....	27
<b>6</b>	<b>Information Architecture.....</b>	<b>30</b>
6.1	Data.....	30
6.2	Information .....	32
6.3	Knowledge.....	33
6.4	Business Results.....	33
<b>7</b>	<b>Technical Architecture.....</b>	<b>35</b>
7.1	System Software .....	35
7.2	Hardware Architecture.....	36
7.3	Network Architecture.....	36
<b>8</b>	<b>IS Organisation.....</b>	<b>38</b>
8.1	Staffing .....	38
8.2	Approaches to Development.....	40
8.3	Service Delivery.....	40
8.4	Change Management & Training .....	41
<b>9</b>	<b>Key Risks .....</b>	<b>42</b>
9.1	Decentralisation.....	42
9.2	Disaster Recovery .....	42
9.3	Business Commitment to Innovation.....	42
9.4	System Security.....	42
<b>10</b>	<b>.. Conclusions &amp; the key issues.....</b>	<b>43</b>

# 1 Executive Summary

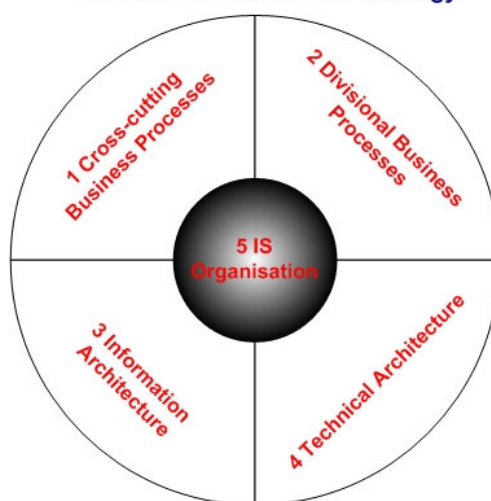
The Department published its Statement of Strategy for 2005-2007 in June 2005 and IS Division are currently carrying out a project to refresh the strategy for Information and Communications Technology (ICT) so that it reflects the key priorities and drivers from the new DCMNR Strategy. This ICT Strategy needs to be linked more closely to the business strategy for the Department, and ultimately ICT should support and enhance the delivery of business services for the Department.

The Department has made excellent progress on the implementation of its previous ICT Strategy from October 2003. There is a very strong basic ICT infrastructure in place – there is a PC on every desk and there are fast and resilient local and wide area Departmental networks in place. Good progress has been made on the delivery of key sectoral applications, such as IFIS, the Coastal Zone Administration system and MAPS, despite some initial difficulties. The Division has significantly improved its use of project management and software development methodologies, and now has a reliable and structured approach to developing new systems. There is a good Intranet in place, which serves as a gateway for Departmental staff to access key internal information and systems. There is a responsive Helpdesk in place, and overall, staff around the Department are very satisfied with the level of service they receive from the IS Division.

The Department has a number of commitments under a variety of Government initiatives that will impact the delivery of this new ICT Strategy, including the Public Sector Modernisation programme, the Sustaining Progress Agreement and the Decentralisation Programme. Given that there is a strong ICT infrastructure in place and a sound ability to develop and deliver new systems, the Division is now keen to capitalise on its investments to date, and to address the public sector modernisation programme by driving innovation through the Department's business processes through the deployment of new technology.

This document analyses the current state of ICT in the Department under the heading of 5 separate but related topics.

The 5 elements of an ICT Strategy



## 1 Cross-cutting Business Processes

The key cross-cutting, or corporate business issues facing the Department are:

Issue	Description
Corporate Governance & Regulation	The Department has responsibility for the corporate governance of over 55 commercial, non-commercial or regulatory bodies. There was a feeling that ICT could help to introduce innovation into the corporate governance process and many of the senior managers within the Department were keen to explore how technology could help to free up staff time to concentrate on the more qualitative aspects of corporate governance.
Policy Definition & Measurement	ICT has a strong role to play in the process of how the Department develops, implements and measures its policies. Within the Department there are a large number of Divisions that are involved in policy development. This necessitates the sharing of information, collaborating and consulting with the general public as well as other relevant organisations that would be interested in the particular area that policy would affect. There are a number of issues with how policy is developed and technology has a role to play in improving some of these policy- making processes.
The Democratic Process	The Department uses a number of systems to help manage its responsibilities under the democratic process, including eCabinet and The Parliamentary Questions (PQs) system. A number of issues were identified with how these processes work, and with how each of these systems operates.

**Table 1: Departmental Issues**

## 2 Divisional Business Processes

In addition to the corporate business issues facing the Department, there are a number of specific business divisions that have needs for specific applications and investment in ICT to carry out their work, like the GSI and the Coast Guard. The key Divisional issues are:

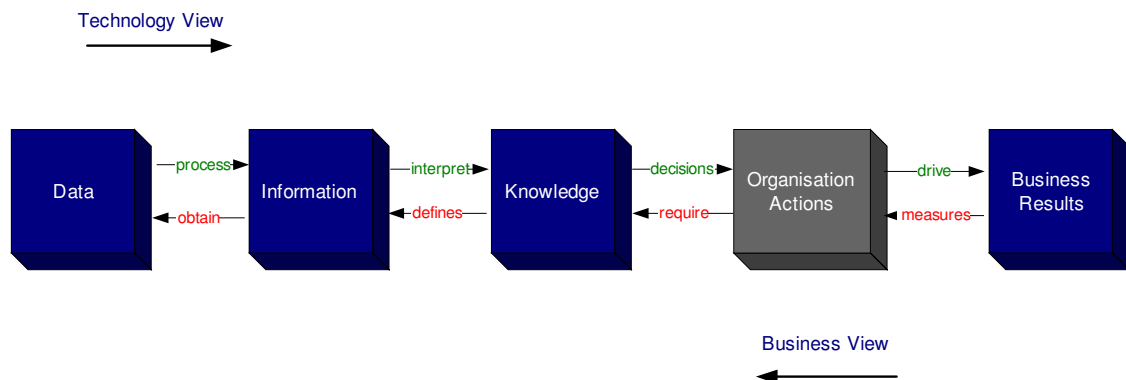
Division	Description
Maritime Safety & Coast Guard – Maurice Mullen	Maritime Safety & the Coast Guard area have responsibility for a broad range of services and policy development around maritime safety. Overall they are happy with the service that they receive from the IS Division in their own administrative function but they are facing a number of specific issues that will need to be dealt with by the ICT Strategy, including survey management and costing, ISD support for the Volunteer network, and the need for a system for Search and Rescue Operations.
Energy – Martin Brennan	The Energy area is focused mostly on regulation, corporate governance and policy definition for the Energy Sector. They currently don't have any need for transactional systems to support their business processes, but they do rely heavily on the basic infrastructure of email and access to documents. There are however a number of areas where their business processes could be supported by ICT, including energy systems modelling and an Energy Infrastructure GIS Dataset.
Communications & Broadcasting – Eamonn Molloy	The Communications, Broadcasting and Postal Divisions are concerned mostly with Corporate Governance, regulatory and policy-making activities. They have a critical reliance on the core desktop productivity applications and infrastructure – network access, email, documents etc. The Division maintains a number of websites – <a href="http://www.broadband.gov.ie">www.broadband.gov.ie</a> and <a href="http://www.gbs.gov.ie">www.gbs.gov.ie</a> and they have received strong assistance from ISD on the management of these websites.
Maritime Transport, EMD, PAD, GSI – Michael Guilfoyle	There are a broad variety of functions and roles in this Division, from Maritime Transport to Inland Fisheries to the GSI to Petroleum Affairs and each of these different areas have varying requirements for ICT. EMD, PAD and GSI have significant requirements for specific transactional and geographical systems to support their business processes. While the other areas do not have the same need for transactional or geographical systems, they do have informational needs to help support policy making and governance functions.
Seafood Sectors and Coastal Zone Management – Cecil Beamish	This Division is working on two major projects which have a significant ICT element, Integrated Fisheries Information System (IFIS) and Coastal Zone Administration System (COZaS). In addition to these two main projects, they have a number of business processes where they see the potential for ICT to introduce innovation into how they carry out their work, including internet submission of fish sales and transport data, and mobile field inspections.

Division	Description
Central Divisions – Sara White	<p>The Central Divisions are responsible for management of the delivery of the Department's corporate management and development programmes, strategic organisational and crosscutting priorities, whole of Government priorities and internal and external modernisation and change agendas. While Central Division have a leading role to play in the management of the cross-cutting issues discussed in Section 4, there are a number of additional issues affecting the Central Division that have a strong IT dependency. These include Financial &amp; Performance Management, and Human Resources management.</p> <p>DCMNR has made significant progress on its MIF Programme with the implementation of the Agresso Financial Management System but there are a number of drivers for a move towards performance reporting and evidence-based policy-making. ICT has a strong role to play in helping to achieve a closer linking of resource allocation, output/outcome indicators and performance measurement.</p> <p>The Department is an intensive user of internal, staff-related data but there are over 7 separate repositories of staff-related data, and HR staff find that they need to revert to the paper personnel file regularly. As the decentralisation programme gathers pace, the current systems will become more and more unmanageable, since updating a person's data necessitates so many separate database updates, and reporting is currently a manual process. While Peoplesoft has been identified for implementation, it is as yet unclear as to what percentage of HR requirements it will fulfill. More work is needed here as a priority.</p>

**Table 2: Divisional Issues**

### 3 Information Architecture

This Section looks beyond business processes to the issue of information and data management within the Department. This is a key issue for the Department, since business processes cannot function effectively unless staff executing those business processes have the right knowledge to make decisions. ICT has a pivotal role to play in ensuring that data is captured, stored and accessible, so that it can be turned into information, which combined with experience leads to the knowledge to make the right business decisions and determine Departmental policy. There is a strong link between data, information, knowledge, business process and results, and the information architecture of the Department is discussed under these headings.

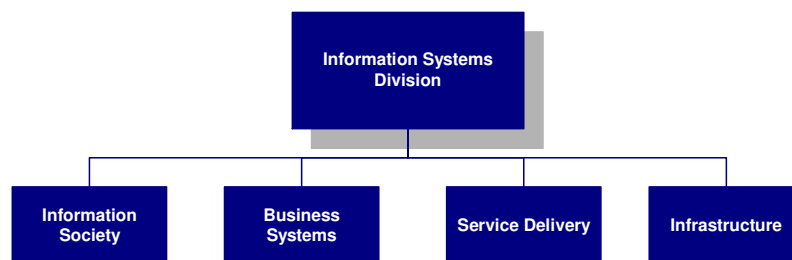


### 4 Technical Architecture

Technical architecture is assessed under 3 headings – system software, hardware architecture and network architecture. The main issues discussed under system software include the Department’s reliance on three main enterprise software suppliers, the need for ongoing investment in security, and password synchronisation. The key issue for the Department in terms of its physical infrastructure is how recoverable it is in the event of a disaster. Finally, under network architecture the 2 primary issues raised by the business Divisions was the perceived slowness of some remote network connections, and the lack of knowledge around what remote access facilities there are to Departmental systems.

### 5 IS Organisation

The IS Division undertook a major restructuring in May 2005, and there are now 4 main Sections, reflecting the major workstreams of the Division.



The key issues discussed around the structures and processes within the IS Division are: approaches to software development within the Department, a number of issues around service delivery, and some feedback around the Department’s approach to the change management associated with the rollout of ICT projects.

Finally, the Conclusions & Key Issues Section of the document addresses the key conclusions of the Current State Assessment and suggested next steps for the Strategy Development process.

## 2 Introduction

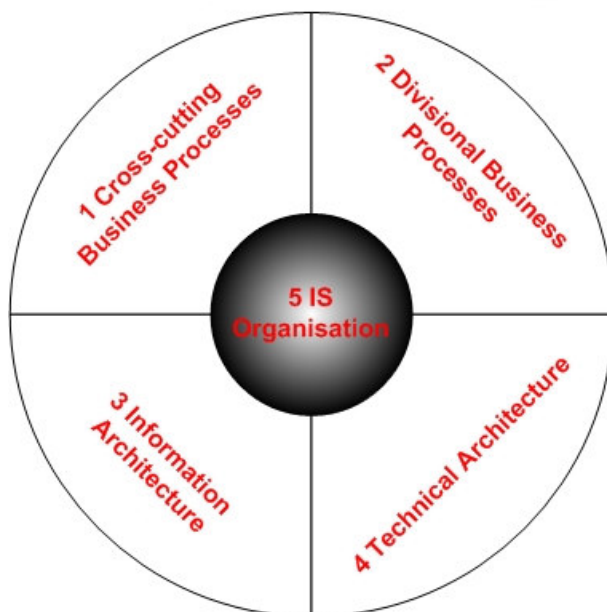
This document represents the 2<sup>nd</sup> deliverable of the 2006-2008 ICT Strategy and is the result of the Analysis phase of the project. The first phase, Scoping and Planning, resulted in the signed off Project Initiation Document, and the team then carried out the assessment of the current business of the Department and how ICT supports that business. This is commonly referred to as an “As Is” or Current State assessment. This involved the project team carrying out over 50 interviews with Departmental staff at all levels, including the Assistant Secretaries, the PO group, and a number of APs and HEOs. The project team also reviewed the existing strategies, business plans and other documents relating to the Department’s business.

This document represents the output of this second phase of the project, and is known as the Current State Assessment document. *This is not the final Strategy document.* It is designed to give the project’s management and Steering Group the necessary material to have an informed debate on the key directions that the strategy should focus on.

The document is structured as follows:

Section 3 outlines the strategic context and external drivers behind this ICT strategy project.

### The 5 elements of an ICT Strategy



Section 4 provides a discussion of the Department’s key corporate business processes (those that cut across all Divisions).

Section 5 describes the key issues facing individual Divisions in carrying out their specific business processes, and the applications that support those business processes.

Section 6 outlines the current Information Architecture of the Department.

Section 7 outlines the Department’s technical infrastructure.

Section 8 discusses the governance and management of ICT within the Department.

Finally Section 9 provides a recap of the major issues facing the Department at the present time. It provides the basis for the further strategy development that will be carried out in the next phase.

Appendix 1 contains a list and description of the Department’s Current and Planned Projects (as of June 2005).

Appendix 2 contains a list and description of each of the applications in the Department’s application portfolio (as of June 2005).

## 3 External Drivers of the ICT Strategy

The Department published its Statement of Strategy for 2005-2007 in June 2005 and IS Division are currently carrying out a project to refresh the strategy for Information and Communications Technology (ICT) so that it reflects the key priorities and drivers from the new DCMNR Strategy. The mission statement from the Statement of Strategy is

*“To promote the sustainable development, management and regulation of the communications, energy, marine and natural resources sectors in support of national economic and social policy objectives”.*

The Department’s economic remit spans communications, broadcasting and energy together with seafood, maritime transport, maritime safety and natural resources. In terms of activities, the Department determines the regulatory environment and policy for a number of economic sectors, governs a wide range of commercial and non-commercial organisations, and delivers a range of services to its customers, both businesses and individuals.

A key driver of strategy for the Department is the Government’s Public Service Modernisation Programme. This programme incorporates a number of thematic areas which complement and reinforce each other, including Better Regulation, Financial Management, Human Resource Management, Quality Customer Service, Partnership in the Civil Service, and finally, Information Society. The ICT Strategy will need to reflect these key Government-wide initiatives, and in particular the drivers from the Information Society programme.

Another key issue facing the Department that will impact on the direction of the ICT Strategy is the decentralisation programme.

*The key externally driven strategic issues driving changes in the ICT strategy are discussed in more detail below.*

### 3.1 Public Service Modernisation Programme

The Department is committed to the implementation of better government, and is actively involved in the Public Service Modernisation Programme. There are six major thematic areas that this Programme focuses on:

1. Better Regulation
2. Financial Management
3. Human Resource Management
4. Information Society
5. Quality Customer Service
6. Partnership in the Civil Service

The ICT Strategy will need to draw on best practice from each of these initiatives to ensure that the DCMNR is the leading Government Department in addressing each of these key issues for the public service. Senior management in the IS Division is keen to ensure that ICT serves to modernise how the Department carries out its business, rather than simply automating it.

### 3.1.1 Better Regulation

Delivering better regulation is a key driver for DCMNR, given that the Department is responsible for two key regulatory offices, the Communications and Energy Regulators, and three complaints & appeals commissions. There has been significant interest in the Department as to how the various bodies under the Aegis of the Department can be governed, and how the management of the Department's regulatory responsibilities can be improved. A considerable amount of work has been carried out already on how the corporate governance process is managed in DCMNR, since the Strategic Change and Modernisation Division have been actively looking at the issue of better governance for the bodies under the aegis of the Department.. There are a variety of different practices and procedures across the various Divisions, as well as huge variation in the types of organisations managed – from large commercial to small non-commercial bodies. ICT will have a role to play in facilitating better governance processes.

### 3.1.2 Financial Management

Financial Management has been one of the key themes of the change and modernisation agenda from the start. *Delivering Better Government (DBG)* contained a number of recommendations about how aspects of financial management in the Public Sector could support a more strategic approach to the use of resources. Recommendations in this area were for greater integration of financial management with the core business of individual Departments and supporting value for money in terms of a sharper focus on outcomes. DCMNR has made excellent progress on this front, with the implementation of the Agresso Financial Management System, which provides for improved financial management and devolved responsibility for budgetary and resource administration to the various Divisions. The issue of financial and performance management is dealt with in more detail in Section 5.6 below.

### 3.1.3 Human Resource Management

*Delivering Better Government* stated that the modernisation agenda in the Civil Service needed to be supported by changes in Human Resource Management (HRM) policy and practices. DBG recognised the need to achieve a better balance between central regulation and local autonomy at the level of individual Departments in the area of HRM. DBG also advocated better use of effective HRM systems to ensure that each person who works in the Civil Service can develop to his/her maximum potential in contributing to the attainment of organisational goals. Some of the key developments around the area of HRM include:

- ❑ Performance Management and Development System (PMDS )
- ❑ Framework for Civil Service Training and Development 2004 - 2008
- ❑ Equality of Opportunity - Civil Service policies on Gender Equality and Diversity
- ❑ Human Resource Management Systems (HRMS)
- ❑ Guidance Document for the preparation of HR Strategies by Civil Service Departments and Offices
- ❑ Sustaining Progress's HR Modernisation Programme

DCMNR has participated fully in these developments and is due to participate in the implementation of PeopleSoft, which is being led by the Dept. of An Taoiseach. The Department has a legacy Personnel Administration System (PAS) which will be replaced by PeopleSoft in late 2005.

### **3.1.4 Information Society**

Information and communication technologies (ICTs) have had a major impact on our lives in recent years. Mobile phones have become almost indispensable to us and Internet usage continues to grow as more and more people appreciate its relevance to them. ICTs make possible new connections, new means of interacting and doing business and new forms of communication that challenge traditional boundaries. Exploiting these opportunities, using technology to enhance people's lives is what the Information Society is about.

Considerable progress has been made in recent years in building the foundations of the Information Society in Ireland. There is however a vast programme of change and innovation which must be undertaken to realize the Government's ambition to position Ireland at the leading edge of technological development. This DCMNR Strategy will be strongly driven by the Information Society agenda, and will contribute toward the realisation of the Information Society by implementing best practice in public sector deployment of ICTs in DCMNR.

The New Connections document is the Government's Action Plan for the Information Society in Ireland, which addresses a number of crucial areas such as Telecommunications Infrastructure, Legal and Regulatory, Environment, ICTs in Government and eInclusion. DCMNR has recently made its submission for the third progress report on New Connections, and excellent progress has been made on committed projects. In addition, a new project, a Corporate Vessel Register will be built.

### **3.1.5 Quality Customer Service**

The QCS initiative is about the achievement of an excellent service for the public. Delivering Better Government, published in May, 1996 recommended the introduction of a Quality Service Initiative for the Customers and Clients of the Irish Civil Service, and the QCS Initiative is progressed through the Quality Customer Service Working Group. The focus of the Group is to work with organisations from across the public service to help support implementation of the QCS initiative by:

- ❑ Monitoring and evaluating progress
- ❑ Sharing experiences and good practice, and
- ❑ Overseeing the development of mechanisms for benchmarking and for recognising improvement in quality service delivery.

DCMNR has been actively addressing the Quality Customer Service initiative and have completed a Customer Service Action Plan, where a range of specific customer service standards have been defined and these are actively measured.

### **3.1.6 Partnership in the Civil Service**

Partnership 2000 provided for the establishment of Partnership Committees in each Department and Office. The purpose of Partnership Committees is to try to involve staff directly in change and modernisation through discussion and hopefully agreement on how to respond to challenges facing their organisation. The way in which Partnership Committees work in terms of their structures, size, membership, frequency of meetings etc. is a matter for the organisations concerned to decide in the light of their circumstances and business requirements.

## 3.2 Sustaining Progress

Another Government-wide initiative that the Department has a range of commitments to is the *Sustaining Progress Agreement*. *Sustaining Progress* focuses on what is necessary to make the economy:

- ❑ Competitive in a changing world;
- ❑ Environmentally sustainable;
- ❑ Efficient through finding and implementing appropriate market and regulatory regimes in different areas; and
- ❑ Socially acceptable.

The shared overall goal of the Agreement covering the period 2003-2005 is to continue progress towards the realisation of the NESC vision for Irish society in a period of considerable uncertainty, and to do this by sustaining economic growth and maintaining high levels of employment and securing living standards for all, while strengthening the economy's competitiveness and thereby its capacity to resume trend growth in more favourable international conditions. DCMNR has a wide range of commitments under *Sustaining Progress*, from a review of the State's commercial ports to infrastructure investment for broadband for businesses and citizens. These commitments impact on the business strategy of the Department, and the associated ICT strategy also.

## 3.3 Interaction with Bodies under the Aegis

DCMNR plays a key role in driving sustainable economic and social growth within the Irish economy and represents a wide spectrum of State-Sponsored Bodies (SSBs). SSBs are "Bodies with powers and duties set by either statutes or Ministerial authority, whose staff are not civil servants and to whose governing Boards or councils the relevant Minister, with the approval and/or consent of the Minister for Finance, appoints all of the Members". They can be either commercial, non-commercial or regulatory.

- ❑ Commercial SSBs produced goods and services sold directly to the public and should be self-financing from their trading activities
- ❑ Non-commercial SSBs are categorised as being either advisory/research or developmental and are exchequer-funded (although some also charge fees/levies for their services)
- ❑ Regulatory Offices are responsible for overseeing competition in market areas dominated by one player.

The Department has approximately 55 of Bodies under its Aegis, which includes:

- ❑ 16 commercial bodies (including 10 Port companies)

- ❑ 17 non-commercial bodies (including 7 Regional Fisheries Boards)
- ❑ 14 harbour authorities
- ❑ 2 regulatory offices (ComReg and CER)
- ❑ 3 complaints & appeals commissions (Aquaculture Licences Appeals Board, Broadcasting Complaints Commission & the Mining Board)
- ❑ 2 research & development agencies (Marine Institute & MediaLabEurope (MLE))

These bodies include major commercial bodies such as the ESB, An Post, Bord Gáis Éireann, RTE etc., and non-commercial bodies such as Sustainable Energy Ireland and Bord Iascaigh Mhara (BIM). Corporate governance of these entities is a significant activity for the Department.

### 3.4 Decentralisation

The Department's Headquarters is due to move to Cavan, and a number of other functions will move to Clonakilty and Dundalk. Many staff feel that the timing and volume of change will be the key to a successful decentralisation process. Although internally decentralisation is seen primarily as a location and human issue, the programme will have implications for the delivery of ICT in a number of ways:

- ❑ There may be significant changes in staff in the IS Division, which may have an impact on the quality of ICT services delivered to internal and external customers
- ❑ While the Department's documents and databases will be retained, organisational knowledge and memory will be lost as experienced staff move
- ❑ The technical infrastructure for the Department may have to be re-evaluated depending on the network infrastructure in place in each of the locations, since a lack of network bandwidth may potentially necessitate a move towards more decentralised technical architecture
- ❑ As decentralisation is implemented, additional technology will need to be deployed to facilitate better linkages between the various physical locations, in terms of messaging and videoconferencing. Services must be delivered to employees and citizens securely and efficiently across both internal and external networks.
- ❑ Further initiatives in the provision of online services to the Department's customers may help to lessen the impact of the Department splitting across multiple locations, since better use of electronic applications will lessen the reliance on physical documents and the difficulties associated with moving them between locations
- ❑ There are implications for business continuity, given that systems and servers will need to be moved during the decentralisation process

Some staff within the Department commented that if the business of government is sufficiently modular, then individual parts can be more easily decentralised. IT will have a role to play in that it can help support the re-engineering of processes so that they are more modular and can be easily split apart and reconstituted in other locations and indeed, other organisations.

## 4 DCMNR Cross-cutting Business Processes

The critical output of any “As Is” Assessment phase in a strategy project is the discussion of the main issues facing an organisation in the execution of its business. The key cross-cutting, or corporate, business processes of the Department are described in this Section, that is, those business processes that affect, or are carried out by a number of Divisions across the Department. The major issues facing the Department are discussed, including how ICT impacts on the delivery of those business processes and services. The Central Division has a strong role to play in helping the various business Divisions to manage these cross-cutting issues.

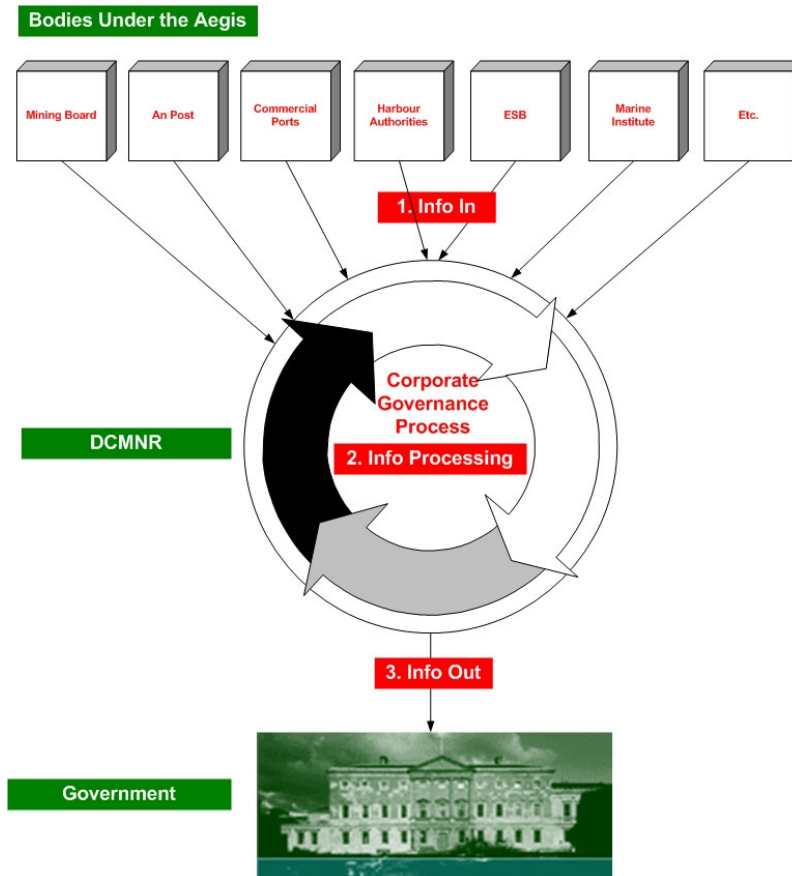
This section therefore provides a discussion of the key issues that were highlighted in interviews with a targeted group of senior managers from the various business Divisions of the Department, and in reviews of existing Departmental strategy and business plans.

These issues are discussed under 3 main categories:

1. Corporate Governance & Regulation Process
2. Policy Definition & Measurement
3. The Democratic Process

### 4.1 Corporate Governance & Regulation

The Department has responsibility for the corporate governance of over 55 commercial, non-commercial or regulatory bodies. A considerable amount of work has been carried out already on how the corporate governance process is managed in DCMNR. There are a variety of different practices and procedures across the various Divisions, as well as huge variation in the types of organisations managed – from large commercial to small non-commercial bodies. How the Department carries out corporate governance could be characterised as a 3 step information management process – 1. the Bodies Under the Aegis reporting into the Department (information in), 2. the Department gathering, analysing and summarising the data from the Bodies Under the Aegis (information processed), 3. the Department providing Annual Reports and accompanying Assessment Memoranda to Government about each of the Bodies (information out).



At present the majority of corporate governance work happens through email, telephone or face-to-face meetings, but there are a number of issues with these channels. For example, as regards email, there is concerns about the level of security in email transmission, given that often commercially sensitive data is being submitted. Also if the email recipient is away, problems can arise.

There was a feeling that ICT could help to introduce innovation into the corporate governance process and many of the senior managers within the Department were keen to explore how a secure website or portal technology could provide more structured communication channels to the Bodies. Such a system would add more security to the communications, and would help with the more clerical aspects of ‘chasing up’ of submissions from the external bodies. It would ensure that any material that was due wasn’t overlooked, and could also help to provide a structured online mechanism for borrowing and capital expenditure applications. These innovations would help to free up staff time to concentrate on the more qualitative aspects of corporate governance.

In addition, there is a Board Appointments database in place, managed by Strategic Change and Modernisation Division (SCMD), which keeps a list of all Board appointments and positions for each of the Bodies Under the Aegis. The problem with this database is that it can be difficult to get the individual Sections responsible for corporate governance of specific bodies to keep this database up to date. SCMD ends up chasing each Division to see if their list is up to date. There is potential for improvement of the database, so that responsibility for its update is devolved to the individual Divisions. It might also be possible to push responsibility for its update out to the bodies being managed.

Finally, there was a feeling amongst senior management within the Department that a central resource area for corporate governance would help to improve the process. For

example, a knowledge repository around pensions would help to share experience around this complex area.

## 4.2 Policy Definition & Measurement

ICT has a strong role to play in the process of how the Department develops, implements and measures its policies. Within the Department there are a large number of Divisions that are involved in policy development. This necessitates the sharing of information, collaborating and consulting with the general public as well as other relevant organisations that would be interested in the particular area that the policies would affect. It also involves communications and collaborations with other Government agencies and Departments. To execute the development of such policies, a large amount of research needs to be compiled and gathered as well as the gathering of documents and data and the formulation of reports and papers. There are a number of issues with how policy is developed. These include:

- ❑ Ensuring that the right information, data and reports are available to the key staff responsible for the development of policy. Performance indicators do exist (over 365 were identified for the Department) of which only 50-60 were financially based.
- ❑ Soliciting information from stakeholders in the area in which policy is being developed. Consultation with external bodies tends to be managed largely through e-mail and standard face-to-face meetings.
- ❑ The policy making process tends to be different every time, and is not a repeatable or transactional type process. There is a sense of ‘re-inventing the wheel’ when new policy needs to be developed in an area.
- ❑ Policy making involves quite a bit of collaborative working and document authoring both internally and externally. There is a view that the Department has not yet achieved best practice in terms of document collaboration and co-authoring.

Technology has a strong role to play in improving some of these policy-making processes. For example, a number of the senior managers within the Department were enthusiastic about the use of the Internet to publish information out to the public and to solicit feedback from consultations.

## 4.3 The Democratic Process

The Department uses a number of systems to help manage its responsibilities under the democratic process. These include:

- ❑ The eCabinet system
- ❑ The Parliamentary Questions (PQs) system (includes Representations (Reps))
- ❑ The Freedom of Information (FOI) system
- ❑ The Correspondence Tracking system

A number of issues were identified with how these processes work and with how each of these systems operates. In particular, a number of shortcomings were identified for the PQs and eCabinet applications.

Although the Parliamentary Questions system is supplied by the Department of Finance, there are many perceived weaknesses with this system, in the areas of distribution, ownership, classification, authoring, approval, retrieval and search. The process of

answering PQs can be prone to mistakes being made, and staff using the ‘system’ can get frustrated with the problems associated with PQ analysis and responses. Part of the problem here is the human factor of lack of knowledge of the PQ process, and training may also help to address this.

eCabinet is also a centrally provided system from the Department of An Taoiseach and there was a strong feeling across DCMNR that there are significant usability issues with the application. There is no proper documentation for the system, and what documentation is there, is out of date. In addition, a number of staff have not had proper training on the eCabinet application.

## 5 DCMNR Divisional Business Processes

As a direct follow on to the discussion of the key corporate business processes, this section discusses the individual Divisional business processes and the ICT issues surrounding the delivery of those business processes. Again, they are the result of interviews with a targeted group of senior managers from the various business Divisions of the Department.

### 5.1 Maritime Safety & the Coast Guard – Maurice Mullen

Maritime Safety & the Coast Guard area have responsibility for a broad range of services and policy development around maritime safety, including Maritime Leisure and Safety Policy, Coast Guard, Maritime Regulation, Marine Environment, Enforcement, Surveys, Security, Port Waste, Accident Investigation etc. They have staff in a range of remote offices around the country – Cork, Ballyshannon etc. They have to feed into a range of policy areas and they are subject to more and more EU reporting requirements.

Overall they are happy with the service that they receive from the IS Division in their own administrative function but they are facing a number of specific issues that will need to be dealt with by the ICT Strategy. Given that there is a possibility that these Divisions may become a distinct organisational entity, separate from the Department, the ICT Strategy should consider this area of responsibility as a single discrete organisational unit, albeit as yet, within the remit of DCMNR. They are also keen to ensure that they buy into, and indeed drive, any ICT initiatives that develop from this ICT strategy, since in the past they feel that IT projects have been mandated to them.

#### 5.1.1 System for Search and Rescue Operations

A key function of the Coast Guard is to respond to maritime safety incidents. IRCG currently operate an application called the Radio Maritime System (RMS - which is built on a DataEase platform) for operational incident logging. They have a requirement for a new Search and Rescue system which will address a number of the major weaknesses associated with the current RMS.

Up to 2004 the RMS was a DOS-based application but because this DOS version could not be remotely fixed by ISD and because the OS version was also going out of date, it was decided to upgrade DataEase to a Windows based version. Following a period of teething problems this upgraded application is now relatively stable. However, there are a number of other problems with RMS / Dataease.

Firstly, Dublin, Malin and Valencia use separate logging databases, and although PC Anywhere is used to access the remote instances of Dataease from Dublin, this causes performance problems locally.

RMS can't be accessed by IRCG management from home when incidents occur, which means that operators have to explain the problems by phone to management while they should be spending the time organising the incident response.

In addition, it is difficult for the Coast Guard to match the incident details on RMS with the incident reports received subsequently from the area officers.

Finally, due to ageing analogue remote Transmitter/Receiver/Control and communications room equipment, IRCG is presently working towards replacing these with a new Integrated Command and Control (ICCS) system. A small group management and staff has been researching/visiting/exchanging ideas for possible systems and has come to the realisation that in order to have a fully integrated modern communication system, it will also be necessary to consider installation of a new digital logging system integrated with the ICCS system. The UK MCA Vision system is an example of this type of integrated system, which can display location mapping from both OS and Admiralty mapping, has caller I/D, records events from the ICCS system, deals with logging and has many other features.

### **5.1.2 Cost Allocation for Marine Survey Projects**

The MSO would like to be able to allocate all costs for each marine survey carried out for external 3<sup>rd</sup> parties. At present they believe that Agresso is not set up to allow project-by-project cost reporting. If they can allocate costs better, they can bill better, they can do more surveys and take on more surveyors. To do this effectively there would probably be a need to interface into Transfare T&S, and probably the CVR.

### **5.1.3 Maritime Safety Web Portal & Intranet**

They are keen to begin the development of a single portal or sub-area on the Department's website that covers all aspects of maritime safety (and all areas under Maurice Mullen's responsibility). This could include:

- Public access to the vessel register, including access to licensing information
- Regulatory affairs
- Advice to the public (similar to [www.safetyonthewater.ie](http://www.safetyonthewater.ie))
- Coast Guard information
- Weather
- Area based services, for example, charts, wrecks etc.
- Commissioner of Irish Lights information
- RNLi information

Closely tied to this, they would like to develop a dedicated Intranet site, specific to the Maritime Safety and Coast Guard area.

### **5.1.4 Remote access to Departmental systems**

They feel that they are not well served by remote access to the Department's systems. Both the management and the surveyors need access to email and files when travelling remotely on Departmental business, in Ireland and abroad. For surveyors, if they have better remote access, then they need to spend less time in the office, and that means they can spend more time on the road and get more surveys done. They do however acknowledge that there is a significant cost associated with this type of access.

### **5.1.5 ISD Support for the Volunteers**

All the administrative work associated with managing the 900 volunteers is handled by IRCG, i.e. exercise payments, ESB bills, phone bills, etc. To improve the management of this function, they need the 54 Units to be computerised and added to the IRCG / DCMNR network. This would speed up the administrative process and save considerable time for the admin staff. Currently all queries are handled by phone or by letter with associated significant time delays. An IRCG network would alleviate these time delays. Also they would like to have the possibility of rolling out elearning to the volunteer network.

### **5.1.6 Volunteers Network Intranet**

Closely tied into the issue of better ICT Support for the volunteer network would be an Intranet site tailored to their needs.

### **5.1.7 Volunteers Database**

A data base was set up for the Volunteers (personal details, training, certs etc.), but IRCG feel that this is not meeting their needs and is not very stable. They currently have over 900 volunteers whose records need to be kept up to date.

### **5.1.8 Vessel & Seafarer Data**

The Division want to ensure that vessel and seafarer data are properly managed, and that both be developed over time. The objective of the Corporate Vessel Register (CVR) project is to improve and support the provision of services in relation to the Department's management and administration of Vessel-related activities including Registration, Surveying, Certification, Licensing, Monitoring and Marine Safety. This initiative will employ the Internet as a method for sharing data related to the Irish fleet between the Dept's Marine Safety Directorate [MSD], its customers, its agencies, the EU/EMSA (European Maritime Safety Agency), and the general public.

In terms of vessels, they were keen to see layers of data built up on the CVR datastore – including basic vessel data, survey data, mortgage data and safety data. They were also keen to ensure that all vessels were included in the CVR, from fishing vessels to commercial ships to leisure craft.

They are also keen to explore the possibility of making vessel information accessible to the public online – for example, the results of the last survey of a particular vessel.

Finally, they believe that they need to address how seafarer data could be managed better, since there are a number of seafarer datastores around the Department.

### **5.1.9 Marine Survey Management**

As a follow on phase in the Corporate Vessel Register project they are keen to enhance the scope, so that it includes the development of a Survey Management module. They are also

keen to allow their external customers to apply online, and pay online, for surveys to be carried out.

### **5.1.10 Reporting on Marine Safety Incidents**

They require a system to help with managing and reporting on marine safety incidents and investigations. For example, they have to produce casualty statistics, whereas the Coast Guard's Dataease system is geared up to report by incident calls. They feel that system could be built, with a link to the Coast Guard Dataease system, which would help to meet their reporting needs.

### **5.1.11 EU Reporting Requirements**

In addition to Marine Safety reporting requirement, they are constantly being forced to address emerging and mandatory EU reporting, particularly for the European Maritime Safety Agency (EMSA) on the full range of functions of the divisions. Some reports are very comprehensive and require more than just statistical data. Also there are a growing number of external audits by EU.

### **5.1.12 Stores Management System**

The need for an electronic stores system was highlighted in the previous strategy and IRCG are still keen for this issue to be tackled. As regards asset management, Agresso has relatively recently been introduced into the Department, however the Coast Guard feel that it does not meet all IRCG's needs regarding a stores system. Agresso does provide for procurement, and asset registering, however they require additional information concerning location of stores and expiry/replacement/repairs of stores. Additional modules may be added to Agresso to cover this, and either this should be done or a stand alone stores system should be purchased. Storing, which is a major area of work in IRCG, is still relying on paper trails. Over €2 million is spent on Coast Guard equipment every year, and this is still largely managed using manual inventory lists.

## **5.2 Energy – Martin Brennan**

The Energy area is focused mostly on regulation, corporate governance and policy definition and they coordinate all policy making, reporting and planning for the Energy Sector. They don't have any need for transactional systems to support their business processes, although they do rely heavily on the basic infrastructure of email and access to documents. Much of their information and data needs are outsourced to external organisations like Sustainable Energy Ireland (SEI) and consultancies, like ESRI. Energy Efficiency is a new Division, recently constituted. There are however a number of areas where their business processes could be supported by ICT.

### **5.2.1 Energy Infrastructure GIS Dataset**

This Division was keen to explore the development of an energy infrastructure geospatial database. They would like to be able to know exactly what infrastructure is in what location. A number of private sector companies do track Energy infrastructure, such as La Tene Maps, who have a comprehensive commercial map of all Irish Electricity installations. This would help with policy making and with reporting. At present, much of the statistical data that is required by the Division is collected and managed by Sustainable Energy Ireland.

## **5.2.2 Energy Systems Modelling**

One of the major areas that the Chief Technical Advisor provides advice on is the flow of energy in the Irish energy system. Towards the end of 2005 this office will need a specialist application to help with modelling and analysis of changes in the system. This application will be used to provide an independent view on potential changes in the Irish energy infrastructure, including possible switches to alternative or renewable energy sources. It will also guide where funding on research and development should be directed. It would assist on answering questions around the costs and benefits associated with alternative energy supplies. One of the criticisms leveled at DCMNR is that they occasionally don't know the effect that a change in the ESB and other semi-states' activities will cause – they need to be able to provide a second, independent view. A number of their counterpart organisations in other European countries use similar applications and they may be able to reuse work done by them.

## **5.2.3 Access to SEI data**

Sustainable Energy Ireland have a significant amount of data that they would like to have access to, and they are currently in talks about how to achieve better access to their systems.

## **5.3 Communications & Broadcasting – Eamonn Molloy**

The Communications, Broadcasting and Postal Divisions are concerned mostly with Corporate Governance, regulatory and policy making activities. The Division is responsible for corporate governance for An Post, RTE, the Communications Regulator, the Digital Hub, the replacement organisation for Media Lab Europe and the Broadcasting Commission of Ireland. Their major concern for the period 2005-2007 was that much of the staff in the Division are about to face into a period of significant change because of decentralisation, and that carrying out the key tasks would be more difficult because of personnel turnover and location change.

Similar to the Energy Division, they feel that they have a critical reliance on the core desktop productivity applications and infrastructure – network access, email, documents etc. It is important that staff in this Section are exposed to, and use information & communications technologies, since many of the bodies they interact with are commercial, private-sector companies who operate in the telecommunications and technology sectors. They feel that the key objective of the ICT Strategy should be consolidation and improvement of the systems already in place in the Department, since the overhead associated with preparation for the decentralisation process will make it difficult to take on new initiatives. Although the majority of staff are now using the core productivity applications well, there is room for improvement and the ICT Strategy should address this, particularly in terms of IT training.

The Division manages a number of websites – [www.broadband.gov.ie](http://www.broadband.gov.ie) and [www.gbs.gov.ie](http://www.gbs.gov.ie) . They have received strong assistance from ISD on the management of these websites.

## **5.4 Maritime Transport, EMD, PAD, GSI – Michael Guilfoyle**

There are a range of Divisions under Michael Guilfoyle’s responsibility, with a broad variety of functions and roles, from Maritime Transport to Inland Fisheries to the GSI to Petroleum Affairs. In terms of ICT Strategy, the various different areas differ in levels of requirements and how they have been looked after by ISD to date. EMD, PAD and GSI have significant requirements for specific transactional and geographical systems to support their business processes, While the other areas do not have the same need for transactional or geographical systems, they do have informational needs to help support policy making and governance functions.

Staff from these Divisions were particularly keen to explore how ICT could facilitate better evidence-based policy making. Can we capture and report on the data that reflects the outputs of policy making, e.g. how would we answer questions around “..the level, quality and geographic spread of petroleum exploration...”.

The Maritime Transport area are responsible for policy and corporate governance of the 10 Commercial Ports and 14 Harbour Authorities, and were especially keen to explore any initiatives that freed up staff time to work on the less clerical aspects of corporate governance.

EMD have recently implemented the Minerals Administration and Programme Support (MAPS) system and are in the process of bedding that down..

The GSI as an entity have significant needs from this ICT Strategy, since they are an organisation that makes intensive use of geological data. They have had a strong programme of ICT development over the past number of years and they now need to continue to build on the investment they have put into ICT to date. They have developed many geospatial and geological datasets and want to make them more available to the public over the Internet.

PAD have quite a few strong technical resources inhouse and manage a significant amount of geophysical information. PAD have a number of specialised systems that they support and they will need ongoing investment from ISD on those systems.

### **5.4.1 PAD Licensing**

PAD are keen to take on an adaptation of the MAPs systems to manage their licensing processes. Their volumes are low (6-12) licenses per annum but they feel that it would be beneficial to help manage the process.

### **5.4.2 PAD Systems Maintenance**

They have a number of systems which run geological and geophysical software, a Vax system and a Sun system, which they maintain and upgrade themselves internally. They also have a number of contracts with external organisations to manage geological metadata for them, such as the PAD Database Inventory, which allows exploration companies to see what data is available from PAD.

### 5.4.3 GSI Systems Development

The GSI must make obtain, manage and make available to customers quality geological data which is spatially referenced and customised to their needs. The GSI are keen to ensure that user-friendly information be increasingly made available in digital format over the Internet. GSI has already made considerable investments in building the foundations of such systems. A digital document management system containing over half a million items has been created and ongoing investment is needed to create integrated databases that are both multisectoral and multidisciplinary. The rate of visits to GSI websites doubled in 2004 from the 2003 figures, and there is ample room for the GSI to double and triple that number of users, as more and more datasets become available online. There is strong demand from the GSI's customers for online data, so it is critical that the GSI's datasets are populated with further information in order to improve on the high-quality service to customers.

The GSI are currently working on a programme of information technology projects called DIGIT (Digital Information on Geology of Ireland in Total) to facilitate the delivery of the GSI's data to its customers over the Internet. DIGIT proposes to create a Web-based, virtual Geological Data Warehouse for the Republic of Ireland.

In addition, the GSI are about to undertake a major programme of geoscience research around a number of themes, such as climate change, human & animal health, pollution, coastal erosion and landslides, and it will need to put in place the right systems to capture and manage the data associated with this programme, especially 3D data. Geoscience contributes to several sectors of national life, for example, effective development of infrastructure, protection of vital groundwater resources, and effective management of fisheries, energy, shipping and ports.

The following are the major projects that make up the IT aspects of the DIGIT Programme, the Geoscience programme, plus a number of the other IT initiatives that need to be tackled that are not formally part of DIGIT.

#### 5.4.3.1 DIGIT Project 1 - Centrally Organised Network of Records (CONoR)

The CONoR project seeks to centralise a number of geological datasets onto a central Oracle database. At present the GSI's datasets are stored in multiple databases and maintained by multiple staff members. Centralising datasets onto one single Oracle database environment will help to standardise access to, and maintenance of, these datasets, as well as facilitating spatially-enabling the data. Seven datasets are planned to be completely migrated to the Oracle environment by end of 2005, including Boreholes, Bedrock Maps (plus the 'Map Catalogue'), Sea Bed Survey, Mineral Exploration Reports, Geotech (Reports / Boreholes / tests), Groundwater Wells and Mineral Localities. However, there are a large number of additional datasets (approximately 20) that need to be migrated to this database, and a programme of investment is needed to extract, cleanse and load these datasets to the new CONoR database.

#### 5.4.3.2 DIGIT Project 2 - Document Management System (DMS)

A large proportion of the GSI's data is not held in structured datasets, rather is held in document format. The GSI currently have a document repository with over 1.5 terabytes of reports, maps, multipage images, and large A0 sized maps in 24bit colour raster. These are only available internally at present and are available to the public only through the Customer

Centre where customers can view and buy maps and reports and take them away on CD. The GSI now has three main requirements around its document management system:

1. A large number of other documents need to be scanned and indexed into the document repository
2. They would like to make this repository available to its customers over the the public Internet.
3. They would also like to add a spatial dimension to these documents, so that they can be accessed through GIS.

#### **5.4.3.3 DIGIT Project 3 – Location-Aware Data (through the ArcIMS GIS engine)**

While the CONoR project seeks to create a structured database of geological data, the GSI need to ensure that this data can be accessed using a spatial or locational dimension. Many of the GSI's customers have a specific project in a specific location and they need to access the GSI's data in relation to that specific location. For this reason, the GSI have instituted a project to spatially-enable its data through the deployment of ArcIMS, a leading GIS application. As a first project all geotechnical data (borehole information in site investigations) will be spatially referenced and linked into ArcIMS. This data is used in planning controls and engineering projects in all the major cities, and for major public projects such as LUAS. However, this infrastructure is currently being developed internally only. The GSI now need to purchase the hardware, develop the software and test this infrastructure for online ordering, sale and delivery of spatial data.

#### **5.4.3.4 DIGIT Project 4 – eCommerce Website**

In order to sell its data and documents, the GSI needs to ensure that its website has an online shop. The current online shop only sells non-digital physical items, such as maps, books and other GSI publications. In addition, the current ecommerce engine behind this shop is no longer supported. Therefore a new ecommerce engine is needed for the GSI which is capable of selling both physical and more especially, digital data parcels.

#### **5.4.3.5 DIGIT Project 5 – Seabed data**

A large dataset of multibeam data, navigation data, reports etc. are currently available for sale through HEANET to academics through UCG in Galway. The GSI would like to make this data available for sale to everyone else over the Internet.

#### **5.4.3.6 3D Data Modelling Project**

Since the GSI have made good progress on capturing their 2 dimensional data through the CONoR project, they now have a requirement to begin capturing, modelling and visualising 3 dimensional data. A number of the GSI's projects for 2005-2007 need to capture 3D data, particularly the geothermal deep drilling project, and the protection of group ground water schemes project. A 3D data modelling project is needed to establish the systems, methodologies, protocols, data management regimes and best practice procedures to enable GSI to make the step change to delivery of 3D information as a routine output. A scoping

study is needed to examine the longer term options for the development of a full 3D Geology Framework.

#### **5.4.3.7 Internal GSI Projects**

In addition to the core DIGIT project, the GSI have a range of other internal projects which will need funding over the next 3 years. These include:

1. Support from a specialist GIS Analyst regarding Bedrock mapping, borehole and cross section plotting, and mineral exploration records. This work should be part of the new GIS Strategy's implementation programme.
2. A new metadata server is required for the GSI and DCMNR web server.
3. Microsoft Access assistance is required for GSI Sections waiting for CONoR.
4. The Disaster Recovery project that is in progress needs to be completed for the GSI, since they have major data stores and hence, significant data recovery issues.
5. The GSI web site needs to be redone using the DCMNR's CMS which will allow any user to submit data to "approvers " for inclusion in the site. Some time is needed from the Business Systems team.

The GSI would also like to upgrade their links to Leeson Lane and Adelaide Road as their Internet speed is significantly slower than Adelaide Road. In addition, with the rollout of Agresso and other Intranet applications they feel they need faster connections.

## **5.5 Seafood Sectors and Coastal Zone Management – Cecil Beamish**

Seafood Sectors and Coastal Zone Management have staff in a range of locations around the country – including Dublin, Cork, Tralee, Galway and Ballyshannon. They are very dependant on ICT and this dependence derives from a number of issues:

1. The geographical spread of the personnel of the Division around the ports of Ireland.
2. The large numbers of personnel within the Division.
3. A number of distinct legal requirements to provide fisheries statistics to the European Commission and to other groups.
4. The Division needs the capacity to be able to interact effectively with a number of other agencies that are partners in Food Safety and Fisheries Conservation.

This Division are working on two major projects which have a significant ICT element, Integrated Fisheries Information System (IFIS) and Coastal Zone Administration System (COZaS). IFIS provides a single centralised database containing all information pertinent to the administration and enforcement of Sea Fisheries. The objective of IFIS is to provide a single system which will integrate the related business processes of Licencing, Registration and Sea Fisheries Control online. They have also been working on a new Coastal Zone Administration System to contribute to the effective management of Departmental activities in the areas of Foreshore and Aquaculture Licencing. This application will provide integrated information on foreshore and aquaculture licence approval, inspection and enforcement and monitoring of coastal changes. In addition to these two main projects, they have a number of business processes where they see the potential for ICT to introduce innovation into how they carry out their work.

### **5.5.1 Internet Submission of fish sales and transport data**

They would like to potentially reengineer how they manage the capture of fish sale and transport data and see strong potential for the use of Internet technology to facilitate the gathering and automated storage of this data.

### **5.5.2 Internet publication of enforcement information**

They would like to make more frequent use of the DCMNR website to post information on enforcement policies and methods and the outcome of enforcement programs.

### **5.5.3 Database for capturing fishing logbook data**

They have a requirement for a database to capture fishing logbook data.

### **5.5.4 Mobile Field Inspections**

They are keen to explore the use of hand-held devices to permit the automated download and subsequent business processing of information gathered during field inspections.

### **5.5.5 Consultants Database**

They feel that a database of consultants used and consultancy projects commissioned by the Department would be useful, since the Department regularly gets Parliamentary Questions on what consultants are used and what was spent on each project etc.

## **5.6 Central Divisions – Sara White**

The Central Divisions are responsible for management of the delivery of the Department's corporate management and development programmes, strategic organisational and crosscutting priorities, whole of Government priorities and internal and external modernisation and change agendas. While Central Division have a leading role to play in the management of the cross-cutting issues discussed in Section 4 above, there are a number of additional issues affecting the Central Division that have a strong IT dependency.

### **5.6.1 Financial & Performance Management**

DCMNR has made significant progress on its MIF Programme with the implementation of the Agresso Financial Management System, which provides for improved financial management and devolved responsibility for budgetary and resource administration to the various Divisions. Although the core financial system is now in place, a number of follow-on 'mini'-projects need to be carried out to further improve the financial management process and the operation of Agresso. For example, a number of interfaces still need to be

completed – like Corepay, and an asset register for the Department needs to be purchased or developed. A number of the business Divisions feel that reporting from Agresso is not sufficient yet and that it is difficult to manage budgets.

In addition, now that the core functionality of the financial system is in place, there are a number of drivers for the move towards performance reporting and evidence-based policy making – 1. the Department’s commitments to implement the second phase of MIF on performance management, and 2. the DCMNR’s responsibility to become compliant with the National Statistical Strategy. Currently, external organisations provide much of the data that DCMNR needs to determine its policy – e.g. ComReg, SEI and BIM but a project is needed to determine what data is needed, whether we capture that data internally, what the data gaps are and what we need to measure? ICT has a strong role to play in helping to achieve a closer linking of resource allocation, output/outcome indicators and performance measurement. The Agresso system will provide the core financial reporting but the likelihood is that an alternative system or add-on to Agresso will be required to capture, manage and report on sectoral and non-financial Departmental performance. In 2007 the Estimates process will change in that the Department will be forced to declare what it expects the allocation of resources to achieve in terms of outcomes, and the present systems do not permit this type linkage.

## **5.6.2 Human Resources management**

The Department is an intensive user of internal, staff-related data. While a significant proportion of this data is stored and managed through the key Personnel Administration System (PAS) system, the Department has no one central location for information on staffing. A plethora of other applications, such as Corepay, Clockwise, Datamapper, and a variety of other homegrown Access databases and Excel spreadsheets are also used. Overall, there are over 7 separate repositories of staff-related data, and HR staff find that they need to revert to the paper personnel file regularly.

While PAS has records for all permanent staff, it does not allow for temporary staff members. Staff lists provides information on all staff including temporary / technical / industrial but it reduces these to numbers and provides no information on the individual. Access has a central list of all staff file numbers and supervisors but again, staff information is kept minimal. In conjunction with these information is stored in Datamapper, Clockwise and numerous spreadsheets and Word documents.

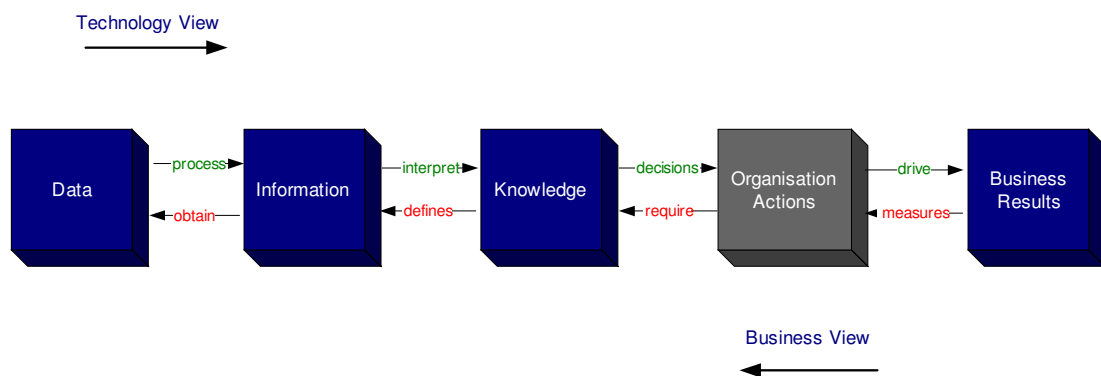
It is not possible to produce many of the Department’s everyday staffing reports without manually extracting the information. The reporting requirements of the Department are significant and the absence of a central system inhibits the accuracy and timeliness of many reports requested. Finally, no log of dealings with staff are kept apart from the personnel file. If a file goes missing or is in use by another member of staff, it is difficult for the Department to correctly and promptly address staff queries.

The Department of Finance has centrally selected Peoplesoft as the preferred HR software package for the public sector, and it has put a framework agreement in place with an external supplier for its purchase and implementation. While over half of the other government Departments have implemented Peoplesoft, the Department of Finance have not yet scheduled an implementation slot for DCMNR. As staff transfer into DCMNR, they are need to bring their staff record with them, and since the majority of government agencies now use Peoplesoft, it is not possible for DCMNR to import their electronic record into PAS. They will need to input manual data from Peoplesoft printouts.

As the decentralisation programme gathers pace, the current systems will become more and more unmanageable, since updating a person's data necessitates 7 separate database updates, and reporting is currently a manual process. While Peoplesoft has been identified for implementation, it is as yet unclear as to what percentage of HR requirements it will fulfill. There are very specific DCMNR requirements that other Departments do not have, like how Sea Fisheries Officers and Coast Guard staff are rostered and paid.

## 6 Information Architecture

This Section looks beyond business processes to the issue of information and data management within the Department. This is a key issue for the Department, since business processes cannot function effectively unless staff executing those business processes have the right knowledge to make decisions. ICT has a pivotal role to play in ensuring that data is captured, stored and accessible, so that it can be turned into information, which combined with experience leads to the knowledge to make the right business decisions and determine Departmental policy. There is a strong link between data, information, knowledge, business process and results, and the information architecture of the Department is discussed under these headings.



### 6.1 Data

IS Division has made strong progress on the implementation of the vision for a Common Data Model (CDM) for the Department. Since the previous ICT Strategy in 2003, significant work has been completed on defining both common and sectoral data models to support most of the Department’s externally-oriented systems. This Common Data Model provides a framework and structure to govern the creation, management and retrieval of datasets relevant to DCMNR. These datasets have been used to create pieces of common application functionality, called Common Components, such as Manage Customers, which can be used and re-used in multiple sectoral applications. There is however, still a significant amount of ongoing work to be carried out by the CDM team to define a more comprehensive set of common and sector-specific data models. The CDM team is currently working on the definition of a vessel data model and datastore for the Safe Sea Net / Corporate Vessel Register project.

Strong progress has also been made on the creation of a GIS technical infrastructure which allows for the capture and management of geospatial datasets relevant to the business of the Department. The Information Systems Division has recently agreed on a new GIS Strategy, which will govern how location-based datasets will be managed.

In addition to the CDM, the Department maintains a number of other datasets, such as personnel, Seafarers, finance and correspondence. Most of these datasets have been created through the deployment of off-the-shelf packages, however some have been developed bespoke by the Business Systems team.

### 6.1.1 Common Data Model

In the ICT Strategy carried out in late 2003, the vision for a Common Data Model was set forth. The CDM team has been put in place and a formal data modelling process defined. The CDM team works very closely with the Common Components application development team and the data models that have been developed have been based on the data requirements of the key new applications, such as IFIS, MAPS and CoZaS. As the development team requires access to new data, the Common Data Authority assesses the data requirements and seeks to compare those data requirements with the current entities in the CDM. There are now entities (and corresponding common application components) in place for:

- ❑ Customers
- ❑ Documents
- ❑ Payments
- ❑ File Notes

In addition, there are a number of other data models being worked on currently:

- ❑ Applications, Offers, Licenses (AOL)
- ❑ Consultations
- ❑ Cases
- ❑ Vessels

The benefits of this approach include:

- ❑ A single view of all of the Department's customers, allowing the Department to see all applications and consultations that a single customer may have made
- ❑ Ease of integration into the Public Services Broker, when this comes online

### 6.1.2 Sectoral Data Stores

The key sectoral datastores are

- ❑ IFIS – Sea Fishing Licenses, Sea Fishing Vessel Registration and Landings of Sea Fishing Vessels and Shellfish Gatherers
- ❑ COZaS – foreshore and aquaculture licences & leases, payments, inspections, coastal changes.
- ❑ MAPs – Prospecting licences
- ❑ Seafarers – fishing seafarers personal details and certifications, commercial seafarers' service records

There are currently 2 seafarer datastores, both managed outside of the CDM. One is a database to track non-fishing seafarers and their service records, and the other is a database to track fishing seafarers, their personal details and the certificates they hold. A common approach to the management of seafarer data should be addressed.

As the Strategy evolves more sector specific applications and data may be needed, but given that there is now a comprehensive set of common data stores and associated application

components to manage those datastores, the deployment of new sectoral applications will be significantly faster and more reliable than earlier applications.

### **6.1.3 GIS Data**

A GIS Strategy for the Department was completed in late 2004 and a number of the initiatives recommended in this Strategy are in the initial phases of being implemented.

The role of spatial data needs to be stressed in any new projects coming on stream in the Strategy, since location plays such an important part in many of the services the Department delivers, from the marine sector to the communications sector.

In addition, many of the Department's business Divisions (such as Engineering and PAD) are keen to continue close cooperation with the Department's GIS team, since they are heavy users of GIS services.

## **6.2 Information**

### **6.2.1 Document Management**

A key store of organisational information is its stock of documents, and a number of issues with how documents and files are stored, accessed and searched on the corporate network arose during the knowledge management project's Mobilisation phase. Specific issues around document management included:

- ❑ Addressable locations – currently the location of specific files can only be provided if the recipient of the file address has exactly the same drive mappings as the addressee, which is not the case for the vast majority of the Department's users
- ❑ Search – there is currently no way to search all documents stored on the corporate network
- ❑ Document storage – the Mobilisation phase of the KM project sought to introduce standards as to how files were stored by Divisions in network folders, however, there is still significant variation across the various business Divisions
- ❑ Collaboration and versioning – the Department has not yet implemented best practice technology around document collaboration and versioning
- ❑ Externally accessible documents – at present there is only very limited access to documents when users are external to the DCMNR LAN or WAN. A security token is required and users are limited to accessing only their own personal folders

Document management needs to be addressed as a follow on project to the Knowledge Management project, which is addressed in more detail in Section 6.3 below.

### **6.2.2 Intranet**

One of the key tools for the management of documents is the Departmental Intranet, which is widely regarded internally as an easy to use and intuitive 'gateway' to access the DCMNR's internal information and applications. It is both a source of information and documents, and an access mechanism for key internal applications. It also serves as the repository for more and more 'quick win' internal applications, such as Correspondence

Tracking, and the Departmental Org Chart. The Department has built a strong capability to create and deploy internal applications rapidly on the Intranet, and can respond promptly to business divisions' needs to capture data around specific processes.

### **6.2.3 Internet**

To facilitate improved management and control of the Department's websites, the Business Systems team have implemented content management technology, Microsoft Content Management Services. This technology provides for devolved responsibility for Departmental content approval, and ensures a common 'look and feel' to the Department's websites. Much of the information that the public wishes to access about the Department is provided through this channel.

### **6.2.4 Email**

A key information store for the Department is in its email infrastructure. Much of the key information that the Department exchanges with its various agencies goes through email. The Department does not have an official policy on how email needs to be handled, for example, does it constitute 'official' correspondence? There are also issues around email retention policy, particularly in an era when paper files are declining in significance. In addition, email is not always the most secure mechanism for the transmission of information. For these reasons, the Department should clarify a number of issues with the formal role of email as an information and communication system.

## **6.3 Knowledge**

Since the previous Strategy was completed, a major knowledge management (KM) initiative has been instituted in the Department, led by the Strategic Change and Modernisation Division. There are a number of phases to this project, with the development of a knowledge capture and management software application being just one of the threads. The phase currently under way is the Mobilisation phase, which broadly seeks to educate Divisions as to the knowledge, information and document handling behind the execution of their business processes. At the time of writing, over half of the Department has been addressed by the KM team and the feedback is that it has been very useful, particularly around the lessons learned on management of files & folders.

While the knowledge management project will help to capture some of the know-how around business processes and organisational 'memory', it is recognised that it can only go part of the way towards the capture of the experience built up in the Department. There are also concerns about how well people would adopt and use the new system, once the technology phase is delivered. These issues will have to be managed closely but overall, knowledge management should be an enduring Departmental project, and will need the continuing support of the IS Division.

## **6.4 Business Results**

The measurement of Departmental performance is a major issue facing DCMNR, and was discussed in Section 5.6 above. The Department's commitments to the MIF Programme and

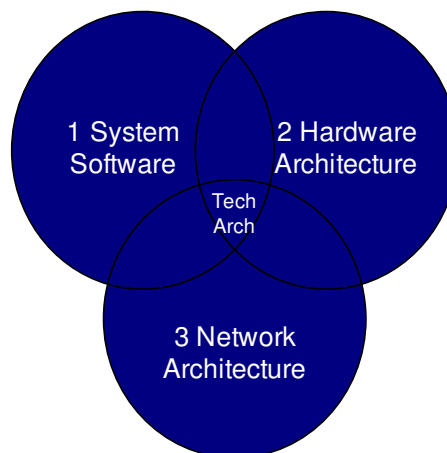
the National Statistical Strategy are necessitating a body of work around how the Department will drive change in how it measures performance (and develop its strategy moving forward). ICT, in the form of some sort of performance management application, will undoubtedly have a significant role to play in this.

A number of sectoral systems, such as IFIS and MAPS, sitting on the Common Data Model are now in use and a number of other systems, such as CoZAS and SSN/CVR, are in development. It will be difficult to report from and manipulate the data from these systems to feed into evidence-based policy making. A real time view of this data should not be necessary, and would probably cause performance issues for operational users. A system is needed to allow users to create their own reports and 'slice and dice' operational data.

In terms of reporting, the Department has recently began using a management reporting tool, Oracle Discoverer, to allow end users to access and manipulate data held in a number of the Department's datastores.

## 7 Technical Architecture

The previous ICT Strategy made a number of recommendations around the development of the Department's technical architecture, and these have largely been implemented. This Current State Assessment looks at the overall technical architecture under 3 headings:



### 7.1 System Software

The key building blocks for the Department's software technical architecture are all industry standard and include:

- ❑ Windows 2000 Server for server management
- ❑ Windows 2000 for the desktop OS
- ❑ Oracle 9i or 10g for storage of data and information related to strategic applications (spatial and non-spatial information) and certain package applications
- ❑ ESRI ArcGIS for GIS services
- ❑ Oracle 9iAS for enterprise application management and browser deployment
- ❑ Microsoft Exchange and Outlook for email and calendar services
- ❑ SQL Server for data storage and management for a variety of internal applications including staff travel and related information
- ❑ Microsoft NT Active directory / LDAP for user authentication and access
- ❑ Microsoft Content Management Server 2002 for management of the Intranet and a variety of Internet sites
- ❑ Oracle Discoverer for management reporting

These technologies are largely from three main enterprise software suppliers: Microsoft, Oracle and ESRI. While these suppliers often offer a very strong around technology and good support, they are not necessarily always best-of-breed for the deployment of specific applications. In addition, it has been suggested that while the Department has made significant investments in a number of key enterprise technology suppliers, it has not yet evaluated the applicability of open source technology to its IT operations yet. Although

there are justifiable concerns over the support and maintenance of many open source components, support services have improved significantly in the past year or two for key open source technologies, and may now be mature enough to consider as part of an enterprise architecture.

The key issue for the Department in terms of its software technical architecture is to ensure that the highest levels of security are enabled on all Departmental systems to prevent both external intruders and unauthorised internal users from damaging or stealing Departmental data. The Department has been stepping up its efforts on security since the previous ICT strategy, and now has two full-time resources working on a range of security issues. Given the significant risks associated with a lax approach to electronic security, it is key that the Department continue to invest in strong security around its systems.

A technical issue that a number of users expressed dissatisfaction with was the fact that passwords across the Department's systems and applications weren't synchronised, and a plethora of passwords needed to be remembered.

## 7.2 Hardware Architecture

In terms of the physical technical architecture, the Department has a large stock of PCs, laptops, servers and printers. It also maintains a range of other devices, such as handheld PDAs, mobile phones and cameras. The Department has a rolling replacement programme to ensure that its equipment is kept up to date, however, a number of users felt that their equipment was not renewed in a timely fashion, and that they are using out of date PCs.

The Department uses hosting services from the Local Government Computer Services Board (LGCSB). This strategy is effective in that the Department can avail of the specialist infrastructure and services provided by the LGCSB around the communications network, management of the databases and application servers, and security for its main Internet applications. The Department is guaranteed a quality level of performance and availability for its Internet infrastructure.

The key issue for the Department in terms of its physical infrastructure is how recoverable it is in the event of a disaster. To address this issue the Department instituted a Disaster Recovery project after the previous ICT Strategy. The goal of this project is the design and implementation of a Disaster Recovery Management programme and a Disaster Recovery Plan. This project is not yet completed and while it will produce a plan for disaster recovery, it is unlikely that physical restores of servers and routers etc. will take place. For this reason a significant body of physical testing work still needs to be done to ensure that the Department can rely on its business continuity capability.

## 7.3 Network Architecture

The Department has a wide range of locations which it has to provide networking capability to, and the Department is constantly renewing and upgrading various connections. However, a number of the business Divisions with remote offices felt that their connections back to the Dublin offices are still too slow to carry out large scale interaction, and therefore they tend to use local file stores, rather than the central file servers. In some cases, network access and speed issues cause problems accessing corporate applications, such as Agresso.

In terms of support for remote working, a number of initiatives have been successfully delivered over the past 2-3 years. Firstly, the key technology deployed by the Department is

Outlook Web Access (OWA), which allows Departmental staff to connect to their Outlook services (email, calendar, tasks etc.) from any external location through a web browser.

A big issue for a range of the Department's users is how email can be managed better. A significant portion of Departmental work involves responding to and managing a heavy volume of email. Staff feel that the current systems for remote access to email are not user-friendly enough for them to be able to process email effectively while away from the office. There was considerable interest in devices smaller than laptops to process email, such as Blackberrys, although staff recognise that there is a significant cost associated with this type of access.

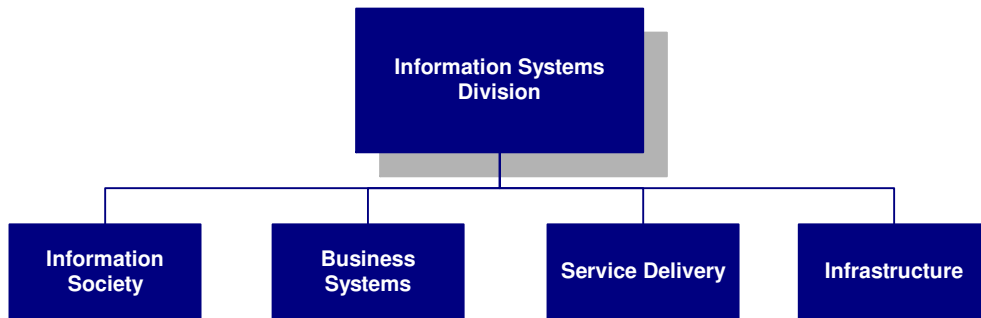
In addition to the key OWA service, the Department makes available ISDN lines for remote workers to connect onto the Department's network, but only on a case-by-case basis where a business case is made for its provision. VPN connections are then used to ensure security over these ISDN lines.

Finally, users can access documents inside the Departmental firewalls, with access to users' personal folders through a secure login with a security token. However, this does not extend to other documents on any other network servers. A number of users were keen to be able to access shared Divisional files while on the road. The drive to provide better remote access to the Department's systems must be balanced with the need to ensure that those access mechanisms are secure, and that the Department's data and documents are not compromised.

A number of users either did not know about the facilities for remote access or struggled with making them work, and the feeling was that some training or communication on the Department's facilities and policies around remote access would be widely welcomed across the Department.

## 8 IS Organisation

The IS Division undertook a major restructuring in May 2005, and there are now 4 main Sections, reflecting the major workstreams of the Division.



Business Systems deliver a mixture of software development, and support and maintenance for a wide range of primarily internal applications. They are responsible for development of the Intranet and for the support of the Department's various websites. They contribute to key internal business projects, such as the Financial System implementation and the Knowledge Management initiative.

The Information Society Section deliver major software development projects, particularly for the sectoral systems projects, such as IFIS, COZaS and SSN / CVR. They are also responsible for the maintenance and support of a number of applications, such as MAPs and the Fishing Seafarer's Database. They also support the provision of GIS technology and services to the wider Department.

Service Delivery are responsible for the provision of IT support to the Business Divisions through the Helpdesk, and they manage the relationship with the external service provider for the Helpdesk. In addition they are responsible for the Programme Management Office and for all procurement related activities.

Infrastructure are responsible for the planning and maintenance of the three elements of the technical architecture- system software, physical hardware and networks. They are responsible for ensuring security across the systems in the Department. They also trial new technologies to evaluate their applicability for deployment in the Department.

A dedicated Test team has been in place in the IS Division since early 2004, and this team has provided specialist testing services into a number of projects since its inception. This team has proven a valuable addition to the Division, since it has helped to improve the quality of software before it reaches the users for user acceptance testing (UAT). This team has also been valuable because members of the Test team have provided a significant body of training and assistance to users in approaches to testing, as well as with specific knowledge of the new applications in UAT.

### 8.1 Staffing

The total full time staffing complement for ISD is 21. The following table gives a breakdown of these resources.

Grade / Role	Number
PO / Head of Function	1
APO / Senior Systems Analyst	3.5
HEO / Systems Analyst	9.5
EO / Junior Systems Analyst	1
Staff Officer	1
Clerical Officer	2
Executive Engineer	1
<b>Total</b>	<b>19</b>

In addition, this complement is supported by a number of short and long-term contract personnel supporting a number of outsourced activities. The following table gives a breakdown of these resources.

Role	Number
Programme Manager	1
Systems Analyst	2
Technical Architect	1
Java Programmer	3
Analyst / Programmer	4
Software Quality Assurance	3
Oracle DBA	4
ESRI GIS	1
Helpdesk and Service Delivery	12
Technical Infrastructure	1
Security Infrastructure	1
<b>Total</b>	<b>33</b>

Some principles have been established within DCMNR in relation to staffing for ICT service delivery. These are that ISD will not attempt to deliver all IS services from the internal staff complement. Instead, ISD will maintain key resources in each discipline required and procure the required delivery capacity from the marketplace. This ensures that ISD personnel develop the required skills and knowledge to keep abreast of their area of expertise, while drawing the latest required skills from the marketplace. This change of approach from outsourcing of software projects towards carrying out development and support projects internally has been a move which has been acknowledged as giving the Department more control and flexibility over the deliverables of the projects. In addition, the Division engages in some specific outsourced contracts for a number of projects and services, such as the IT Helpdesk.

A number of issues were raised around the structures and processes within the IS Division, and these are discussed below.

## **8.2 Approaches to Development**

There are broadly two main styles of software development within the Department, and they are split across the two main development units within ISD, the Information Society Unit and the Business Systems Unit. Within the Information Society Unit, the style of development has moved away from the more traditional waterfall-method style of development to a hybrid of a more rapid and user-focussed development methodology, Dynamic Systems Design Methodology (DSDM). This methodology provides a structure to include users more actively in the design of the system, with one of the key tenets of the methodology being the importance of prototyping to allow users to see application functionality earlier. Reusability of code is a major design goal for the Information Society development team since they have made a major investment in a set of Common Components. While earlier projects were hampered by slow development cycles due to the complexity of building and deploying these common components, the comprehensive set of common components now built should make the development of the next generation of sectoral systems significantly faster.

The Business Systems Unit makes use of a similar prototype-focused application development methodology, and develops primarily internal, bespoke systems that are deployed through the Intranet. Their style of development allows for rapid development and deployment of internal systems, and ensures that if users have a high priority need for an internal application, this can be created and rolled out quickly.

While there is a good balance between the structure associated with the enterprise architecture used by the Information Society team, and the rapid application development capability of the Business Systems team, there is a perceived lack of shared software components, data and methodology across the two teams, which can lead to inconsistent data across the two areas. For example, the Information Society team is responsible for fishing seafarers, whereas the Business Systems team is responsible for a commercial seafarers datastore. Also, as regards communication with the Department's customers, the Business Systems team maintains a Correspondence Tracking system, whereas the Information Society team maintain a number of common components in this area, like Consultations and Document Handling.

## **8.3 Service Delivery**

Overall, the perception around the Department is that the quality of service received from the ISD Helpdesk is excellent. There were however a number of concerns raised on IT service delivery issues.

Firstly, the IRCG is moving towards decentralisation to Drogheda for HQ staff and closure of the Marine Rescue Co-ordination Centre (MRCC) in Dublin. When this comes about there will be 2 RCCs, at Malin Head and Valentia, and a HQ in Drogheda. A fully integrated communications/computer system will be required to operate in this remote environment especially when dealing with major air/sea emergencies. A present concern exists about IRCG systems vulnerability as there is no 24/7 ISD support for Malin Head, Dublin and Valentia RCCs (Rescue Coordination Centres). A serious problem commencing on a Friday

evening may not receive attention until the following Monday morning. If a system went down it could mean going back to pen and paper.

Secondly, there was a perception that ISD could provide significantly better support to events. One of the Business Divisions recently organised an international conference and felt that they could have received stronger support from the ISD with relation to networks, backups and Internet access etc.

Thirdly, although Divisions that are away from HQ are very happy with the level of IT support services they get from ISD, they have stressed that they want the local presence from the Helpdesk maintained in their local offices.

## **8.4 Change Management & Training**

Although there is greater proficiency amongst all Departmental staff in last 12 months thanks largely to ECDL and the knowledge management projects, there is a perception however that ISD assume a common minimum level of competence with ICT, and that communications and policy statements in relation to technology from ISD could be easier to understand. There is still a need for a continuous training programme and concentrated effort specifically on new systems, and it has been suggested that more use should be made of one-to-one training and follow ups.

In addition, there is a perception that IT projects, as a Central service, are ‘rolled out’ to the Business Units, sometimes without necessarily having their full buy-in. ISD should seek to ensure that business Divisions drive any initiatives that have an ICT element, rather than ISD leading these projects. Part of the issue here is about communication and dialogue. Divisional staff must have a good understanding of the benefits of leaving the current ways of doing their jobs. If these questions are not addressed, resistance to the change naturally develops across the Department and creates risk to the implementation and sustainability of the ICT change initiatives. More concentrated efforts and structures around the change management process can help to reduce these levels of resistance.

In the past the effort involved in transitioning from old systems to new systems was underestimated, and staff felt that they couldn’t get the information they needed out of the newer systems.

## 9 Key Risks

There are a number of key risks facing the Department with relation to ICT over the next 3 years.

### 9.1 Decentralisation

Clearly, the decentralisation issue will pose a number of major issues for the Department over the next 3-5 years. A number of these were discussed in Section 3.4, however these can be summarised under 2 main headings:

- ❑ Relocating the current ICT infrastructure is a risk to business continuity
- ❑ The difficulty of maintaining the correct balance of skilled personnel within ISD is a risk to the delivery of ICT services

In addition to the risks to ISD there are a range of risks for the business Divisions, with the key issue being the significant staff churn, which will mean a loss of experience and potentially a reduced quality of public services.

### 9.2 Disaster Recovery

The Disaster Recovery project has been made slow progress but there has as yet been relatively few tests of the recoverability of the Department's servers. Since the recovery process has not yet been fully tested, the Department cannot be certain that it can recover its full infrastructure completely, and this poses a significant risk for the Department.

### 9.3 Business Commitment to Innovation

While a number of business Divisions have demonstrated strong commitments to improving the quality of the service they provide through better use of technology, a number of Divisions are slower to embrace the business improvements that ICT can enable. A major risk for the implementation of the ICT strategy therefore, is the resistance from the Divisions to the business changes that technology can enable. More concentrated efforts and structures around the change management process can help to reduce these levels of resistance.

### 9.4 System Security

As the Department's local and wide area networks expand to take in new locations, and the number of the DCMNR's public services delivered through electronic means increases, the risk of unauthorised attacks on Departmental systems will increase significantly. In order to mitigate this risk, the Department has already significantly increased its investment and manpower in ensuring its systems are secure.

## 10 Conclusions & the key issues

The Department has made excellent progress on the implementation of its previous ICT Strategy from October 2003. There is a very strong basic ICT infrastructure in place – there is a PC on every desk and there are fast and resilient local and wide area Departmental networks in place. Good progress has been made on the delivery of key sectoral applications, such as IFIS, the Coastal Zone Administration system and MAPS, despite some initial difficulties. The Division has significantly improved its use of project management and software development methodologies, and now has a reliable and structured approach to developing new systems. There is a good Intranet in place, which serves as a gateway for Departmental staff to access key internal information and systems. There is a responsive Helpdesk in place, and overall, staff around the Department are very satisfied with the level of service they receive from the IS Division.

The Department should now look to maximise its investment in technology, software development capability, and IS processes to help drive innovation through the Department's business processes. While some Divisions are keen to invest in new technology and the associated new ways of working, other Divisions can be more resistant to the introduction of technology innovation into business processes. In the past, there has been a perception that technology has been 'pushed' onto business divisions, but as the Public Sector Modernisation programme gathers momentum, business Divisions will need to recognise the improved ways of working that ICT can facilitate, and ISD will need to provide better support for business Divisions as they adopt new processes and systems.

The next phase of the project is the Strategy Development stage, and this will focus on the issues identified in the Analysis phase as key for the Department's future by the project's management and also senior management from the business Divisions. The key issues suggested for examination in the Strategy Development phase are:

- ❑ Seeking opportunities for innovation around the key cross-cutting business processes of
  - Corporate Governance & Regulation
  - Policy Definition & Measurement
  - The Democratic Process
- ❑ Defining the priorities for investment in ICT in specific Business Divisions, especially
  - MSD & Coast Guard
  - GSI
  - PAD
  - HR
  - Financial Management
- ❑ Identifying specific business processes where ICT can help to facilitate business change
- ❑ Identifying areas where the Department's Information and Technical Architecture need to be further developed