

Implementing the Information Society:

A Framework for Action



**First report of the Inter-Departmental Implementation Group
on the Information Society**

December 1998

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Executive Summary

1. The Information Society represents a phenomenal **challenge and opportunity** for Ireland. If we are to maintain and build on our economic success of recent years, and ensure that all of society can participate in the Information Society, it is vital that we become both an early mover and a global player in the Information Society.
2. The **pace of development** in this new area is unprecedented and cannot be overstated. Many of the critical policy decisions will be made, and much of the shape of the future global Information Society will be determined, over the next one or two years.
3. The **role of Government** in facilitating the Information Society in Ireland, and providing the necessary political leadership, will be absolutely critical in successfully defining Ireland's position in that global Information Society. Key decisions and resource allocations are needed now to ensure that the potential benefits are maximised.
4. This is the **first report** of the Inter-Departmental Implementation Group on the Information Society. It contains two parts: a **proposed Action Plan**, and a Commentary on that plan. The Group recommends that the Government should adopt the proposed Action Plan and assign the various tasks which it contains. The recent report of the Advisory Committee on Telecommunications and the National Competitiveness Council's "Statement on Telecommunications: a Key Factor in Electronic Commerce and Competitiveness" broadly fit in with the overall approach of the Group.
5. The proposed Action Plan covers a number of broad areas: **telecommunications infrastructure, development of electronic commerce and business opportunities, enabling measures, legislative measures, ICTs and delivery of public services, support areas where action is needed, and taking the work forward**. The objective of the Action Plan is to present a comprehensive strategic plan embracing all tasks which need to be addressed. Consequently, it includes a combination of completely new tasks and tasks which have already been identified as necessary and where, in some instances, action has already commenced.
6. In the area of **telecommunications infrastructure**, the Group urges rapid action in developing proposals to attract global operators into Ireland and to secure adequate investment to develop international connectivity. It also makes recommendations in the areas of submarine cable licensing, the powers of the Office of the Director of Telecommunications Regulation (ODTR) and funding nation-wide broadband roll-out.
7. There is a need for measures in the context of **development of electronic commerce and business opportunities**. In this section, the group notes the work on establishment of a Digital Park and recommends that this be taken forward rapidly. It also recommends the preparation of a comprehensive action programme by the Department of Enterprise, Trade and Employment and the industrial development agencies to assist companies in this area.
8. The Group feels that a range of issues needs to be addressed in order to improve access to the Information Society, and to contribute to the development of secure and reliable applications. These are considered under the heading **enabling measures**, and include addressing social exclusion insofar as it inhibits access to the Information Society, seeking to reduce participation costs, creating certification authorities and issuing digital certificates, developing electronic interfaces for public services, and providing electronic payment mechanisms.

9. The sections on **legislative measures** cover the areas where legislation is needed to give effect to some of the proposed measures concerning telecommunications infrastructure, and to help create the necessary legal framework for secure and reliable electronic messaging and electronic commerce. The topics covered include digital signatures and encryption, electronic evidence in Courts, data protection, copyright, the Telecom IPO, telecommunications infrastructure issues, telecommunications regulation, Digital TV, taxation and consumer protection.

10. A range of measures under three parallel strands is proposed under **Information and Communication Technologies (ICTs) and delivery of public services**. The Group's recommendations under the first strand cover increased use of websites and related technology for information dissemination. Under strand two, the Group proposes a range of flagship pilot projects which would incorporate features such as an electronic access interface, electronic filing of returns, electronic payments etc. Strand three requires an in-depth examination of the issues arising in order to re-engineer public services in a citizen-centric manner.

11. Under **support areas where action is needed**, the Group examines measures to raise awareness of the Information Society, education issues including extending learning beyond the formal education process, means to assist the elderly and disabled people and the need for greater market monitoring, benchmarking performance and research and development.

12. The sections on **taking the work forward** are concerned with structures within the civil service and resource allocation. Clarification of the role of the Implementation Group is recommended, as is establishment of a policy development team in the Department of the Taoiseach, creation of a special fund to assist with key initiatives and allocation of additional resources within Departments. Greater involvement in international debate and improved links with the business sector and the Information Society Commission are also proposed.

13. The proposed Action Plan presents precise tasks with timeframes, resource requirements and responsibility allocations, where appropriate.

Implementing the Information Society: A Framework for Action

Introduction

I.1. We are at the early stages of a new industrial revolution - one which will have more dramatic implications than any other single industrial development in the history of the State. New structures and business models are evolving but, unlike in previous times, these developments are taking place at breakneck speed. In order to reap the benefits of these developments, new and flexible decision-making processes are needed. The pace of change is such that rapid response is needed to ensure that the benefits of the Information Society can be availed of by Irish citizens and Irish businesses, thus contributing to the ongoing improvement of Ireland's society and economy.

I.2. In the new Information Age, the countries that are first to adapt and change are the countries that will reap the rewards. The Government has a small window of opportunity to bring about the changes needed to position Ireland as a leading country in this Information Age. Failure to take action could mean that much of the strong economic performance of recent years could be lost, particularly as international companies who have chosen to locate activities in Ireland would be likely to move to other, more advanced, countries. Failure to act would also mean missing out on the opportunities to improve the social inclusion process through the use of information and communication technologies.

I.3. Decisive action must be taken early and this must be followed up in a sustained manner over the critical period of the next eighteen months to two years to ensure that the opportunities now open to us are not lost.

I.4. The Inter-Departmental Implementation Group on the Information Society was set up to progress the implementation of the Information Society agenda, including the recommendations in the Information Society Commission's report. The tasks assigned to the Group include the making of proposals to Government concerning the development of electronic commerce and electronic government, appropriate institutional arrangements to facilitate implementation of the Information Society, and the implications of a programme to enable full electronic government within, say, three years and the resource implications arising. This document is the first report of the Group.

I.5. The Group has met in full on a number of occasions. In addition, it established three sub-groups to examine different areas (infrastructure, electronic commerce and electronic government) in more detail. Membership of the Group is shown in Annex 1.

I.6. The Group has concluded that, in order to prepare Ireland for the Information Society and to take full advantage of the opportunities available to Ireland, a comprehensive policy framework is required. This is confirmed by the recent report of the Advisory Committee on Telecommunications and the National Competitiveness Council's Statement on Telecommunications: a Key Factor in Electronic Commerce and Competitiveness. The framework should identify all areas where action is needed, assign clear responsibility for the tasks to be undertaken and indicate the resources and structures necessary for these tasks and the deadlines by which they should be completed.

I.7. Consequently, this report proposes such a comprehensive policy framework, in the form of a proposed Action Plan (Part A) and a Commentary on that plan (Part B). The proposed Action Plan is capable of being used as a standalone document if necessary.

I.8. The proposed Action Plan contains a list of specific tasks, and indicates the appropriate departments and agencies, the timeframe and the additional resources needed, where relevant. It is acknowledged that work is already under way in the relevant Departments and agencies regarding many of the individual tasks identified in the plan.

I.9. The Commentary provides background to the various items presented in the proposed Action Plan. It is based on an examination of the range of issues relevant to the creation of a modern society in the front-line of the Information Society, covering subjects such as improving telecommunications infrastructure, measures to facilitate access, mechanisms to support secure electronic transactions and supporting legislative provisions.

PART A

PROPOSED ACTION PLAN

A.1. The proposed Action Plan outlined below sets out the areas where the Implementation Group considers that action is needed. It also indicates the departments or bodies which the Group considers appropriate in respect of each action point. Finally, where relevant, it indicates a target date for completion of the action points and the resource allocations which the Group considers are needed in order to carry out the action points. For each action point, the relevant sections of the Commentary are indicated in brackets.

A.2. In preparing this proposed Action Plan, the Group has sought to balance the need to make rapid progress with allocating sufficient time to allow specific tasks to be completed in a manner which fits neatly with other elements of the plan. In addition, in the context of use of information and communication technologies (ICTs) in the public service, it recognises that the three strands of work identified in the report can be advanced in parallel, even though they will not necessarily come to completion at the same time. The Group is also conscious of the valuable psychological significance of the closeness of the year 2000, and the start of a new millennium. In this context, it has, in particular, sought to identify tasks which should be capable of completion by then.

A.3. Against this background, it should also be noted that, where resource allocations are indicated, the timescales indicated are calculated on the assumption that those resources will be allocated. The need to allocate sufficient resources will be a deciding factor if this report is to be implemented in a manner which ensures that the benefits of the Information Society accrue.

Telecommunications Infrastructure

International connectivity.

A.4. The task force reporting to the Minister for Public Enterprise should negotiate a memorandum of understanding with a global connectivity provider as soon as possible, with a view to agreement regarding provision of connectivity being reached in the first half of 1999. In parallel, the Department of Enterprise, Trade and Employment, in conjunction with other relevant Departments and agencies, should proceed with negotiations on the formation of a consortium to run the relevant infrastructure. The Department of Public Enterprise should also give consideration to what other measures, if any, are needed in this area. (Paragraph B.11).

Submarine cable licencing.

A.5. Clear procedures should be drawn up by the Department of the Marine and Natural Resources, in consultation with the Department of Public Enterprise, by February 1999. (Paragraph B.12)

Regulatory issues.

A.6. A Sub-Group of the Implementation Group should be established immediately to determine how the actions of the ODTR, the Competition Authority, the IRTC and the new entity with responsibility for digital television transmission should be co-ordinated with regard to regulating the new, converged environment. This Sub-Group should also consider what legislative provisions, if any, are required to strengthen the promotion of competition in this sector. The Sub-Group should consult with the agencies concerned as appropriate. The Sub-Group should report its findings by February 1999. (Paragraphs B.13 & B.14)

Nation-wide broadband network.

A.7. The Department of Public Enterprise, together with Forfás, should prepare estimates of further funding requirements by March 1999. In addition, they should finalise a comprehensive position regarding possible negotiation of future EU funding under the Agenda 2000 negotiations. (Paragraph B.15)

North-South Digital Corridor.

A.8. Discussions between officials from both sides should be progressed as quickly as possible. (Paragraph B.16).

Local Access.

A.9. The Department of Public Enterprise should monitor progress in this area with the Office of the Director of Telecommunications Regulation, with a view to introducing measures to unbundle the local loop and provide wireless local loop access as quickly as possible. (Paragraph B.17).

Telecom Eireann IPO and divestiture of Cablelink.

A.10. The Department of Public Enterprise should continue with its preparations in these areas, with a view to divestiture of Cablelink being completed by March 1999 and the Telecom Eireann IPO taking place by July 1999. (Paragraph B.18)

Communications Infrastructure Group.

A.11. The Department of Public Enterprise should finalise its plans to establish an industry infrastructure group by January 1999. (Paragraph B.19)

Development of Electronic Commerce and Business Opportunities (Paragraphs B.20 - B.23)

Digital Park.

A.12. Work on identification of a satisfactory second site, in the Dublin Docklands area, should be brought to completion as quickly as possible by IDA Ireland. A report setting out the relevant requirements to get the west Dublin Digital Park site up and running should be prepared by the Department of Enterprise, Trade and Employment, in conjunction with its agencies and the Department of Public Enterprise, with a view to a submission being made to Government by January 1999. (Paragraph B.20)

Business Development Action Programme.

A.13. The Department of Enterprise, Trade and Employment and the industrial development agencies should finalise their proposed action programme for the development of electronic commerce and associated business and employment opportunities both in the area of foreign direct investment and indigenous company development by January 1999. (Paragraphs B.21 & B.22)

Entrepreneurship.

A.14. The Department of Enterprise, Trade and Employment should consider measures to develop the entrepreneurship culture in the context of the work of the development agencies and preparation of the action programme referred to above. (Paragraph B.23)

Enabling Measures. (Paragraphs B.24 - B.46)

Access.

A.15. The Department of the Environment and Local Government should ensure that PCs, ISDN connections and internet access are installed in every public library. This work should commence immediately, and should include a phased implementation plan commencing in 1999. Funding of £6 million to cover the capital cost involved should be allocated. (Paragraph B.28)

A.16. The Department of Social, Community and Family Affairs should expand its programme of providing similar facilities to the community and voluntary organisations during 1999. (paragraph B.29)

A.17. The Implementation Group should give further consideration to additional means of extending access to those who do not have PC/internet access at present, including examining the scope for use of dedicated kiosks and other nation-wide networks such as schools, post offices etc. The Group should also explore the potential offered in this context by the development of Digital TV services. These issues should be covered in the Group's next report. (Paragraphs B.30 & B.31)

A.18. The Implementation Group should also explore further the scope for reducing computer acquisition costs. This should also be covered in its next report. (Paragraphs B.31)

Internet access costs.

A.19. The Department of Public Enterprise should continue to encourage lower internet access and usage costs from ISPs and telecommunications operators. (Paragraph B.32)

"E-mail for all".

A.20. The Information Society Commission should be invited to conclude its assessment of this topic and submit a report to the Implementation Group by March 1999. The Implementation Group should examine this report and present proposals by June 1999. (Paragraph B.33)

Certification authorities and digital certificates.

A.21. The Department of Public Enterprise, in conjunction with other departments developing flagship projects aimed at electronic delivery of public services, should continue work in identifying potentially suitable certification authorities, with a view to at least one such entity being established by June 1999. In parallel, the Implementation Group should consider what, if any, State body should be responsible for the accreditation of certification authorities. The Department of Public Enterprise should finalise legislative proposals concerning a system for recognition of certificates issued by foreign certification authorities by June 1999. (Paragraph B.34 & B.35)

Protection of rights and data.

A.22. The Department of Enterprise, Trade and Employment should monitor international developments in this area, and should consider the preparation of proposals which would ensure that international legal obligations are met while accommodating self-regulatory approaches to implementation. (Paragraph B. 36)

Public service access interfaces.

A.23. The Department of Social, Community and Family Affairs, in conjunction with other concerned departments and agencies, should proceed with the re-launch and re-positioning of the Integrated Social Services Strategy as a citizen-centred initiative to facilitate integrated access to public services, building on the legislative framework introduced this year for the Personal Public Services Number and the Public Services Card. The objective should be to develop a common access interface for use by citizens in availing of public services and accessing information. The strategy should incorporate satisfactory certification and encryption techniques to permit secure electronic transactions between the citizen and the public service. A progress report should be prepared by June 1999. (Paragraph B.38)

A.24. The Departments of Health and Children and Social, Community and Family Affairs should ensure that these concepts are fully incorporated into plans for reform of the General Register Office. (Paragraph B.39)

A.25. The Department of Enterprise, Trade and Employment should ensure that similar arrangements are put in place for businesses, in the context of development of the Companies Registration Office. (Paragraph B.40)

A.26. The Implementation Group should establish a sub-group to co-ordinate the various activities taking place in this area, with a view to ensuring the maximum possible common interface, and full compatibility with any digital certification requirements needed for secure electronic communication. (Paragraphs B.37 - B41)

Electronic payment mechanisms.

A.27. Following on the seminar held on 27 November 1998, the financial institutions should be requested to prepare proposals for appropriate systems to facilitate further deployment of electronic payments in the economy. Under the auspices of the Implementation Group, further consultations should be held with the various interest groups with a view to agreeing mechanisms to take work forward rapidly in this area. These consultations should be completed by January 1999, with a view to mechanisms to progress this area of work, involving representatives of the various interest groups, being in place by March 1999. (Paragraphs B.42 - B.45)

Legislative and Regulatory Measures. (Paragraphs B.47 - B.64)

Digital signatures and encryption.

A.28. Legislation to facilitate electronic transactions, covering the establishment of certification authorities and giving legal recognition to electronic signatures, is being drafted by the Department of Public Enterprise. Draft Heads of Bill should be available before March 1999 with a view to legislation being adopted during 1999. (Paragraph B.48)

Electronic evidence in Courts.

A.29. The Department of Justice, Equality and Law Reform and the Department of Public Enterprise, should investigate the scope for early enactment of legislation on this topic, pending its inclusion in more general provisions on hearsay. Additional staff resources should be allocated with a view to legislative proposals being prepared during 1999. (Paragraph B.49)

Data protection.

A.30. Measures to implement the EU Directive were to be in place by 24 October 1998. Accordingly, swift enactment is required. The Department of Enterprise, Trade and Employment should also give consideration to the extent to which appropriate self-regulation measures can be accommodated under the relevant legislation. (Paragraphs B.50 & B.51)

Copyright.

A.31. Draft legislation has been prepared by the Department of Enterprise, Trade and Employment. This legislation should be enacted at the earliest possible opportunity. (Paragraph B.52)

Telecom Eireann IPO.

A.32. The Department of Public Enterprise should finalise proposals for legislation, to be published by end 1998 and with a view to enactment by March 1999. (Paragraph B.53)

Telecommunications infrastructure installation/access.

A.33. Proposals for legislation concerning the installation of telecommunications infrastructure, governing issues such as rights of way for telecommunications operators to install access, sharing of infrastructure between operators, etc. in this regard have been prepared by the Department of Public Enterprise and were presented to Government in July 1998. Draft legislation should be published by January 1999 with a view to enactment by March 1999. (Paragraph B.54)

Telecommunications regulation.

A.34. Following the work of the Sub-Group referred to above, the Department of Public Enterprise should prepare a paper on Telecommunications Regulatory Policy as a prelude to preparation of legislation to address the powers of the ODTR and that Office's role in relation to competition, if appropriate. This paper should be prepared by April 1999. (Paragraph B.55)

Digital TV.

A.35. The Department of the Arts, Heritage, Gaeltacht and the Islands should finalise its work on the drafting of legislation to give effect to the Government decisions in the area of digital terrestrial television, including the expanded role envisaged for the IRTC, with a view to enactment by mid 1999. The process of identifying an equity partner for RTE to create an entity to operate the transmission infrastructure should also be completed by then. (Paragraphs B.56 - B.58)

Taxation.

A.36. The Department of Finance, the Office of the Revenue Commissioners and the Department of Enterprise, Trade and Employment should, as appropriate, seek to ensure that Ireland's views are reflected in any international developments and ensure that any agreements made at EU, OECD, etc. are transposed into national law as quickly as possible. (Paragraphs B.59 - B.62)

Consumer protection.

A.37. The Department of Enterprise, Trade and Employment and the Office of the Director of Consumer Affairs should seek to ensure that Ireland's views are reflected in any international developments in this area and ensure that any necessary amendments to national law are made as quickly as possible. (Paragraphs B.63 & B.64)

ICTs and Delivery of Public Services (paragraphs B.65 - B.101)

Strand one.

A.38. All Departments and agencies should ensure that they operate websites which provide up to date information, forms, leaflets, etc., together with useful links to other sites. New material should be made available electronically via websites at the same time as it is provided by more traditional means. E-mail should be incorporated into the normal range of contact methods and departments and agencies should implement arrangements for rapid response to e-mail queries. "Push" technologies should be used as much as possible to disseminate information. Service-wide guidelines and practices should be adopted concerning content format and presentation etc. for websites. CMOD should establish an Inter-departmental group to deal with these issues. Government policy in relation to provision of services in the Irish language should be taken into account in this context. Quality standards for public service websites should be incorporated into the Quality Customer Service component of the Strategic Management Initiative. Each Department should carry out an audit regarding the requirements of this action point by March 1999, and the results of this audit should be included in the Department's annual report. (Paragraphs B.76, B.77 & B.79)

A.39. Databases which would present public service information electronically in a client-centred manner - one dealing with citizens, one for business needs - should be commissioned. Additional funding of £500,000 should be allocated for each of these tasks. The Department of Social, Community and Family affairs should lead on the citizen database, with the Department of Enterprise, Trade and Employment leading on the business database. Both databases should be up and running by end 1999. The departments concerned should also prepare plans for the ongoing maintenance of the data in these projects. (Paragraph B.78)

A.40. Public servants need to educate themselves on the benefits of ICTs and to keep themselves abreast of developments in this area and how they can be integrated into the business area. CMOD already presents courses which cover many of these requirements and these could be further enhanced and developed. CMOD should prepare proposals in this regard by February 1999, with a view to implementation during 1999. (Paragraph B.80)

Strand two.

A.41. All new ICT-based service delivery projects must comply with the principles to be implemented under other action points in this plan concerning electronic delivery, electronic payments, electronic exchange methods where data is communicated between departments, and the use of digital certificate concepts. Compliance with these principles will be taken into account in the context of resource allocation. (Paragraphs B.81 & B.82)

A.42. Flagship pilot projects aimed at establishing reliable electronic access interfaces should be developed during 1999 by the Department of Social, Community and Family Affairs (in the context of the Personal Public Service Number/Public Service Card initiative) the Department of Enterprise, Trade and Employment (for the Company Registration Office) and the Land Registry (for an electronic service for folio access). Progress reports should be made quarterly, starting in March 1999. (Paragraph B.85)

A.43. The following pilot projects common across departments should be developed: a secure intranet to facilitate safe electronic communication between departments; provision of public procurement information electronically and further development of a virtual private telephone network (possibly in conjunction with the intranet mentioned above). The Department of Finance (CMOD) should lead on these projects, and progress reports should be made quarterly, starting in March 1999. (Paragraphs B.86, B.87 & B.89)

A.44. Electronic payment systems should be developed further within the public service, and clients need to be encouraged to take up electronic payment options. This should be considered in parallel with the work referred to above on mechanisms to take forward electronic payment systems in general. (Paragraph B.88)

A.45. A number of individual departments should introduce flagship pilot projects. These projects, which are indicated in the following paragraphs, should be developed rapidly. Where they do not already exist, development plans should be prepared by January 1999, with a view to the pilot projects being launched during 1999. Quarterly progress reports should be made, beginning in March 1999. The projects should be compatible with the client interface and digital certificate developments described above. (Paragraphs B.90 - B.100)

A.46. The Office of the Revenue Commissioners should select at least one of their large volume returns (e.g. the periodic VAT return or the Self Assessment returns for companies and for sole traders) as a pilot project for electronic filing. They should also investigate the scope for introducing new electronic payment options, and should bring forward at least one pilot project in this area. (Paragraph B.90)

A.47. The Department of Enterprise, Trade and Employment (CRO) should continue to develop a pilot project for electronic delivery of annual company returns. That department should also proceed with its plans to introduce electronic filing of annual returns by insurance companies and a facility to calculate and submit claims for Redundancy and Insolvency payments. (Paragraphs B.91 & B.92)

A.48. The Department of Social, Community and Family Affairs should identify and develop candidate services for full electronic delivery using the Public Services Card/Integrated Citizen's Access concepts referred to above. This department should also proceed with its pilot project concerning delivery of benefit payments using Laser cards, in the context of the Ennis Information Age Town project. (Paragraph B.93)

A.49. The Department of Health and Children should develop pilot electronic services for patient identification, tracking of healthcare records, etc., also using the Public Services Card/Integrated Social Services System concepts referred to above. (Paragraph B.94)

A.50. The Department of Agriculture and Food should proceed with a pilot project to allow farmers to submit application forms for headage and premium schemes electronically. (Paragraph B.95)

A.51. The Department of Environment and Local Government should develop a pilot project to allow electronic processing of driving test applications, including electronic payment of the test fee. (Paragraph B.96)

A.52. The Central Statistics Office should develop its dissemination services to enable users to have greater access to its statistics and databases via the internet. It should also establish a pilot project for the submission by companies of appropriate statistical returns in electronic form. (Paragraph B.97)

A.53. The Department of Environment and Local Government (local authorities), the Department of Health and Children (health boards) and the Department of Education and Science (schools) should each develop secure sectoral intranets, over which they can conduct business with their respective bodies. (Paragraph B.98)

A.54. The Implementation Group should examine the scope for developing a public service delivery channel in the context of development of Digital TV services and as a means of providing electronic access to public services. This concept should be addressed in the Group's next report. (Paragraph B.99)

A.55. Each Department and agency should include in its annual report a section on progress being made regarding use of ICTs and delivery of services electronically, including the results of an internal audit in this area. (Paragraph B.100)

Strand three.

A.56. The Implementation Group should commence a detailed examination of the issues appropriate to strand three, with a view to identifying how far this strand should be developed, preparing proposals for suitable initiatives and indicating how they should be taken forward. A report on this matter should be made by mid 1999. (Paragraph B.101)

Support Areas Where Action is Needed (Paragraphs B.102 - B.116)

Awareness.

A.57. The Information Society Commission and IBEC should continue with implementation of their joint awareness campaign during 1999. (Paragraph B.105)

A.58. The Information Society Commission should be invited to prepare proposals for complementary awareness campaigns for the general public and for the voluntary organisation/NGO sector by March 1999, with a view to implementation during the remainder of 1999. (Paragraph B.106)

Education.

A.59. Rapid application of the Education Technology Investment Fund and implementation of the Schools IT 2000 Initiative should be pursued by the Department of Education and Science. (It is noted that provision of PCs and internet access to the public library system will help to address shortcomings in the area of learning outside the formal education process.) (Paragraph B.107)

A.60. The Implementation Group should monitor progress in the area of providing ICTs in schools and make proposals regarding any additional measures which may be needed. (Paragraph B.109)

A.61. The Information Society Commission should be invited to examine further means of developing the concept of lifelong learning, of extending access to the formal educational infrastructure to those outside the formal education process and of identifying further options to introduce new learning possibilities for the population in general, with a view to making recommendations by March 1999. (Paragraphs B.111)

Future skills needs.

A.62. The recommendations of the Expert Group on Future Skills Needs should be considered and appropriate measures adopted as quickly as possible. (Paragraph B.112).

Application of ICTs to the elderly/people with disabilities.

A.63. As part of the strategy to address social exclusion, the special needs of the elderly and people with disabilities should be addressed. Good practice using established design standards should be incorporated into the development of ICT applications, and the National Disability Authority should be invited to monitor standards in this area. Government Departments and agencies, in particular, should take account of this aspect in developing new services and applications. This should be an ongoing activity. (Paragraph B.113)

Market information and benchmarking progress.

A.64. Proposals for the establishment of a Market Observatory being developed by the Departments of Public Enterprise and Enterprise, Trade and Employment and its agencies, IBEC and the Information Society Commission should be finalised by February 1999, with a view to this facility being established by mid 1999. The same bodies should also prepare proposals on the development of benchmarking mechanisms by February 1999. (Paragraphs B.114 & B.115)

Research and development.

A.65. The Departments of Enterprise, Trade and Employment and Education and Science, in conjunction with other relevant Departments and Agencies, should prepare proposals for improvements in the area of research and development, also taking into account the recommendations in this area of the Expert Group on Future Skills Needs. (Paragraph B.116)

Taking The Work Forward. (Paragraphs B.117 - B.138)

International developments.

A.66. Government Departments dealing with policy aspects of the Information Society should ensure that Ireland is represented at all relevant discussions at international level, that Ireland's views are incorporated into any proposals or decisions to the greatest possible extent and that adequate arrangements are in place for the rapid dissemination of information from these discussions. This should be done on an ongoing basis. (Paragraph B.118)

A.67. The Implementation Group should consider appropriate means of maximising Irish influence on the international decision-making process and of disseminating information in relation to international developments, including investigating the merits of establishing a secure communication forum for the sharing of documents, information and views, and the possibility of placing key officials in appropriate posts in international organisations. Proposals, where appropriate, should be made by the Group by March 1999. (Paragraph B.119)

A.68. The Implementation Group should also consider how best to ensure that information on developments in other key countries is captured and fed back into the policy formation process, including assessment, with the Department of Public Enterprise and the Department of Foreign Affairs, of the suggestion of locating Telecoms Attachés in key locations such as Washington and Tokyo. Proposals should be brought forward by March 1999. (Paragraph B.120)

Liaison with business and industry.

A.69. The Implementation Group should give consideration to what measures, if any, can be taken to ensure greater formal representation of the various sectoral interests in the consideration of policy options. Proposals in this regard should be prepared by the Implementation Group by February 1999. (Paragraphs B.121 & B.122)

The Implementation Group.

A.70. The primary role of the Implementation Group should be to ensure that the action points outlined in this plan are implemented by the respective Departments and agencies as indicated, and to prepare further proposals for the development of the Information Society as appropriate. Membership of the Group should remain at Assistant Secretary General level. (Paragraphs B.124 & B.125)

An Information Society Policy Development Team.

A.71. An Information Society Policy Development Team should be established in the Department of the Taoiseach, to assist the Implementation Group in its work, to co-ordinate activities relating to implementing the Information Society and to contribute to policy development in this area. The Department of the Taoiseach should, in consultation with the Department of Finance and the other key Departments/bodies concerned, prepare plans for the setting up of such a team by January 1999. (Paragraphs B.126 & B.127)

Liaison with the Information Society Commission.

A.72. Measures should be put in place to improve the two-way flow of information between the Commission and the Implementation Group and Government departments and agencies more generally, including attendance at meetings of the various advisory groups by a representative of the Policy Development Team. (Paragraph B.128)

Resources.

A.73. Where the resource requirements of individual departments or projects have not yet been established, this should be done by the departments concerned, in consultation with the Departments of the Taoiseach and Finance, as a matter of urgency. Additional staffing requirements identified under this process should be allocated as soon as possible, ideally by January 1999. (Paragraphs B.129 - B.135)

A.74. A special fund should be established, to be operated over a three year period, as a means of providing funding to Information Society projects which would not come within Departments' normal budget programmes. The Department of the Taoiseach and the Department of Finance should prepare proposals regarding the establishment, management and implementation of such a fund, in consultation with other departments as appropriate. (Paragraph B.135)

A.75. In addition to any extra resource allocations proposed in this Action Plan, Departments and agencies should ensure that their internal resource allocation strategies reflect the high priority accorded by Government to Information Society issues. (Paragraph B.132)

IT staffing issues.

A.76. The Department of Finance should seek to conclude discussions with the public service trade unions urgently with a view to introducing measures to alleviate shortages of IT skills and resources. (Paragraph B.136 & B.137)

An Action Plan.

A.77. This Action Plan is considered necessary in order to ensure a comprehensive and cohesive strategic approach to implementing the Information Society in Ireland. Its implementation should be overseen by the Implementation Group, which should prepare periodic reports for Government on the progress being made. (Paragraph B.138)

PART B

COMMENTARY ON THE PROPOSED ACTION PLAN

OVERVIEW

B.1. As stated in the Introduction to this report, we are at the early stages of a new industrial revolution - one which will have more dramatic implications than any other single industrial development in the history of the State. New structures and business models are evolving but, unlike in previous times, these developments are taking place at breakneck speed. In order to reap the benefits of these developments, new and flexible decision-making processes are needed. The pace of change is such that rapid response is needed to ensure that the benefits of the Information Society can be availed of by Irish citizens and Irish businesses, thus contributing to the ongoing improvement of Ireland's society and economy.

B.2. In the new Information Age, the countries that are first to adapt and change are the countries that will reap the rewards. The Government has a small window of opportunity to bring about the changes needed to position Ireland as a leading country in this Information Age. Failure to take action could mean that much of the strong economic performance of recent years could be lost, particularly as international companies who have chosen to locate activities in Ireland would be likely to move to other, more advanced, countries. Failure to act would also mean missing out on the enormous opportunities to improve the social inclusion process through the use of information and communication technologies.

B.3. The Group is conscious of the important interconnection between the objectives of, on the one hand, creating the right environment for Ireland to be seen as a critical global hub for companies engaging in telecommunications, electronic commerce, digital and internet-based industries and, on the other hand, providing modern and inclusive public services using the latest technologies. This interconnection has influenced heavily the preparation of this report.

B.4. Predictions for world-wide growth of electronic commerce vary considerably, though all are dramatic. The OECD has estimated that it will increase from a base of US\$2 billion in 1997 to US\$200 billion by 2001. Differences in estimates are partly caused by different definitions of electronic commerce: the larger estimates usually refer to all business placed electronically irrespective of the method of delivery. Lower estimates exist in relation to "pure" electronic commerce, where order, payment and delivery all take place electronically. All estimates have one thing in common: they point to phenomenal growth over a very short period of time.) (Categories such as motor cars or flowers ordered over the internet but, of necessity, delivered physically, may be included in wider estimates. Examples of products capable of being delivered over the internet here could include computer software, music and video selections, travel services, financial services etc.)

B.5. Countries which adapt to exploit the new opportunities will gain competitive advantage - others will be left behind. Existing evidence shows a widening gap between Ireland and the leading economies in terms of competitiveness in this area. It is important that we do not allow our high overall levels of economic growth to distract us from the dangers of falling behind in this particular, growing, sector. The absence of decisive and comprehensive action now could lead to the loss of existing industry and failure to attract new industries. This would mean a reduction in employment and tax revenue, with obvious negative consequences for overall economic performance.

B.6. In order to create the right environment to accommodate and to encourage widespread use of information and communication technologies (ICTs), a number of areas need to be addressed: the provision of adequate telecommunications infrastructure; measures to promote the development of electronic commerce and business opportunities; the putting in place of appropriate enabling measures to facilitate development of, use of, and access to applications using ICTs; adoption of legislative arrangements to underpin those enabling measures; development of electronic delivery methods for public services and a variety of support activities. The Group believes that addressing these key areas will provide the necessary environment within which large elements of commerce and public service delivery will be developed in the future.

B.7. The Group has also noted two recent developments which it considers highly relevant to its work. Firstly, in June 1998 an Advisory Committee on Telecommunications, consisting of a number of senior industry experts, both Irish and international, was established. This Committee's report, presented to Government in November 1998, contains a number of recommendations covering not only telecommunications infrastructure and costs but also electronic commerce and associated human resource issues. In parallel, the National Competitiveness Council has produced a "Statement on Telecommunications: a Key Factor in Electronic Commerce and Competitiveness", which contains recommendations covering the same broad areas. The views and recommendations expressed in both of these documents fit in with, and confirm the need for, the overall strategy which has been considered and is now being proposed by the Group.

Telecommunications infrastructure.

B.8. Ireland should be, and be seen to be, an effective hub in the global communications sector, a prime location for the information, communications, digital and internet-based industries and a recognised centre of excellence for electronic commerce. A number of important recent initiatives will help to create a more competitive environment in the telecommunications area, as well as facilitating greater investment in the sector. These include:

- *establishment of the Office of the Director for Telecommunications Regulation;
- *the decision to bring in full liberalisation of the telecommunications market from 1 December 1998 (thirteen months ahead of schedule);
- *establishment of the Advisory Committee on Telecommunications and publication of its report and recommendations;
- *adoption of a policy framework for digital television, including plans to establish a new entity to operate Digital Terrestrial Television infrastructure;
- *the decision to sell Cablelink;
- *plans to develop a public/private partnership approach for telecommunications and internet infrastructure provision;
- *the Initial Public Offering (IPO) for Telecom Eireann, scheduled for mid-1999;
- *plans to establish a North-South digital corridor between Belfast and Dublin.

But of themselves these initiatives will not be sufficient. Action in a number of areas is now necessary in order to move these initiatives forward: complementary initiatives are also needed.

B.9. The objective of establishing Ireland as a leading country in the Global Information Society and a major centre for electronic commerce will not be realised unless the telecommunications bandwidth and connectivity are enhanced radically. Ireland is now lagging well behind the leading OECD countries in this regard. Deficiencies in this area have already been cited by some global companies as contributing to their decisions not to locate activities in Ireland. In order to overcome these deficiencies it will be necessary to attract a number of major global telecommunications backbone operators and internet service providers into the country. The objective should be to get them to establish Ireland as a hub on their network and possibly as a gateway between USA and Europe, with large capacity, high speed telecommunications connectivity from Ireland to all the major European centres at a price that does not put companies located in Ireland at a competitive disadvantage relative

to their European competitors. This does not exist at present and unless the issue is addressed urgently we risk failure to attract new industries and loss of existing business. This is particularly relevant in the case of the important software distribution sector where at present we are the second largest exporter worldwide. It will also be necessary to ensure the establishment of a facilitatory and supportive environment and a legislative and regulatory regime to encourage continued investment in telecommunications and internet infrastructure.

International connectivity.

B.10. In order to attract the necessary operators into Ireland, a programme of actively seeking to attract global telecommunications backbone operators and internet service providers (ISPs) should be implemented by the Department of Public Enterprise and IDA Ireland. The full cost implications of Ireland becoming established as a telecommunications hub - both in terms of cost levels and sources of funding - have not yet been established. Clearly there are cost implications in terms of establishing the necessary broadband communication links between Ireland, the US and major European centres. The announcement by the Minister for Public Enterprise of a public/private partnership approach for provision of global connectivity and internet infrastructure is also an important step towards ensuring that Ireland has the required scale of international connectivity and sufficient peering arrangements to transfer internet traffic between ISPs.

B.11. The Group notes, and welcomes, initiatives announced recently regarding upgrading of international connectivity by a number of telecommunications operators. Moreover, the Government recently approved the establishment of a task force under the responsibility of the Minister for Public Enterprise to oversee negotiation of an agreement (subject to prior approval by Government) with a provider of international connectivity. The task force includes representatives of the Departments of Finance, Enterprise, Trade and Employment, Public Enterprise, IDA Ireland and Forfás. In parallel, negotiations on the formation of a public/private consortium to own and operate the infrastructure as soon as practicable should be undertaken under the responsibility of the Minister for Enterprise, Trade and Employment, acting through Forfás and IDA Ireland, in consultation with the Departments of Finance and Public Enterprise. An initial allocation of £12 million has been allocated for this project in the 1999 Budget, with provision for investment of up to £60 million by way of seed capital over a three year period. This initiative should play a major part in the development of high grade international connectivity from Ireland.

Submarine cable licencing.

B.12. Apart from land-based infrastructure, further submarine cabling will be needed to provide the necessary connectivity with networks internationally. Operators wishing to install submarine cables need to be licensed for this purpose at present. It is important that, in this context, the procedures for the granting of such licences are clear and facilitatory. The Departments of Marine and Natural Resources and Public Enterprise should co-operate on this matter.

Regulatory issues.

B.13. An effective and efficient regulatory environment that supports competition and facilitates investors and developers can be a key national competitive advantage. As the technologies converge the importance of having the correct regulatory environment increases. Regulation in the telecommunications sector is implemented through both the Office of the Director of Telecommunications Regulation (ODTR), which is responsible specifically for regulation of the telecommunications sector, and the Competition Authority, which is responsible for promoting and enforcing competition generally. The Independent Television and Radio Commission also has an important part to play, particularly given its proposed expanded role, as has the new body to be established concerning digital terrestrial television transmission.

B.14. There is scope for, and a need for, greater coherence between all of these agencies. A number of bodies, including the Information Society Commission, the Advisory Committee on

Telecommunications and the National Competitiveness Council, have argued that the ODTR should have a key role in relation to encouraging competition. The Group considers that specific proposals should be made to Government in relation to these matters and that this should be pursued rapidly by the Implementation Group.

Nation-wide broadband network.

B.15. The credibility, and usefulness, of Ireland's wish to be a key player in the Digital Age will depend to some extent on our ability to provide a nation-wide broadband communication network. The geographic and demographic situation in Ireland is such that the roll-out of broadband communication links to regional areas may not be commercially attractive initially, and a prioritised plan for nation-wide roll-out is needed. The Information Society Commission has highlighted the need for further investment in areas of low commercial viability. The Advisory Committee on Telecommunications has called for consideration of the specific means by which development of broadband access on a national basis can be promoted. The National Competitiveness Council has estimated that, despite recent investment by telecommunications operators, significant shortfalls remain in the investment requirement. Funding from the Community Support Framework (£18 million) has been made available for this purpose at present, and it is expected that through co-financing this amount may generate overall investment of the order of £40-£50 million. It may also be possible to secure further EU funding in the context of the Agenda 2000 negotiations, and the Department of Public Enterprise and Forfás are pursuing this aspect at present.

North-South Digital Corridor.

B.16. There is a proposal to create a Digital Corridor between Dublin and Belfast. This has the potential to open out telecommunications infrastructure on both sides of the border, and into regions well beyond Dublin and Belfast. Discussions between officials from the two sides are taking place at present.

Local Access.

B.17. The Advisory Committee on Telecommunications has recommended that the local loop be unbundled in order to promote telecommunications access and competitive service offerings. This would require Telecom Eireann to provide access to the local network to competing operators at tariffs based on long run incremental costs. The Advisory Committee has also recommended that the Director of Telecommunications Regulation should accelerate plans for the award of licences in the areas of wireless local loop access and third generation mobile services. This would also contribute to a more competitive environment. In this regard, the Group notes that the ODTR has already issued a consultation paper on the wireless local loop issue as a first step towards the development of services in this area.

Telecom Eireann IPO and divestiture of Cablelink.

B.18. The Advisory Committee on Telecommunications has recommended that these matters should be implemented as priority elements of the primary objective of creating a competitive, market-driven telecommunications sector. The Group notes that the Telecom Eireann IPO is scheduled for mid-1999 and that preparatory work is under way in the Department of Public Enterprise. Similarly, divestiture of Cablelink is expected to be completed by March 1999.

Communications Infrastructure Group.

B.19. The Department of Public Enterprise together with IDA Ireland have had discussions with many of the major companies and are in the process of establishing an Infrastructure Group to discuss their specific requirements in this area. This could become an important focus of developments in industry and at the same time could be provided with up-to-date information on what is happening at Government level and internationally.

Development of Electronic Commerce and Business Opportunities.

Digital Park.

B.20. IDA Ireland and Forfás, with the assistance of the Departments of Enterprise, Trade and Employment and Public Enterprise (in relation to telecommunications infrastructure) are working on proposals for the establishment of a Digital Park, which would provide suitable infrastructure from which companies engaged in electronic commerce, multimedia and digital industries could operate. This would be an important step in creating the right environment for companies engaged in electronic business and would involve the creation of a dedicated infrastructure at one or more sites. In this way, companies locating in the Park would have the benefits of immediate access to high grade telecommunications and locally available support services. Agreement has been reached between IDA Ireland and Citywest regarding development of such a park in the west Dublin area, and work is now under way to move this forward to implementation. A second location, in the Dublin city centre/docklands area, linked by high capacity, high speed broadband links to the west Dublin site, is also considered desirable. A number of possible sites are being considered at present. Work is under way on the preparation of a report on the telecommunications infrastructure requirements which is absolutely critical to the success of the Digital Park concept. The National Competitiveness Council has suggested that the concept should be extended to other industrial parks across the country.

Business Development Action Programme.

B.21. The development of electronic commerce is an integral part of development of industrial policy and the programmes of the industrial development agencies. However, it is recognised that there is a need for a more visible and co-ordinated approach to this important sector, not least if we are to establish a strong reputation for Ireland as a key location for companies engaged in electronic commerce. With this in mind, the Department of Enterprise, Trade and Employment and the industrial development agencies are currently preparing an action programme for the development of electronic commerce in Ireland and the associated business and employment opportunities, both in the area of foreign direct investment and indigenous company development.

B.22. Development of such a programme would also be in line with a number of the recommendations of the National Competitiveness Council. It should cover a range of issues, including the targeting of certain sectors which offer potential in terms of electronic commerce, such as the financial services sector, multimedia production and distribution, creative content development, specialist software support services such as encryption and digital certification products etc. The programme should also indicate the support measures envisaged, including financial support for pilot projects, training and development support, information services (including web-based services) etc. The Advisory Committee on Telecommunications has recommended examination of the feasibility of introducing an accreditation system for firms engaged in electronic commerce from an Irish base for the purposes of building security and trust in electronic commerce. This issue should be examined in the course of preparation of the programme mentioned above.

Entrepreneurship.

B.23. The Advisory Committee on Telecommunications has also made recommendations with a view to promoting a greater entrepreneurial culture in Ireland. The recommendations include incorporation of modules on entrepreneurship into the education system, providing web-based information on support services and venture capital funding options, developing networks for information sharing and developing risk assessment capability within the financial service sector. These concerns should be taken into consideration in the broader development of measures to promote electronic commerce business opportunities.

Enabling Measures.

B.24. A number of important enabling measures need to be put in place to provide adequate access options and to enable electronic communication to take place in a secure and reliable manner. These measures are needed to ensure that the benefits of the Information Age are available to the widest possible range of people and organisations, and to facilitate rapid development of electronic commerce. The importance of electronic commerce in global economic terms was highlighted during the recent visit to this country by the US. President when Ireland and the USA signed a joint communiqué on Electronic Commerce. Significantly, this communiqué was signed electronically, using digital signatures: this was the first time that this technique was used to sign an international document of this nature. This communiqué reiterates the key principles which should underline electronic commerce and the areas where further work is required to foster its development.

B.25. Similarly, in the area of public service reform and improved service delivery, ICTs have an increasingly important role to play. The putting in place of appropriate and complementary operational mechanisms, which facilitate access to electronic commerce and the Information Society in general, will contribute to improved efficiency and performance in the area of public service delivery and can assist in creating greater social inclusion.

Access to the Information Society.

B.26. Access should be addressed at a national level in terms of physical access to the devices and networks necessary to participate in the Information Society and, more importantly, in terms of the skills and confidence levels of the potential users of services. In particular, the needs of the socially excluded should be addressed in order to prevent the growth of a gap between the "information rich" and the "information poor".

B.27. The general levels of personal computer ownership and internet access in Ireland are amongst the lowest in the developed countries. This is a potential obstacle to the development of the Information Society in Ireland. Corrective measures are needed in order to stimulate consumer awareness, to increase the potential to participate in electronic commerce and electronic public services and to reinforce signals to outside investors that Ireland has moved forward technologically. These measures will need to address both the provision of alternative access points and the scope for improving access from within the home.

B.28. Measures to provide access outside the home are necessary if we are to ensure that access to the Information Society is available to citizens in an equitable and socially inclusive manner. The public library service provides a valuable medium: there are 320 public libraries throughout the country and librarians, with their experience and training in handling information and dealing with the public, would be particularly suited to the role of guiding and assisting the public in the use of the technology. The Information Society Commission has recommended that an ISDN connection be provided for every library in the country. The Group agrees with this recommendation. The cost of provision of such connectivity and associated hardware in quantities appropriate to each library, according to its size and customer base, has been estimated at £6 million.

B.29. Community and voluntary agencies already serving local needs have also been identified as having an important role to play in providing access for the less privileged sectors of society. Some progress has already been made in terms of providing computer facilities to these agencies as part of the Department of Social, Community and Family Affairs' community and voluntary sector development programme. However, a more accelerated and focused programme to make computer and internet facilities, together with appropriate training, available to these agencies would be of immense benefit from the viewpoint of social inclusion in the Information Society, as well as improving the resources of these agencies and their ability to serve their clients more generally.

B.30. Other possibilities which would have a nation-wide reach include schools and An Post. Furthermore, there would appear to be scope for development of specialist standalone access kiosks. The feasibility of using these options to provide wide-scale public internet access needs to be explored further by the Implementation Group.

B.31. Measures to improve access from within the home are also needed. Options for reducing computer acquisition costs would be welcome, particularly as computer usage is important for those who wish to combine internet access with other, more conventional, computer applications. This will also contribute to the overall level of computer literacy of the population. It has been particularly highlighted in the context of teachers, as a means of raising their knowledge and familiarity levels and thus, in turn, contributing to incorporation of ICTs into the education system. Finally, new means of providing access to the internet are being developed which exploit more commonplace commodities. The most obvious of these is the television set, as the advent of Digital TV technology is expected to provide a parallel means of accessing the internet and information-based services, possibly via set-top boxes or similar devices. Corresponding developments based on the telephone are also understood to be in the pipeline. Relatively cheap and simplified access devices, involving touch-sensitive screens and keyboards but without the processing power of a computer are also being developed. It is important that the potential to extend access is fully taken into account as these concepts are developed and brought to the market.

Internet access costs.

B.32. Apart from reducing the cost of internet access devices, or making them available to "non-owners", the underlying access costs also need to be addressed. These are still considerably higher in Ireland than in many competing countries, and this is inhibiting growth in take-up levels, as highlighted recently by the National Competitiveness Council and the Advisory Committee on Telecommunications. It is inescapable that significant reductions are needed in this area, and it is important that these reductions come on stream quickly. The European Commission recently indicated that it would not oppose a more progressive charging system. It is encouraging to note that there has been progress in this area, with reductions announced by a number of telecommunications operators recently, influenced in part by the market liberalisation from 1 December 1998. It is also noted that some operators are now offering, or planning to offer, flat-rate internet access. The Group welcomes these developments, but stresses that further progress is needed to further encourage internet take-up levels, to improve competitiveness and to contribute to the perception of Ireland as a leading internet and electronic commerce location..

"E-mail for all".

B.33. The Information Society Commission has also suggested that all citizens should have access to e-mail (e.g. via the public library system) by the year 2000. This would be a valuable step forward in terms of making access a reality for every citizen and as a clear signal of the Government's commitment to the Information Society, as it would provide an electronic communication mechanism to every citizen. A number of practical implementation issues arise, and the Information Society Commission has been invited to explore the topic with a view to identifying what the cost and funding implications, technical implementation options, etc. The Commission is also looking at how this concept ties in with the more general access issue and with availability of internet-based public services and information.

Certification authorities and digital certificates.

B.34. Electronic communication and electronic commerce will not develop to their full potential unless satisfactory measures are put in place to establish the authenticity of parties to transactions, to ensure confidentiality of data, to protect the integrity of data and to prevent parties from disclaiming ownership of or responsibility for their actions. These four concerns - authenticity, confidentiality, data integrity and non-repudiation - can be addressed by cryptography and electronic signature technology. A combination of techniques is typically used: encryption technologies, which allow data to be encrypted and decrypted; digital

certificates issued by certification authorities who satisfy themselves as to the identity and/or credentials of applicants, and digital signatures, which are generated using a digital certificate to create a unique identifier associated with a given transaction or message.

B.35. The Government has approved a policy framework in this area, indicating the overall approach which would be followed in Ireland. This comprises a number of principles, including the right to choose the cryptographic method, the right to strong and secure encryption, and a commitment that the production, import and use of encryption technologies shall not be subject to any regulatory controls, other than lawful access. It is envisaged that certification authorities which meet certain standards will be accredited by a State entity. Suitable candidate certification authorities now need to be identified and encouraged to establish themselves in this business area. An Post has already expressed interest in this area. This is vital to the development of secure electronic commerce and viable electronic public services. Possible candidates would include banks, ISPs and Government bodies (e.g. Department of Social, Community and Family Affairs, Companies Registration Office). Furthermore, this need not necessarily await adoption of relevant legislation. In addition, certificates issued by foreign certification authorities will have to be recognised, and a system needs to be established for this, including underpinning legislation.

Protection of rights and data.

B.36. The development of the Information Society, and increased use of ICTs to transmit data, messages, commercial transactions, etc., poses new risks and challenges in the area of protection of intellectual property rights. It will be important to ensure a balance between, on the one hand, ensuring adequate protection of rights such as copyright, performance royalties, etc., where intellectual property is being transmitted in digital form and, on the other hand, allowing the development of ICTs and electronic commerce to take place free of unnecessary obstacles. In the same way, data protection is an important concern, as increasing amounts of personal information are likely to be transmitted over telecommunications networks and often across national boundaries. These issues will require careful consideration. European law will inevitably require transposition into national law.

However, the manner of that transposition, and its subsequent implementation and interpretation, must take account of implementation options, including the possibility of increased industry self-regulation.

Public services access interfaces.

B.37. A range of public services will, over time, be capable of being delivered electronically. Elsewhere in this document, a range of proposals are made regarding development of such services, with many expected to come on stream by the year 2000. This will lead to improvements in the services themselves, improved delivery and reduced costs. The nature of the emerging technologies and the way in which they interact with public service delivery will require a simple, common interface to facilitate access to and delivery of public services electronically.

B.38. Following the enactment of legislation that establishes the legal framework for use of a Personal Public Services Number and a Public Services Card (PSC), the Department of Social, Community and Family Affairs is preparing proposals to re-launch and re-position the Integrated Social Services Strategy (ISSS) to provide a common means of access to a range of public services. The PSC can provide a secure key for citizens to access information concerning them which is held by different public service bodies. It is also capable of being developed as a secure personal identifier for transacting electronic business (including electronic payments) with those bodies.

B.39. Reform of the General Register Office (GRO) is also relevant here. The Ministers for Health and Children and Social, Community and Family Affairs intend to bring forward a joint memorandum for Government early in 1999. Development plans in this area can both contribute to and exploit developments in the use of ICTs within the public service and in the wider community.

B.40. Similarly, the manner in which the Companies Registration Office (CRO) operates and interfaces with companies in the future will be important. It is vital that developments in these areas dovetail with emerging technological developments, given the way in which they will impact on public service delivery.

B.41. A common access interface to as many public services as possible, and which is capable of being used remotely and electronically, will offer major benefits in terms of improved service delivery and reduced operating costs. It will also contribute to the development, and acceptability, of corresponding mechanisms outside the public sector, and there may be scope for development of joint mechanisms between public and private sector operators.

Electronic payment mechanisms.

B.42. Clearly electronic commerce cannot be a meaningful commercial reality unless it is supported by trustworthy electronic payment mechanisms. This is an area where Ireland risks lagging well behind other countries. Traditionally, Irish citizens have displayed a marked reluctance to operate payments accounts with banks. More conventional electronic payment methods, which have been common in other European countries for several years (in some cases, decades) have seen low take-up levels or are still in their infancy in Ireland. These would include direct payment of salaries to bank accounts, shopping with current account debit cards etc. Moreover, the comparatively small size of the Irish financial service market means that there is a need for close co-operation between the various players in order to achieve economies of scale, particularly in the context of introducing new services.

B.43. The financial services community is now keen to address the shortcomings in this area, and this can, in part, be achieved by exploiting the experience of and developments in other countries. There is a clear need to make progress in promoting greater use of electronic funds transfer in the economy, including in respect of payments to or by Government Departments or agencies. Moreover, from a Government perspective, projects which involve payments over the internet either to or by Government Departments or agencies will not become realities unless and until secure and efficient electronic payment systems are introduced by trusted agents. It is clear, therefore, that a common interest exists between the financial services sector, other interested parties and public administration in this area.

B.44. At the initiative of Allied Irish Bank and Bank of Ireland, research into electronic payment issues in Ireland has been carried out recently by a firm of consultants, working in close consultation with an ad hoc group of public sector representatives. A seminar was held on 27 November 1998, attended by representatives of the public service, financial institutions, the business community and consumer/trade union interests. There was a broad level of support for the development of electronic payment services, though a number of issues were raised which will need to be addressed. There was also general agreement that the next steps should focus on possible implementation mechanisms and should include more structured consultation with the key interest groups.

B.45. Parallel with the development of new payment methods and services is the question of regulation. A balance needs to be struck between encouraging the development of these concepts and minimising any scope for fraud, money laundering or tax evasion which might arise. It is important that the degree of regulation in this area should be proportionate to any risks presented.

Linkage between these issues.

B.46. There are important links between the issues outlined above. Easy access to the communications network (e.g. via the public libraries, Digital TV, dedicated information kiosks, etc.), possibly in tandem with the "e-mail for all" concept, would ensure that every citizen has access to electronic communication. Use of digital certificates would offer security and authenticity over the network, ultimately including the area of financial transactions, such as internet-banking and electronic commerce. A common client identifier would facilitate easy

access to public services, including access to personal information, potentially via integrated access points - the "virtual one-stop shop" concept. Furthermore, optional use of digital certificates based upon such an identifier would open up scope for delivery of interactive, client-sensitive public services over the network, and would facilitate electronic payment arrangements for those who wished to conduct their financial affairs with Government bodies - social welfare, tax, etc. - electronically. This combination of concepts represents a credible vision of how business and public administration might be expected to be carried out in the future.

Legislative and Regulatory Measures.

B.47. The infrastructure and operational measures outlined in the previous sections will only be possible if facilitatory and, in some instances, complementary legislative and regulatory measures are put in place.

Digital signatures and encryption.

B.48. The arrangements described above regarding the establishment of certification authorities, the issue of digital certificates and their subsequent use in commercial transactions are not yet underpinned by legislation. This now needs to be addressed as a matter of urgency. Furthermore, the European Commission has issued a proposal for a Directive to regulate the area of certification authorities, and it is important that Ireland's response to this proposal is fully considered. Issues which will need to be addressed include the question of mutual recognition of certificates issued by certification authorities located in other jurisdictions and recognition within countries.

Electronic evidence in Courts.

B.49. The value of electronic records, messages, documents, contracts etc. will be very limited if they are not capable of being presented as evidence in court in the event of a legal dispute between the parties to transactions, or in the event of third parties, including government bodies, taking action against parties engaged in electronic commerce or record keeping. It is understood that, at present, legislation concerning this topic is expected to be covered in the context of wider proposals to amend the law on hearsay, and that this legislation may not be prepared for some time. In such instance, it would be appropriate to investigate ways of bringing forward specific legislation in the near future pending enactment of more comprehensive legislation in this area. Either way, it is considered that greater priority needs to be attached to getting legislation governing admissibility of electronic evidence in civil proceedings, and that resources be allocated to make progress in this area.

Data protection.

B.50. The free flow of information across electronic networks creates new challenges in relation to data protection, and consumers will be particularly concerned about the accuracy of data held about them with the increased probability of that data being held in another jurisdiction. It will be important to ensure that the legal framework for electronic commerce includes appropriate controls in relation to data protection. Failure to do so will undermine public confidence in exchanging data or making transactions over communication networks such as the internet. Data protection issues also need to be considered in the context of development and use of digital certificates, including their use in delivery of public services. Moreover, given the rapidly changing environment of ICTs it is important that the measures in place are kept under constant review.

B.51. It is noted that draft legislation amending the Data Protection Act 1988 has been prepared to give effect to a new European Directive in this area (Directive 95/46/EC), as measures to implement the Directive were required to be in place by 24 October 1998. This new legislation will strengthen the rights of individuals and attaches additional conditions to the processing of personal data. At the same time, however, it must be noted that differences of approach exist between Europe and the US as regards data protection, with the US

favouring a "code of conduct" approach backed up by a self-regulation system operated by industry. This is different to the European legislative approach. Given the particular importance of data transmission between Ireland and the US it will be necessary where feasible to ensure a flexible approach to EU discussions and to implementation and interpretation of the Directive.

Copyright.

B.52. Given the ease with which an increasingly large range of material can be distributed around the globe, it is important to ensure that the position relating to protection of copyright is not diminished. Moreover, increased global trading means that greater consistency of legislation internationally is required in this area. The Group noted that draft legislation has been prepared by the Department of Enterprise, Trade and Employment (July 1998) which is intended to give effect to EU Directives on Copyright and Related Rights, and to enable Ireland to ratify the Paris Act of the Berne Convention, the World Intellectual Property Organisation (WIPO) Copyright Treaty and the WIPO Performers and Phonograms Treaty.

Telecom Eireann IPO.

B.53. The Group has noted the recommendation of the Advisory Committee on Telecommunications that the IPO should be implemented as a priority in the context of the primary objective of creating a competitive, market-driven telecommunications sector. The Department of Public Enterprise is working on the preparation of draft legislation for the IPO, which should be in place by March 1999. The IPO itself is expected in the middle of 1999.

Telecommunications infrastructure installation/access.

B.54. To benefit from the Information Society, communities will need access to advanced telecommunications infrastructure. The installation of telecommunications infrastructure gives rise to a number of sensitive issues, including the question of rights of way for operators to install access, sharing of infrastructure between operators, etc. This needs to be balanced against the constitutional right to private property in a way which does not create obstacles to the rapid roll-out of telecommunications infrastructure. In addition, if maximum efficiencies are to be achieved, then sensible sharing arrangements should be implemented by competing operators. Legal provisions are needed to address these concerns. Proposals for such legislation were agreed by Government in July 1998 and should be enacted as soon as possible. It is important that communities accept the need for infrastructure if the Information Society is to happen. In this regard, the concept of infrastructure sharing is important and the Information Society Commission should stress this in its awareness programme.

Telecommunications regulation.

B.55. Legislation may be needed to give effect to the outcome of the discussions concerning the respective roles of the ODTR and the Competition Authority referred to above. It has also been suggested by a number of bodies, including the National Competitiveness Council and the Advisory Committee on Telecommunications, that the ODTR should have increased powers to impose sanctions against those who fail to comply. The Group shares this concern, and this will also require changes to legislation.

Digital TV.

B.56. Digital television has the potential to offer television viewers greater indigenous television programme choice as well as parallel delivery of internet and information-based services over its infrastructure. It is expected, as a consequence, that there will be greater convergence between telecommunications and broadcasting and that this will lead to improvements in terms of access to the Information Society. The recent Statement on Telecommunications and Electronic Commerce from the National Competitiveness Council stresses the importance of developing Digital Television in this context. Work on the implementation of the recent Government decision in the area of Digital terrestrial television services is proceeding with a view to having structures in place by mid-1999 and digital

terrestrial broadcasting services available before the end of the year 2000. Under this decision, the existing transmission function will be transferred from RTE to a new entity, in which RTE will retain a minority equity stake, and the role of the IRTC will be expanded to cover standards for the content of indigenous broadcasting services on all platforms. Six new multiplexes will be made available, with one going to RTE and half a multiplex each going to TnaG and TV3.

B.57. A new membership of the IRTC has been appointed recently, and they have been requested to assume non-statutory responsibility for the necessary preparatory work to facilitate the functioning of the IRTC in its expanded statutory role following the enactment of the legislation. In addition, a Steering Group, consisting of representatives of the Departments of Arts, Heritage, Gaeltacht and the Islands, Finance, Public Enterprise and Enterprise, Trade and Employment and RTE has been established to oversee the setting up of the new transmission entity. This group is engaging consultants to assist it in its work.

B.58. The regulatory regime to be developed by the IRTC in its expanded statutory role should be clear and impartial across all digital delivery platforms. It should recognise the importance of broadcasting as a medium of cultural expression, the convergence of digital, media and communication technologies and the commercial potential offered by these developments to maximise competitive choice for business and consumers. It will also be necessary to ensure that there is adequate co-ordination between this body and the other regulatory bodies in the new, converged environment.

Taxation.

B.59. Customs duties and more general taxation issues as they should apply to electronic commerce are the subject of international debate at fora such as the European Union, OECD, World Trade Organisation (WTO) and World Customs Organisation (WCO) at present. In the recent past, cases have been made for the introduction of new taxes, such as a "Bit Tax", to ensure continuity of revenue receipts. However, there is now growing international consensus that no new taxes need to be introduced, and that existing taxes can be applied, subject in some cases to new or adapted rules and procedures. Ireland has been in the lead in OECD discussions here, stressing that the current focus should be on ironing out technical difficulties in the application of existing tax arrangements.

B.60. At the other end of the spectrum, there have been calls from some business sectors to create a favourable tax environment to promote electronic commerce. However, it must be recognised that, ultimately, electronic commerce offers huge potential for reduced operating costs, extended customer bases and enhanced profits. Furthermore, electronic commerce is, essentially, just a new way of doing business. Consequently, in the international discussions on taxation there is general agreement that it is difficult to justify treating it as a "tax free" concept or applying special reliefs or exemptions.

B.61. Application of taxation to electronic commerce should be consistent with well established general tax principles: it should be fair, neutral, simple to comply with and easy to administer. Failure to ensure that tax rules meet with these criteria could, indirectly, amount to an obstacle to the development of electronic commerce. At the same time, it is recognised that the expected increased volumes of international transactions, coupled with the new electronic and often instantaneous methods by which they are completed, will mean that greater levels of international co-operation between tax authorities will be required to prevent and detect tax evasion. These issues are reflected in a recent document produced by the OECD entitled "Electronic Commerce - Taxation Framework Conditions", which was welcomed at the OECD Ministerial Conference on electronic commerce in Ottawa in October 1998 and which includes a programme of future work to give effect to those conditions. It is important that we continue to press to have our views reflected in any international agreements in these areas, and that Ireland is well placed to implement any such agreements clearly and quickly.

B.62. Notwithstanding emerging agreement at international level, and our associated obligations under international tax law, it is clear that national taxation policy will have an important bearing on the development of electronic commerce, particularly given the increasingly mobile nature of companies likely to engage in this activity. In Ireland's case, the overall policy on Corporation Tax is a strong asset in the strategy of boosting competitiveness and attracting mobile corporate activity to locate in Ireland. Exploration of complementary measures, which do not involve breach of our international obligations, should be encouraged.

Consumer protection.

B.63. Ensuring adequate protection for consumers in the context of electronic and international transactions is a fundamental requirement for promoting consumer confidence and participation in electronic commerce. Concerns have been expressed about the ability of customers to be assured of adequate recourse in the event of dissatisfaction over a purchase, after sales service, guarantees, etc. where international trading increases and where, in many cases, the purchaser may not even be aware of the location of the supplier. These are legitimate concerns which need to be addressed in order to provide assurances and safeguards to prospective customers and to prevent any unnecessary obstacle to the development of electronic commerce. Again this is an area where international standards are likely to be needed and brought forward, and where we should seek to ensure that adequate protection is incorporated into any international agreements and that Ireland is well placed to implement any such agreements clearly and quickly. It is recognised that the unique features of the electronic marketplace may need to be taken into account in the development of consumer legislation in this area.

B.64. A declaration on consumer protection was adopted at the recent OECD Ministerial Conference referred to above, under which Member countries undertook to work together to develop effective and transparent measures to provide protection to consumers, including development of effective market-driven self-regulatory measures. At the same time, the OECD Member Countries undertook to develop guidelines to enhance consumer confidence in electronic commerce, and the OECD expects to produce draft guidelines during 1999. It will be important that Ireland participates in this work.

ICTs And Delivery of Public Services

B.65. Increased use of ICTs by Government and public administration will have a number of benefits in the provision of modern and inclusive public services. Firstly, it will lead to improved delivery of service: better services can be delivered to a wider range of customers at greater speed and lower cost. Secondly, it will act as a catalyst for the uptake of ICTs in the economy and society generally, leading to corresponding improvements in efficiency and performance there. Finally, it will act as an important indication of the Government's commitment to the development of electronic commerce.

B.66. Improved service delivery should be a constant objective of any modern public service. In Ireland, this objective has been reinforced in recent times, not least through the Strategic Management Initiative, and many programmes and projects have been set up across the public service in order to provide better services. Indeed, many departments and agencies have already employed ICTs extensively in their administration and in the services they operate, and many new applications are being developed. ICTs can also play a valuable role in the context of the recent introduction of Freedom of Information legislation, as departments and agencies move to more proactive publication of information and as the needs for sophisticated document and file tracking technology increases. It is important to recognise that ICTs are not an end in themselves: rather, they are tools which can, in many cases, be the means to certain ends. Furthermore, as these technologies develop rapidly, and are used increasingly by other sectors and by public administrations in other countries, their ease of use, and the public expectation of enhanced services built upon them, will increase. They also offer the potential for significant cost savings.

B.67. At the same time, increased use of these technologies in the development and delivery of public services will contribute to their acceptability and use by other sectors, thus compounding the rate at which they are developed and deployed in our society. This can have enormous benefits for society at large, particularly where products and services are developed beyond the mainstream business sector, and potentially offers enormous advances in the area of social inclusion as improved services are made available by non-governmental agencies, voluntary organisations etc.

B.68. Similarly, there is an important linkage between the provision of modern and efficient public services and the objective of establishing Ireland as a key centre in the global electronic commerce market. In the world of electronic communication it will take more than just infrastructure to establish Ireland as a key centre - the overall environment for business and administration will also be taken into the equation by mobile companies. In addition, the perception and reputation of Ireland as a country with modern and efficient public services which use state of the art technologies, and with a population which is increasingly at ease with such technologies, will reinforce its attractiveness to companies seeking a suitable centre from which to operate their European, or indeed global, business.

A structured approach.

B.69. The experience of other countries suggests that a structured approach to the introduction of electronic government is needed, involving several strands to be developed, and implemented, in parallel. Under such an approach, the first strand would cover easy access to clear and comprehensive information which is in the public domain. A second strand would introduce services involving appropriate access to more sensitive information, and interactive services, including two-way transmission of data and handling electronic payments. A number of flagship pilot projects could be launched initially. Finally, the concept of seamless, client-centred electronic interaction with public administration would be developed and introduced under a third strand.

B.70. The cost implications of the move towards increased electronic delivery of public services vary considerably, depending on the strand in question. However, it is important to recognise that many of these costs are unavoidable: the various services are required in their own right, and will have to come on stream sooner or later. The key issues are timing and coherence, and in the long run the combination of early movement and coherent, co-ordinated action across the public service may well result in lower overall funding requirements than might otherwise arise, apart from being necessary in the context of presenting Ireland as a leading Information Age country.

B.71. Turning to the individual strands, the actual costs involved in developing and implementing strand one may be considered relatively modest, whereas they can be expected to be higher under strand two. The re-engineering of substantial elements of the public service which may be necessary under strand three would require very considerable investment. Of course, the investment requirements arising under each strand would have to be seen against the consequent improvements in service delivery and reduction of operating costs. They must also be gauged in the knowledge that, in many cases, they will arise sooner or later anyway, as indicated above.

B.72. The countries which are most advanced in embracing the new technologies and integrating them into their administrative and economic environment are being identified internationally by mobile corporations as suitable locations for their business activities (e.g. Finland, Singapore). These countries have also adopted longer term strategies aimed at seamless, citizen-centred electronic services (strand three). Moreover, it is important to recognise that there are interdependencies between the three strands - where a decision is taken to aim for strand three, that will have implications for how strand two is developed and implemented, and so on.

B.73. In view of the important policy statements made recently concerning the establishment of Ireland as a leading country in the Global Information Society, the Group believes that there must be a commitment to a move, in the medium term, towards radically modernised and integrated public services (strand three) and, in the shorter term, to rapid development and implementation of a range of electronic public services (strand two). Such a commitment must imply an acceleration of certain public service reform projects which may already be (provisionally) programmed as worthwhile and necessary in their own right.

B.74. Given the fundamental re-engineering of public services which is likely to be required, seamless access to Government services in Ireland is likely to take some time to deliver. Nonetheless, very substantial progress can be made over, say, a three year timeframe if a structured approach is adopted along the lines described above. This would allow incremental progress to be made, with the development of each strand learning from the others. It is considered that strand one could be implemented quite quickly. Furthermore, a significant range of flagship projects under strand two would require considerably less than three years to be developed and should thus come on stream in the year 2000, with additional projects coming on stream on a phased basis over the remainder of the three year period. In addition, considerable progress could be made during that period on the preparatory elements of strand three. The combination of progress under the three strands over a three year timeframe would amount to a highly credible move forward by Ireland towards full electronic administration and would send very strong signals to the wider economic circles of our commitment to being at the forefront in this area.

B.75. Consequently, it is considered necessary that some clear signals should now be given by Government regarding the direction to be taken and to reinforce overall commitment in this area. Actions proper to the first strand of implementation should be set in train immediately. This will involve greater use of websites and electronic dissemination of information by Government Departments and agencies, and production of this information in a more structured way. Secondly, progress needs to be made in the area of modernised, interactive electronic services. Here, the primary concern must be that development of such services must take place in a structured way, so that they are fully compatible with the client identifier and certification arrangements being developed and where they involve exchange of data between government departments or agencies, this exchange can take place electronically. Finally, preliminary work should commence on examining the scope and need for delivery of services in an integrated, citizen-centred way and in a manner which takes account of Government policy regarding provision of services in the Irish language, again in keeping with the operational and legislative framework described above.

Strand one - improved information services.

B.76. Most Government Departments and agencies now operate websites. Those which do not should rectify this as a matter of urgency. The concept of introducing websites has now moved well past the novelty stage, and it is not unreasonable to expect that all Government Department and agency websites should be maintained in an up-to-date fashion, and should provide information about the entity, its functions, the services it offers, etc. They should provide copies of all publicly available material such as information leaflets, application forms, text of legislation, relevant reports, policy papers, discussion documents etc. These should be in a format which enables customers to access them and, if appropriate, to download copies to their own computers and printers without incurring any costs. They should also include useful links to other relevant government bodies, international organisations etc. New material should be made available in a timely fashion, and should be provided electronically at the same time as it is made available by more conventional means. (The long term objective should be that electronic publication would be the preferred publication medium, once sufficient access levels have been established.)

B.77. Government Departments and agencies should introduce "push" technologies for the dissemination of key documents, reports, updates etc. to channel material directly to their clients. Furthermore, they should ensure that they are in a position to cater for and respond to queries by e-mail at a level which is at least as efficient and speedy as the response to more traditional correspondence methods.

B.78. At present, the information provided by Government Departments and agencies is mainly presented in an organisation-centred manner. As the Information Society develops, there is an increasing need for information to be presented in an integrated, client-centred manner. As an initial step, it would be desirable to generate databases which present public service information in a client-centred manner, organised around the event-cycle of citizens or of businesses as appropriate. In this context, the social service database being developed by the National Social Services Board, which itself is organised around the citizen's event cycle, will be an important contribution. This database should be made available on the internet as soon as possible. Consideration also needs to be given to extending this database to all public services. Similarly, there is a need for such a database in respect of public services for businesses - the Department of Enterprise, Trade and Employment would be best placed to develop such a database. It is estimated that a budget of £500,000 would be needed for each of these two databases.

B.79. Government-wide practices should now be adopted concerning access to and the nature of the content of websites, covering issues such as format and presentation, copyright of Government information, access mechanisms etc. The objective should be to produce a homogenous format which is easy to access and navigate. In addition, the Information Society Commission has recommended that quality standards for Government departments' websites should be incorporated into the Quality Customer Service component of the Strategic Management Initiative. Government policy in relation to delivery of services through the Irish language also needs to be reflected in this area.

B.80. Successful implementation of electronic government will depend on public servants individually and collectively being aware of and exploiting the potential of ICTs in their daily work. Greater internal use of ICTs for communication within and between Departments, agencies, etc. will produce improved efficiency and will also contribute to the wider awareness needed among public servants. A particular concern here is the risk of resistance to change which can arise in any large organisation. The scale of the changes needed over the next few years will require greater than ever careful change management, so that unnecessary and avoidable obstacles to that change do not obstruct its implementation. In particular, it is expected that the rapid rate of development of new technologies and applications will give rise to a need for ongoing education of public servants as to the benefits of these new developments and how they can be integrated into their business areas. CMOD already presents courses which cover many of these requirements and these could be further enhanced and developed.

Strand two - interactive electronic services.

B.81. Strand two initiatives, which go beyond electronic access to basic information, forms etc., take on many of the characteristics of general electronic commerce transactions. As such, they raise the same issues as electronic commerce generally, including authentication of correspondents, privacy, data integrity and non-repudiation. Thus, they will depend on the availability of appropriate mechanisms to address these issues, such as digital certificates, encryption facilities etc. Access, too, will be vitally important, both in terms of citizens having access to the basic communications media and in terms of easy, user friendly access to specific applications. Similarly, they will need to be developed in a manner which lends itself, where appropriate, to interconnectivity with other services.

B.82. Consequently, it is vital that all such projects are developed in a manner which uses the various operational arrangements described above, and that they are consistent with the various legislative measures which have been identified as necessary to underpin satisfactory electronic communication. In order to ensure that this is achieved, all new ICT-based service delivery projects will need to comply with the following principles: they should be capable of serving clients electronically; they should be capable of interacting with electronic payment systems, if appropriate; where they require information from other Government entities, they should be capable of accepting this electronically; where they produce information for such entities, this should be produced electronically, and in each of these instances, they should incorporate digital certification and encryption technologies as they come on stream. Compliance with these principles should be a critical factor in terms of resource allocation for project development.

B.83. All Departments, agencies, etc. should continue their work in identifying suitable projects and preparing for their implementation using ICTs. However, a significant number of pilot projects should be highlighted and should be taken forward rapidly. These pilot projects should aim to involve different sectors, such as key business groups, the banking system, the general public, etc. They should be used to test both the technology itself and the cultural environment and attitude to the emerging Information Society, including aspects such as use of the internet as a communications medium, digital certification, electronic payment mechanisms etc. In so doing, they will contribute to the overall perception of Ireland as an advanced country in the area of ICTs and electronic commerce. Moreover, they will establish the Government and the public service in general as a major stakeholder in the development and use of ICTs. This, in turn, should help to leverage significant investment and take-up by the private sector.

B.84. A number of viable pilot projects have been identified. These come under three categories: projects which will contribute to developments in the area of client interfaces and digital certificates, projects which are common to several or all government departments and specific service delivery projects in individual departments. The combination of projects suggested is intended to satisfy the objectives outlined in the preceding paragraph.

[Client interface/digital certificate projects.](#)

B.85. As indicated earlier, plans for introduction of a Personal Public Service Number and Public Services Card are being developed by the Department of Social, Community and Family Affairs. The Department of Enterprise, Trade and Employment (Companies Registration Office) is developing new systems in respect of businesses and their interaction with the public service. As a precursor to an electronic registration system, the Land Registry should engage in a programme of data capture of existing documents and develop new systems for extensive on-line searching and record provision. Each of these developments should ensure that it takes account of the various enabling measures identified earlier, including access, use of digital certificate technology, protection of data, etc. There should also be tight co-ordination between these projects as they are developed.

[Projects common across departments.](#)

B.86. Secure electronic communication between and within departments is becoming increasingly important and necessary. Demand for better intranet applications, such as secure e-mail (including transmission of embedded or attached files and documents), common databases and communication fora (for matters such as preparation of bills, interdepartmental groups and committees, preparation of subjects for Government discussion etc.) is increasing. These applications should be developed in a common format and in a way which incorporates adequate security features based on encryption and digital certification techniques.

B.87. Public procurement information, including Prior Indicative Notices, details of tenders and procurement outcomes should be published electronically. Facilities should be provided for on-line ordering of tender documents. In the medium term, when the legal status of electronic documents etc. has been established, full electronic public procurement should be the target.

B.88. Electronic payment systems need to be developed by all Government Departments and agencies, and increased take-up of electronic payment options by clients needs to be encouraged. This can lead to very substantial savings in terms of transaction processing and operating costs. For example, replacing paper-based payments with electronic payments can reduce operating costs by the order of one hundredfold. This is also an important issue in the context of discussions with the banking industry regarding electronic payment systems referred to earlier.

B.89. Notwithstanding the development of more sophisticated, electronic and interactive public services, the telephone will remain a vital communication link between citizens and public administration. Measures can be taken which will improve its effectiveness and which will help to prepare for more integrated service delivery, whether by electronic or more traditional means. In terms of access, progress has already been made with the introduction of the Lo-Call initiative, which gives access to Government Departments for the price of a local call. The first phase of this initiative is nearing completion. A logical further phase is the continued development of a virtual private network within and between departments together with appropriate applications, which would allow calls to be transferred as necessary, rather than requiring the caller to make a new call. This would be capable of implementation in parallel with the introduction of a secure intranet, as mentioned above. It would also lend itself to the development of a telephonic "first stop shop" for business with public administration, which in turn could be developed as a precursor to fully electronic "first stop shops" and which may also be required to run in parallel with its electronic equivalent.

Service delivery projects in individual departments.

B.90. A number of tax forms are under consideration by the Office of the Revenue Commissioners as possible candidates for electronic filing. These include the periodic VAT return and the Self Assessment returns for companies and for sole traders. Selecting at least one of these forms as the basis for a pilot project in conjunction with a certification authority would be an important development, with the medium term objective being electronic filing of all periodic returns and improved electronic payment options. While electronic fund transfer options are now available for tax payment in a large proportion of cases, other electronic payment options also need to be developed.

B.91. The development of facilities for electronic filing of companies returns by the Department of Enterprise, Trade and Employment (CRO), in tandem with the client identifier/digital certificate project described above, would be an important step towards providing a range of electronic public services for businesses. Companies are obliged to file returns annually. Electronic filing of these returns would have benefits for the companies themselves, the CRO and the public, particularly if electronic access to those returns is also possible.

B.92. Two other relevant projects have been identified by the Department of Enterprise, Trade and Employment. The first of these concerns electronic filing of annual returns by insurance companies, which would have benefits for the industry, the public and the Department. The second involves providing a facility to calculate and submit claims for Redundancy and Insolvency payments. Again, this would benefit companies, the public and the Department. Work on providing these services is already under way. This should be progressed in collaboration with the other projects, and under the overall framework, mentioned above.

B.93. The Department of Social, Community and Family Affairs should identify and develop candidate services for full electronic delivery using the Public Services Card/Integrated Social Services System concepts referred to above. This department should also proceed with its pilot project concerning access to benefit payments using Laser card in the context of the Ennis Information Age Town concept.

B.94. The Department of Health and Children should develop pilot electronic services for patient identification, tracking of healthcare records, etc., also using the Public Services Card/Integrated Social Services System concepts referred to above.

B.95. The Department of Agriculture and Food could usefully develop a pilot project to allow farmers submit application forms for headage and premium schemes by e-mail. In the medium term it should be possible to allow clients access to track progress of their individual grant applications from receipt to payment.

B.96. The Department of Environment and Local Government could develop a system to allow electronic processing of driving test applications, including electronic payment of the test fee.

B.97. The Central Statistics Office collects and disseminates statistical information and in the implementation of both of these functions can provide a better service through the development of electronic communication systems. Companies responding to statistical inquiries should be facilitated through having the option of making their returns in electronic form in appropriate cases. At the same time, users can make more effective use of statistical data through having electronic access to official statistics and related databases via, for example, the internet.

B.98. A number of individual departments have nation-wide networks under their aegis. These include the Department of Environment and Local Government (local authorities), the Department of Health and Children (health boards) and the Department of Education and Science (schools). The development of secure sectoral intranets, over which they can conduct business with their respective bodies, would be a valuable and logical step in terms of improving information flows. Again, these intranets should incorporate the access and security features referred to above, where appropriate.

B.99. As a common format for public service websites and common electronic access mechanisms for public services are developed, it may be appropriate to consider developing a delivery channel in the context of Digital TV developments. Such an approach might be possible, for example, in partnership with one of the Digital TV multiplex operators, and could provide access to public services using Digital TV technology even where consumers choose not to avail of full internet access over this medium. This concept needs to be explored further, in parallel with developments in the area of Digital TV generally.

All Departments and agencies should be preparing plans for the development and introduction of electronic delivery options for their services, irrespective of whether they have been identified in the context of flagship projects above. An audit system is needed to ensure that this takes place in a satisfactory manner. Each Department or agency should include in its annual report a section covering progress in this area, including the results of its audit.

Strand three - seamless, client-centred electronic services.

B.101. This strand would require substantial re-engineering of the way in which a large range of public services are delivered, in order to move beyond simply providing information in a client-centred way to fully integrated delivery of services in a client-centred manner. The question of how far to go down the road of client-centred public services needs to be examined in detail. For example, should public services be organised around the life event cycle, should they continue to be delivered by individual departments in a largely unconnected way or is there a case for much greater integration across service suppliers? What demand exists, or is likely to exist, for such an approach? What are the full implications

of extending electronic communications mechanisms to the entire population? What lessons can be learnt from the development of strands one and two? What has been the detailed experience in other countries at a more advanced stage of development? A major examination of these and related issues, including resource and funding implications, needs to be carried out in order to inform the decision making process in this area.

SUPPORT AREAS WHERE ACTION IS NEEDED

B.102. There are a number of other areas where action is needed to monitor, support and complement the issues identified above and to ensure their satisfactory implementation.

Awareness.

B.103. The stimulation of business and public awareness is crucial to the success of encouraging and implementing the Information Society in Ireland. A particular need in this regard, which has been identified in the Report of the Information Society Advisory Committee, and repeated by the Information Society Commission, exists in the small and medium sized enterprise sector. This sector needs to be convinced of the benefits to be gained from incorporating ICTs into their business processes. A recent OECD survey found that, in Ireland, lack of awareness was cited as the primary obstacle to electronic commerce among SMEs, followed by uncertainty of the business benefits. (Significantly, in the US, awareness was only ranked fifth, with set-up costs taking first place.)

B.104. The public too needs to be made more aware of the capabilities and benefits of ICTs. The scope for improved social inclusion needs to be emphasised, as ICTs offer potential for improved provision of information, communication and service capabilities to those who feel marginalised in society. At the same time, the public needs to be educated in dispelling some of the myths and confusion surrounding the internet and ICTs in general. For example, the recent report by the Working Group on Illegal and Harmful Use of the Internet identifies the need for a balanced view of downside issues - "Moral panic based on poor understanding of the Internet is an enemy to progress" - and makes recommendations for increased awareness in this regard. Here awareness is needed regarding the potential downside, but also regarding options to minimise or overcome this downside.

B.105. A campaign about the opportunities and threats of the Information Society for SMEs in Ireland is being undertaken by the Information Society Commission in conjunction with IBEC. It is part-funded by the Department of Public Enterprise using funds from the EU Economic Infrastructure Operational Programme, with £235,000 allocated for this purpose. This campaign was launched recently and is expected to run until late 1999. It will aim to increase awareness and to motivate SMEs to take positive action to embrace ICTs and to thus improve competitiveness.

B.106. Further awareness programmes are needed for the general public and non-governmental agencies. Furthermore, it is important that awareness programmes are sustained through 1999 and 2000, and that adequate funding is made available to this end. A new television series - TechTV - which is sponsored by the Information Society Commission has been broadcast weekly for thirteen weeks since September on Network 2. This series aimed to educate the population at large in the area of ICTs and associated applications, and can make an important contribution to the awareness raising process.

Education.

B.107. Significant initiatives in this area are now under way, including the Education Technology Investment Fund and the Schools IT 2000 Initiative. The Education Technology Investment Fund is making £250 million available over a three year period to renew and modernise third level institutions' infrastructure, develop skills to cope with new emerging needs and invest in promoting innovation. The Schools IT Initiative, with £40 million Government funding, is facilitating integration of ICTs into Irish schools, including provision of hardware and support services in schools and skill development for teachers. These initiatives are also expected to leverage significant industry funding for the education sector.

Telecom Eireann, in partnership with the Department of Education and Science, is contributing £10 million to the Schools IT 2000 Initiative to provide internet connections and multimedia computers to all schools.

B.108. These initiatives are expected to contribute in a large way to ensuring the availability of a highly skilled workforce and a population at ease with ICTs. This is likely to be particularly important in the immediate future, as there is already evidence of an emerging skills shortage in the technology sector. If this shortage is allowed to develop it has the potential to undermine the various other measures aimed at establishing Ireland as a leading location for electronic businesses.

B.109. It is by no means certain that the measures now being implemented will result in Ireland being at the same level of technology penetration in schools as other leading developed countries, and notwithstanding the significant overall amounts of funding being allocated, this nonetheless translates into comparatively modest allocations on a per school basis, and it is likely that substantial further funding will be needed in this area. Consequently, the initiatives referred to should be closely monitored by the Implementation Group to establish their effectiveness, and the Group should make recommendations regarding what further measures, if any, are needed in this area.

B.110. Another key area identified within the education sector is the level of private computer ownership and use by teachers. The nature of the profession is such that much of the preparatory work is done in the home, and it is expected that increased use of PCs and the internet by teachers would, in turn, have a very positive knock-on effect within schools. This needs to be considered further in the context of measures to improve computer ownership and internet usage levels.

B.111. Most of the learning initiatives are focused on people within the formal education system. The Information Society Commission has rightly highlighted the need to embrace the concept of lifelong learning, and the use of complementary facilities outside the formal education system. Provision of access to PCs and internet for those who do not have these facilities directly available to them will play an important role in meeting this need. In this context, the access measures identified earlier, including provision of internet access mechanisms to public libraries and community and voluntary bodies where additional support facilities and advice is available on-site will make a significant contribution, particularly to those who feel they are most excluded from the formal education system.

Future skills needs.

B.112. While the broad measures outlined above will contribute to greater overall comfort with and knowledge of ICTs amongst the population generally and more particularly amongst school goers, there are also pressing needs in the area of future skills entering the workforce. The Expert Group on Future Skills Needs has examined this aspect, has identified emerging shortages in the ICT sector which need to be addressed and has made certain proposals in this area.

Application of ICTs to the elderly/people with disabilities.

B.113. The Information Society Commission has highlighted the need for adoption of good practice on the application of ICTs to the elderly and people with disabilities, in the context of the report from the EU-funded PROMISE initiative, including by those involved in government projects. The PROMISE project promotes an all-inclusive Information Society, which aims to raise awareness of both the needs and the potential of elderly and/or disabled people, and identifying and encouraging innovation and best practice in this area. The report presents twenty case studies aimed at raising awareness of the particular needs and abilities of elderly/disabled people, explores the issues involved and identifies good practice options. The Information Society Commission has suggested that the National Disability Authority should monitor design standards in the area of internet-based information and services, particularly public services.

Market information and benchmarking progress..

B.114. Up-to-date and reliable information is a basic requirement in the context of the demands of a rapidly developing and changing environment such as the Digital Age. A Market Observatory to track investment and developments in the communications and information sectors, to monitor Ireland's competitive position and to make this information available rapidly to interested bodies would be a valuable asset. The relevant departments and agencies have been examining this, with a view to identifying the best way to implement the concept.

B.115. There have also been calls for measures to benchmark Ireland's progress in ICT deployment and electronic commerce readiness, most recently from the Advisory Committee on Telecommunications and the National Competitiveness Council. This will help to establish our relative position in the rapidly changing global environment, to identify areas where rapid corrective action may be required and, ultimately, to confirm our position as a leading Information Society country. Appropriate mechanisms need to be put in place to facilitate such benchmarking.

Research and development.

B.116. Investment in research and development in Ireland has traditionally been low by comparison with other, competing, countries. In this light, the recent announcement of a £180 million investment programme for research in higher education to help Ireland become an international centre for innovation is a welcome development. This programme, which will be part funded by the Education Technology Investment Fund (including an additional allocation to that fund of £30 million) will run over three years. This development can play an important role both in creating the environment for training future graduates and post-graduates to international standards and in attracting knowledge-based industries to Ireland, issues which have been highlighted by the Expert Group on Future Skills Needs.

Taking the work forward

B.117. Considerable progress has been made, over a comparatively short time period, in terms of raising the profile of the Information Society, identifying the key issues, analysing them and coming up with solutions or responses. A number of bodies, at both national and international level, have contributed to this process. However, there remains a perception in the wider community that the response from Government and public service generally is somewhat fragmented and less co-ordinated than is desirable or necessary. This negative perception can have a damaging effect on efforts to show that Ireland has a modern and attractive infrastructure and environment in which to carry out electronic business. It is vital that all resources are harnessed and that rapid and comprehensive response mechanisms exist to ensure that Ireland is a key player in the Digital Age, and perceived as such.

International developments.

B.118. The nature of the new communications environment means that, inevitably, many of its aspects are being discussed and, ultimately, will be decided at international level. A wide range of bodies are concerned with different elements - EU, OECD, WTO, WIPO, WCO, United Nations Commission on International Trade Law (UNCITRAL), etc. - and concern has been expressed that Ireland is not taking a sufficiently active role in such discussions. Given the pace of development, it is vital that Ireland is represented at all relevant discussions at international level, whether they are of an exploratory or a regulatory nature, and that we seek to have Irish concerns reflected in the outcome of those discussions. This will afford an opportunity to influence developments and will ensure rapid feedback of those developments as they are emerging. Furthermore, it will help to reinforce the objective of establishing Ireland as a credible, leading state in the emerging Information Society.

B.119. Consideration needs to be given to the best means of ensuring that Irish views are taken on board and of disseminating information, given the pace and scale of developments. A secure communication forum, operating over the internet or a Government intranet, could be a useful tool for sharing documentation, information and views. Strategic placement of key officials in appropriate posts in international organisations could also play an important role.

B.120. As part of the overall task of monitoring developments in other countries, the Department of Public Enterprise has proposed that Telecoms Attachés should be located in key countries (USA, Japan) and that their tasks should include monitoring and reporting on significant market developments and policy decisions as they arise. This is an issue which needs to be examined further, in consultation with the Department of Foreign Affairs.

Liaison with business and industry.

B.121. Government Departments and agencies have had, and need to continue, ongoing dialogue with the key business and industry operators as part of their normal operations. In addition, the Information Society Commission provides a mechanism for incorporating the views of a wide cross-section of parties interested in and involved in the development of the Information Society. However, there are limitations to the effectiveness of these consultation mechanisms. In particular, there would appear to be inadequacies in the area of representation for certain business sectors. This would apply, in particular, to the relatively new area of internet service providers and other operators concerned with the new infrastructure, where tight competition is not always conducive to the existence of a cohesive representative voice for the sector. Moreover, it must be noted that, notwithstanding the contribution of the Information Society Commission in this area, it does not claim to provide a forum for a representative voice of the various sectors from which its members - and the participants in its Advisory Groups - are drawn. In this context, despite the wide range of participation in the work of the Information Society Commission and its Advisory Groups, its membership does not ensure comprehensive representation of all sectors.

B.122. Consideration needs to be given to how these consultation mechanisms can be improved and how greater representation of the key sectors can be achieved. It is noted that, in the context of the Working Group on Illegal and Harmful Use of the Internet, the ISP sector established a representative forum - this may be a useful starting point towards more formal representation arrangements for this particular sector.

Structures to take the work forward.

B.123. The SMI Working Group on IT concluded that a Strategic Results Area Team should be established to pool expertise and to oversee the development of the Civil Service response to the demands of the Information Society. In many respects, this was overtaken by events with the establishment of the Implementation Group which now has responsibility in this area. Nonetheless, the work of the Group to date confirms the need for an ongoing team to oversee the implementation of the Information Society agenda, including identifying the longer term objectives and ensuring that action takes full account of the evolving context. In this sense, it is considered that the Implementation Group can be seen as a Strategic Results Area Team.

The Implementation Group.

B.124. The primary role of the Implementation Group should be confirmed as having primary responsibility for ensuring that the action points measures outlined in the action plan are implemented by the respective Departments and agencies as indicated in that plan. This will be particularly important where those action points cross over two or more departments or agencies. In addition, the group should ensure that initiatives in the area of public service delivery using ICTs are fully compatible with the operational and legal arrangements described in this report. Any initiative or development which has an impact on the Information Society agenda should be brought to the attention of the Implementation Group. Periodic reports by the Group to Government would be an important means of keeping the

Government informed of progress and of highlighting any emerging issues where decisions at that level are required. The Group should also prepare further proposals regarding the development of the Information Society as it considers appropriate or necessary.

B.125. It is considered appropriate that the Implementation Group should continue to be established at Assistant Secretary General level.

An Information Society Policy Development Team.

B.126. Notwithstanding that the Group is established at senior management level and meets regularly, there is a limit to what can be achieved with this structure. In order to ensure that the policy framework is continually developed and updated as necessary, a dedicated support team is needed. This team would assist in the preparation of policy in the light of developments in the wider Information Society, co-ordinate related activities in the context of delivery of public services, and provide support services to the Implementation Group including in its task of overseeing implementation of the action plan. In this latter case, it would be expected to identify rapidly any issues which require attention, to raise issues for discussion as appropriate and to provide secretarial/support/advisory services to the Implementation Group in its work. It would also provide a specialised policy advisory service to Departments and agencies in the context of overall delivery of the Government's commitment to implementing the Information Society in Ireland, it would facilitate exchange of information and contacts across departments and agencies and it would help to move forward issues which cross over two or more departments or agencies, where necessary.

B.127. It would be appropriate to establish this Policy Development Team within the Department of the Taoiseach, given that Department's central role in co-ordinating policy matters generally and its particular responsibility for the Information Society Commission and chairing the Implementation Group. It would be a new, additional service in response to an emerging need and would complement, rather than replace, any existing central services such as CMOD and the SMI teams, which would continue to be responsible for their existing functions.

Liaison with the Information Society Commission and its Advisory Groups.

B.128. The Information Society Commission has established six Advisory Groups, each dealing with a specific aspect of the Information Society. One or more Government Departments are represented on each of these Groups. While their primary purpose is to provide advice to the Information Society Commission, information can flow in both directions, and Departments can benefit from the expertise of the members of the Advisory Groups. Closer linkage between each of these groups and the Implementation Group would improve this two-way flow of information, in addition to any feedback received formally via the Commission. This would be helped by the proposed Policy Development Team being represented at each meeting of each group. In addition, representatives from Departments who attend these meetings should ensure that they provide timely and comprehensive feedback to their representatives on the Implementation Group.

Resource implications.

B.129. Many of the developments related to the Information Society, such as internet growth and the emergence of electronic commerce, have only arisen over the last two or three years. The nature of these developments, and the speed with which they occur, impose new demands on the ability of Government Departments to keep abreast of, to seek to influence and to respond to them. The sheer pace of development, and the absolute necessity to respond rapidly, mean that additional resources are required in key areas if we are to deal adequately with the range of issues identified in this report and to give effect to the objective of Ireland being a key player in the Information Society.

B.130. It is generally accepted that critical developments in the area of ICTs and, in particular, concerning electronic commerce, will take place over the next two years. This requires resources to be committed immediately, if we are to be adequately positioned to influence and respond to these developments, and to ensure that our economic performance is not damaged through failure to keep abreast of them. Indeed, this latter point cannot be overstressed: there is very little in the way of options here if we are to protect and preserve our economic performance levels. Ignoring current developments in the marketplace will mean that these levels will suffer and we will find ourselves forced into trying to catch up with those who have taken the earliest lead at a later stage. Even if such a catch up were possible, the resources required at a later stage to take corrective action may well be considerably greater than those needed now to take anticipatory measures.

B.131. Consequently, resources need to be committed now in a number of areas, including those with responsibility for policy and legislative aspects of the emerging environment and those responsible for introducing new means of service delivery. A flexible approach will be needed to cater for the rapidly developing environment, and to ensure that new developments and technologies are exploited at the earliest possible opportunity.

B.132. It is unfortunate that a period of intense development and application of ICTs coincides with other major developments, such as Y2000 and introduction of EMU. However, we cannot afford to postpone action until these other developments have been catered for - other countries will not do so, and we will simply be left behind if we do not act now. Accordingly, Departments and agencies must ensure that Information Society issues and initiatives receive high priority in their internal resource allocation procedures. Furthermore, it is clear that certain specific actions will only be possible in the desired timeframe if additional resources are made available to achieve them - it is imperative that these resources are allocated.

B.133. Where possible, additional resource requirements are indicated for the individual action points arising from this report. In some cases the tasks identified are not discrete tasks but will be carried out as an integral part of a department or agency's wider range of responsibilities. Furthermore, in some cases, the resource requirement concerns a number of related action points. These factors have also been taken into consideration in resource assessment.

B.134. It is not possible to put an absolute figure on overall, additional resource requirements at this stage, given the nature and breadth of the subject. However, overall costs must be considered in the context of the range of actions needed (affecting practically every aspect of public administration), the necessity of implementing this programme in order to protect our economic performance, the expected improvements in service delivery and reduced operating costs and the likelihood that, sooner or later, these costs would have to be incurred anyway. Failing this, our economic performance will simply not be maintained, with consequent job losses and reductions in tax revenues.

B.135. It is noted that substantial revenues are expected to accrue to the State from the Telecom Eireann IPO next year. A unique opportunity exists to ensure that part of these revenues are re-invested in the development of ICTs and associated applications, in order to establish Ireland as a leading country in this area. Creation of a dedicated fund to assist in the implementation of the Information Society in Ireland, particularly in respect of pilot projects or initiatives which would not come within the normal budgetary process of individual Departments or agencies, would provide a much needed flexible source of funds in this vital area.

IT staffing issues in the public service.

B.136. The SMI Co-ordination Group has already highlighted the particular difficulties regarding availability of IT resources for development of projects within the public service recently. The move to introduction of electronic delivery of public services will exacerbate these difficulties and the need to overcome them, as further new skills will need to be integrated into the public service IT framework. Some of these difficulties arise from a drain of

resources away from IT divisions to general service posts without adequate compensatory measures for the IT skillbase. Others arise from the loss of skilled staff to the private sector because of the better terms on offer there. Moreover, apart from the loss of skilled and experienced staff itself, even where scope for recruitment of replacement staff does exist this is of limited benefit due to the mismatch between public service recruitment, pay and promotion arrangements and the expectations of both newly qualified and experienced IT professionals outside the public service.

B.137. A number of measures have been identified by the SMI Working Group on IT which could go some way towards resolving these difficulties. These include:

- maintaining panels at EO/AO level identifying people with IT skills;
- in certain circumstances, allowing retention within IT divisions of staff who are promoted and who, as a result, would otherwise be assigned to non-IT areas;
- scope to transfer staff with appropriate skills from general duties to IT posts if necessary;
- changes in the basic recruitment level for certain IT staff;
- greater flexibility to recruit short-term contract staff directly from the market.

When the Government considered the report of the SMI Implementation Group in July 1998, it decided that discussions should be held with the Civil Service Unions to agree measures to help retain existing skilled staff and to allow direct recruitment of suitably skilled and qualified people. Rapid progress in this area is needed, in order to ensure availability of adequate IT resources for the range of developments which are envisaged over the coming years.

An Action Plan.

B.138. The Group believes that a comprehensive action plan is needed to move work forward on the implementation of the Information Society in Ireland. Such a plan should cover the various areas identified in the above analysis. Consequently, the Group has prepared a proposed action plan which is presented in Part A of this report, and the Group recommends that the Government adopt this plan. The Group also considers that a highly visible commitment to the implementation of the Information Society is appropriate. Publicising adoption of the Action Plan would be a useful contribution in this context. Finally, it would be important that implementation of this plan be subject to stringent monitoring and reporting, whilst at the same time being sufficiently capable of adaptation and updating as necessary in the light of the constantly developing Information Society environment. As indicated above, this should be a key responsibility of the Implementation Group and the Development Team.

Annex 1

Membership of the Implementation Group

Dermot McCarthy	Dept. of the Taoiseach (Chairman)
Tom Arnold	Dept. of Agriculture and Food
Sean Connolly	Office of the Revenue Commissioners
Jim Duffy	Dept. of Finance (CMOD)
Eric Embleton	Dept. of Finance (CMOD)
Tony Enright	Dept. of Health and Children
Michael Grant	Dept. of Arts, Heritage, Gaeltacht and the Islands
John Haskins	Dept. of Justice, Equality and Law Reform
Denis Healy	Dept. of Education and Science
Ronald Long	Dept. of Enterprise, Trade and Employment
Donagh Morgan	Dept. of the Taoiseach
Gerry O'Hanlon	Central Statistics Office
Tom O'Mahony	Dept. of Environment and Local Government
Oliver Ryan	Dept. of Social, Community and Family Affairs
Peter Ryan	Dept. of the Taoiseach
Brendan Tuohy	Dept. of Public Enterprise
John Callinan	Dept. of the Taoiseach (Secretary)