Schools I.T 2000: Full Report.

Foreword

A Message from the Minister for Education and Science

It is with great pleasure and pride that I publish this policy framework document on Information and Communication Technologies in Irish Education. As we approach the dawn of the 21st Century it is vitally important that we grasp, in partnership, the opportunities presented by the information age. This ICT initiative will place our pupils and teachers at the cutting edge of international innovation and development in education and help to secure important skills necessary to our future economic wellbeing. The level of investment underpinning this initiative is very substantial and this coupled with the flexibility of the policy framework document will ensure that we will have a very varied and comprehensive response to ICT development in Irish education.

Teachtaireacht ón Aire Oideachais agus Eolaíochta

Is cúis mhór áthais agus go deimhin cúis mhór bhróid dom an doiciméad creatpholasaí seo faoi Theicneolaíochtaí Eolais agus Cumarsáide in oideachas na tíre seo a fhoilsiú.

Agus an t-aonú haois fichead buailte linn tá sé ríthábhachtach go dtapóimís, i gcomhar lena chéile, na deiseanna a chuireann Ré an Eolais ar fáil dúinn.

Leis an tionscnamh seo ar Theicneolaíocht Eolais agus Cumarsáide beidh daltaí agus oidí na tíre seo go maith chun cinn leis an nuáil agus leis an bhforbairt is déanaí i gcúrsaí oideachais ar bhonn idirnáisiúnta. Cuideoidh an tionscnamh linn scileanna a bhaint amach a bheidh de dhíth orainn sa todhchaí chun go mbeidh rath ar ár n-eacnamaíocht náisiúnta.

Rinneadh infheistiú substaintiúil airgid sa tionscnamh seo. Cuir é seo leis an tsolúbthacht atá sa doiciméad creatpholasaí agus deimhnítear go ndéanfaimid freastal ilghnéitheach cuimsitheach ar fhorbairt Teicneolaíochtaí Eolais agus Cumarsáide in oideachas na tíre seo.

1 General Introduction

1.1 Ireland lags significantly behind its European partners in the integration of information and communication technologies (ICTs) into first and second-level education. **T**he need to integrate technology into teaching and learning right across the curriculum is a major national challenge that must be met in the interests of Ireland's future economic well being.

In the *Action Programme for the New Millennium* the Government commits itself to address this and achieve computer literacy throughout the school system. This document, which is based on the work of an expert Steering Group, sets out a comprehensive and innovative programme for realising this objective.

Running until the end of the year 2001 and involving a public investment of £40 million, the *Schools IT 2000* Project will target action on:

- o   classroom resources and infrastructure;

- o   teacher skills development and support;

- o   policy and research.

A key objective of *Schools IT 2000* is to bring about a national partnership involving schools, parents, local communities, third-level institutions together with public and private sector organisations to meet the Project's ambitious aims. The government's investment of £40 million in the programme will be significantly enhanced and supplemented through the efforts of the Project's partners. For example, the announcement by Telecom Eireann on 16 September, 1997 that it would invest £10 million over the next three years in supporting the increased integration of ICTs into first and second-level schools represents a very significant commitment to the partnership process by that organisation.

1.2 *Schools IT 2000* has clear targets for achievement up to end of the Year 2001. The government investment in the Project will act as a catalyst for change by supporting the development and implementation of an exciting programme to assist every one of Ireland's first and second-level schools to enrich teaching and learning through the best possible educational use of ICTs. While the Project is targeted at the first and second-level sectors only, the improvements, which it will realise in teacher-training arrangements and in Internet-based communication and information dissemination, will also benefit the further and higher-education sectors. In addition, it is recognised that considerable development in relation to curriculum, teacher professional development and certification has taken place in the further vocational education and training sector. Developments in this sector will be examined with a view to building on existing good practice.

1.3 This document sets out a policy framework for achieving the integration of information and communication technologies (ICTs) into first and second-level education and also the broad implementation strategy for the *Schools IT 2000* Project. The document is being circulated widely in both the public and private sectors and it is also being published on the Department's Web site (www.irlgov.ie/educ). In addition, a seminar will be held for the partners in education and the social partners and arrangements will also be made to discuss *Schools IT 2000* with other public and private sector partners.

The aim of this process is to ensure that the best possible educational gains can be extracted from the additional resources now being devoted to educational ICTs by the Government. The Department will welcome the views of all interested parties.

1.4 S*chools IT 2000* will integrate with, and build upon, the work which has already been done to develop the use of ICTs in Irish schools. The expertise, creativity and dedication of voluntary groups such as the Computer Education Society of Ireland (CESI), other teacher ICT support networks and teacher subject associations will be recognised and availed of. The valuable experience gained from existing Department, NCCA, NCVA, NITEC (National Information Technology in Education Centre), VEC, Education Centre, third-level institution and individual school initiatives will be utilised. The work which has been done by teacher unions and groups such as Léargas, the European Studies Project Team, the Transition Year Support Team, the Leaving Certificate Vocational Programme Office, the Leaving Certificate Applied Programme Support Service and others will be taken fully into account. The goodwill and support which has already been demonstrated by parents, local communities, third-level colleges and public and private sector organisations through a number of different initiatives will also be encouraged. Close links will be forged with the recently launched Irish TechCorps, which is facilitating the development of school/private-sector partnerships.

In summary, the experience of those already active in the field will be a major asset to the *Schools IT 2000* team.

2. Why Action is Needed

2.1 Ireland is presently ranked in the third division (at position 23) by the International Data Corporation (IDC) in terms of its state of preparedness for the information age. It is perhaps not surprising that the USA is ranked in first position. However, the high ranking of smaller countries is more noteworthy. The Nordic countries all feature highly, Sweden (2), Denmark (3), Norway (4), Finland (5), while other small countries such as New Zealand (9), Singapore (16) and Israel (19) are also ranked above Ireland. It is significant that all of these countries have developed national strategies for integrating ICTs into education.

2.2 Despite our present ranking, it must be recognised that Ireland has many strengths which can form the basis for quickly improving its state of preparedness. The report of Ireland's Information Society (IS) Steering Committee identifies the high value placed on education in Irish culture which suggests a likely openness to new ideas in the whole area of learning and a willingness to move towards a future of lifelong learning. Furthermore, a willingness to innovate has been evident in those Irish schools at the forefront of the digital revolution and teachers and pupils have shown themselves to be highly creative and imaginative in their use of ICTs. The challenge now facing Irish education is to assist every school in enriching teaching and learning through imaginative educational use of ICTs.

2.3 Many countries throughout the world have now launched initiatives in response to the challenges presented by the emerging global information society. The integration of ICTs into school curricula is almost invariably a key element of such initiatives.

In the USA, for example, the *Technology Literacy Challenge* launched by President Clinton in February 1996 envisions a 21st century in which all US students are technologically literate. The first instalment ($250 million) of a total federal allocation of $2 billion for the Programme was included in the 1997 Budget. For the fund to succeed, the US Government expects each federal dollar to be matched by dollars and in-kind contributions from state, local and private sector sources. In Japan, the Ministry of Education will install 900,000 network-equipped personal computers in schools by the year 2000. A partnership involving the Ministry and Nippon Telegraph and Telephone (NTT) will facilitate the connection of schools to the Internet over the next two years. The EU Action Plan *Learning in the Information Society*, launched in July 1996 by Commissioners Cresson and Bangemann in association with Commissioner Flynn, sets out to target primary and second-level schools where the need for technology is being met least satisfactorily.

In 1995, Finland launched a five year plan, *Education, Training and Research in the Information Society: A National Strategy* (1996 budget: 39 Mecus or approx. IR£29m). Norway's three-year plan *IT in Norwegian Education* was launched last year. Israel has a five-year plan entitled *Tomorrow 98* which aims to have all schools fully equipped and connected to the Internet before the year 2000.

Here in Ireland, the IS Steering Committee report presents a challenging *"strategy for action"*. The Committee believes that *" our education and training system will have to be transformed in order to take advantage of the opportunities that the new information and communications technologies bring in meeting education objectives and to respond also to the scale and speed of re-skilling that the Information Society will entail for Ireland's labour force. This transformation will extend from policy making to curriculum development, teaching methods and teacher training. The sources of education and training must be extended beyond the traditional institutions to include the home, the community, enterprises and other organisations."*

2.4 There are compelling reasons for integrating ICTs into the school system. Firstly, there are **social** benefits. The Bangemann Report has pointed out the danger of the creation of a two-tier society of information haves and have-nots. It is clearly important that all young people, regardless of social or economic background, should have equal access to new technologies.

Secondly, there are **vocational** and **economic** reasons for promoting the use of ICTs in schools. Knowledge and familiarity with new technologies will be an important dimension of employability in the information society. Those organisations that cannot adapt to the information age will not function effectively. Similarly, those nations that successfully embrace the information age will gain an advantage over their competitors. This is of particular relevance to Ireland in light of the increasing demand for these skills and their importance for the continued growth of the Irish economy.

Thirdly, there are **pedagogic** reasons for adopting new technologies in classrooms. ICTs can improve the quality of the educational experience by providing rich, exciting and motivating environments for learning. Most educational researchers refer to the high motivation evidenced in pupils using ICTs for learning. Numerous studies have illustrated the benefits of ICTs for pupils with special needs. Others refer to the opportunities which ICTs present to encourage the development of creativity, imagination and self-expression.

Finally, and perhaps most importantly, there are broader **catalytic** reasons for ICT integration. The use of computers can accelerate positive trends such as increased emphasis on information handling and problem solving and reduced emphasis on memorising facts. ICTs can make schools become more collaborative environments for both students and teachers. Indeed this collaboration can extend beyond school boundaries to include co-operation for learning at a distance both within and between countries.

Thus the primary rationale for ICT adoption is that it should be seen to complement the achievement of broader educational aims which affirm the professional skills of teachers and the personal growth of students. At national level, this means that ICT integration should correlate with wider educational aims. Additionally, at local level, ICT integration must work in tandem with the implementation of school development plans. From the perspective of those responsible for policy implementation, whether at national or local level, it should be evident that their personal commitment to the goal of ICT integration will complement their present and future professional roles. Unless this synergy is seen to exist, it is unlikely that the level of commitment and ownership necessary for successful implementation will be achieved.

2.5 **In summary, the integration of ICTs into classrooms should be seen as an important goal for Ireland. Achieving this goal will require the commitment of many actors and agencies.**

3. Goals and Objectives

3.1 Introduction

Schools IT 2000's core objective is to put in place a permanent infrastructure which will ensure that:

- **pupils in every school have the opportunity to achieve computer literacy and to equip themselves for participation in the information society;**

- **support is given to teachers to develop and renew professional skills, which will enable them to utilise ICTs as part of the learning environment of the school.**

3.2 Supporting Objectives

The following more detailed objectives have been established to support the achievement of the core objective.

3.2.1 General

- To support all first and second-level schools in Ireland so that they will have the following:

- access to training, curriculum materials, advice and support;

- at least one multimedia computer system connected to the Internet with appropriate software within two years, with an overall target of 60,000 systems nationally by the end of 2001;

- a technology plan specific to the needs of the school;

- To ensure that schools in disadvantaged areas, both urban and rural, receive early support so that they do not fall behind schools with access to greater resources;

- To develop, disseminate and implement models for the support of lifelong learning by schools in co-operation with the library service and community development organisations;

3.2.2 Partnership

- To support schools in acquiring equipment, training and support additional to that funded by Government;

- To establish a Policy Advisory and Development Committee **which will** include representation from the partners in education and the social partners;

- To establish an Industry Advisory Group which will promote and support investment by the ICT industry, the private sector generally and public enterprise in educational ICTs;

- To ensure the continuing availability of preferential terms for Internet access and usage by schools from both Internet Service providers and telecoms providers. (Telecom Eireann has already announced that over a period of three years, it will offer free high bandwidth ISDN access lines and free usage of the Internet, up to a certain level, to every school);

3.2.3 Professional Skills Development

- To carry out as a priority a teachers' professional development ICT needs analysis;

- To support colleges and schools of education in developing the integration of ICTs in pre-service teacher-training;

- To establish a widely-based forum to advise on service and in-service ICT training needs of teachers;

- To develop a complete, integrated in-career development programme for ICTs, facilitating progression from novice to expert;

- To deliver professional development in ICTs to at least 20,000 Irish teachers;

- To provide the necessary equipment and deliver special training to the Department's Inspectorate to enhance their role in providing advice and support to teachers on ICT issues and to enable better national evaluation of progress under *Schools IT 2000*;

- To develop accreditation of training in partnership with ICT professional bodies, national certifying authorities (e.g. Teastas, NCVA) and/or third-level institutions;

- To support the development of postgraduate programmes in the educational use of ICTs and to seek the inclusion of a module on the educational use of ICTs in all postgraduate teacher education programmes;

3.2.4 Schools Support

- To provide advice and support directly to schools and to facilitate the integration of ICTs into the curriculum;
  To establish an online information, advice, support and dissemination facility;

- To develop models of best practice in classroom implementation of ICTs in association with a pilot group of about 40 schools;

- To disseminate information about the best curriculum products and practices to all schools;

- To establish a *Schools IT 2000* base in at least 10 Education Centres to provide support to schools on a regional basis;

4. Partnership

Progressing from where we are now to a situation in which ICTs are fully integrated into every school represents a major national challenge. The Government's investment of £40m in *Schools IT 2000* up to the end of 2001 will enable major advances to be made.

Among the most important outcomes of *Schools IT 2000* will be a comprehensive national policy on the role of ICTs in Irish schools together with a strategic action plan specifying the activities and resources necessary to fully implement the policy. This, along with the development of the equipment base in schools, links to the Internet, development of individual school technology plans, appropriate curriculum materials, and a sound framework for delivery of professional development, advice and support to teachers will establish the basis for further investment to be made in the future.

The development of *Schools IT 2000* will be based on partnership. The aim of this partnership approach, which will have a number of different strands, will be to enhance the effect of the Government's investment and to more effectively plan, fund and implement the integration of ICTs into education during and beyond the period of the Project.

A key dimension of the partnership will be the involvement of both the partners in education and the social partners in *Schools IT 2000*.

At national level a Policy Advisory and Development Committee, which will include representatives of the partners in education and the social partners, will be established. The National Centre for Technology in Education (NCTE) will also establish an Industry Advisory Group, which will promote and support investment in educational ICTs by the ICT industry, the private sector generally and public enterprise. The recent commitment by Telecom Eireann to invest £10 million in this area in partnership with the Department of Education and Science will, for example, contribute significantly to the further integration of ICTs in classrooms. The Telecom initiative offers the following:

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  o free Internet connection for every school in the country;
  o the provision of high bandwidth ISDN lines to schools;
  o free usage of the Internet, up to a certain level, for each school in the country;
  o assistance with the provision of computer systems under the *Technology Integration Initiative ;*
  o support with the provision of specialised information and other services to schools under *ScoilNet ;*
  o piloting new emerging technologies in a number of first and second-level schools under the *School Integration Project* framework.

The NCTE and the Irish TechCorps (which is already implementing a programme including elements similar to elements proposed under *Schools IT 2000*) will also work closely together.

In addition to developments at national level, partnerships at school, local and regional levels involving teachers, parents, local communities, third-level institutions and public and also private sector organisations will be a vital dimension of *Schools IT 2000*.

5. Schools IT 2000: What Will the Project involve?

5.1 Introduction

The strategies for achieving the objectives of *Schools IT 2000* are:

5.1.1 The development of a *technology infrastructure* that includes :

- a scheme of technology integration which will ensure that there are **at least** 60,000 multimedia computers in Irish schools by the end of the year 2001;

- the connection of every Irish school to the Internet within two years.

5.1.2 The development of a *skills infrastructure* that includes :

- the provision of professional skills development in ICTs to **at least** 20,000 teachers;

- the establishment of distance learning programmes to provide ready access for all teachers to flexible and cost-effective ICT training;

- the introduction of pre-service training in the use of ICTs in education for all student teachers.

5.1.3 The development of a *support infrastructure* that includes :

- the introduction, in co-operation with the National Council for Curriculum and Assessment (NCCA), of curriculum innovations to enhance learning through the use of ICTs in the classroom;

- the establishment of a national network to advise and support schools in developing their own technology plans and in utilising ICTs;

- the setting up of a national framework to support the development of multimedia tools and products tailored to the curriculum in Ireland;

- the creation of appropriate curriculum resources, including multimedia tools and products, for schools during the course of the Project.

5.2 Guiding Principles Underlying Schools IT 2000

A number of guiding principles, derived from an examination of the available research, underlie the selection of these particular initiatives and the proposed approach to implementation.

- Availability of the appropriate technology in schools is essential i.e. computer systems and connection to the Internet.

- Provision of the technology must be linked to provision of appropriate professional skill development and support.

- ICTs need to be integrated into first and second-level curricula and teachers need ready access to high quality supporting resource materials, including software.

- There is no one formula for integrating technology into the classroom and school curriculum. The nature and level of technology use in any school will depend on the school's educational priorities.

- Each school must be supported in developing its own technology plan, which integrates with the broader educational aims of the school development plan.

- An experimental approach (piloting) is needed to identify the best models for technology adoption in Irish classrooms.

- Good mechanisms for disseminating pilot project findings need to be developed.

- Local support and peer networking among teachers are vital to successful implementation at classroom level.

6. Implementation - Organisational Arrangements

6.1. There will need to be effective co-ordination in order to realise the ambitious objectives of *Schools IT 2000*. To achieve this co-ordination the following structures are being put in place at national and regional level:

- **An Educational ICTs Co-ordination Unit** in the Department of Education and Science to act as the focal point for the Department's involvement in all educational ICT matters.

- **A National Centre for Technology in Education** (**NCTE**) in Dublin City University to manage the implementation of *Schools IT 2000*, to develop ICT policy proposals (these will be subject to consideration and approval by the Minister for Education and Science) and to provide policy advice to the Department of Education and Science.

- **A *Schools IT 2000* base in at least 10 Education Centres** to provide support to schools on a regional basis. A full-time IT Advisor will be appointed to each of the centres involved.

6.2 Department of Education and Science: Educational ICTs Co-ordination Unit

An Educational ICTs Co-ordination Unit has been established in the Department of Education and Science.

The functions of the Unit include:

- providing focused handling of educational ICT issues at Department level;

- acting as the linkage between the Department and the NCTE and providing advice and support to the Minister and to Department staff;

- providing any necessary direct Department of Education and Science input to both national and international fora and discussions on educational ICT issues;

- evaluating proposals made directly to the Department by other parties;

- responding to parliamentary questions, letters and telephone queries received on educational ICTs.

6.3 National Centre for Technology in Education (NCTE)

A National Centre for Technology in Education (NCTE) is at present being established under the aegis of the Department of Education and Science. Dublin City University will host the NCTE. Its advisory brief will extend beyond the use of ICTs in schools to cover all educational ICT issues, including those arising in relation to third-level, further and adult education, with particular reference to the development of models for lifelong learning in response to the requirements of the emerging information society.

The terms of reference of the NCTE are as follows:

- to develop policy proposals on the role of Information and Communication Technologies (ICTs) in the Irish education system for consideration and approval by the Minister for Education and Science;

- to advise the Minister for Education and Science on issues related to the development of the use of ICTs in the Irish education system;

- to provide information and advice to the Department and other educational agencies on educational ICT issues;

- to manage the implementation of all aspects of the *Schools IT 2000* Project at national level, including putting in place appropriate equipment procurement arrangements.

- to provide input to both national and international fora dealing with questions related to the educational use of ICTs and, in particular, to develop co-operation with the UK system on these matters;

- to promote multi-agency initiatives on educational ICTs (including establishing an Industry Advisory Group which will promote and support investment in education by the ICT industry, the private sector generally and public enterprise, and also seek to ensure that maximum benefit accrues from such investment);

- to ensure active Irish involvement in, and benefit from, current and future EU initiatives on educational ICTs by :

- acting as a point of contact, information and co-ordination for EU institutions, other member states and the relevant parties in Ireland;

- facilitating the establishment of educational consortia in response to EU calls for proposals on the application of ICTs in education, and providing advice on the formulation of these proposals;

- to review/evaluate educational software and to keep in touch with pilot projects on educational software use implemented by ICT companies in Ireland and abroad;

- to communicate with groups of individuals or organisations having the same or similar objectives in Ireland or abroad;

- to undertake whatever other functions are considered necessary to promote the public interest insofar as the development of the use of ICTs in the Irish education system is concerned, which may reasonably be regarded as falling within its remit.

A Board of Management appointed by the Minister for Education and Science will manage the NCTE. A Policy Advisory and Development Committee that will include representation from all the partners in education and the social partners will assist its work.

The Centre will compile an annual report on its work. It will also produce a newsletter each term outlining the progress being made on each of the elements of *Schools IT 2000*. An annual national conference will be held to provide project schools and the wider education community with the opportunity to review progress. Periodic seminars/workshops will be organised for those involved in various initiatives at education centre and at school level.

The Centre will recruit six staff in 1997 as follows:

- a Director;
- a Co-ordinator for the Teacher Skills Initiative;
- a Co-ordinator for the School Integration Project;
- a Co-ordinator for *ScoilNet*;
- a Co-ordinator for the Technology Integration Initiative;
- a Receptionist/Secretary.

In the interests of coherence and value for money, it is proposed that NITEC (National Information in Education Centre) should merge with the NCTE from the date of establishment of the new organisation. Some additional staff will need to be recruited in 1998 or thereafter as the implementation of *Schools IT 2000* gathers pace.

The NCTE's staff will include educationists (mainly seconded teachers), experienced IT staff and administrators. The NCTE staff will work very closely with the education centres in supporting locally based activities under *Schools IT 2000.*

6.4 A *Schools IT 2000* base in at least 10 Education Centres

Education centres have an important role to play in ensuring the success of the *Schools IT 2000* Project. Their task will be to support the work of the NCTE by providing leadership, training and support, including on-line support, at regional level and by providing regular feedback on progress and issues arising.

A full-time IT Advisor (e.g. a seconded teacher with a proven track record in ICTs) will be appointed to each of a number of education centres and will be charged with providing training, advice and support on ICTs to all schools within a defined area.

It is envisaged that a minimum of 10 advisors will be put in place to support the implementation of *Schools IT 2000*. It will be the function of the NCTE to determine which centres should have advisors and the rate at which the advisors should be put in place - appointments should be made in stages as the Project gathers pace. Where the need arises, the NCTE will arrange appropriate training courses for newly appointed IT Advisors.

Each education centre to which an advisor is appointed will seek to work in partnership with a third-level college and with other interested parties (e.g. the library service).

In summary, *Schools IT 2000* will aim to support education centres in becoming a key resource within the community, where teachers and others can access quality resources, support and training in educational ICTs.

7. Implementation Initiatives

7.1 The Project will involve three major initiatives:

Technology Integration Initiative (TII);

Teaching Skills Initiative (TSI);

Schools Support Initiative (SSI) :

- ScoilNet;

- School Integration Project (SIP).

7.2 Technology Integration Initiative (TII)

The *Technology Integration Initiative (TII)* will aim to ensure that there are **at least 60,000 multimedia computers in Irish schools by the end of the year 2001.** This will be implemented in two strands.

Strand 1: In recognition of the need to make rapid initial progress, each school will be assisted in acquiring at least one multimedia-ready computer system with Internet access before the end of 1999 as the first step in a phased development programme. The purposes of this strand are:

- To support technology planning at school level by providing an opportunity for schools without multimedia systems to experience and explore the potential of the technology;

- To enable schools not already on the Internet to fully participate in the Project by providing them with an on-line link to the NCTE and to the many other useful educational sites on the World Wide Web;

- To encourage further development in the use of ICTs within schools already having multimedia technology and/or an Internet connection by supporting them in acquiring a further system to meet priority needs.

Strand 2: The NCTE will develop mechanisms to support schools in building up their ICT equipment infrastructure during the course of the Project. The objective of achieving an installed base of at least 60,000 multimedia computers by the end of the year 2001 will be reached with the assistance of all of the partners involved in *Schools IT 2000.*

Any state funds recently allocated to schools specifically for educational ICT equipment will be taken into account by the programme to the extent appropriate.

Given the ever-increasing rate of change in the field of ICTs it is essential that schools be regularly advised of the opportunities offered by ongoing technological developments. In this regard the NCTE will commission an expert study to consider current and future technology infrastructure options (equipment selection, wiring, deployment of equipment etc.) for schools. This study will guide the continuing implementation of the *TII.* It will be updated on a regular basis.

7.3 Teaching Skills Initiative (TSI)

7.3.1 TSI Overview

The professional development of teachers has been identified internationally as *the* primary factor in enabling the effective integration of ICTs into schools. For this reason teacher in-career development has been prioritised in most recent initiatives in relation to ICT development.

One of the staff of the NCTE will act as full-time co-ordinator of the *TSI.* The Co-ordinator's first priority will be to establish a forum aimed at ensuring that providers of pre-service training and in-career development have opportunities to become involved in *Schools IT 2000* and that all ICT-related teacher professional development activities (including those for trainers of teachers) are continuously reviewed and developed. Participants in the forum will be representative of the Department of Education and Science, colleges and schools of education, other third-level

institutions, education centres, management authorities, teacher unions, parents and others (including certifying bodies such as NCVA and Teastas). Priority will also be given to carrying out a professional development needs analysis to identify deficiencies in the present system, including any geographical disadvantages in terms of access to development programmes.

The Co-ordinator will meet with representatives from the colleges and schools of education to discuss how the integration of ICTs into pre-service training curricula might be further developed by them, with support from the *TSI*. It is envisaged that priority tasks would need to be identified, with pilot projects being undertaken and reviewed in advance of general implementation.

The *TSI* will address the need for a variety of skills development and training experiences to be available to teachers and will develop a skills/training continuum which will allow teachers to progress in a structured way from novice to expert users of ICTs. It is considered that at least three different categories of need exist, as follows:

- **ICT Skills and Awareness Training** directed at developing practical experience in using the computer, the Internet and associated technologies.

- **Professional Skills Development in ICTs** aimed at providing guidance and experience in the use of particular software types/products in curriculum delivery and general information on the applicability of ICTs to particular curriculum areas.

- **Pedagogical Skills Development** leading to whole school and classroom-based action learning, targeted principally at schools involved in the *Schools Integration Project.*

Much of the ICT skills development being provided to teachers at present falls into the skills and awareness category and this will, of course, continue to be available through the work of the *TSI* Co-ordinator in partnership with the present training providers and the Department's In-Career Development Unit (ICDU).

The provision of the necessary ICT equipment and special skill development and training will also need to be arranged for the Department's Inspectors to enhance their role in providing advice and support to teachers on ICT issues and to facilitate national evaluation of progress under *Schools IT 2000*.

A crucial element of the *Schools IT 2000* support structure will involve the appointment of a full-time IT Advisor to each of at least ten Education Centres. About half of each advisor's time will be dedicated to the development and delivery of the *TSI* with further substantial time being spent in advising and supporting schools in his/her region on ICT issues. In addition, each advisor will be allocated approximately four schools under the School Integration Project and will use the experience gained from this to assist the *TSI* Co-ordinator in developing the overall ICT training programme.

7.3.2 Piloting and Delivery of TSI

Professional development programmes will be delivered primarily through the education centres with IT Advisors delivering some courses themselves and additional services being contracted in as necessary. The potential for *Schools IT 2000* professional development, possibly accompanied by follow-up technical support, to be delivered in partnership with third-level colleges or other organisations will be explored.

A key aim will be to develop access to ICT skill development through the production of resources for flexible delivery, including distance learning via the Internet, video, CD-ROM etc. In this way the *TSI* will provide all teachers with access to cost effective and efficient ICT training.

The suggested model for delivery of training for each category is as follows:

- **ICT Skills and Awareness Training:** At least one teacher from every school requiring it will be provided with training aimed at developing practical experience in using the computer and associated technologies in conjunction with Stage 1 of the *Technology Integration Initiative (TII)*. Training will also focus on the use of the Internet and on introducing selected relevant educational software. The suitability of the European Computer Driving Licence (ECDL) qualification as a model for the delivery of this type of training will be examined. The modular certification structure developed by the NCVA may also offer a model of practice for piloting.

- **Professional Skills Development:** A number of teachers from each school, depending on its size and sector, will be provided with opportunities for professional skills development aimed at providing guidance and experience on the use of particular software types/products in curriculum delivery and general information on the applicability of ICTs in particular curriculum areas. This category of skill development will emphasise the context in which teachers as professionals use ICTs.

- **Pedagogical Skills Development:** A priority for the TSI Co-ordinator will be to support and develop the role of (i) teacher associations and (ii) colleges and schools of education in the development of pedagogical skills. Many commentators have identified the most effective mode of delivery of pedagogical training as classroom based. The aim, therefore, will be to involve teacher educators in the support of school-based activities, with an initial focus on teachers from the 40 *Schools Integration Project (SIP)* pilot schools. It is intended that the training resources developed by these teachers in partnership with teacher educators will then provide a model for the implementation of staff development programmes in other schools.

In addition, the *TSI* Co-ordinator will seek to support the work of third-level institutions in developing the delivery of pedagogical skills development through the Education Centre network (e.g. the National Distance Education Centre is presently developing such a programme under the EU ADAPT Programme). An important objective will be to provide all teachers, regardless of physical location, with access to pedagogical training in ICTs, which will be accredited at diploma and, eventually, postgraduate level. The inclusion of such pedagogical training in all relevant post-graduate education programmes is also an objective.

The *TSI* will, as appropriate, assist education centres in equipping themselves with the ICT infrastructure necessary to provide the above skills development/training programmes. Possible mechanisms for making computer systems available to teachers to facilitate the learning process will also need to be explored.

7.3.3 TSI - Expected Outcomes

- **Training Forum** established to advise on the planning and implementation of pre-service and in-service training in ICTs;

- **ICTs integrated into pre-service teacher education curricula** to a much greater extent than at present;

- **Training Continuum** developed involving progression from novice to expert users of ICTs;

- **Professional Development** delivered to at least 20,000 teachers;

- **Distance Learning Training Resources** developed by the *TSI* Co-ordinator in conjunction with the education centres and available for dissemination nationally;

7.4 Schools Support Initiative (SSI)

7.4.1 Schools will need access to continuing support and advice to enhance the use of ICTs in the classroom. Every school will be supported in producing a technology plan, which supports its broader educational goals. In implementing their technology plans it is essential that schools should have access to technical support in using equipment on a day-to-day basis. Appropriate mechanisms will be developed to ensure that such support is provided under *Schools IT 2000.* An example of such a mechanism could be a partnership between a third-level institution and a cluster of schools that included the provision of technical support by the institution. These mechanisms will be reviewed regularly.

The *Schools Support Initiative (SSI)* will also include the following dimensions:

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  - *ScoilNet; and the*
  - *School Integration Project (SIP).*

7.4.2 ScoilNet

ScoilNet - Overview

Managed centrally by the NCTE, the main purpose of this initiative will be to support ICT integration by:

- providing information, advice and support to schools on *Schools IT 2000* and ICT issues generally;

- developing an on-line database of ICT-related curriculum materials;

- supporting the development of on-line reference databases with documents from the Department of Education and Science, the NCCA, the NCVA and others;

- improving communication within the educational community;

- supporting the development of an on-line library of training support materials covering the whole spectrum of in-service training (incl. ICT training);

- promoting the development of multimedia products, including products in the Irish language, suitable for widespread use in Irish schools in co-operation with various interests including software and publishing companies;

- Developing links with UK, EU and other international ICT projects and networks.

A co-ordinator on the staff of the NCTE will be responsible for managing *ScoilNet* activities on a full-time basis. External assistance will also be contracted in, as necessary.

A *ScoilNet* Web site will be established as the focal point of the initiative. In the main, this will house *Schools IT 2000* and other ICT-related documentation, with links being put in place to a wide range of other sites. The initiative will seek to support the work of the Department, NCCA, NCVA, education centres, co-ordinators of out-of-school second-chance education services such as Youthreach, individual schools and outreach centres in developing their own web-based resources.

As the information society emerges, more learning will take place outside of the formal system. One of the advantages of *ScoilNet* will be the fact that appropriate materials and information can be made available not just to the education sector but also to this wider community of learners. Anyone with an Internet connection will be able to follow the progress of *Schools IT 2000* and give feedback to the team.

ScoilNet - Technical Support and Advice

The *ScoilNet* team will provide technical support in the form of NCTE advice sheets and guidelines for schools, e.g., alternative ICT infrastructure options for schools, security and backup advice, purchasing advice and guideline prices, advice on the optimum use of ICTs in the Special Education context, how to connect to and make best use of the Internet, how to set up school Web pages, how to guard against harmful material on the Internet etc.

 In addition, detailed support materials on the *Schools IT 2000* Project will be made available on-line. These will include policy documents, application forms, sample school technology plans, progress reports from participating schools, training resources from the TSI etc. The Web site will contain advice for teachers and students on how to locate retrieve and download information from the Internet and also on how to publish Irish curriculum support material on the Web.

 Teachers will be able to e-mail *ScoilNet* and receive timely responses to queries they may have in relation to ICTs. Complementing this service will be a collection of the most frequently asked questions on ICTs and suitable responses.

 The *ScoilNet* team will consult closely with groups such as the Computer Education Society of Ireland and other teacher ICT support networks in advance of implementing any of the above arrangements. The practical experience of these groups will be of great benefit.

ScoilNet - Curriculum Development and Support

ScoilNet will support the NCCA, teacher and subject associations and, where appropriate, individual schools and teachers in:

- developing materials which enhance the integration of ICTs into curriculum content and delivery;

- publishing these materials (including lesson plans) on the Web.

Schools will be able to use their Internet connection to access the above and to link to other Web sites with useful educational content to offer.

There is at present a scarcity of educational software to support the delivery of the curriculum at first and second level. Many schools are now creating their own resources and publishing them on the Web. *ScoilNet* will play a key role in identifying multimedia content suitable for widespread use in Irish schools. It will work in partnership with teachers, content owners and the software industry to develop high quality multimedia software products.

Apart from the ICT aspects of the curriculum, *ScoilNet* will identify and support the publication (on Web site or CD-ROM) of a wide range of general curriculum reference materials for teachers. An order of priority for publication will be developed in consultation with the NCCA, NCVA and others.

ScoilNet - Staff Development

This will involve working in partnership with the Department's In-Career Development Unit and others to bring about the development of an on-line library of training support materials covering both ICT training and in-service training generally.

It will also involve supporting the delivery of distance learning on ICTs via the Internet, where this is appropriate.

ScoilNet - Information Dissemination and Communication

ScoilNet will greatly enhance information dissemination and communication within the education sector. It will do this by:

- supporting the extension of the Department of Education and Science's Web site to contain a larger database of documents than at present (this will include circulars, reports, information notes, up-to-date listings of schools etc.);

- supporting the development of on-line reference databases of NCCA, NCVA and other documents;

- supporting voluntary educational groups in extending their Web sites;

- piloting the introduction of secure e-mail links within the sector (e.g. a pilot application for the automated transmission of statistical returns to the Department by first and second-level schools could be tested via these links);

- Organising on-line discussion groups and other activities involving ICT support for peer networking.

Given the extent of material, which the Department could potentially publish on the Web, priority will be given to the most sought-after documentation.

Considerable cost and timesaving can be realised through increased use of the Internet for information dissemination and communication within education.

ScoilNet - International Links

ScoilNet will develop links with UK, EU and other international programmes on educational ICTs. The contacts which already exist between the Department of Education and Science and the UK Department for Education and Employment will facilitate an ongoing exchange of information/research findings and increased co-operation on educational ICTs as new initiatives taking place in both countries unfold. Planned developments in the UK include the implementation of a new "National Grid for Learning" and a new University for Industry. The National Grid for Learning is an Internet initiative broadly similar to *ScoilNet.* The new University for Industry will be developed in collaboration with the Open University and will support lifelong learning by using ICTs to bring new opportunities to adults seeking to develop their potential.

At EU level, the *ScoilNet* Web site will constitute the Irish hub of an EU-wide network of networks, which is planned under the European SchoolNet (EUN) Project. The main objective of EUN is to support the implementation and deployment of electronic network services for European schools and to encourage and facilitate the introduction and integration of multimedia-based teaching and learning in these schools. It will be an important forum for co-operation and exchange of knowledge and experience in a European context. The *ScoilNet* site will be a focal point for those in the EU Commission or in member states wishing to brief themselves on developments in Ireland. *Schools IT 2000* will gain considerably from collaboration with the EUN and other international developments.

ScoilNet - Expected Outcomes

- **Databases** containing:

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        - ICT-related curriculum content;
        - general curriculum support materials;
        - educational documents (Department, NCCA, NCVA etc.);
        - in-service training support materials;

- **Multimedia software** suitable for widespread use in schools;

- **Comprehensive technical support documentation** related to ICTs, with particular reference to Schools IT 2000;

- **Improved communication** within the education system;

- **Increased public awareness** of educational ICT activities;

- **Close links with educational ICT developments in other countries.**

7.4.3 School Integration Project (SIP)

SIP - Overview

While *Schools IT 2000* sets out a clear policy framework for the integration of ICTs into first and second-level education in Ireland, experience with the integration of new technologies into education in other countries makes it clear that the automatic success of such initiatives cannot be assumed, even when financial resources are readily available. It is generally accepted that successful models for change should foster experimentation on a pilot basis initially. *The School Integration Project (SIP)* will promote whole school development in relation to ICT integration. It will involve

at least 40 "lead" schools working in partnership with ten education centres and, where appropriate and possible, with third-level institutions. The project will include schools, which have already implemented ICTs in teaching and learning and may already provide models of good practice, and also schools, which are at an earlier stage of development. The *SIP* will lead to the identification of additional and complementary policy, skill development and support models, pedagogical strategies, and classroom resources for the continuing adoption of ICTs in Irish schools. Information on the best practices and curriculum products emerging from all of the project schools will be disseminated throughout the system on an ongoing basis. One of the staff of the NCTE will act as National Co-ordinator for the *SIP*. The findings of the *SIP* will inform the implementation of the *TII,* with particular reference to Strand 2.

Selection of SIP Schools

The devolved approach employed in the Transition Year Programme has been shown to encourage ownership and commitment by teachers to long-term implementation aims. Given this, schools (or school clusters) will, where feasible, be encouraged to develop their own project proposals in co-operation with the IT advisor in the relevant education centre. A list of priority areas will be drawn up by the NCTE to assist the development of project proposals. These areas will include aspects of curriculum delivery, special needs, gender equity, disadvantage, home/school/community liaison, parent-teacher co-operation, etc. A careful balancing of national goals (e.g., national dissemination) and local requirements (e.g. local fit and teacher engagement) will be required. The involvement of third-level , local community, private sector or other partners in the projects will be encouraged.

The arrangements for seeking and vetting applications from schools to participate in the *SIP* will be developed by the NCTE in consultation with the National Policy Advisory and Development Committee and the Department of Education and Science. Selection criteria will take account of the need for wider implementation of the *SIP's* findings. In effect, as many different types of school as possible should be included e.g., large, small, urban, rural, special needs, disadvantaged, gaelscoileanna, single sex, mixed etc. The knowledge and experience of local inspectors will be drawn upon in finalising the selections.

Support Arrangements for SIP Schools

Pressure on teacher time has been identified as a major barrier to implementing change in schools. In addition to equipment and training, it is anticipated that *SIP*

schools will be allowed to provide for a reasonable amount of release time for those teachers involved in the Project (the average should probably be around 0.25 teacher equivalents per annum). In larger schools, it is likely that some of this time will be allocated to a school IT co-ordinator and some to other teachers.

SIP local support will be provided by the IT advisor based at each of the ten education centres referred to already. In respect of *SIP*, the IT Advisor will primarily be responsible for local management and national dissemination. In addition, the *SIP* National Co-ordinator will support the development of a partnership arrangement between each education centre/school cluster and a third-level college. An academic advisor, based in a third-level college, could assist in formulating pilot proposals, school-based implementation and on-going evaluation. The accreditation of work undertaken by teachers could be explored with each academic partner (accreditation for classroom based action research has already been developed by many colleges and schools of education).

Wider Benefits of SIP

As SIP develops, an independent panel chaired by a member of the Department's Inspectorate will evaluate the educational outcomes being achieved. The best practices and curriculum content emerging from the *SIP* schools will be adapted for dissemination throughout the system via *ScoilNet*.

It is anticipated that the expertise developed by the IT Advisor will become a resource for the wider educational community as the project progresses. In particular, assistance will be available to schools in each advisor's region on how to develop an appropriate policy in relation to ICTs. Thus, in addition to one pilot-school workshop per term, further workshops will be organised for schools outside *SIP*. A primary aim will be to encourage all schools to integrate the adoption of ICTs into school plans in a manner, which is compatible with broader educational aims. Schools selected to participate in *SIP* will be able to assist the Advisor by providing demonstrations and advice/training to nearby schools as their own project concludes. In these ways, the experiences and benefits of the Project will be disseminated to other schools.

SIP - School-Based Outcomes

- **Curriculum Content/Guidelines** developed to support ICT integration in co-operation with NCCA and other agencies;

- **Physical Resource** issues identified e.g hardware and software management and maintenance, software licensing, Internet access etc.;

- **Staff Development** needs identified e.g. model for involving all staff including the school principal and class/subject teachers;

- **School Support** issues identified e.g. role of IT co-ordinator, time requirements;

- **Whole-School** strategies identified to facilitate ICT adoption into the school plan;

SIP - Education Centre Outcomes

- **Training Resources** developed and available for adoption by other regions;

- **Regional Support** and resourcing issues identified, including peer support effected by school clustering and the role of the regional IT Advisor;

- **Administrative** issues explored in relation to information management at local, regional and national levels;

- **Community Involvement** strategies identified to encourage closer links between schools, commercial organisations and community groups (including the extension of ICT learning opportunities into the wider community);

- **Learning Partnerships** in place between schools, education centres and third-level institutions;

- **Research** available on ICT practice in schools;

- **Pedagogical Expertise** developed with regard to ICTs in schools.

8. Funding

Schools IT 2000 involves a Government investment of £40 million over the period to end of the year 2001. At least sixty percent of this will be invested in assisting the development of schools' equipment infrastructure (hardware, software and wiring) with the remainder being devoted to training, curriculum resources and support. As stated earlier, the development of a national partnership in enhancing the integration of ICTs into education is a key element of the Project. This partnership will lead to additional investment from public and private sectors and other sources being channelled into the Project to complement Government expenditure.

At local level there is ample precedent for community and/or private sector investment in ICTs in education and such investment will have an essential role to play in *Schools IT 2000.* The NCTE will urgently examine a range of options in respect of both local contributions and of mechanisms for encouraging local investment in ICTs in education before submitting policy proposals on this important matter to the Minister for Education and Science. Policy in this area will be applied in such a way as will ensure that schools in disadvantaged areas, urban and rural, will not fall behind schools with access to greater resources.

9. Next Steps

The following steps will be taken to progress *Schools IT 2000* from this point on:

- Circulate this document widely and publish it on Department's Web site with a facility for comments;

- Arrange a seminar for the partners in education and the social partners;

- Set up the Policy Advisory and Development Committee;

- Appoint a Director to the NCTE;

- Appoint initial staff required by the NCTE;

- Commence work on *Teacher Skills Initiative* and *ScoilNet;*

- Establish Industry Advisory Group;

- Begin implementation of Strand 1 of the *Technology Integration Initiative;*

- Appoint a first group of IT advisors to education centres;

- Invite schools to apply for involvement in the first stage of the *School Integration Project*.

SUMMARY

1. Introduction

Ireland lags significantly behind its European partners in the integration of information and communication technologies (ICTs) into first and second-level education. The need to integrate technology into teaching and learning right across the curriculum is a major national challenge, which must be met in the interests of Ireland's future economic wellbeing.

In the *Action Programme for the New Millennium* the Government commits itself to address this and achieve computer literacy throughout the school system. This document, which is based on the work of an expert steering group, sets out a comprehensive and innovative programme for realising this objective.

Running until the end of the year 2001 and involving a public investment of £40 million, the *Schools IT 2000* Project will target action on;

- o classroom resources and infrastructure;

- o teacher skills development and support; and

- o policy and research.

A key objective of *Schools IT 2000* is to bring about a national partnership involving schools, parents, local communities, third-level colleges together with public and private sector organisations to meet the project's ambitious aims. The government's investment of £40 million in the programme will be significantly enhanced and supplemented through the efforts of the Project's partners. For example, the announcement by Telecom Eireann on 16 September, 1997 that it would invest £10 million over the next three years in supporting the increased integration of ICTs into first- and second-level schools represents a very significant commitment to the partnership process by that organisation.

2. Objectives and Strategies

Schools IT 2000's core objective is to put in place a permanent infrastructure which will ensure that

- - pupils in every school have the opportunity to achieve computer literacy and to equip themselves for participation in the information society;

- - support is given to teachers to develop and renew professional skills, which will enable them to utilise ICTs as part of the learning environment of the school.

The strategies for achieving this ambitious objective are:

2.1 The development of a *technology infrastructure* that includes:

- - a scheme of technology integration which will ensure that there are **at least** 60,000 multimedia computers in Irish schools by the end of the year 2001;

- - the connection of every Irish school to the Internet within two years.

2.2 The development of a *skills infrastructure* that includes :

- - the provision of professional skills development in ICTs to **at least** 20,000 teachers;

- - the establishment of distance learning programmes to provide ready access for all teachers to flexible and cost-effective ICT training;

- - the introduction of pre-service training in the use of ICTs in education for all student teachers.

2.3 The development of a *support infrastructure* that includes :

- - the introduction, in co-operation with the National Council for Curriculum and Assessment (NCCA), of curriculum innovations to enhance learning through the use of ICTs in the classroom;

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- o the establishment of a national network to advise and support schools in developing their own technology plans and in utilising ICTs;

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  - o the setting up of a national framework to support the development of multimedia tools and products tailored to the curriculum in Ireland;

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  - o the creation of appropriate curriculum resources, including multimedia tools and products, for schools during the course of the Project.

3. Partnership

Progressing from where we are now to a situation in which ICTs are fully integrated into every school represents a major national challenge. The Government's investment of £40m in *Schools IT 2000* up to the end of 2001 will enable major advances to be made.

Among the most important outcomes of *Schools IT 2000* will be a comprehensive national policy on the role of ICTs in Irish schools together with a strategic action plan specifying the activities and resources necessary to fully implement the policy. This, along with the major development of the equipment base in schools, links to the Internet, development of individual school technology plans, appropriate curriculum materials and a sound framework for delivery of professional development, advice and support to teachers, will establish the basis for further investment to be made in the future.

The development of *Schools IT 2000* will be based on partnership. The aim of this partnership approach, which will have a number of different strands, will be to enhance the effect of the Government's investment and to more effectively plan, fund and implement the integration of ICTs into education during and beyond the period of the Project.

A key dimension of the partnership will be the involvement of all the partners in education and the social partners in *Schools IT 2000*.

At national level a Policy Advisory and Development Committee, which will include representatives of the partners in education and the social partners, will be established. The National Centre for Technology in Education (NCTE) will also establish an Industry Advisory Group, which will promote and support investment by the ICT industry, the private sector generally and public enterprise, in educational ICTs. The recent commitment by Telecom Eireann to invest £10 million in this area in partnership with the Department of Education and Science will, for example, contribute significantly to the further integration of ICTs in classrooms.

The NCTE and the Irish TechCorps (which is already implementing a programme including elements similar to elements proposed under *Schools IT 2000*) will also work closely together.

In addition to developments at national level, partnerships at school, local and regional levels involving teachers, parents, local communities, third-level institutions and also public and private sector organisations will be a vital dimension of *Schools IT 2000*.

4. Implementation

4.1 There will need to be effective co-ordination in order to realise the ambitious objectives of *Schools IT 2000*. To achieve this, the following structures are being put in place at national and regional level:

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  o An **Educational ICTs Co-ordination Unit in the Department of Education and Science** to act as the focal point for the Department's involvement in all educational ICT matters.

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  o A **National Centre for Technology in Education (NCTE)** in Dublin City University to manage the implementation of *Schools IT 2000*, to develop ICT policy proposals (these will be subject to consideration and approval by the Minister for Education and Science) and to provide policy advice to the Department of Education and Science.

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  o A *Schools IT 2000* **base in at least ten Education Centres** to provide support to schools on a regional basis. A full-time IT Advisor will be appointed to each of the centres involved.

  2.
      2. *Schools IT 2000***: What will it involve?**

The Project will involve three major initiatives:

4.2.1 *Technology Integration Initiative (TII)*

The *Technology Integration Initiative (TII)* will aim to ensure that there are **at least 60,000 multimedia computers in Irish schools by the end of the year 2001.** This will be implemented in two strands:

Strand 1: In recognition of the need to make rapid initial progress, each school will be assisted in putting in place **at least** one multimedia-ready computer system with Internet access before the end of 1999, as the first step in a phased development programme.

The purposes of this strand are:

- - to support technology planning at school level by providing an opportunity for schools without multimedia systems to experience and explore the potential of the technology;

- - to enable schools not already on the Internet to fully participate in the Project by providing them with an on-line link to the NCTE and to the many other useful educational sites on the Web;

- - to encourage further development in the use of ICTs within schools that already have multimedia technology and/or an Internet connection by supporting them in acquiring a further system to meet priority needs.

Strand 2: The NCTE will develop mechanisms to support schools in building up their ICT equipment infrastructure during the course of the Project. The objective of achieving an installed base of at least 60,000 multimedia computers by the end of the year 2001 will be reached with the assistance of all of the partners involved in *Schools IT 2000*.

Given the ever-increasing rate of change in the field of ICTs it is essential that schools be regularly advised of the opportunities offered by ongoing technological developments. In this regard the NCTE will commission an expert study to consider current and future technology infrastructure options (equipment selection, wiring, deployment of equipment etc.) for schools. This study will guide the continuing implementation of the *TII*. It will be updated on a regular basis.

4.2.2 *Teaching Skills Initiative (TSI)*

The professional development of teachers has been identified internationally as *the* primary factor in enabling effective ICT adoption by schools. With this in mind the *TSI* will involve the development of a complete ICT skills development programme to ensure teacher progression from novice to expert. **Skill development will be provided to at least 20,000 teachers nationally (and to at least one teacher per school).** A forum involving representation from the Department of Education and Science, colleges and schools of education, other third-level colleges, education centres, managerial authorities, teacher unions, parents and others (including certifying bodies such as NCVA and Teastas) will be established to advise on the planning and implementation of the initiative.

Colleges and schools of education will be consulted with a view to developing appropriate mechanisms to support them in implementing a programme of pre-service training in the use of ICTs in the classroom for all student teachers.

The ICT skill development programme for serving teachers will target the following areas:

- o ICT awareness (incl. Internet usage) training;

- o Professional development in the usage of ICTs in a curriculum context;

- o Pedagogical ICT skills development (whole-school and classroom-based action learning).

Every school will be supported in acquiring relevant ICT skills during both strands of the *TII*.

4.2.3 *Schools Support Initiative (SSI)*

Schools will need access to continuing support and advice to enhance the use of ICTs in the classroom. Every school will be supported in producing a technology plan, which will support its broader educational goals. In implementing their technology plans it is essential that schools should have access to technical support in using equipment on a day-to-day basis. Appropriate mechanisms will be put in place to ensure that such support is provided under *Schools IT 2000*. These mechanisms will be reviewed regularly.

The *Schools Support Initiative (SSI)* will also include the following dimensions:

ScoilNet

ScoilNet will involve the establishment in the NCTE of an on-line ICT advisory and support service for schools. A *ScoilNet* Web site will publish *Schools IT 2000* advice sheets, guidelines and curriculum materials to assist ICT integration in the classroom. *ScoilNet* support staff will provide expert advice to schools via e-mail. Curriculum materials will be developed in partnership with educational organisations and teacher groups. Curriculum resources produced by *ScoilNet* will be made available to every school. The development of multimedia products tailored to the Irish curriculum and suitable for widespread use in schools will be promoted by working in co-operation with various interests including publishing and software companies.

School Integration Project (SIP)

The *SIP* will lead to the identification of additional and complementary policy, training and support models, pedagogical strategies and classroom resources for ICT adoption in Irish schools. A core group of at least 40 schools will be involved in piloting various models of ICT integration. Each project school will work in

partnership with an Education Centre and the involvement of third-level, local community, private sector or other partners in the projects will be encouraged. As many types of school as possible (e.g., large, small, urban, rural, special needs, disadvantaged, gaelscoileanna, single sex, mixed etc.) will be included. The project will include schools, which have already implemented ICTs in teaching and learning and may already provide models of good practice and also schools, which are at an earlier stage of development. Information on the best practices and curriculum products emerging from all of the project schools will be disseminated throughout the system on an ongoing basis. The findings of the *SIP* will inform the implementation of the *TII,* with particular reference to Strand 2.

5. Funding

Schools IT 2000 involves a Government investment of £40 million over the period to the end of the year 2001. At least sixty percent of this will be invested in assisting the development of school equipment infrastructure (hardware, software and wiring) with the remainder being devoted to training, curriculum resources and support.

As stated earlier, the development of a national partnership in enhancing the integration of ICTs into education is a key element of the Project. This partnership will lead to additional investment from public and private sector and other sources being channelled into the Project to complement Government expenditure.

At local level there is ample precedent for community and/or private sector investment in ICTs in education and such investment will have an essential role to play in *Schools IT 2000.* The NCTE will urgently examine a range of options in respect of both local contributions and of mechanisms for encouraging investment in ICTs in education before submitting policy proposals on this important matter to the Minister for Education and Science. Policy in this area will be applied in such a way as to ensure that schools in disadvantaged areas, both urban and rural, will not fall behind schools with access to greater resources.