DIGITAL FUTURES GROUP AND DIGITAL COMPETITIVENESS STAKEHOLDERS' CONSULTATION

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INTRODUCTION

This submission from the Irish Primary Principals Network (IPPN) on the challenges and opportunities facing the Digital Sector in Ireland is confined to our particular area of expertise, namely, the integration of ICT into the curriculum and the deficiencies that currently exist within the Irish Education System in relation to digital infrastructure.

Opportunities/Challenges facing Ireland in Digital Sector.

Ireland, despite impressive economic growth lies near the bottom of many international figures regarding ICT implementation in education, broadband penetration and other technology measures. In particular, the level of teaching of and through technology has left us way behind our OECD counterparts. The case for ICT as a powerful enabling component for learning and an economic growth force multiplier has been well made. We are now preparing pupils for jobs that do not yet exist, in which they will be using technologies that have not yet been invented, in order to solve problems that have not yet been imagined. ICT is challenging modern education paradigms as well as Global economic strategies.

From an educational viewpoint, the challenges/opportunities facing the Irish Education System could be briefly outlined in the following two points;

(a) The development of skills and attitudes essential for preparing pupils for today's knowledge and information-based society;

(b) The proven potential of ICTs to dramatically enhance the teaching and learning experiences in every classroom in our country.

Preparation of children for today's knowledge and information-based society

Information technology has transformed the global economy and has already radically changed how business and society operates. IPPN believes there must be a corresponding adaptation in education to ensure pupils gain digital literacy - the necessary skills to succeed in the digital age. Understanding how to utilise technology to locate, select, filter and evaluate information; to learn, reason, make decisions, solve problems, and to collaborate and work in teams will be essential abilities for our rapidly changing world. Without a fundamental and significant investment towards these skills, our schools face the impossible challenge of trying to create 21st century learners for a 21st century society in 20th century educational environments.

Enhancing Learning and Teaching

91% of School Principals feel that increased ICT integration into school curriculum has the potential to significantly improve educational outcomes at Primary level (IPPN membership Survey, Jan 2007 involving over 600 schools). The overwhelming majority of Principals believe that properly integrated technology strategies and methodologies substantially improve pupil motivation, engagement and attainment levels and boost literacy and numeracy levels at all levels of the system.

The current situation in Irish schools falls far short of this vision: Only 6% of Principals feel their schools were well equipped in terms of technology. 6.7% recognise strong vision, leadership and policy from the Department of Education and Science (DES) as essential to the development of ICT in Primary Education. Only 1.5% are satisfied with the level of financial supports their school receives for ICTs. 83% state that a significant amount of existing ICT infrastructure is the result of school fund-raising / parental support etc. IPPN contends that the process whereby Primary Schools are forced to collect supermarket tokens to provide computer equipment for pupils to use indicates their desperation to acquire basic levels of technology and should be viewed by DES as nothing short of an embarrassment.

Current Obstacles

The reasons for the current stagnation are well known and require little elaboration:
- Lack of funding in general, and particularly since 2002
- Little evidence of any vision or leadership. The lack of an ICT vision and plan by the DES has been disappointing. Many initially enthusiastic and leading-edge teachers from the era of IT2000 have since given up using ICT in frustration
- The two previous points have led to a situation whereby it has become impossible for School Principals to plan in any meaningful framework for the integrated deployment of technology
- The absence of meaningful references or examples of technology integration in the delivery of curriculum in-service.
- The failure to address the crucial issue of digital content provision (with a small number of notable exceptions)
- A lack of service integration amongst the bodies charged with supporting and developing the education system.
- The dissipation of teachers' motivation and goodwill towards technology (a massive percentage of whom have undertaken in-service professional development in their own time) due to points one and two above, and the unavailability of modern, reliable infrastructure in their schools
- The inability of the highly motivated and skilled ICT Advisor cohort to provide anything approaching a comprehensive service to schools due to lack of capacity and insufficient resources

Ireland as a World Leader.

From an educational viewpoint, if Ireland is to reclaim her position as a heavyweight in the global technology pecking order, the following fundamental principals must underpin all strategy and policy deliberation;

a. All pupils must leave school with the technology skills needed in today's world and tomorrow's workplace. This can only happen through regular, structured access to ICT as an integral part of the curriculum.
b. All teachers must be equipped to use technology as a tool to achieve the highest possible standards for pupils through a cross curricular, integrated, discovery based approach. Principals and teachers must have continuous access to appropriate supports and professional development opportunities.
c. The Irish Government must invest adequately and continuously in education technology, research and development. Each school should have up to date infrastructure in terms of computer software and hardware and broadband connectivity.
d. The DES must engage meaningfully with School Principals in a proactive, meaningful and partnership approach in policy implementation.

Important Strategic Investment to Enhance Competiveness.

In addition to the above 4 observations, the following recommendations are of crucial importance from an investment viewpoint;

Funding

In the context of a six to seven year plan, and given that schools have had no financial support for the last 6 years to purchase, upgrade or maintain their technology infrastructure, it is clear that the investment requirements needed at both Primary and Second Level must be dramatically increased immediately. IPPN therefore recommends that the DES immediately initiate negotiations with Central Government for adequate resourcing.

This allocation provides €46 per pupil per year (or €26 if one considers the absence of funding since 2002). Compare this to our closest OECD neighbour, the UK: "Capital investment per pupil has grown from £100

per pupil in 1997 and by 2011 we will be spending per student over £1,000 per year, a ten-fold increase. In the past 10 years IT investment has increased sevenfold, interactive whiteboard- and IT-based learning helping the teacher be more than a lecturer and a tutor as well". (Gordon Browne, Feb 2007)

Given the drastic under-provision experienced by schools in recent years, IPPN suggests that serious consideration be given to a more radical approach to modernising Irish schools' infrastructure. Central purchasing of computers and digital content would result in considerable savings due to economies of scale. Additionally, to enable schools to forward-plan properly, maintenance and refresh contracts should be integrated into any successful tender. This crucial point ensures that teachers do not have to manage the choice, purchase and technical support for IT in schools. These measures have been adopted with a large degree of success in Northern Ireland.

Additionally, all school ICT equipment (including teachers' personal computers) should be exempt from VAT.

In the context of the acknowledged neglect of supports to schools' technology needs over the last four years, it is clear that an immediate and substantial injection of funding is required to enable schools update their technology infrastructure – in the areas of hardware, software and maintenance contracts. IPPN recommends therefore that the funding allocated to schools for this purpose be weighted heavily in years one and four of the period of the plan. This would enable school authorities to update their technology infrastructure at the earliest possible stage, but, additionally, and of equal importance, to put in place strategic targets and whole-school policies in the knowledge of future supports.

And finally, consideration should be given to public-private partnerships where commercial interests are involved at an executive level in developing software, funding pilots, providing resources etc. With the provisos that curriculum integrity is actively safeguarded and direct commercial pressure on children is avoided, these projects such as the Yamaha et al / Mayo Education Centre have much to offer.

Infrastructure

IPPN recommends that the nature of technology deployment – such as computers in classrooms, laptop trolleys, computer rooms, interactive whiteboards etc. – should best be decided by schools themselves, according to every school's own particular needs and priorities, and in consultation with a properly constituted and resourced advisory / guidance service. To benefit from economies of scale, a scheme of central purchasing for hardware and software should be set up – one in which a scheme such as eLearning credits could be considered.

Additionally, schools should be strongly encouraged, if not required to purchase computers/equipment with **at least** an onsite maintenance/support contract. Use of funding should be 60% hardware, 25% software, 15% technical support with an additional 30% for professional development coming from the DES and relevant agencies.

It is now clear that **broadband** width allocated to Irish schools is patently insufficient. Additionally, School Principals whose schools are connected by satellite report frequently that their provision is totally unsatisfactory. Their service is not dependable, and when it does actually work, it is far too slow. IPPN recommends that DES / NCTE take immediate steps to address these issues and establish minimum requirements. IPPN further recommends that the Department of Communications, Marine and Natural Resources should finance broadband rather than coming from DES.

IPPN recommends that a review of thin-client technology be undertaken with a view to offering a thin client alternative approach which would centralise administration, technical support, reduce overheads and enable a standardised delivery of services. It is worth reviewing this approach because of the substantial cost-savings and ease of maintenance that are indicated.

Consideration should be given to devising and recommending a standard, "locked-down" hardware and software configuration for adoption by schools. A generic approach like this across all schools would deliver most requirements to the majority of users and – most importantly – allow for ease of technical support and maintenance. This approach would not preclude schools from operating outside a standard configuration for specific purposes, e.g. video-editing, while not required on every PC in every classroom, might be supported on one laptop in a school or among a group of schools.

Next Steps for Government.

In addition to the investment and infrastructural issues identified above, the following areas must also become a priority for Government.

Digital Schools:

IPPN recommends that the Digital Schools Initiative, launched in 2006 be substantially supported and expanded to facilitate the dissemination of best practice across the primary system and not be the victim of any Government 'economies'. IPPN recommends that schools achieving Digital School status be suitably rewarded for their efforts and additionally, that the Digital Schools web portal be expanded significantly so that all schools can learn from the successful strategies implemented by such "beacon" schools. These are the schools where vision has become a reality. Consideration should be given to creative ways by which these leading schools can articulate and demonstrate *the critical success factors* as requested by the Minister.

Additionally, schools themselves have responsibility in the engagement, accountability and planning for the use of ICT resources.

School Principals must be facilitated in devising and planning policies, strategies and objectives upon which funding of ICT is contingent. IPPN suggests that it is not unreasonable that the DES formulate a similar set of plans encompassing targets, learning outcomes etc. so that schools will know they are operating within a system-wide framework.

IPPN views the use of ICTs in Primary schools as an extremely powerful vehicle for the implementation of the fundamental principles of the Primary Curriculum.

Consequently, IPPN recommends that attention be paid as a priority to the production and dissemination of high quality *interactive* digital content for all age groups and in every curriculum area, especially those areas unique to the Irish curriculum. What schools need in particular is indigenous, tailored, interactive software geared to our individual Irish curriculum.

In the 2006 Principals' survey, only 12% of Principals felt that there is sufficient indigenous software and resources appropriate to use with the revised curriculum. We also wish to emphasise the fact that for many teachers not actively engaged in using technology in their work, the continued absence of appropriate software resources underlines their perception of ICTs as a subject unto itself, and lacking in relevance to their daily work.

Going forward, schools should be encouraged to spend 25% of an agreed enhanced budget on software / applications. To support this, we recommend that the NCTE commission a paper-based publication for schools which details available high quality proven software and which describes the applicability of these applications across the curriculum.

Professional Development:

IPPN recommends the immediate reinstatement of all ICT Advisors with a clarified and redefined role to prioritise direct support to schools. It would also be of enormous benefit if ICT support to Primary Level came from an Advisor with a background in Primary Education.

In relation to teachers' role in supporting ICT, IPPN believes that teachers do not, cannot and should not be required to provide technical support for equipment in their schools. This is a waste of professional time and resources and underlines the need for support contracts with all ICT purchases.

Continued professional development in the area of ICT is crucial. CPD delivery should be sustained, in-school, curricular-driven and focused on specific teaching and learning. There is also a need to incentivise teachers with accreditation.

To implement these principles, IPPN recommends the introduction of a 'coaching' service which could share best pedagogical practice amongst schools. This service should be funded by the DES rather than from NDP funds.

Additionally and crucially, existing support services to schools should be reviewed and supported to ensure that ICT becomes an integral and embedded part of the service they provide. This has definitely not been the case heretofore - 91% of Primary School Principals indicated they had not been enabled to plan strategically for ICT provision and deployment by DES, - and this has contributed hugely to the loss of interest among teachers and Principals in using ICTs as an integral part of their work.

Teacher Engagement in an Integrated Approach

  It is the view of IPPN that there needs to be, far greater consultation and "joined-up" thinking in relation to ICT among the Education Partners. IPPN therefore calls for the immediate establishment of a meaningful forum for all those bodies involved in the development of the Primary Education System to be represented and to contribute to an integrated approach.

IPPN also recommend an explicit curriculum update for ICT. It is not good enough to describe ICT as a tool and recommend integration. An explicit framework, structure, core software, specific curriculum-driven objectives and a guide for schools to describe in general terms the type and level of ICT activity expected across the curriculum is required. This would enable some degree of self-assessment and standardisation across classes and schools and move away from current thinking of ICT as a 'nice to have' optional extra.

If schools are to embrace the integration of ICTs successfully, teachers must have confidence and competence to use technology, access to computers, networks and software applications that can be depended on to work and to appropriate professional development training and support. As a matter of priority, Principals must be supported in managing their schools ICT system and facilitated in using ICT to support school administration.

In New Zealand, for instance, access to computers has been assisted in recent years by the Laptops for Teachers Scheme, where teachers working with year 7–13 school students are reimbursed for approximately two-thirds of the costs of leasing a laptop. As part of the programme, teachers are expected to undertake professional development aligned to their school's ICT development plan. Laptops have also been provided to principals during 2002 and 2003. IPPN believes that a key element of this developmental process would be the provision of laptop computers to teachers and Principals (which could be linked to teacher competence / professional development), or at least to provide a 50% grant and VAT exemption.

Conclusion
IPPN is delighted to have been afforded the opportunity to make a submission on this very important area for education and economic wellbeing and looks forward to the report from the IIEA in due course.