

**ANGUS COUNCIL**

**EDUCATION COMMITTEE**

**2 JUNE 2011**

**INFORMATION AND COMMUNICATIONS TECHNOLOGY: INVESTMENT 2011/12**

**REPORT BY DIRECTOR OF EDUCATION**

**ABSTRACT**

This report outlines proposals to enhance ICT provision in Angus schools.

**1. RECOMMENDATIONS**

It is recommended that the Education Committee:

- (i) note the growing importance of ICT in providing appropriate learning opportunities for pupils
- (ii) approve the proposed investment in ICT outlined in Section 5 of this report.

**2. BACKGROUND**

**2.1** At its meeting of 13 January 2005, the Education Committee approved report 44/05, ICT Development Plan 2004/07, which set out the Education Department ICT priorities, including how available budgets were to be utilised to meet the requirements of schools and indeed the department as a whole. Reference was also made to reports:

- 825/04 Procurement of Computers for Primary Schools
- 1316/04 ICT provision in Primary Schools
- 1302/05 Broadband Communications in Primary Schools
- 46/06 Primary School Administrative System
- 52/07 Interactive Whiteboards and voting kit systems
- 764/10 Primary School Broadband Update

**2.2** These reports have highlighted the continued commitment to the ongoing development of ICT in primary and secondary schools over the last few years.

**2.3** The Education Department has continued to support the development of ICT, taking into account the evolving nature of requirements. A significant capital investment has been committed each year to maintain progress and ensure pupils and staff have appropriate facilities and resources. It is important to invest in new and emerging technologies to ensure maximum benefits are gained, to maximise learning and teaching opportunities and to integrate available ICT within the school curriculum.

**2.4** At a special meeting of Angus Council on 10 February 2011, it was agreed that an additional £315,000 be provided on a one-off basis in 2011/12 to allow the Education Department to fund Information and Communications Technology projects.

**3. CURRENT POSITION**

**3.1** At present, all schools and educational establishments have excellent ICT resources and the provision can be summarised as follows:

## **3.2 Primary**

**3.2.1** In accordance with the Education Department ICT Development Plan, resources are allocated to schools enabling equipment to be replaced on a four year rolling replacement programme (this encompasses laptop and desktop PCs). The Education Department has been refreshing approximately 25% of all IT equipment each year, based on the agreed computer: pupil ratio of 1:7.5 in the primary sector (additional PCs are allocated for administration and pre-school). All PCs in two primary cluster groups are refreshed each year, as part of the rolling programme.

**3.2.2** Fileservers have been installed and commissioned in each primary school. This programme was fully completed in all schools during 2006/07. This approach enables all desktop PCs and laptops to be linked to the school fileserver to enable storage of educational resources and data from materials, central Education Department and national systems eg Glow, SEEMIS, CPD Online.

### **3.2.3 Broadband Provision**

In order to ensure that staff and pupils have access to bandwidth, provision has been enhanced. This enables improved access to real-time applications which feature video, audio and/or have large file transfer requirements.

In addition to secondary schools, which are linked to the corporate network via a 100MBit line, 27 of our larger primary schools are linked via a 10MBit link. A further 11 schools have connectivity of equivalent capacity provided by alternative technologies, including local fibre, BT copper and Aerelink radio.

It has not yet been possible to upgrade the network to 15 smaller primary schools who still are linked via Metroflex lines.

While a technical solution is potentially available for the remaining 15 primary schools, at present this is not a financially viable option. However, as technology continues to develop, offering new solutions, and the cost of existing technologies reduces over time, it is proposed that Information Technology division in conjunction with Education Department regularly review the cost effectiveness of available technologies with a view to improving service to the remaining 15 Primary Schools and bring forward further reports should these technologies prove cost effective.

### **3.2.4 Interactive Whiteboards**

Good progress has been made in providing whiteboards to primary schools and by the end of the initial project in March 2009 approximately 240 interactive whiteboards had been purchased and installed.

The Interactive Whiteboard is widely regarded as the most powerful piece of educational technology introduced into the classroom in the last 30 years and the feedback from both pupils and staff has been extremely positive. Interactive Whiteboards provide an excellent vehicle for pupil/teacher interaction to improve learning. The use of the ACTIVprimary/ACTIVstudio empowers the teacher to enrich the learning experiences of school children. Numerous resources are provided with the software but these coupled with access to resources on the internet and limited only by the imagination of the teacher, the scope for media rich lessons is greatly enhanced.

## **3.3 Secondary Schools**

### **3.3.1 Equipment Refresh**

Secondary schools currently refresh 25% of their IT equipment each year which is approximately 345 PCs, together with servers, switches and interactive whiteboards on an as required basis. Each school has discretion as to how best to enhance/refresh ICT provision to ensure investment best meets local requirements and priorities.

### **3.3.2 Wireless Networks**

The purpose of this technology is to increase the accessibility of ICT for pupils and staff; to integrate ICT into learning and teaching within the classroom and to facilitate the use of a variety of classroom pedagogies which encourages independent learning and direct interactive teaching.

Utilising funding from the Scottish Executive, Monifieth High School was at the forefront of this initiative almost 10 years ago and has fully embedded ICT within Science and Social Subjects. The entire system was upgraded in 2007 with upgraded wireless access points, communication switches and refined security software.

Webster's High School has also adopted this technology, albeit to a limited extent at present. It is clear that this technology will transform the way schools utilise ICT in the future. The flexibility this technology offers staff and pupils to access school resources, e-mail, Internet, web based applications and nationally produced resources from various locations within a school will result in ICT being embedded into all aspects of the curriculum. All secondary schools are now considering how best to utilise this technology as part of the annual investment exercise.

### **3.4 Curriculum for Excellence (CfE)**

Curriculum for Excellence represents Scotland's vision for the education of all children. It aims to raise standards, improve knowledge and develop skills. This enriched and creative curriculum requires the full involvement of teachers, practitioners, parents and learners, and for everyone to work together.

The aim of all pre-school centres, primary schools and secondary schools is to ensure that every child should have the opportunity to experience a broad general education that develops skills for learning, for life, and work with a real focus on literacy and numeracy and promotes an active and healthy lifestyle.

The use of ICT will be essential to enable the full delivery of Curriculum for Excellence outcomes. This includes the provision of educational software which is pre-installed when the PCs are configured, access to online resources and communication with pupils/staff in other schools, as well as making best use of developing technologies.

The use of ICT and Glow will be extremely important in the delivery of CfE outcomes and all National Assessment Resources (NARs) will be available exclusively on the National Glow site.

### **3.5 GLOW**

The main purpose of Glow (which is a national Education Internet) is to enhance the quality of learning and teaching in the classroom by fully supporting Curriculum for Excellence (CfE). It is proving to be an essential tool, and provides a platform for the educational community to build capacity and ensure a first-class education for Scotland. Using the national directory, Glow users can find others with similar areas of interest or expertise, collaborate across the country and make connections with others to improve learning and teaching.

Glow is fast becoming well established in Angus schools and usage is growing rapidly. Benefits of using Glow include:

- provide significant and varied efficiencies as well as cost savings to establishments and establishment staff
- enhance and improve learning opportunities for young people and enhance teacher pedagogy
- schools are beginning to develop 'Glow Expectation' documents for all users that provide transparent learning intentions for pupils in a lesson.
- Glow groups are being used as digital learning spaces with pupils, which enable appropriate resources to be available in one place. Within these Glow groups the following have been observed:
  - use of Glow Blogs to communicate, collaborate and share
  - use of Glow Wikis to communicate, collaborate and share
  - use of Discussion/Glow Forum boards to communicate and collaborate

- provision and access to external content through web links
- removal of the 'paper-chase' through effective digital content – e.g. homework being completed and uploaded into a customised web part by the pupil (P7 – S4 observed)
- Glow Meets (Video conferencing) being used to link up digitally with other local/international schools
- 'Interest' in the ePortfolio option to allow pupil profiling and the creation and building of an effective and enduring tool for recording progress, achievement, attainment and personal development (pupils)

## **4 EMERGING TECHNOLOGIES**

### **4.1 Mobile Devices/Wireless Technology**

The purpose of this technology is to increase the accessibility of ICT for pupils and staff; to integrate ICT into learning and teaching within the classroom and to facilitate the use of a variety of classroom pedagogies which encourages independent learning and direct interactive teaching.

The introduction of School Wireless Network Technology into the classroom will allow more flexibility for pupils and staff to gain access to resources held on the school fileserver, have greater access to CfE materials, and access central and national Education Department systems.

Initially it is proposed to introduce managed wireless mobile devices (laptops/netbooks) into schools which will provide greater flexibility (which is currently not achievable with dedicated PCs and hardwired data connections - the current arrangement in schools). Such devices can be readily moved between classrooms to create an 'ICT Suite' and enhancing opportunities for pupils to access ICT.

It should be noted, however, that this technology will not be suitable for every situation, where high processing power and larger file sizes are required, particularly within secondary schools.

### **4.2 Developments in Games and Learning Technology**

The computer game and its impacts on learning and teaching in Scottish schools is an area of development which needs to be explored. Research suggests that computer games can help to stimulate a successful learning environment and provide motivational learning contexts that suit many learners. They also provide an opportunity to develop communities in which learners have a sense of ownership over what they do.

Games can encourage self-reliance and self-determination in terms of a learner's ability to make progress within a demanding but incrementally staged environment, and help them to appreciate that the skills necessary for success in games such as problem solving and critical thinking can have relevance in other curricular areas and other social contexts such as study or work. They also create an implicit and explicit understanding that as a learner on our own we can be good but as a learner in a connected team, using Co-operative Learning techniques, we can be much better.

There are a number of different types of computer game that can potentially be successfully used within a classroom environment to enhance the learning experience. Some commercially available games provide rich, immersive environments to focus learning around. Others provide learners with one-to-one interaction and feedback on specific subject areas. However, in order for game based learning projects to be successful, it requires sound pedagogy from the teacher and support from the school Senior Management Team. The potential benefits of using games can include:

- motivating learners to succeed and to continually improve
- fostering self-esteem, self-determination and enhancing self-image
- facilitating collaborative learning
- implicitly developing learners ability to observe, question, hypothesise and test
- facilitating metacognitive reflection
- developing complex problem-solving skills

- making school an exciting place to be
- offering inroads into other curricular areas
- sharing practice features that show how games have enhanced learning in the classroom

#### **4.3 Server Infrastructure**

The continuing changes in available technology offer opportunities to review the server infrastructure utilised to support delivery of curricular and other activities in schools. In particular, newer technologies offer reduced procurement cost for a given performance, and recurring cost savings from increased energy efficiency. The infrastructure in schools will be reviewed to develop a programme of equipment requiring replacement to achieve efficiencies while supporting the ongoing requirements of schools. It is anticipated that this programme will be implemented over a number of years, delivering benefits on a phased basis.

#### **4.4 Social Networking**

It is important to access and, where appropriate, make use of social networking opportunities, for example, it has become apparent that various excellent educational resources are being hosted on YouTube, a video streaming web-site. Many of these short video clips are available for use in the delivery of Curriculum for Excellence (CfE) to enhance learning and teaching across all subject/topic areas.

The Angus Council 'Responsible use of the Internet' approach still applies to all staff using these resources and it will remain the responsibility of individual staff to ensure the use of the YouTube web-site is appropriate. Staff have been instructed to ensure video clips are to be used to enhance a lesson, the staff member should have identified the appropriate video clips prior to the start of any lesson and have viewed the video clips in their entirety to verify the clip is of suitable quality and appropriate content for the class.

In addition, the use of applications such as Blogs, Flickr (an online photo management application) and **Wikis** (a website that allows the creation and editing of any number of interlinked web pages via a web browser using a simplified text editor) will continue to evolve in schools.

### **5 PROPOSALS 2011/12**

It is important to continue to invest in ICT and proposed investment for 2011/12 can be summarised as follows:

#### **5.1 Primary Schools**

##### **(i) Arbroath Clusters**

As part of the refreshment programme, it is scheduled to replace PCs in the two Arbroath Clusters. However, in order to maximise opportunities available, it is proposed, where appropriate, (and taking into account the proposed investment in the school estate and the physical restrictions of existing buildings), to introduce wireless technology in a number of schools.

Each school community will have input into the number and type of devices to be deployed in the school. It is expected this will be a combination of PCs, laptops and netbooks. It is estimated the cost will be £240,000.

## (ii) Other schools

The infrastructure in recently completed school building projects (Forfar/Carnoustie schools and Seaview Primary School) ensures it is relatively straightforward to introduce wireless technology. In addition building works are currently being undertaken in Grange Primary School where there is a need to improve utilisation of space (due to roll configuration). Accordingly, it is proposed to invest in wireless technology in Grange Primary School. As existing equipment does not require to be refreshed, the number of wireless devices will be restricted in 2011/12. However, this approach will improve arrangements in these schools and make full transition to wireless technology easier to achieve when refreshment takes place. The estimated cost of improving provision (including the provision of a limited number of mobile devices) is £110,000.

## 5.2 Secondary Schools

**5.2.1** To enable secondary schools to refresh approximately 25% of their IT equipment it is proposed to devolve resources to schools in 2011/12.

**5.2.2** The budget allocated to each school will enable the purchase of games and learning technology, and consider opportunities to utilise wireless technology. The cost of this proposal is £232,000.

**5.2.3** It is proposed to introduce additional data storage to all our secondary schools to improve difficulties with the amount of available data storage space allocated to individual users. With the introduction of CfE and the requirement to gather digital evidence pupils may have to be recorded.

## 5.3 Infrastructure

### 5.3.1 Wireless Authentication Service

It is proposed to purchase a central unit to authenticate users in the primary sector which should mean that any wireless device configured for the primary school domain can connect in any of the schools that are fully equipped with wireless access points. The cost of unit and associated property works is £15,000.

### 5.3.2 Primary Schools Data Storage and Communication

File servers switches in primary schools are now reaching the end of their working life and have been showing signs of becoming unstable. It is proposed that we assess and implement the best technical solution to meet the requirements of primary schools. At this stage, it is estimated that the cost will be £98,000.

## 5.4 Summary of Investment

The proposals for 2011/12 can be summarised as follows:

	<b>£000</b>
<b>Primary Schools</b>	
• Arbroath Schools Equipment Refresh/ Wireless Provision	240
• Wireless Provision – other schools	110
<b>Secondary Schools</b>	
• IT Equipment Refresh/Data Storage	232
<b>Infrastructure</b>	
• Wireless Authentication	15
• Data storage/ Communication Switch replacement	
Total	<u>98</u> 695

## 6. PROCUREMENT AUTHORITY

### 6.1 Sourcing Strategy

The Director of Education considers that the provision of IT equipment to enhance the ICT provision in Angus schools is an essential to meet the requirements for the Education Department. No alternative delivery to procurement of the required supply is appropriate here because the Education Department will place all procurement orders with the Information Technology Division of Corporate Services who procure on the behalf of the Education Department.

The following Angus Council policies support and/or are relevant to this procurement:

- Developing a Framework for Effective Learning and Teaching  
The research project set out to evaluate the effectiveness of curriculum structures and of learning and teaching approaches at different stages of the school. In part it was a response to the HMIE report *Achieving Success in S1/S2* and the Government's *Raising Standards: Setting Targets* initiative.

- The various Committee Reports referred to at paragraph 2.1 of this Report.  
The supply market has been analysed and it is considered that all PCs, Communication Switches, Fileservers, Laptops and Netbooks will be procured by the Information Technology Division via the national Procurement Scotland IT Hardware contract where the product is available on them or, where not, from the UK national Buying Solutions IT/Communications contracts. The Procurement Scotland contract will be used of preference where the commodity is available from both sourcing routes on comparable terms.

The use of these pre-procured sourcing routes assures the Council of compliant, on-contract purchasing with the opportunity to achieve good value for money.

The impact on the locally-based supply chain of procurement of this equipment has also been considered and it has become apparent that no potential suppliers are based in Angus and all are international companies.

Equipment will be ordered or procured to coincide with agreed timeslots identified within the IT installation plan which allows IT resources to be made available to undertake the installation and configuration of such equipment throughout the financial year.

Lot 1	replacement PCs / Laptops for secondary schools
Lot 2a	replacement PCs for primary schools (phase 1)
Lot 2b	replacement PCs for primary schools (phase 2)
Lot 3	replacement Network Switches for primary schools
Lot 4a	replacement Servers for primary schools (phase 1)
Lot 4b	replacement Servers for primary schools (phase 2)
Lot 4c	replacement Servers for primary schools (phase 3)
Lot 5a	Wireless (phase 1) Central Infrastructure equipment
Lot 5b	Wireless (phase 2) Access Points
Lot 6	Mobile Devices associated with wireless provision in primary schools
Lot 7	replacement Communications (VoIP) for primary schools
Lot 8	replacement Storage

Most of this equipment can be ordered through the arrangements described above, however, a full procurement exercise may be required for wireless provision depending upon the finalised specification of requirements.

Consultation has not been undertaken at this time with our Tayside Procurement Consortium (TPC) partners, Dundee City Council, Perth & Kinross Council and Tayside Contracts. However, consultation will be undertaken in advance of the procurement exercise being undertaken to gauge the potential for achieving savings with our Tayside partners under the umbrella of the Tayside Procurement Consortium by bulk purchasing at that time.

The procurement is not considered to be a "major procurement" in terms of Financial Regulation 16.8.4. Approval of this Report would mean that the contract can be accepted without the need for further approval by the relevant committee. In accordance with the new arrangements the contract award will be reported to the Corporate Services Committee for noting only.

## **6.2 Key Terms Proposed**

It is envisaged that the contracts will commence on 07/06/2011 with Lot 1 and further contracts will commence as and when required for a ten month period.

The value of the supply is estimated and detailed in Section 8 below and shows the full cost of the proposed expenditure.

## **6.3 Procurement Procedure**

The purchasing mechanism to be adopted in this process is for the Education Department to raise orders with the Information Technology Division who will undertake the identification and procurement of appropriate equipment in line with the Education Department's requirements. Sourcing will be carried out as above following consultation via TPC.

## **6.4 Contract Evaluation on Award Basis**

Where contracts are to be awarded, tenders will be returned and evaluated and the contract will be awarded on the basis of the most economically advantageous tender, on a mix of quality and price. The price/quality split applied will 70/30% in accordance with Financial Regulation 16.14.2.

Appropriate evaluation criteria and weightings will be defined and agreed in advance according to the nature of goods or services that may be procured by tender. The Head of the Information Technology has advised that evaluation criteria and weightings for the tender which may be required in connection with wireless provision will be prepared when the specification of requirements for that provision is finalised. The Corporate Procurement Manager will be involved in all tendering processes that may be required as part of this procurement.

If, however, collaborative opportunity via TPC procurement is identified then the evaluation / award basis will be as agreed amongst the partners and approved by the TPC Head of Procurement / Steering Group.

The Corporate Procurement Manager has been consulted on the proposed procurement process and outline requirement and is satisfied that that this approach is suitable and likely to produce best value for the Council.

## **6.5 Procurement Risks**

A risk assessment has been undertaken for this procurement and, other than the normal risks inherent in any contract; no significant risks have been identified.

## **7 FUTURE YEARS**

### **7.1** The investment outlined in Section 5 will provide the basis for future procurement. It is proposed over a period of 3 years to provide wireless technology in all schools with suitable bandwidth (in accordance with refreshment of PC and other equipment).



In partnership with colleagues in IT Division, we will continue to investigate ways in which improved bandwidth can be cost effectively introduced to all Angus schools and CLD establishments.

A further report will be brought forward outlining specific proposals for 2012/13 and 2013/14.

## **8. FINANCIAL IMPLICATIONS**

**8.1** There is provision within 2011/12 for investment in ICT as follows:

	2011/12 £000
Revenue Budget	100
Capital Budget	280
Additional Resources	<u>315</u>
<u>Total</u>	<u>695</u>

It is estimated the cost of the proposals outlined in Section 5 will be £695,000.

## **9. HUMAN RIGHTS IMPLICATIONS**

**9.1** There are no Human Rights implications arising from consideration of this report.

## **10. EQUALITIES IMPLICATIONS**

**10.1** The issues dealt with in this report have been the subject of consideration from an equalities perspective. An [equalities impact assessment](#) is not required.

## **11. SINGLE OUTCOME AGREEMENT**

**11.1** This report contributes to the following local outcomes contained within the Angus Single Outcome Agreement:

- young people and adults in Angus maximise their potential through learning opportunities (National Outcome 3)
- children and young people in Angus will have access to positive learning environments and opportunities to develop their skills, confidence and self-esteem to the fullest potential (National Outcome 4)

## **12. CONSULTATION**

**12.1** The Chief Executive, Director of Corporate Services, Head of Information Technology, Head of Finance and Head of Law and Administration have been consulted in the preparation of this report.

**NEIL LOGUE  
DIRECTOR OF EDUCATION**

**NOTE:** No background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (other than any containing confidential or exempt information) were relied on to a material extent in preparing the above report.