

Why do schools need network connectivity and how do they use it?

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- Naace is the professional association for those concerned with advancing education through the appropriate use of information communication technology (ICT).

Why do schools need network connectivity and how do they use it?

Setting the scene: The UK education system.

Foundation	3 to 5 year old	
Key Stage 1:	5 to 7 years old	Primary education
Key Stage 2:	7 to 11 years old	
Key Stage 3:	11 to 14 years old	Secondary education
Key Stage 4:	14 to 16 years old	
Key stage 5:	16 years plus	Higher education

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Why do schools need network connectivity?

What actually is a network?

- *Many types of networks exist, but essentially a network is a group of linked computers. (Becta 2003)*

What does it allow users to do?

- communicate with each other
- to access resources which may be hosted on a network server.
- to communicate and share resources beyond the school.

Why have a network?

- *Some targets are preset by DfES such as computer:pupil ratio (1:8 primary, 1:5 secondary) and the Laptops for Teachers scheme, which has a target that by 2006 two thirds of teaching staff should have personal access to a laptop. (Becta 2003)*

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Why do schools need network connectivity? **The history.**

- *Schools started with single stand alone PCs*
- *Numbers slowly grow, but limited by cost.*
- *1997 Government launches NGfL and ring fenced funds are devolved to schools.*
- *A purchasing frenzy begins to meet government targets.*
- *Schools begin to develop basic peer-to-peer networks.*
- *The issue of suites versus PCs in classrooms.*
- *The internet appears in Primary schools.*
- *Increasing numbers of PCs mean a move to client server networks.*
- *Broadband internet connections, issues with filtering and security.*
- *Technical support becomes a major issue as networks grow in size.*
- *Sustainability*

Why do schools need network connectivity and how do they use it?

Setting the scene: Key statistics and trends.

BESA (British Educational Suppliers Association).

Information and Communications Technology in UK State Schools.
(September 2006)

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Setting the scene: Key statistics and trends.

Computer numbers	2002	2003	2004	2005	2006
<i>Number of desktops</i>	496,000	570300	647700	673300	716600
<i>Number of desktops per school</i>	21.5	24.7	28.1	29.2	31.1
<i>Number of laptops</i>	87,100	136200	193600	290600	329800
<i>Number of laptops per school</i>	3.8	5.9	8.4	12.6	14.3

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Setting the scene: Key statistics and trends.

Networked computers	2002	2003	2004	2005	2006
<i>% of schools with networks</i>	88.1%	92.0%	94.7%	96.3%	96.6%
<i>Est. schools with networks</i>	20300	21200	21800	22200	22300
<i>Est no. of client units</i>	347000	437600	610400	728200	868000

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Setting the scene: Key statistics and trends.

Internet connections	2002	2003	2004	2005	2006
<i>% of all schools</i>	98.4%	99.2%	99.6%	99.8%	99.8%
<i>Connected computers</i>	376800	491600	626700	722000	842000
<i>Units per connected school</i>	16.6	21.5	27.3	31.4	36.5

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Fixed and wireless network provision

- 38% of primary schools have Windows 2003 server technology. Around 10% of primary and secondary schools continue to rely on Windows NT servers.
- 43% of primary recorded ownership of wireless networking technology in 2006. In addition 16% of primary intend to make purchases in 2006/07.
- There are estimated to be around 183,000 computers in primary schools which make at least intermittent use of a wireless network.

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Internet access and expansion

- Practically all schools have Internet-connected computers with 80% of all primary school computers being connected to the Internet.
- By 2007 a typical primary school will have 42 Internet-connected computers.

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Internet bandwidth

- Primary schools record an average bandwidth of 2.3Mbps, which is expected to increase to 2.8Mbps by April 2007.
- It is anticipated that by April 2007, a typical primary schools will have 43 pupils who can connect concurrently to interactive websites based on 64Kbps per user.
- Optimal bandwidth to provide for all requirements still lags behind current provision. Primary schools suggest a bandwidth requirement averaging 8Mbps in 2007, even though actual provision is likely to be under 3Mbps.

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Internet usage and online content

- Nearly half of schools make significant use of Internet for free downloads of online curriculum software or content products. 61% of primary schools paid for online software and content.
- Around 65% of primary schools make significant use of online curriculum software and content in whole-class teaching. By 2007-08 it is anticipated that almost 19,000 schools will be making significant use of use of online learning materials with whole classes.

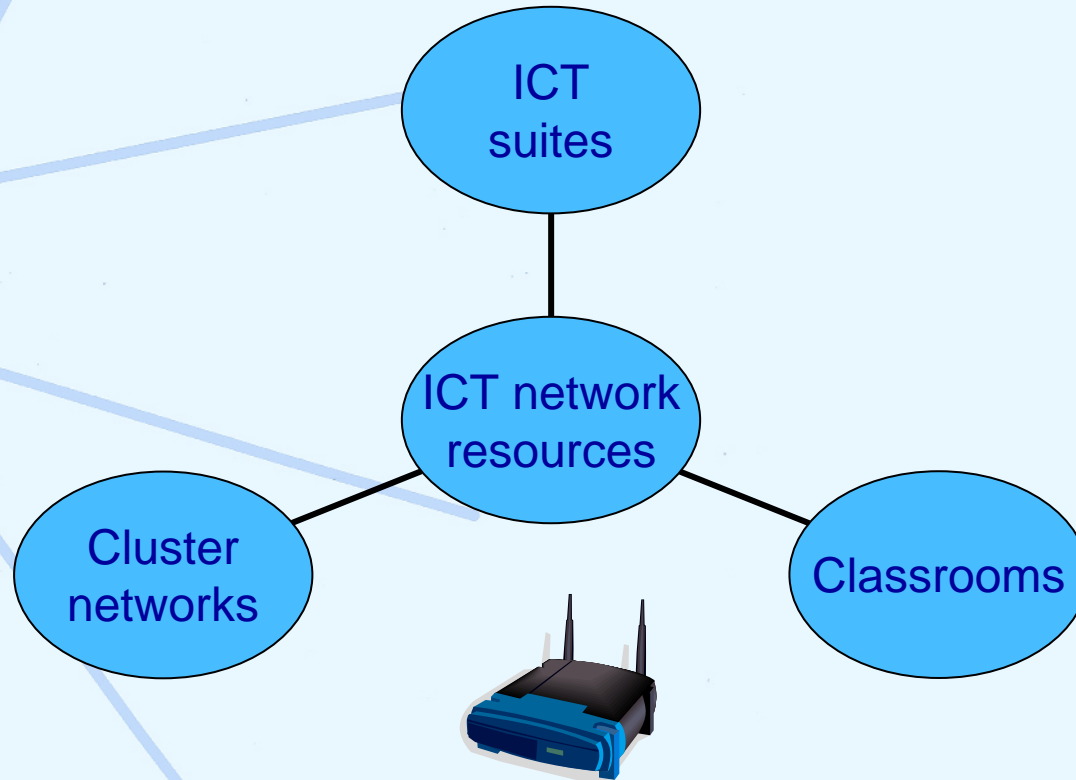
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Deployment models.

- Computer suites still tend to be the predominant model for the location of computers. This, it has to be said, runs somewhat against the principles underpinning embedded e-learning. In most schools (primary and secondary), computers are currently located in a combination of computer suites, classrooms and clusters.

Moving Towards e-Learning in Schools and FE Colleges: Models of Resource Planning at the Institution Level
PricewaterhouseCoopers LLP (2004)

Why do schools need network connectivity and how do they use it?





A computer suite.



A cluster network.

Network access in the classroom.

Wireless access.

Why do schools need network connectivity and how do they use it?

Some of the positive effects of network technologies

- learning to use the internet,
- developing communication skills by using electronic tools such as email,
- sharing of online resources
- wireless networking reduces the physical constraints associated with computer use
- networks open up access to tools and resources which can have a strong
- positive effects in areas such as self-esteem, motivation, interest and focus
- opportunities to address work to an external audience
- opportunities to collaborate on assignments with people outside or inside school
- access to online course resources

What the research says about network technologies in teaching and learning. Becta ICT Research 2003

Why do schools need network connectivity and how do they use it?

Some of the positive effects of network technologies

Lesson observation in the use of broadband indicates that ***increased bandwidth can result in improved pace of lessons, increased pupil motivation for ICT work and higher quality lesson outcomes.*** (Becta review 2005)

A study of the educational impact of broadband found that ***the reliability offered by broadband gave practitioners the confidence to use technology 'live' in class (Underwood et al., 2005), and had a positive impact on the use of the internet to support classroom learning and teaching.***

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However.....

Ofsted (2004) reported that upgrading connection speeds **does not automatically result in users benefiting from an enhanced educational experience.**

Whilst systems are faster and more robust, schools were still unclear about the full range of benefits to learning that broadband brought, or had not yet made significant use of applications that specifically required broadband.

Ofsted identified this as an area of action at both local authority and regional level.

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Wired to learn, What's holding up the school of the future? Tom McMullan (2002)

- Are schools able to access an adequate, sustainable and manageable ICT infrastructure?
- Are schools effectively connected to each other, to their communities and to the Internet?
- Are teachers confident enough with their practice to know when and how to use ICT and when not to use it?
- Do teachers have easy access to a diverse range of educational online content?

Why do schools need network connectivity and how do they use it?

Why do we need a network at Westmoor?

- An inevitability
- A learners space
- Access the network from anywhere in the school
- Access the internet
- Limited file sharing
- Pooling of resources

Why do schools need network connectivity and how do they use it?

Why do we need a network at Westmoor?

- Seen as an inevitability
- Because other schools have one
- To give our pupils the same chances
- A necessity not a luxury

Why do schools need network connectivity and how do they use it?

How do we use our network?

- Not to its full potential
- Accessing the internet
- Saving files
- A learners space
- Access the network from anywhere in the school
- Limited file sharing
- Pooling of resources

Why do schools need network connectivity and how do they use it?

Conclusion:

- Evidence clearly shows that having a network is not an option.
- What to do with it is the issue.
- All aspects of the network need to be sustainable.

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