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ICT ADVICE: Cloud Computing Explained

The traditional method of using operating systems and software applications on more expensive desktop PCs or servers physically located in a school is being challenged by the rise of computing in 'the cloud'. Large business organisations have used cloud services for many years.

WHAT YOU NEED TO KNOW

With a lower specification computer, good bandwidth and a browser the user can go onto the internet, access and manage:

- **Cloud Infrastructure** - servers, networks and related hardware held in data centres worldwide. Part or all of the School's technical infrastructure can be hosted in a data centre.
- **Cloud Platform** - the infrastructure applications/operating platforms eg. Microsoft Azure. The data centre infrastructure can run the operating platform for the School.
- **Cloud Applications** - The School can manage its own software using the data centre and it can also use available free or paid for applications eg. Google mail and docs, Office online.

THE OLD WAY (IN-SCHOOL HOSTED DATA AND SYSTEMS)

- Purchase desktop computers and servers with the knowledge you will need to dedicate a good deal of future investment to upgrade storage space or

specification to provide for new technological development.

- Finance and manage an in-house large technical team which deals with all aspects of ICT – Academic and School Information Management systems.

This is what many schools are used to doing. As a school decides to upgrade and spend a good deal of money on ICT infrastructure it should consider whether a large investment for similar provision is needed or whether a combination of in-school and Cloud services would save money and allow more flexibility in the future.

THE NEW WAY (CLOUD - HOSTING DATA AND SYSTEMS IN EXTERNAL DATA CENTRES)

- Purchase a 'pay as you go' option for server space (or even data centre rack space and install your own servers), server operating platform, software applications, volume of data storage needed and technical assistance to set up, back up and maintain it all.
- These 'off the shelf' ICT products are scalable (you only buy the amount you need) and flexible (you can increase or change the provision quickly and easily).

WHAT YOU NEED TO CONSIDER

- Some schools already use some Cloud services eg. Google docs, Google mail or similar. Few schools have yet to move many of their systems onto 'The Cloud'.
- Some businesses and schools are worried that hosting data and services off-site may compromise data security and reduce the control of access to data. Even Google and Twitter have suffered when internet traffic problems or hacking have resulted in data centre systems being affected.
- The next 12 to 24 months will see improvements in bandwidth provision and data centre services. There are already providers offering Education a similar service to that established for Business. As user confidence grows and acceptance of The Cloud as a basis for ICT service provision it is predicated by many to become the preferred choice for the provision of systems that manage ICT data for schools.
- It is likely we will have an interim period of adoption (possibly the next 1 to 2 years) of some new Cloud services while other traditional services are still hosted in schools.
- The strategy for development of virtualised servers in schools and use of Wi-Fi, Mobile Devices and Thin Client technology integrates with the procurement of Cloud services. The ISC has a wide variety of ICT Strategy Discussion Papers that can give helpful information on these subjects.

WHAT YOU MIGHT LIKE TO DISCUSS

- Your infrastructure solution should match the particular needs of your School. There are excellent cost effective solutions available. The knowledge, wisdom and experience of your ICT Academic Senior managers and your ICT Technical leaders are the essentials in your strategic development. The ICT purchases only provide the tools for the new work.
- Many schools have ICT infrastructure which will need a major upgrade in the immediate future. The potential low cost of services on The Cloud will make this a very attractive option and the security concerns of concern to many (data held offsite, possibly in another country, without as much control in protecting the data) will be minimised to an acceptable level as time goes on. An intermediate approach is to choose The Cloud for one or two solutions and then increasing as the School develops experience and capability in use.
- When planning your ICT strategy consider how your technical team may need to develop skills in management of these offsite services as well as how you would like the team to be deployed more in the support of the hands-on pupil and staff user.
- Consider whether you need to invest in your internet bandwidth provision for School as multiple connection to wide scale Cloud services needs very good bandwidth.
- Consider reading these two books by Nicholas Carr to stimulate debate in the context of your School's needs:
 - Does IT Matter ISBN 1591394449
 - The Big Switch - From Edison To Google ISBN 039306228