Rotherham College of Arts and Technology:
BUSINESS – Building a South Yorkshire Network to Enable Shared Services

Summary

Rotherham College of Arts and Technology (RCAT) and Thomas Rotherham College used existing and new technologies, hardware and processes to create a “South Yorkshire Cloud” to support and improve business continuity and disaster recovery, as well as generating savings. They are in the early stages of developing the first Further Education-led private cloud capable of delivering disaster recovery and business continuity across a number of colleges.

About Rotherham College of Arts and Technology

Rotherham College of Arts and Technology (RCAT) offers a rich mix of full-time and part-time college courses; apprenticeships and degrees delivered in two campuses; and bespoke courses delivered in the community. They want to provide the people of South Yorkshire with the highest-quality education and training, ensure that all sections of the local community are represented there and encourage all of their students, of every age, to achieve their full potential. Their goal is also to meet the training needs of local employers, and so continually develop their offering to address new industries and emerging needs in the workplace.
The challenge

The key driving factor behind this project are costs and processes related to backing up, storing and recovering (business critical and user) data within colleges of different sizes. The aim is to create a local ‘cloud’, supported and maintained by the member organisations, to improve services while keeping costs reduced.

The initial challenge varies slightly depending on the size and existing infrastructure of each college. Larger / multi-site organisations (like RCAT) already have in place some form of ‘off-site’ back-up and storage solution ‘within’ the confines of the college buildings, whereas smaller / single site organisations, (like Thomas Rotherham College), are using external solutions such as VMWare as a virtualisation platform.

Neil Jones, IT Manager at Thomas Rotherham College, identified that the problems with backing up their servers started about three years ago when a full backup was taking an unsustainable 30 hours, due to increased storage demand. They counteracted the issues in the short term with a disk-disk-tape (D2D2T) / synthetic full backup strategy but over three years the following new problems developed:

1. Quantity of tapes being used increased to eight
2. Running out of disk backup storage
3. Disaster recovery time grew to a point where it became uncomfortable

The activity

This project develops and extends the scope of a previous project that explored the potential for a consolidated disaster recovery service and collaborative procurement.

Partners from the network of eight colleges in the South Yorkshire colleges collaborative regional ‘Yorkshire and Humber Metropolitan Area (ICT) Network’ undertook a detailed information gathering and process mapping exercise which identified each college’s existing approaches to disaster recovery and business continuity. They then mapped these approaches
against their requirements of the new system before holding initial discussions with market leading suppliers in the field of cloud computing and disaster recovery services. Their aim was to facilitate honest open and transparent discussions on the possibilities of developing the desired service and the likely cost implications.

After securing AoC Shared Services funding, two colleges began formalising and improving the ICT infrastructure.

RCAT already had the infrastructure to support a certain level of off-site backup due to having two campuses. However, Robert Hutton, Head of Central Services Unit, was able to use the funding to purchase an EMC San [storage area network] for RCAT as well as one for Thomas Rotherham College. This would enable replication of data between the two colleges and build upon the existing foundation network. Initially the two colleges are using the hardware for slightly different things:

- RCAT are using their San to host non essential data with some live content to enable replication testing.
- Thomas Rotherham College are using their San for Live storage, backup and replication.

Training about the changes and the security of the shared IT systems and data protection occurred after the funding was gained and is still ongoing. A common understanding is being established in the development of the ultimate aim of a “South Yorkshire Cloud”.

**The outcomes**

The project has the following outcomes already:

- Hardware (EMC San each for two colleges)
- The connected network is being used for email and Internet access
- The connection works
- Sharing between sites is possible

As the project moves forward the following outcomes will also become visible:

- More hardware (funding permitting at other colleges)
- The linked network infrastructure will be used for more data sharing
- The process and functionality will become more streamlined and efficient
- This ‘network infrastructure’ project will become a stepping stone to the sharing of more IT systems proving the integrity of the idea
The impact

One of the key impacts of this project (increased as it grows to include other colleges in the region) is that money is being kept within the local area rather than paying for virtual storage and/or back up services from 3rd party suppliers who could be anywhere in the world.

The project proves that South Yorkshire colleges can work together, resulting in better levels of service for South Yorkshire where colleges are working to proactively support each other rather than remaining in isolation.

By sharing cloud storage, licences and skills sets, maintenance and support, it is anticipated that the approach will significantly reduce the costs for each member institution. The project has already generated £5,000 of savings through the joint purchasing of the necessary hardware.

Robert states that there have already been some money savings in relation to IT infrastructure costs. However there is the potential for much greater savings as the project moves forward, with the greatest savings possible for colleges with single sites and no current off-site backup in place. He adds that the change to operational practices would also ultimately benefit teaching and learning.

Partners hope to achieve 20 percent savings on disaster recovery and business continuity spend in year one following the full implementation of the service, with the ability to release additional savings in year two onwards by utilising the private cloud to provide additional services. Partners need to pilot the system and undertake further cost analysis work before more detailed cost savings can be developed.

The impact of this project for Thomas Rotherham (a smaller, single site college), reported by Neil Jones, includes:

1. Affordable: Sharing the cost between the connected South Yorkshire colleges has made the DR facilities affordable. It is also much cheaper than using third party off-site data protection facilities.
2. Reliability: The College no longer requires the use of tapes which can be unreliable especially when backups span multiple tapes.
3. Improved Security: There is a reduced chance of data leakage or embarrassment from tapes being lost whilst they are in transit.
4. Reduced Recovery Window: In the event of a full site disaster they will be able to restore key services at the mirror site within hours instead of weeks.

The lessons learned

If other organisations are thinking of creating a similar shared service, Robert Hutton points out that one of the most important elements to ensure is in place very early in the life of the project is a Memorandum of Understanding,
in relation to different elements of the project; clarifying that:

“The project has experienced differing levels of partner participation throughout. The establishment of a memorandum of understanding committing resources up front would have been beneficial in avoiding this issue.”

Robert states that “the project builds on existing collaborative agreements and identifies how shared procurement of licences and hardware across multiple organisations can be addressed,” adding that a key element towards success is that the “partners trust each other, that’s very important.”

Both Robert Hutton and Neil Jones agree that it is important not to underestimate the time and resources needed and especially what other constraints will be placed upon you during that time. One of the difficulties encountered by teams involved in this project was that cost saving requirements led to rationalised staffing which in turn has elongated the project.

Neil added that it was important, budget permitting, to pay for professional services to assist with the implementation; as the current climate does not allow you to accurately predict what internal resources you will have at your disposal.

The process that has been followed so far for this project is:

1. Initial exploration of issues and barriers
2. Information gathering and process mapping
3. Requirements scoping
4. Supplier discussions
5. Cost benefit analysis
6. Procurement
7. Piloting the System

The next step for the project is for a business case / proof of concept document to be presented to the South Yorkshire college’s network, so that individual Colleges can make the decision whether to join (budget permitting if new / additional hardware is required). This would then be followed by individual organisations buying and installing hardware (staff time and infrastructure permitting) and reviewing how the changes impact on their existing IT security policies – adapting and updating where needed.

At present one of the other partner colleges already has the necessary infrastructure in place to join the service once it goes live, whereas the remaining five partners would be required to purchase the necessary hardware.
Useful links

Rotherham College of Arts and Technology
Thomas Rotherham College
AoC Shared Services

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