



When Bits and Books Collide: Storing Digital Content in Scotland

When the National Library of Scotland began its expansion from traditional hard-copy book storage, to digital publication archiving, it called on GlassHouse to lend its expertise to a very data-heavy project.

Storing National Treasures

The National Library of Scotland (NLS) is a major European research library and is the world's leading centre for the study of Scotland and the Scots - an information treasure trove for Scotland's knowledge, history and culture.

The Library's collections are of world-class importance, with many of Scotland's iconic literary treasures. Key areas include rare books, manuscripts, maps, music, official publications, business information, science and technology, modern and foreign collections, and the Scottish Screen Archive.

The Library holds well over 14 million items, including printed items, approximately 100,000 manuscripts and nearly 2 million maps. As Scotland's legal deposit library, the library has the right to claim a copy of every item published in the UK. Every week it collects approximately 6,000 new items via Legal Deposit, which equates to over 300,000 items per year. The Library also has an active purchasing programme and receives donations of material. In addition to all of this, the library is one of only three in the UK that has opted to store digital publications for public reference purposes.

In late 2006, it was decided that the Library needed a more modern approach to storing, retrieving and protecting its digital data, as well as catering for the growing rivers of electronic based publications and web-based information. The difficulties they faced from the outset were two-fold.

Firstly, it was clearly going to be an expensive project which would need considerable public funding. Secondly, and perhaps more importantly, there was likely to be a level of complexity involved in such an ambitious project, that planning in the first place was going to be very difficult without additional expertise.

The Library began looking for a consultancy with a combination of the independence, reliability, expertise and experience to advise them on how to move forward with the data storage requirements for the project from the outset. When David Dinham, NLS ICT Manager, came across GlassHouse Technologies and obtained a good understanding of GlassHouse's heritage in storage and experience with data centres and future-proofing, the Library quickly realised that it had found the match it was looking for.

Dinham comments; "We have a fair bit of internal technical knowledge at NLS, but our plans for digitisation took our storage needs to a new level. We had to justify any project expenditure to the Scottish Government in order to get the funding in the first place, and after that we had to have a storage plan for the project, as well as an assurance that whatever we were putting in was future-assured for continued growth. This was no small undertaking, and we had to have a trustworthy consultant partner with proven experience in order to plan the process."

Dinham explains why NLS decided to work with GlassHouse in the first place. "We didn't have a huge knowledge of data storage technologies and we wanted to get advice from people who do this on a day to day basis. We were looking to store these national treasures for a very long time, and we needed to get future-proofing right, so that it wouldn't be difficult to migrate content from system to system as time goes by.

It was clearly vital that we had the right information from the beginning. GlassHouse's experience in this area is more or less unparalleled, and combined with the company's rigorous independence, it made them the perfect partner for us in this project."

It's All in the Planning

GlassHouse initially started out working with the NLS to produce the storage aspect of a business case for project funding. When the completed case, incorporating storage recommendations, was put forward, the NLS secured £1.8 million worth of funding for the Library to cover the entire project.

Following this successes, GlassHouse embarked on the larger job of assessing the full technical storage requirements for the project, and producing the full reference architecture to be followed. Dinham outlines the process that was followed. "GlassHouse worked hard to understand our needs through a series of in-depth interviews with stakeholders across the organisation. This was followed by a collation of each request, and an assessment of their importance within the development of the NLS digital library; were they 'must-haves', or 'nice to haves'? It was from this that a plan for a large Storage Area Network (SAN) was designed that allowed above all for easy management and access of data. Following this, a complete and objective assessment of supplier bids was needed, so GlassHouse built a scoring mechanism for use in the RFP (request for proposal) stage to help us decide which vendor we would to choose for the project.

"This was an extremely effective process" says Dinham, "The GlassHouse Plan was very well thought through. We spent a lot of time with GlassHouse explaining what we wanted technically, but also what the business wanted and needed at the same time. GlassHouse had a full picture of what we were trying to achieve with the technology both now and in the future as well. The report was spot on in terms of what we needed, and we didn't need to change anything along the way. We took the information in it and included it directly in our tender."

A Year in Edinburgh

A year after the hardware and integration programme was initiated, the NLS is starting to look like a very different place. The SAN is now up and running and data is being migrated from the old network attached solution to the new 102 Terabyte SAN. This SAN itself has been mirrored to ensure business and data continuity, as per the GlassHouse plan, and one of the NLS primary requests. The second identical site is positioned 30 miles away in Hamilton, and is connected via a high-speed network link.

When looking back at the value of the GlassHouse consultancy for the NLS, Dinham is pretty definite about his decision to work with the company. "The GlassHouse activity was a small percentage of the overall project budget, but it was an extremely useful investment to make to ensure that at a technical level our project was successful. It's almost as though we needed an internal audit before we did the project. It's difficult to measure specific return on investment here, but what I can say is that we have built an infrastructure that will keep us happy for the years ahead, and we have a very clear picture of what we have to do next, which in many ways is priceless."

The NLS has some big plans for its digital library moving forward – all very clearly laid out. Its next step is to take the SAN to the next level with the introduction of a virtualisation hypervisor, to simplify data management. Beyond this, it's going to focus on increasing the usability of its data, assessing its value by mapping it out.

Dinham concludes that overall this project has been worth more than just the sum of its parts, with some unexpected benefits. "This has given us, the ICT Division, a way of engaging with the business using its own terminology. We have a very good idea of what state the system is in at all times, and we can make speedy judgements in relation to what people need from it and how expensive it's going to be. In the end, this has become all about managing our planning that much better as well as being able to act much more as a service for our business, rather than just an unavoidable cost centre."