**Move On Up: TCD TARA and the Value of Dspace 1.6**

*Retrospective Theme music: The Jam 'Move On Up'*

**http://www.youtube.com/watch?v=8HPzzf2PvpE**

*Actual project soundtrack: Paramore 'Decode'*

http://www.youtube.com/watch?v=RvnkAtWcKYg

**Before**

In 2006 Enovation Solutions with Trinity College Dublin developed TARA – Trinity's Access to Research Archive. TARA was based on DSpace customised with specific enhancements for TCD and integrated with the university's CERIF-compliant CRIS, the TCD Research Support System (RSS). The version of Dspace deployed was 1.3.2.
Over the years, much further integration, customisation and configuration of complex workflows, metadata fields and web services were implemented as TARA became an integral part of the university's fully-integrated research environment. However, it was realised that the version of Dspace was starting to creak, and that an upgrade was needed to move the repository to a new level of capacity, functionality and responsiveness to the needs of the research community.

In 2009 TCD approached Enovation Solutions to investigate and plan the upgrade of TARA from DSpace v1.3.2. Upgrading the repository had hitherto been avoided due to its high level of customisation, integration with local Oracle-based systems (HR, CRIS, and Student Records System etc.) and the focus on streamlining repository processes and content acquisition. With the growing acceptance of Open Access deposit (13,000+ items) reflecting university policies and researchers' practice and the need to support a growing number of quasi-autonomous user communities within TARA, TCD now needed to upgrade and take advantage of new features such as Embargo, delegated community/collection administration and improved statistics reporting. At that time DSpace v1.6 was still in development and the release date was a moving target, so TCD needed the option to switch at a late stage in the project to target DSpace v1.5.2 for the implementation of the upgrade in case of further delays with the release of DSpace v1.6. In addition TCD was changing its internal IT systems, so the upgrade would also include migrating to this new hosting platform.

**The migration.**

Robust data migration and smooth switchover with minimal downtime for users was essential. TCD wanted to upgrade existing customisations & enhancements as well as a number of additional enhancements during the project, so source management was central to the process. A gap analysis was performed between 1.6 and the existing system to identify which customisations were needed to be upgraded and which had become core. Each customisation/enhancement was repackaged as a modular patch for ease of testing, deployment, and back-porting

**Testing**

As with any upgrade project, ensuring that afterwards everything is working as well as before is

of paramount importance. We built an internal UAT environment which was a copy of the live system and that included a test research system to test against. We reworked the code as it updated to Release Candidate 1 & Release Candidate 2 releases as they became available – this increased code stability and verified/validated the modular patch deployment approach.

The Enovation project team lead by Ciaran Walsh worked closely with the TARA and CRIS teams to ensure that that the gap analysis, testing and live deployment provided a smooth transition from the old system to the new 1.6 solution. New servers in TCD's virtual hosting environment helped minimise downtime during final deployment and facilitated data migration dry runs, which ensured the process was streamlined – database migration was complete within 2 hours of starting final deployment. The CRIS remained fully functional throughout: it experienced zero downtime, the link from the CRIS to TARA was simply switched off for a short time as the changeover was effected.

All the testing and preparation facilitated rapid implementation once final DSpace v1.6 code was released – the new system went live on same day of release of the final v1.6 code, fully available to all users the following day.

**After**

What can TARA do now that it couldn't do before? In addition to moving the repository to a much more robust,scalable and sustainable architecture, various projects have been facilitated by this shift to the latest Dspace. These include:

- PEER (Publishing and the Ecology of European Research), EC eContent*plus* collaboration between publishers, repositories and researchers investigating the effects of large-scale, systematic depositing of authors' final peer-reviewed manuscripts. Amongst the participating Dspace repositories, TARA is the only live institutional repository receiving content from PEER (the other Dspace repository partners use dedicated installations for this purpose). Dspace 1.6 and SWORD have facilitated the required processes and metadata requirements.
- Implementation of delegated collection administration has provided self-service management of their Collections to university research communities such as TRIARC (Trinity Irish Art Research Centre) and the School of Histories and Humanities' Digital Image Project.
- RIAN (Irish National Open Access Research Portal) : metadata compliance including the addition of required fields indicating funders, peer-reviewed status etc., and exposed for OAI-harvesting and the web to complete compliance.
- Anticipating the requirements of the OpenAIRE European FP7 project, additional fields and sets (defined by funder name) were added for enhanced harvesting
- OpenSearch enabled the TCD pilot Microsoft RIC for Humanities to search the repository from within that VRE; the RIC was also able to use the new TARA RSS functionality .
- Customisation of the new Embargo function is underway to support the proposed publications policy for the university

- In progress: development of a totally new interface to provide radical improvements to the user experience of results discovery - using the added value of research profile data from the CRIS, improved statistics functionality and 'enhanced content'.

Finally, Google Analytics confirms that the hit-rate of TARA content has increased by at least 100% since the upgrade to Dspace 1.6.

**The project continues...**