Faced with an historic and aging paper-based records system and growing public and business demand for improved service, the Land Registers of Northern Ireland took a bold step. They entered into a 12-year strategic partnership with BT to transform the way they work, how they maintain records, and – crucially – how they deliver this service to business and the public.

**Background**
Land Registers of Northern Ireland (LRNI) is the government agency which is responsible for recording accurate details of legal interest in land in Northern Ireland. It sits at the heart of all property transactions and aims to provide a fast and accurate land information service to smooth the progress of the conveyancing process.

LRNI is organised into three registries: the Land Registry, which has been recording the title to registered land since 1892; the Registry of Deeds which has been recording deeds relating to unregistered land since 1922; and the Statutory Charges Registry, which has been recording information relating to regulations, such as listed buildings and areas of outstanding natural beauty, since 1951.

**Challenge**
With records going back for more than a hundred years there was no shortage of maps, folios, architect’s plans, deeds and other paper-based documents at LRNI. The heavy reliance on paper records led to inefficient processes, duplication of effort, and inaccuracies. Furthermore, anyone wishing to view these documents needed to come from wherever they were based in Northern Ireland to LRNI’s offices in Belfast – a time consuming and often inconvenient journey.

LRNI realised that the existing processes would not be able to support its plans for long term growth. The records were of varying standards, and 100 year old parchment records were fading badly, and would not survive much more manual handling.

Furthermore, new legislation had been introduced that would eventually require LRNI to undertake Compulsory First Registrations (CFR) for all unregistered land. Since half of all properties in Northern Ireland were unregistered, along with the documents relating to it that were held by LRNI, this would have resulted in a huge amount of extra paperwork, and massive increase in the number of staff required to run the Land Register.

With targets for e-government to meet, and with a reputation for being the ‘poor relation’ in comparison to its British counterparts which were already taking advantage of digitised services, LRNI decided that an overhaul of its processes, records and customer service was required.

**The partnership with BT**
Following an EU-approved invitation to tender and selection process, LRNI selected BT as its partner for the transformation project. Wally Gamble, IT Projects Manager at LRNI explained why: “We were impressed with BT’s experience in this area and its work with Registers of Scotland. Aspects of its technology, such as the ability to append notes to scanned documents, made its proposal stand out. And finally, BT’s innovative approach to financing the project was extremely attractive to us, and in fact made the whole programme possible.”
BT signed a £45 million, twelve year partnership agreement with LRNI, with an option to extend this by a further five years. It was the UK’s first pure play Public Finance Initiative deal for IT. Under the terms of the contract LRNI did not pay up front capital for the projects. Instead the work would be financed by BT, which would then charge a certain amount per transaction once the system was generating revenue for LRNI.

This enabled LRNI to take advantage of a sophisticated new information system, without having to raise a prohibitive amount of capital. The nature of the deal also contributed to the close nature of the relationship between LRNI and BT.

Developing landweb and landweb direct

The project consisted of two parts: landweb and landweb direct. landweb is the internally-facing automation of business processes that incorporates workflow, an Electronic Document and Records Management System, a Geographic Information System and bespoke applications management processes. landweb direct is the customer focused online service which allows solicitors and others to access the data online.

The first task for BT’s Land and Property team was to ensure that each person at LRNI had a PC on their desk, and that these were appropriately networked. Once they were sure that a new electronic system would be accessible by everyone they were in a position to start the process of transforming paper documents into digital ones.

Much of the existing information needed restructuring, cleaning and updating before being converted into digital format. Many of the maps were very old, with additions and reworkings made over the years. “One of our first challenges was to update all the maps and indexes, and verify all the information held by LRNI,” said Adrian Harris, LRNI Programme Manager at BT. “We had to make sure that the maps were fully up-to-date, based on the most recent information from Ordnance Survey Northern Ireland, which has been a key stakeholder throughout the landweb programme.” The Land Registry folios and Registry of Deeds memorials also presented a challenge for BT: when converted into standard image files they were still unwieldy and slow to download. This was counter to the principle objectives of the project, which were speed and ease-of-access, so alternative methods of storing folios and memorials had to be found. The result was DJVu images. These are greatly compressed images which offer high resolution but which take up much less space, and as a result are much quicker to access.

A bespoke Electronic Document and Records Management System (EDRMS) that was capable of handling the unique nature of these documents was built, and the BT team called on its expertise in Geographic Information Systems (GIS) to build a platform to support the map-base, which was fully integrated into the workflow system. The GIS provided “intelligent” online maps, that can be searched and analysed, rather than simple static electronic images.

A casework management (workflow) application was also built into the new system, so that each individual case could be handled efficiently and monitored effectively, as it passes through the various stages involved in property purchase and registration. The application was integrated along with a Management Information System (MIS) and an Enterprise Resource Management application, to form a seamless whole.

The landweb direct portal through which customers access the system was then built and is supported by secure transaction payment facilities.

e-Government in Northern Ireland

To use landweb direct, users must register with LRNI, for which there is no charge. There are two types of sign in, standard security and enhanced security. The enhanced security method is needed when using the suspense account facility. In order to verify account holders it was decided to use the authentication service provided by the Government Gateway - the website used to enrol for online government services from a single point of entry. Since LRNI was already making its service available online it was a natural extension to link to the Government Gateway, and enable citizens who had already registered with the Gateway to enrol for landweb direct as well.

The Gateway infrastructure had not yet been deployed in Northern Ireland. The BT team therefore worked with the office of the e-envoy to get it off the ground, accelerating the pace of joined-up government in Northern Ireland.

Normally when registering with the Government Gateway there is a delay of up to two weeks between registering and receipt of verification through the post. Only when verification has arrived can potential users begin to access the Gateway. landweb direct already had between 40 and 50 registered users who would not appreciate having to re-register through the Government Gateway and then having to wait two weeks before being able to use the landweb direct services again.
The answer was to use the Departmental Activation Token (DAT), which enables the appropriate authentication information to be made available instantly. The result was no loss of access for customers and the implementation of a new facility on the Government Gateway. landweb direct was the first site to enable this kind of feature.

Change management
Transferring from a paper-based to electronic system required a significant shift in the way LRNI staff worked. To accompany the technological and business transformation, BT’s Change Management consultants provided a change programme to ensure that the Agency was able to take full advantage of the new systems and processes.

For example, the new system combined into a single-step process, the previously separate text-based ‘settling’ and mapping roles. This meant that data entry clerks who had previously concentrated on ‘settling’ were re-trained as caseworkers, and were able to work on all aspects of property transactions utilising the landweb system.

The programme involved educating staff on their new roles and responsibilities, and explaining how each individual fits in to the wider picture. BT’s consultants worked to gain user buy-in and prevent people from going back to their previous, more familiar but less efficient work patterns.

Security and Business Continuity
To ensure the security of the new electronic service, BT conducted a risk analysis and management review that was compatible with the government’s own strict standards. Following this, BT’s experts produced a detailed security policy document that met the British Standard (BS 7799) as well as the government’s own security standards.

To ensure that the new system continues to meet the strict standards required, BT auditors carry out regular security audits and compliance check reviews. BT specified all the security requirements for external access by its users and customers.

BT also developed a number of disaster recovery and business continuity plans to ensure that LRNI’s valuable data records would not be lost in the event of a major disaster, power outage or component failure.

BT now maintains and supports the system, and deals with any technology related queries, while LRNI has a customer information centre with a help desk facility to handle customer business enquiries.

Features and functions of landweb direct
landweb direct is one of the most sophisticated online land registry services in the UK. It is fully transactional and allows users to make applications and pay securely online as well as view documents. Two payment methods are available through the site – credit/debit cards or suspense accounts. The majority of users are solicitors carrying out conveyancing on behalf of clients and the suspense account is their preferred method of payment. The system also provides transaction reports to ensure that solicitors and their customers are billed accurately.

Now that maps and folios are available online in a digital format, users can view and print documents locally, instead of visiting the LRNI offices in Belfast. They can make searches by address, owner name, folio number or map reference, and print search certificates, which verify the search criteria and results.

To make the searching process even easier it is possible to zoom, pan and adjust the map view to focus on a particular point of interest, and to select a point on the mapbase to obtain more information about registered land. Users can request certified and uncertified copies of maps and folios and can then choose whether to have the required document delivered electronically or via the postal service. When the electronic document is available for download the user is notified by email. Case Status Tracking also enables users to obtain an instant update on a case in progress.

The new service was launched in August 2002 with registrations accepted from three counties: Tyrone, Fermanagh and Armagh. Around 900 transactions were recorded that month. Counties Down, Londonderry and Antrim registered in November, when the number of transactions conducted using landweb direct rose dramatically. In January 2003 the service was extended to the Belfast conveyancing community and during the following month over 7,000 transactions were carried out.

The functional and resilient website now processes thousands of property information transactions a month. Its expert design means searches are simple and logical and the recent change process has improved the quality of information disseminated in terms of both clarity and relevance.

Colin Patterson, Senior Partner of Patterson Donnelly solicitors, said: “Not having to have members of staff or myself jump into a car and drive to Belfast, park, then search for the information at the LRNI building is hugely beneficial, obviously. Management of time, accuracy of information, speed in administering such tasks and most importantly, our reputation, have all benefited and improved since we started using landweb direct.”
Norma Dunnon, legal secretary said, “One key benefit of the service becomes obvious when one is acting for a purchaser. We have the ability to quickly access documents that they don’t have or have misplaced. The way LRNI has filed and referenced information, together with the speed provided online, allows us to access information while clients wait in the office – this simply wouldn’t have been possible before landweb direct. In the past, we would have had to delay proceedings by days, sometimes weeks.”

landweb has also enabled LRNI to expand its customer base outside of the conveyancing community to include the Inland Revenue, HM Customs and Excise, the Police, numerous banks, and other investigative departments in local and central government.

Northern Ireland, like the rest of the UK, has experienced a property boom since 1999, and in addition to the CFR initiative this has contributed to an increase in annual transactions from 350,000 in 2000 to 670,000 in 2004. landweb has enabled LRNI to handle this increase in volumes without a corresponding increase in staffing levels.

Finally, the MIS provides much improved business reporting, enabling LRNI to assess what transactions and documents have proved problematic, how much time has been taken to carry out each task, what activities have been carried out, and which have been the most popular transactions. This has enabled a more effective deployment of resources throughout the agency.

The landweb project has already won the ‘IT category’ at the PFI Awards in 2000, where it was deemed by the judging panel to be ‘outstanding...an exemplar of the transformational effects of PFI’. It was also the runner up for the AGI - Central Government award in 2002 for use of GI technology in the government sector, and highly commended in the 'Central eGovernment excellence: Take-up' category of the eGovernment National Awards 2005.

The online service also acts as a customer network for information sharing and business communications between LRNI, solicitors, government departments and other interested bodies, and places LRNI at the centre of the conveyancing process. landweb direct also plays a significant role in enabling LRNI to meet Westminster’s 2005 targets for e-government and will help the Agency play its central role in the country’s land & property and GIS initiatives, such as the Pointer and Mosiac programmes.

Benefits
landweb direct has enabled solicitors to give clients a more modern and more efficient service. This provides a speedier process for all concerned – purchaser, vendor and legal advisor,” said Patricia Montgomery, chief executive, Land Registers of Northern Ireland.

The instant, secure online access to folios, maps and memorials means that the conveyancing process is greatly speeded up in Northern Ireland. Processing documents, which used to take 10 days, now take five minutes. This has greatly improved efficiencies within LRNI and the country’s solicitors. Conveyancers can also be sure, through the search facilities, that they are requesting the right documents first time round - which again saves time and money.