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Breakthrough in Revolutionary Services for Land and Property Transactions LESSONS LEARNED IN IMPLEMENTING A NLIS IN THE UK

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ABSTRACT

The vision of a National Land Information Service (NLIS) for the UK was first conceptualised by Prof. Peter Dale at the AutoCarto London conference in 1986 and envisaged fast and easy access to an authoritative, accurate and comprehensive record of all land and property in the UK. The first online services from this NLIS vision are nearing reality and a revolution in land and property transactions is underway.

Over the intervening period, the Geographic Information (GI) sector has spent considerable effort in lobbying government and educating the potential service providers and customers about the social and economic benefits of implementing a NLIS. Early efforts only resulted in an endless series of consultative exercises and eventually a small scale pilot project in Bristol, England to support conveyancing. However, in the past 12 months NLIS has been adopted as a *Modernising government* initiative and is now being taken forward by a partnership between the local government's Improvement and Development Agency (IDeA), the organisation responsible for creating the Information Age infrastructure for local government, and HM Land Registry. The vision is for one-stop integrated service(s) that will allow users access, via a computer, to various spatially related data sets.

The procurement of NLIS related services, from the remaining four consortia from the private sector is being finalised and the results made public this summer. These are the first government services to be procured under the Channel Implementation Policies, issued with the *Modernising government* White Paper. The launch of NLIS services by the winning license holders is anticipated to be later in 2000.

The paper will review the progress of NLIS from concept to information service implementation and after exploring the variety of drivers that have at last made NLIS a reality, it will examine the lessons learned from this process.

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Background

The award of contract for the development of the National Land Information Service (NLIS) in England and Wales marks the culmination of considerable effort based upon early visionaries and work by the geographic information community. The first service will be a one-stop shop for the buying and selling of property. It involves the linking of data sets to geospatial information with the intention that the process of a property search can become "a 100% paperless procedure". The concept of NLIS started with a vision by Prof. Peter Dale. It is one of the most exciting initiatives being proposed to provide national information on land and property in England and Wales. NLIS will build services based upon a variety of data providers through the National Geospatial Data Framework (NGDF), feeding into the 'Hub'. Channels then feed off this 'Hub', providing various sources of integrated information. The 'Hub' and the Channels are being licensed out to operators. This idea was developed from the Modernising Government White Paper, enabling the private sector to work in partnership with government. The 'Hub' is the gateway, which enables the electronic access to a vast array of property information. Once this 'Hub' is in place up to four awards can be made for licences to provide channels of different types of information. These consortia will buy data through the 'Hub' and then sell it on to solicitors, conveyancers and the general public.

Central to this information service is the introduction of the National Land and Property Gazetteer (NLPG). This will provide unambiguous identification of land and property and hence an index to the information required by

NLIS. This NPLG will provide a definitive index of addresses by which information held by local authorities and other data providers can be accessed. This project supports Open Government policy, increasing the quality of services currently provided by central and local government and in addition it provides new business opportunities for the public and private sectors. NLIS in the long term has a wide ranging potential for linking all types of data sets to geospatial information, such as retail information and crime data.

In the four shortlisted consortia Hewlett Packard; MacDonald Dettwiler; PricewaterhouseCoopers and Teramedia were the leading companies. On 19th July 2000 The Lord Chancellor announced MacDonald Dettwiler and Associates Limited (MDA) as the leading successful consortium to provide the 'Hub' service for NLIS. As part of MDA, Laser-Scan will deliver map-related property information and applications over the Internet. The next step once the 'Hub' is in place is to award up to four licences to provide channels for different types of information. The other companies are still interested in offering channel services; an announcement on award of contract is yet to be made.

NLIS should be available as soon as spring 2001 depending on when licences for channels are awarded. As shall be seen later, things are very often delayed and the dates for final achievement of goals are therefore extended. Although NLIS should be available from spring 2001 some data sets will not be completely electronically based. Many data providers such as the Environment Agency already have national coverage, allowing data to be available on-line from the outset. The Local Authorities (LA) however, hold their data in a variety of formats. Around 50 of them deal with over 80% of the housing transactions and they have the most advanced systems. Despite this, from the outset NLIS will allow electronic submission of LA searches and there is a program established to bring all LAs up to a similar level. It is possible that within one year all LA's could be able to return electronic results.

The process by which NLIS is being achieved is as follows:

Fundamental shift towards investment

Vision
Identification of Drives
Pilot (Bristol)
Feasibility study
Aligning to Government Policy Initiative
Funding Identification

Major investment activities

Contracting
Award of Hub Contract
Award of Service Channel Contract

Bristol Pilot Study

Following consistent lobbying by the GI community to Government and service providers alike, the NLIS Conveyancing Pilot was launched by Bristol City Council in April 1998. Key to the pilot, as with NLIS itself, was the development of a central land and property gazetteer to control all property related information. The Council at the time was also involved with the Local Government Management Board's development of the BS7666 (Spatial datasets for Geographic Referencing). The Gazetteer was therefore developed to meet the needs of both projects. The pilot study at Bristol proved so successful and useful that it continues to run today, well beyond its six-month plan.

The pilot National Land and Property Gazetteer is used to service search requests from the solicitors. Three solicitors practices based in Bristol have on-line access to the NLIS services with searches being submitted and returned electronically. Therefore the operational use of GIS is now on the desktop of the solicitors and through them the general public. They have access to both digital mapping and LPG data to enable accurate property identification. The gazetteer is shared by the 12 NLIS data providers, the Ordnance Survey being the custodian. The "Gazetteer forms part of the foundation of the process as it provides the essential link that "spatially enables" land and property related information, allowing it to be accessed or manipulated in conjunction with geographical or map based data" (Musgrave and Yeoman, AGI, 1998). As with NLIS, partnerships were seen as critical to the success of the pilot, not least because of the cost effective use of information they allow.

Feasibility Study

The NLIS Feasibility Study was carried out in 1996 and concluded that NLIS was a viable project both financially and practically. This information was published at a time of considerable political and technological change. The fortunate timing of the publication of the Feasibility Study colliding with this unique environment enabled the project to gain enormous momentum. Overlapping and feeding from the practical experience gained in the Bristol pilot the Feasibility Study built upon the extensive research and practical work that had been carried out over the past two decades, including the visionary work of the Domesday group sponsored by The Royal Institution of Chartered Surveyors (RICS) and Ordnance Survey (OS). It also built on working parties on land and property and street gazetteers, and demonstrators and pilots were undertaken to show how NLIS might be realised. The study was run in parallel with the pilot study in Bristol and culminated in a final report of recommendations and actions being undertaken by the NLIS steering group to take NLIS from vision to reality.

The Realisation of NLIS

Amalgamating the results of the studies provided the evidence to go forwards. However, evidence and the creation of an elementary financial model alone was insufficient to enable the project to proceed. The drivers identified at the outset of the project had to be combined with the evidence in order to maintain the vision and succeed. The main drivers behind bringing this vision of NLIS to a working reality were and will continue to be as follows:

Government Policy
Technology Seachange
Social and Political
Setting the Vision, Enabling and Enacting

NLIS, from vision to reality, is therefore the culmination of events and change of political circumstances and technological innovations.

Government Policy
The government White Paper, Modernising Government (1999) included a chapter entitled 'Information Age Government'. This paper examined several areas, which the government believed needed action and set many targets for e-commerce in particular. One target that helped to drive NLIS was the aim to increase collaborative ventures, involving the best of public and private sectors.

Part of the White paper extended the Prime Minister's 1997 target and proposed that by 2005 it should be possible to carry out 50% of dealings with the Government electronically and by 2008 100%. This target includes internal government dealings. The availability of NLIS would go some way towards helping to meet this target as NLIS has the potential to allow various procedures to become 100% paperless.

The White paper set out, among other e commerce aims, that by 2004 all newly created public records will be electronically stored and retrieved. By 2002 the government intends to have worked in partnership with local and central service providers to enable citizens to be able to carry out various activities electronically, such as: submitting self-assessment tax returns; applying for training loans and student support; use the National Grid for learning and get on-line health information and advice. It intends for businesses to be able to complete VAT procedures; apply for regional support grants and receive payments from government for the supply of goods and services electronically.

Technology Seachange
Technology is changing at such a rate that even contemplation of these schemes has only been possible very recently. Not only is the speed of technology change increasing but the types of changes are also gigantic, enabling many different projects such as NLIS.

Social and Political
The technology seachange means that our ability to work and communicate is becoming increasing quicker and easier. However, internet users, home buyers, estate agencies, local government are all frustrated by their inability to match data to geospatial information. The process of property searches for example, could be improved by the wider and easier access to, and availability of, land and property information. Furthermore, organisations with information are seeing the potential of that information in terms of capital gains. Businesses

become data providers to see the latent value of their data exploited for commercial advantage. This all occurs in connection with a political need to link these data.

Many companies and organisations, including the government have a vast amount of information stored internally. This information, although available for the public to access is not widely known about and in addition, access although possible, is not quick and easy. These stacks of data can be turned into knowledge and the different sets of data collated, providing further types of information. To meet both these social and political drivers, there is a fundamental need for a national land and property gazetteer together with a national address database. There is a need to be able to link addresses to property co-ordinates in a geospatial sense.

Setting the Vision, Enabling and Enacting

It is essential not to be stationary or be satisfied with where we are now, or believe that we cannot go elsewhere. A quote from Thomas Watson, chairman of IBM in 1943 shows that even those of us we consider to be at the cutting edge, risk not being in touch with the potential of products: "I think there is a world market for maybe five computers" (Thomas Watson, chairman of IBM 1943, FRICS 7/00).

In order for a goal to be achieved three main features are needed. Vision, Enabling and Enacting. In the case of NLIS, Prof. Peter Dale set the **vision**. Eventually the Government helped **enable** the project with the modernising government white paper. Following from this White Paper NLIS was **enacted** with the combination of public and private sector. The 'Hub' and the Channel licenses are now being awarded for the goal of NLIS to be achieved.

The process is long and determination and enthusiasm are needed to see it through from the initial vision to completion. Although it is essential to know when to stop, it is also important to know when to persevere. For example - "This 'telephone' has too many shortcomings to be seriously considered a means of communication. The device is inherently of no value to us." (Western Union internal memo, 1876, FRICS, 7/00) if too many people had followed this memo we may well not be here talking about NLIS.

Use of Private and Public Sector to Exploit the Potential

The early work that had been carried out was at this stage focused towards crystallising the process so far in order to present it to the private sector. When presented with the optimum environment the public sector has the ability to be extremely inventive. The Government White Paper, Modernising Government enabled the project to obtain the best use of the private sector. The project was funded by an award of £2M from the Government's Invest to Save Budget. This money enabled the project to progress from the pilot stage in Bristol to a national level. In addition there was also financial input from the private sector.

There are many other parties involved in the successful development, organisation and running of NLIS. The Local Government Information House (LGIH) which will regulate the pricing structure of the 'Hub' represents a partnership between HM Land Registry (HMLR) and local government's Improvement and Development Agency (IDeA). Charges will be subject to the terms of the 'Hub' license and will be monitored by the LGIH. The Channels will then operate in a competitive market, subject to market forces. Prices will therefore be regulated by the market place. The core data providers are HMLR and LAs. In addition the National Land and Property Gazetteer is a key part of NLIS and is a development created by a partnership between the LGIH and Intelligent Addressing.

These two factors, the drives and the funding, coming together from both the private and public sector is an exciting combination that has been enabled by the White Paper. It is this initiative that is allowing the project to now proceed more rapidly and bringing NLIS to a marketable success.

Lessons Learned

NLIS is due to be launched as soon as Spring 2001. The process to date has been exciting and led by many enthusiastic people. However, it is important to look at the way in which the project has been undertaken and the way in which it has progressed to see what can be learnt for a future endeavour. The following points are some of the main lessons that can be drawn from analysing the process:

Time Scales, Expectation Management
Stay With the Present
Combination of Public and Private

The Private Sector Can Be Inventive Risk and Reward Bite Size Pieces

Time Scales, Expectation Management

Initially the process from vision to goal achievement was purely a set of endless consultations. However, once the Government White Paper was published the process started to pick up and the combination of public and private sector meant that considerable activity was initiated. However, it is very easy to underestimate the length of time that processes will take. Before the White Paper was published the feasibility study into NLIS stated that the recommended actions should be completed, enabling NLIS to be established in the market place, in a 24 month period. Although only a recommendation to guide the steering group, the Feasibility Study, suggested September '98 as the date for award tenders to be given to service providers. One particular pit fall to remember is that often data is on paper only and computerising the format takes time. Indeed if NLIS is on the market in Spring 2001 many of the LA s will not have their data fully computerised and results from searches will not be able to be returned electronically for another year.

Extended timescales often requires more money. It is important therefore not to underestimate the amount of investment that will be needed. Not only this, but it is important not to design a system just to meet the current capacity. Allow scope to expand to the amazing potentials as it is not always possible to see future needs. Bill Gates for example has been quoted as saying in 1981 "640K ought to be enough for anybody" (FRICS, 7/00)

Stay With the Present

The last point comes however with a warning. Technology is moving so quickly that we cannot look too far into the future or plan a system that will take 10 years to implement as it will be out of date before the design stage has finished. It is therefore necessary to make sure that the system being designed can be up and running and used now with today's technology as tomorrow's technology is likely to be more intelligent than our ideas today. Furthermore, tomorrow's technology could have more capacity than we have information to fill it with.

Combination of Public and Private

"The concept of the hub and channel has developed from the Modernising Government White Paper; the ambition being to harness customer service capabilities in the private sector in partnership with government (both central and local)". With this newly endorsed combination of public and private sector must also come co-operation. Very often the two sectors have very different internal organisational structures. A successful merger of the two can only happen with careful organisational planning, allowing for the strengths and weaknesses of both sides.

The Private Sector Can Be Inventive

Initially, as mentioned, the process of turning NLIS into a reality was merely a series of endless consultation with no real positive outcome. However, with the arrival of the Government's White Paper things started to get moving. The right environment then existed to allow the private sector to invent ways of becoming involved and expand to meet the potential available for its investment.

Risk and Reward

Public sector will only take the risk if they can see the reward and see that it is achieved. Remove the reward and they will not take the risk. Seeing the possibility for releasing the latent potential in the vast amounts of information that both the public and private sector possess may indeed have many rewards. However, as was seen with the sudden take off of the project after the Government paper, once the reward of releasing this potential was made more tangible the public sector were much more enthusiastic and motivated. It must be a "win-win" situation for both Government and private sector.

Bite Size Pieces

The initial stage of the project before launching to a national scale was naturally to establish a pilot scheme. The NLIS pilot scheme was run successfully in Bristol, proving the concept and viability of the information service. Indeed, the fact that the pilot project continues today, well beyond its six month original plan can only be a strong positive sign for the future success of NLIS.

NLIS has a wide potential but it is important to stay focused to be successful. Licences to provide channels can be for many areas such as retail and the environment. Firstly though, the main focus must remain on e-conveyancing to ensure the national project is as successful as the pilot.

Conclusion

England and Wales have taken the first step towards a 21st century conveyancing system where land and property transactions will be completed in hours rather than weeks. The combination of public data and private sector finance combined with technological know-how are combining to revolutionise land and property transactions in England and Wales.

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