

A03.1

Addressing for Britain is not as simple as going from A to B

Gavin Keith, Director of Compass Geographics Ltd and Robin McLaren, Director of Know Edge Ltd

Abstract

In past years, there have been a number of key initiatives in the United Kingdom focused on the 'address'. These range from the National Land and Property Gazetteer (NLPG) in Great Britain to the Pointer in Northern Ireland to the DNA-Scotland (Definitive National Addressing for Scotland) north of the River Tweed. In addition, there is the highly touted Project Acacia that involves a partnership of public sector organisations including; HMLR, Registers of Scotland, Valuation Office, Royal Mail, Ordnance Survey and the Local Government Information House (LGIH).

A primary aim for all these initiatives is to create a definitive source of addresses that can be used for multiple purposes. Indeed, this concept of a 'single address gazetteer' (whether at a local, regional or national level) is seen as a vital component for joined-up government. Many existing e-government services such as call centres, on-line planning applications and council information portals cannot deliver to their fullest potential without an address gazetteer that is of an acceptable quality. Yet, for various reasons the relevant organisations have so far found it difficult to create this definitive address that is sustainable, used for many purposes and can pass quality tests.

This paper explores these reasons in some detail and provides a number of suggestions for consideration to widen the debate and find practical solutions to the issue.

Introduction

Address-based datasets are now well established in Britain in both the public and private sectors. Addresses themselves were established to serve two major functions: the first to deliver mail; and the second as a reference to allow a property to be found and defined. Since the emergence of geographic information in both GIS and mainstream IT systems, the address has gained importance as a universal property identifier (Barr, 2002).

To respond to this need, there are currently a number of national public sector databases of postal and property-level addresses that are held and maintained by a number of different organisations. These include:

- the Postcode Address File (PAF) maintained by Royal Mail to support the national postal service and as an address management product sold commercially;
- Ordnance Survey GB Address-Point, created from PAF by Ordnance Survey GB, providing a national geo-referenced address database again sold commercially;

- the HM Land Registry (HMLR) property database holding and maintaining land and property registration and ownership / rights information for England and Wales. The Registers of Scotland (RoS) has a similar database for property registration and ownership / rights information for Scotland;
- the Valuation Office Agency (VOA) databases supporting the tax base for domestic (Council Tax) and non-domestic (National Non-Domestic Rates) properties in England and Wales. In Scotland, similar datasets are maintained at a local level by 'regional assessors';
- the National Land and Property Gazetteer (NLPG), managed by LGIH on behalf of I&DeA, created and maintained through a conflation of the key national data sources; and
- the Local Land and Property Gazetteers (LLPGs), which are currently under construction by Local Authorities (LAs), and will ultimately be linked to the NLPG.

In the private sector, there are a considerable number of address based products from companies such as QAS, Hopeweiser and Experian supporting applications in CRM, marketing and financial services.

British Standard BS7666 provides a national standard for a range of spatial datasets including streets, land and property, address and rights of way. The standard specific to addressing - BS7666, Part 3 - was originally prepared in 1994 by the Address Standard Working Party for the Local Authorities Association Geographic Information Steering Group. Part 3 specifies a model and structure for an address, providing a means by which an address may be constructed (BSi, 2000). In effect, the standards provide a structure for creating and maintaining unique references for any given address.

While devised initially for local government, BS7666 Part 3 has become the de facto standard for other government agencies as well – the standard is now enshrined in e-GIF. While the NLPG is the only national database that is designed to be fully BS7666 compliant, other government departments, including HMLR, VOA and RoS are committed to ensuring that existing systems are modified to meet this standard.

In terms of initiatives, there are two key GB initiatives underway to create and maintain 'definitive' addresses in addition to the maintenance work performed by Royal Mail, Ordnance Survey GB, HMLR / RoS and the VOA. In the first instance, there is the NLPG and the related DNA-Scotland (for Definitive National Addressing for Scotland) Project that involves local authorities creating 'Corporate Address Gazetteers' or LLPGs at a local level and then conflating this information with other national datasets.

The second key initiative is the Acacia Programme which aims to 'co-ordinate the development and maintenance, and promote the use, of a definitive, consistent and joined-up national infrastructure of property addresses and related data with the related mapping so as to facilitate major economies, efficiencies and service improvements both in the public sector and throughout the economy' (Acacia, 2002). This is a joint programme involving HMLR, RoS, IDeA, Ordnance Survey GB, Royal Mail and the VOA. A pilot project is running between May and October 2003 and progress will be announced on completion.

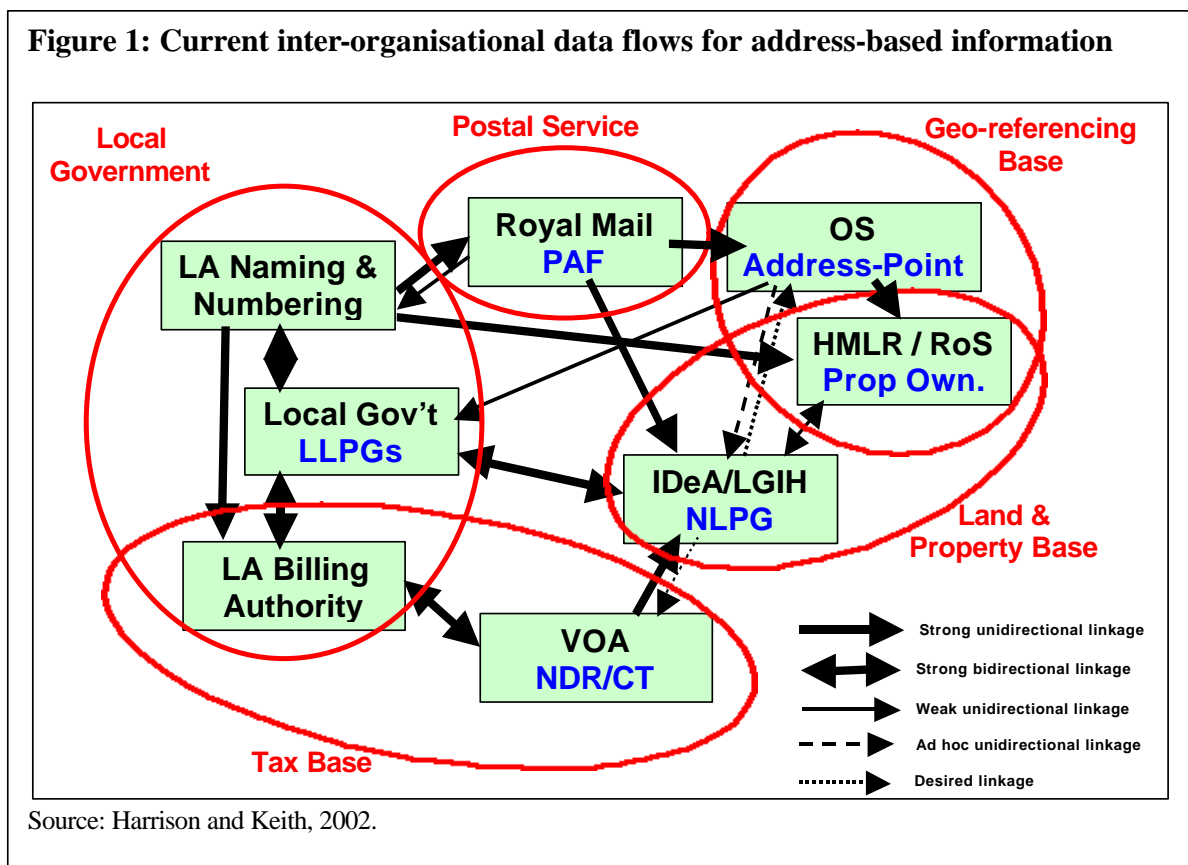
A comparable initiative is underway in Northern Ireland called the 'Pointer' project with objectives to: establish a definitive database of standardised spatially referenced addresses; act as an infra-structural cornerstone of joined up Government; and provide the hub for maintaining, accessing and sharing address related information. In this instance the stakeholders are Ordnance Survey NI, Valuation & Lands Agency, Royal Mail, CITU (NI), Solace and the Water Service.

Although there are many potential sources of addresses in the UK, there is still no completed, definitive source of addresses to meet the increasing demands of the public sector, e.g. to deliver e-

government targets, and the private sector, e.g. to support CRM projects. This vacuum has forced a large number of organisations to create and maintain their own address databases. There is an immediate need to provide a definitive, truly national address source to reduce this current inefficiency.

The Current Situation

As described in the previous section, there are a number of GB databases of postal and property-level addresses held and maintained by a number of different organisations. These include the Royal Mail, Ordnance Survey, HMLR / RoS, VOA / Scottish Regional Assessors and local government. The inter-organisational flows of address-based information that support these GB databases are shown in Figure 1 below.



In September 2002, a report by Harrison and Keith for Project Acacia examined the status of the national address-base and made a number of observations that are still relevant. The most mature and used address-based data products (i.e. PAF, OS Address-Point) provide postal addresses. For the most part, they are successful products and in widespread use, and it will be important that these strengths are recognised. However these products are of limited use in satisfying applications that require a view of land and property that is wider than postal addresses. In addition, there are reports from users of OS Address-Point of specific concerns over data quality relating to the currency and reliability of addresses. Most of these issues relate to the current convoluted processes for

exchanging information between LA street naming and numbering and Royal Mail, and the maintenance of the PAF itself.

While the NLPG uses the national datasets described above, at its core is the collection of LLPGs from local authorities – which is both its strength and weakness. The advantage of LLPGs is that if they are maintained to agreed thresholds of quality then the change intelligence is received from the initial source of this change as local authorities are responsible for street naming and numbering. Local authorities are therefore at the beginning of the ‘supply chain’ regarding changes in addresses. The weakness is that this model, whilst fine in theory, does not work in practice. There is no consistency across local authorities in address management practices resulting in varying degrees of quality of the information.

To date, 232 of the 407 local authorities working on LLPGs have provided the NLPG hub with this information (nlpg.org.uk, 2003). Indeed there are Best Practice examples within the local government community; however, at a general level this seems to be the exception rather than the norm. Only 90 local authorities provide daily or weekly updates – or less than 25% of the local authorities that have a remit to maintain LLPGs. Finally, while there are some customers that are currently using the NLPG on a trial basis, it is still not a product that customers (government or otherwise) can currently purchase due to on-going negotiations on pricing and licensing issues.

In summary, there are a variety of address data sources and products that have been developed to meet different needs over time and providing different views and interpretations on the purpose of an address-based information. At present, there are five organisations in GB creating and maintaining address-based information; 1) local government, 2) HMLR / RoS, 3) VOA / Regional Assessors, 4) Ordnance Survey GB and 5) Royal Mail. While these organisations have different address management requirements, even at a cursory level there seems to be inefficiencies and duplication. For example, there are multiple sources of new address intelligence (e.g. Local Authority street naming and numbering, Local Authority planning and building control, HMLR/RoS property registrations, VOA databases, utilities, Ordnance Survey Pre-build information) and these are inconsistently co-ordinated and integrated into current products and processes at an inter-organisational level. Finally, there are concerns over the quality of most available products and there may be IPR implications on all local authority address-based datasets that at one point or another have used – or linked to OS Address-Point.

Yet at the same time the need for establishing a definitive national address – and inter-agency processes to ensure its long-term sustainability – have never been greater. A key driver for resolving this issue is the Government’s push to modernise services at both a national and local level under the ‘e-Government’ banner. Significant funds have been allocated for this purpose with the 2005 target for online services soon approaching. As government services are about people and/or places, the ‘address’ is now recognised as an essential component – or reference – for supporting information in delivering these services. More important, this is not a ‘GIS’ issue anymore as address-based information is becoming fully integrated into mainstream IS/IT solutions required for e-Government services.

Why Haven’t We Achieved Our Objectives ?

It is clear that the GI industry has not yet delivered its objectives within the addressing domain. There are a number of fundamental reasons that have conspired to delay the delivery of a definitive, national, operational address source. This section explores a number of these factors.

1 Governance

The governance of addressed based information (postal addresses and non-postal addresses) in the UK is currently highly fragmented. The constitutional divide has spawned variations across Northern Ireland, Scotland and England & Wales, with governance split amongst a wide set of stakeholders, including, National Mapping Agencies, Local Government in various guises, Royal Mail, Land Registries, Utilities, VOA and Assessors. Each stakeholder group has a specific view of address based information, leading to a wide variety of products and associated maintenance regimes. Without a holistic, cross government governance framework, this diverse address landscape will persist and the objectives unlikely to be met.

2 Conflicting Business Models

Each of the stakeholders is driven by a different set of business objectives, set by government, and are supported by a variety of business models that are dependent upon the type of legal entity involved. The variety includes:

- Ordnance Survey are a government Department with Trading Fund status, reporting to ODPM, who have an objective to make a 'profit' of £4.7M in financial year 2003 – 2004;
- Local Government IDeA is represented commercially by the Local Government Information House (LGIH), a company limited by government guarantee. LGIH have a mandate to ensure value for money and minimise the costs to their Local Authority sponsors. LGIH have contracted a private limited company, Intelligent Addressing, to manage the NLPG on their behalf and Intelligent Addressing themselves have to deliver a return on investment to their shareholders;
- Royal Mail are a publicly owned plc with increasing pressures to increase efficiencies and return to profitability;
- HMLR are a government Department with Trading Fund status, reporting to the Lord Chancellor, with a remit to optimise the process and associated costs of registration transactions and services; and
- VOA is an Agency of the Inland Revenue, without trading fund status.

Within the scenario, it is increasingly difficult for these stakeholders to share address based products and co-operate within a business environment where some are pursuing completely different business objectives.

3 Intellectual Property Rights (IPR)

The IPR associated with address based information is fragmented across a number of the stakeholders. For example, Royal Mail hold IPR for the Post Code, Ordnance Survey hold IPR for the spatial element of an address and Local Government allegedly hold IPR for the street name and number since they are the street naming and numbering authority. This conundrum significantly increases the complexity of resolving the pricing and licensing arrangements.

4 BS7666

The adoption of BS7666 is perceived to be a general panacea for solving all addressing problems. However, there are a number of potential shortcomings with this standard (the standard is about to undergo a formal review process by BSI) including:

- The standard was devised for local authority requirements and is now used by other government agencies and departments;

- Other government agencies and stakeholders have not adopted BS7666 given that there is no business case to do so;
- There are different interpretations of BS7666 which therefore requires a set of conventions to ensure consistency across all users of the standard. At present, these are prepared at a local level with little guidance nationally;
- The lack of guidance / definition of provenances to ensure consistency of nationally collated datasets from local views; and
- The mandating of a reference to the National Street Gazetteer (NSG) when very few local authorities maintain one to an acceptable level.

Finally, use of a BS7666 compliant system does not guarantee high-quality, consistent and current address data. Organisations still need to provide resources to maintain the data in the system and it is vital to distinguish between the two.

5 Information Management

Information management in general is still not perceived to be a high priority in many organisations, particularly in local government where front-line services are more politically relevant and take a higher priority. An investigation on the NLPG earlier this year (Whitefield, 2003) found that only 13% of local authorities in the UK have a dedicated LLPG officer.

6 Intra-Agency Maintenance Regimes

Apart from the sharing of some change intelligence, for example, between the Royal Mail and Ordnance Survey GB, there is no effective, robust, shared maintenance regime established amongst and between the stakeholders. This must limit the quality and value for money aspects of the address based products. A solution to this maintenance problem lies at the heart of the Acacia initiative.

7 Limited Use of the Private Sector

Only one private sector company has been engaged so far by the public sector to support the creation of addressed based products; Intelligent Addressing support LGIH with the generation of the NLPG. Given the address expertise that currently exists in the private sector and the scale of the problem in hand, it is surprising that more partnerships have not been forged. [or even more surprising that the private sector hasn't stepped in to fill the current vacuum].

8 Technical

There are no significant technical issues that currently inhibit the creation of a national, definitive address source.

9 Business Case

The compilation of customer address databases forms a fundamental role within many arms of government, e.g. Office of National Statistics to support the census, DEFRA to support IACS. Significant resources are applied to the collation and maintenance of address based information. HMLR alone employ approximately 26 staff to maintain addresses. The business case for more effective co-ordination and dissemination of addressed based information would be conclusive.

10 Lack of Investment

The majority of work in creating and maintaining definitive addresses at a national level has been on a piecemeal or project basis with no long-term funding. Without this type of investment, the goal of sustaining a national, definitive address source will not be possible.

11 Missing Stakeholders

The current stakeholders involved in maintaining and delivering national address based products and services are limited to central and local government. There is a strong argument for including Utilities and other major users in this stakeholder community. For example, Utilities have a strong incentive to quickly obtain address information for new or adapted properties since they have to maintain a customer database for invoicing.

12 Custodianship

The current custodianship of postal addresses in the UK is spread across three organisations; Royal Mail, Ordnance Survey and Local Government. In Northern Ireland, the Pointer project has eliminated this confusion of custodianship and is in the process of creating a single, definitive address source. Should this not be the immediate aim in the UK?

13 Expectations

Will it ever be possible to achieve a very high level of comprehensiveness and quality for a definitive address source of the UK? This may never be possible due to the diverse set of stakeholders, their sometimes competing interests and the complex processes involved in maintenance of address based information.

Ideas for Consideration – the Way Forward

However, the challenge is not simply to identify the problem but to provide practical solutions for stakeholders to consider. The ideas below are an attempt to provide such answers and while these suggestions should influence the debate at a national level, some of these ideas can be applied at a local level as well. The ideas for consideration are:

1 Political Involvement

Addressing requires the oversight and involvement from politicians – if only from a cursory level who are interested enough to promote the project and are empowered to make decisions when disputes arise.

2 Governance

Establish a Single Responsible Officer (SRO) and associated project board with cross cutting government powers over the stakeholder group.

3 New Owner of Addressed Based Information

Establish an independent body to own and maintain address source across GB. Plan to create a single, definitive source of addresses rather than compromise. This will involve some radical decisions on existing IPR, pricing and licensing arrangements. However, the costs to replace these arrangements will be insignificant compared to the benefits accrued.

4 Business Case

Develop an effective business case to highlight the tremendous waste of resource that currently maintains addresses up and down the country. This will be conclusive and support the necessary investment to take place.

5 Shared Change Intelligence Service

Establish a process / organisation to more effectively share change intelligence amongst the stakeholders. This will help all stakeholders in maintaining their own address-based information.

6 More Effective Engagement of the Private Sector

Engage the private sector more effectively in the creation and maintenance of the definitive address source to leverage their experience and investment. This should include the involvement of Utilities.

7 National

Business requires a truly national view of addresses, let's remove these artificial boundaries.

8 New Legislation

If the vision can not be achieved by the stakeholders volunteering to co-operate and provide the necessary funding then let's brave and enforce it through new legislation.

9 Focus on Postal Addresses

Let's solve the immediate issue of postal addresses then solve the more difficult issues surrounding non-postal addresses.

10 Accommodate Different Geographies

Accept and support different types of addresses rather than trying to rationalise them.

Conclusions

Over the past 30 years, there have been many attempts to solve the address problem in the UK. All have failed and there is an urgency now to put in place a final and sustainable solution. The fundamental role of addressing in the support of e-Government initiatives is a key driver and can provide the necessary leverage to gain political support for radical changes to the current, fragmented address management situation. A truly national, definitive address source should be viewed as information infrastructure, essential to support an effective government, society and economy of the UK.

The paper has argued that the majority of the current problems are being perpetuated by the fiefdoms generated by the key stakeholders in the address community. If co-operation and collaboration between these fiefdoms to generate a truly national, definitive address source is not forthcoming through initiatives such as the Acacia Programme then it will be essential for government to enforce co-operation by radically rethinking and simplifying the governance of addressing in the UK.

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