OPEN DATA IRELAND

A BRIEFING PAPER

PREPARED BY

THE NATIONAL CROSS INDUSTRY WORKING GROUP
ON OPEN DATA

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Contents

Introduction

OpenData has emerged in recent years as the game-changing opportunity for progressive nations to engage their citizens and wider society with government and industry. Internationally, there is evidence of improved services, greater public sector transparency, engagement and efficiency delivered by innovation technology enterprises.

Ireland is exceptionally well positioned to capitalise upon the opportunity that Open Data presents. We benefit from a strong technology sector, both innovation start-ups and MNCs focusing on the interplay of big data and the cloud. We are also home to the world's leading edge academic institutions in exploring open data opportunities, in particular DERI, Galway and FutureICT, Cork.

This National Cross Industry Working Group welcomes the recent announcement by Government to include Open Data objectives within the Public Sector Reform Plan[1]. We are heartened by the Governments stated reform objectives:

1. Create a Centralised Portal
2. Publish Public Sector Data Online
3. Improve Internal Government Data Sharing
4. Develop an Integrated Approach for collecting Administrative Data
5. Review Data Sharing Legislation

Collectively, these objectives will deliver the pillars for a progressive Open Data strategy that this National Cross Industry Working Group is eager to support.

To that end we have prepared this briefing paper to provide our collective view of how we will support Government in achieving these objectives, based on our industry experience, academic knowledge and public sector insight.

Open Data Europe

The announcement of these shared objectives and the parallel industry initiatives of the past 18 months are timely in the context of the recent announcement from the European Commission.

Vice President of the Commission, Neelie Kroes said *"We are sending a strong signal to administrations today. Your data is worth more if you give it away, so start releasing it now, and use this framework to join the other smart leaders who are already gaining from embracing opendata. Taxpayers are already paying for this information, the least we can do is give it back to those who want to use it in new ways that help people and create jobs and growth"[2].*

A recent study, quoted by the European Commission Communication on Open Data[3], estimates the market for public sector information in 2008 at €28billion across the EU. The same study indicates that the overall economic gains from further opening up public sector

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[1] Public Sector Reform Plan, Department of Public Expenditure & Reform, 17th November 2011 - http://per.gov.ie/wp-content/uploads/Public-Service-Reform-181120111.pdf
[2] http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/1524
[3] A review of recent studies on the PSI market - http://ec.europa.eu/information_society/policy/psi/docs/pdfs/opendata2012/reports/Vickery.docx

information by allowing easy access are around €40 billion a year for the EU27. The total direct and indirect economic gains from PSI applications and use across the whole EU27 economy would be in the order of €140 billion annually.

The National Cross Industry Working Group

This group was formed in June 2011. It is the collaborative response to the individual initiatives and events of group member with the strategic intent of merging expertise and experience to devise an Open Data strategy in support of government objectives. The group comprises industry, public sector, local government, research and education, and Enterprise Ireland perspectives. (Appendix 1 "Group Members"). Each group member has delivered and supported the gamut of research, trial and implementation of Open Data opportunities culminating in the enormously successful inaugural Ireland Open Data Week in November 2011. (Appendix 2 "Events Timeline").

The group wish to support and inform government in the delivery of their Open Data objectives. We are committed to realising Open Data opportunities for Government, society and industry while simultaneously re-enforcing our international reputation as a global technology hub.

Open Data

The Open Knowledge Foundation defines a work as 'open' if it can be freely used, reused and redistributed by anyone. Open Data includes both private sector and public data[4]. Open Government Data refers to data and information produced or commissioned by the government or government controlled entities, Open Data Overview , by DERI NUIG defines Open Data in detail. [5]

The Case for Open Data

1. **Improved efficiency in the provision of public services.** As the proprietors of the largest open data sets, local and national government (including government agencies) are immediate beneficiaries of releasing open data). International evidence of efficiency in public sector exists for energy, transport and town planning. Recent examples: FixyourStreet, in Dublin and City Bikes planning, in New York.

2. **Increased transparency and interaction with citizens and society as a whole**. The delivery of open data applications have shown that citizens benefit through improved access to services, greater transparency and understanding of services and improved communication through feedback loops. The services of voluntary and community groups are likewise provided with greater understanding and insight for the planning and delivery of community resources and societal support.

3. **Creation of job opportunities through innovative uses of Open Data**. Both MNC and indigenous business will have access to an invaluable raw material to uniquely fashion a plethora of citizen and state applications which will in themselves create job opportunities. Furthermore, the open data applications will also support non-tech businesses through the use of the data for decision support such as identification of

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[4] What is Open Government Data?, Open Knowledge Foundation - http://opengovernmentdata.org/what/

[5] Open Data Overview, by DERI NUIG http://workspace.opendata.ie/wiki/Open_Data_Overview

optimal business locations and market analysis. The business case is supported emphatically in the aforementioned announcement from the European Commission.

Ireland is particularly well positioned to capitalise upon these opportunities due to a number of key competitive advantages.

- Although not currently at the forefront of the Open Data movement, we are now well positioned to reflect upon the fragmented experiences of Open Data initiatives in other jurisdictions. We now have a window of opportunity to adapt a unified strategic national approach to our Open Data policy and in doing so reinforce our position as global leaders in technology and a digital economy.

- In this instance, the comparatively small size of our economy lends itself particularly well to connect the supply and demand sides. Also, our size allows us to effectively meet the challenges of 'big data' while still being manageable through the smaller number of transactions – big enough to be meaningful and small enough to be manageable.

- Ireland has the opportunity to further leverage its leadership position as a technology exporter. The combined strength of a strong multi-national R&D presence coupled with a dynamic and innovative SME community renders us well positioned to deliver the open data solutions for domestic and export markets.

The successful use of open data is not simply a technical process of releasing the data and indeed open data is not an end in itself. We need to ensure that the structures and supports are in place to ensure these benefits are realized.

However, two local Government initiatives exemplify the capability for and commitment to such reform.

- Fingal Open Data was created by Fingal County Council in November 2010 and has published 119 datasets to date.
- Dublinked is an initiative of Dublin City, Fingal, South Dublin and Dun Laoghaire/Rathdown County Councils and NUI Maynooth which has published 201 datasets to date.

These Open Data sites have yielded considerable success to date. The Apps4Fingal competition organised by Fingal Open Data has resulted in the creation of 23 Apps built using Open Data. Dublinked has consistently experienced large attendance at their events evidencing a groundswell of support for their innovation. Furthermore, they have been successful in liaising with a number of National Agencies and Government Departments in facilitating the release of initial datasets by them via the Dublinked website.

For job creation and innovation, for citizen's services and government service provision, we need a firm policy for data release across all Government Departments, Agencies and Local Authorities.

This will pose some questions pertaining to some practical implications which we have set out below.

Challenges

Legal Framework

"Move from full-cost recovery to a marginal cost system", said Vice President of the Commission, Neelie Kroes

It is the shared view of the European Commission and this group that there should be no charge for the use of government data except in marginal/exceptional cases. This is to encourage maximum reuse of the data published.   The Commission anticipates a two-year lead time before this becomes the implemented standard, although there is no clear legal challenge to us implementing this proposal immediately and in doing so, establishing our leadership position in this space.

The advantages of a prompt response to this suggestion from the commission by Ireland will not only increase reuse but also benefit the public sector bodies and eliminates possible monopolistic tendencies. It will ensure more equitable access to data and lowers the market cost for entry which will in turn attract new types of users and in particular SMEs.

Awareness

We are pleased to recommend in this report that since 2010 and throughout 2011, a concerted and collaborative effort of the members of this group has been successful in raising awareness of the opportunities that open data presents.   Through engagement with the broadest range of stakeholders, collectively we are positioned now to accelerate Ireland's Open Data Policy.   Given the criticality of and enormous potential that Open Data presents, this group recommends that a single minister is appointed with special responsibility for Open Data.   Upon appointment, this group would welcome the opportunity to meet and discuss implementation and next steps.

Practical and Technical Challenges.

Naturally there are practical issues that need to be addressed to create the appropriate environment for growth. Government agencies and bodies have been working in isolation for many years.   However, Open Data has uniquely brought together the most strategic and forward-thinking of these agencies and councils and a lot can be gleaned from their experiences.   They have further collaborated through this group and practical research findings have been gathered from the events of the past year.

These findings are set out in Appendix 3 (Specific Structural Open Data Challenges) which provides details of the issues that need to be overcome – they encompass the following:

- Data Gaps
- Data Collection
- Data Security
- Data Standards
- Data Hosting and Release

Report Recommendations

1. That a Minister is appointed with specific responsibility for Open Data

2. That a clear and time bound strategy be developed including project plan and project manager with reporting responsibility to the Minister.

3. That the specific structural open data challenges outlined in Appendix 3 are particularly considered in the any government implementation of OpenData strategy

4. That an Open Data forum be established to support on-going dialogue with stakeholders. This forum would comprise enterprise (SME and Corporate), Local Government(s) and National Government and Research & Education.

APPENDICES

Appendix 1 – Group Members

Appendix 2 – Timeline of Events

Appendix 3 – Specific Structural Open Data Challenges

Appendix 1

Members of Working Group

Working Group Members

Organisation	Email
South Dublin County Council	Joe Horan (Chairman)
Local Government Management Agency	Tim Willoughby
Fingal County Council	Dominic Byrne
Irish Software Association	Karl Flannery
Irish Internet Association	Joan Mulvihill
Irish Association of Software Architects	Gar McCriosta
DERI	Deirdre Lee
DERI	Michael Hausenblas
NUI Maynooth	Rob Kitchin
National Digital Research Centre	Teresa Dillon
Dublin City Council	Deirdre NiRaghaillaigh
Microsoft	Liam Cronin
IBM	Ivan O'Dwyer
EMC	Donagh Buckley
EMC	Gerry Murray
Enterprise Ireland	Stephen Hughes
Enterprise Ireland	Deirdre O'Neill

Appendix 2

An Overview of all Open Data activity in Ireland to date

Overview of all Open Data activity in Ireland to date

Fingal Data Hub launched **24 Apr 2009** Several Open Data characteristics	**First meeting of the National Cross Industry Working Group on Open Data** **07 July 2011**, Organised by Enterprise Ireland. Attended by public sector industry and academia
Open Data Google Group created **27 Oct 2010**	**First Irish Open Data Week** **07 Nov 2011** National Events celebrating Open Data across the Country
ie.ckan.net launched **01 Nov 2010** DERI. NUI Galway	**Open Data for an Open Future** **07 Nov 2011**, UCC. Cork
data.fIngal.ie launched **16 Nov 2010** Fingal Coco launch the first public sector Open Data Portal	**Open Data Enterprise — The Game is On!** **07 Nov 2011** National Digital Research Centre (NDRC) & Irish Internet Association (IIA). Crane Street. The Digital Exchange
Hacks and Hackers Hack Day **16 Nov 2010** Organised by ScaperWiki in Dublin	**Open Data Government Roundtable** **07 Nov 2011**, Opened by Minister Phil Hogan. organised by Irish Internet Association (IIA). National Library, Dublin
Opendata.ie launched **01 Dec 2010** DERI. NUI Galway	**Opening Up Government Data** **08 Nov 2011**, DERI, NUI Galway
Open Data Hack Day **04 Dec 2010** DERI. NUI Galway	**Apps4Fingal Open Data Competition Launch** **09 Nov 2011**, Fingal Coco
data-gov.ie launched **01 Jan 2011** DERI. NUI Galway	**Irish Government announces Open Data objectives** **17 Nov 2011**, Department of Public Expenditure & Reform
Open Data Hack Day **15 Feb 2011** DERI. NUI Galway	**Apps4Fingal Developer Day** **03 Dec 2011**, FingalCoCo
IIA Annual Conference - Open Data & Open Government **12 May 2011,** Irish Internet Association (IIA), Aviva Stadium. Dublin	**Open Data Hack Day** **03 Dec 2011**, Organised by Distillr Moxie Studios. Dublin
18-hour Open Data Challenge **04 July 2011,** NDRC Inventorium and Irish Internet Association (IIA). Crane Street. The Digital Exchange. Dublin.	**Apps4Fingal Open Data Competition Deadline** **09 Jan 2012** 23 Apps entries and 36 Ideas entries
Dublinked.ie launched **07 July 2011**, Dublin Local Authorities & NUI Maynooth	

Appendix 3

Specific Structural Open Data Challenges

Enterprise

As the opportunities across the world grow, business will have to adapt to Open Data. They will have to evolve and develop new ways to conduct business with open rather than closed data. Such a transformation has happened with respect to the music industry and is presently taking place in the film and publishing industries.

Ultimately, the internet and evolving forms of digital exchange will affect all information and knowledge industries. While there may be a threat to existing business models, these should not be perceived as barriers by government or business. Instead we must prime ourselves to take advantage of the significant benefits to Ireland that open data presents through new economic opportunities, citizen empowerment, and more efficient and effective government.

The European Commission has published a study[6] assessing models of supply and charging for Public Sector information. It found that where public sector bodies moved to marginal and zero cost charging or cost-recovery, the number of re-users increased by between 1,000% and 10,000%. It also found that lowering charges reduces barriers to market entry and may attract new types of re-users, in particular SMEs. A number of case studies in the report illustrated increased tax revenue as a result of lowering or eliminating charges, and delivery of a high return on investment for the public sector. In addition, the transaction costs for public sector bodies also decrease significantly when charges are eliminated. In many cases improved data quality and process efficiency has also occurred as a result of feedback from re-users due to their shared interest. The study also finds that there is a need to take a medium-term or long-term view of the direct economic impact from the growth in re-use of data, as this growth takes time.

Open Data has in the main been taken up by the developer community on a voluntary basis. The work done by this community is of great value in highlighting the benefits and potential for Open Data and will continue to be of value from the perspective of transparency and participation. The challenge is to ensure that legitimate enterprise with real economic and societal benefits can arise. This can and should co-exist with the community aspects of Open Data.

There is no doubt that there is long term viability in the creation and use of Open Data. However if a Government Data Set that was not lucrative under the control of a government agency becomes popular when released, is there a License or Service Level that can be agreed to give comfort to the stakeholders? In particular consumers of the data (start-up businesses, industry, agencies, etc) must not become victims of their own success. It is incumbent upon government in the release of data to provide a stable platform for business growth. For instance, a data source on which a new commercial enterprise has been established cannot be withdrawn or significantly modified by the data provider.

In order to ensure that an open and collaborative ecosystem is established, engagement of all stakeholders from all sectors should be proactively pursued including industry, public sector, research and education, and community.

Recommendations
1.1 Government needs to support business developing propositions based on open data to ensure that activities yield long term take up and economic benefits.
1.2 **A balanced approach is called for** - We must encourage open data initiatives for strategic growth rather than stifle such innovation based on short term risk that will ultimately diminish our opportunities for long term gain.
1.3 **Supporting Ecosystem** - The potential exists for the state to provide specific supports through the agencies, industry associations and educational institutions. Time bounded

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[5]An assessment of different models of supply and charging for public sector information
http://ec.europa.eu/information_society/policy/psi/docs/pdfs/opendata2012/reports/Deloitte/models.pdf

with specific 'return to the economy' goals and societal benefits should be identified. This is important in order to establish the connection between specific initiatives and these desired outcomes.

1.4 **Licensing Model** - Setting out how consumers of the data are to be charged (free, freemium, minimum fees, full economic costs, revenue sharing) and under what conditions they may reuse the data whether for research or commercial gain.

1.5 **Open Data License** - Create an Irish Open Data license taking into account existing models such as the UK Government Open Government License and the Open Data Commons Open Data License.

1.6 **Data Charter** - Outlining that data ownership is clearly vested in the state and that well defined mechanisms exist to enable publication of the associated data in-line with agreed standards. Also, a well-defined mechanism to implement agreed changes to the publication of the data (format, currency/granularity, amount of historical data, additional fields, etc) needs to be established such that changes can be implemented quickly and at reasonable costs.

1.7 **Service Level Agreement -** Where a viable business proposition exists, the consumers of the data need to be able to enter into a Service Level Agreement in respect of the data. This should provide for a consistent and predictable experience in terms of the support they can expect when issues are identified with the availability of the data or with the data itself. Escalation mechanisms should be established with response times based on severity.

1.8 **Procurement Principles** - For all publicly negotiated contracts, the contracts will stipulate that the data will be owned by the state and that all data generated will be published and released in accordance with open data principles.

What Does the Citizen Want From Open Data?

A key to citizen interaction with government and in terms of the citizen's own expectation is for them to strike a balance between everyday life, work and leisure – e.g., good quality housing, opportunities for work and career development, cultural and leisure spaces, which are nearby and inexpensive.

People need to feel that they are in control of their environment, or have a major say in what happens to them. Open data can empower citizens and engage them in local democratic decision-making. This control requires a two way trust and active participation between the government and citizen, striking a balance between the need and rush for opening up our data to produce rich Open Data with the security concerns (real or imagined) and need to protect the citizen

The production of Open Data and its use and reuse by the citizens can form a relationship between the citizen and government by evolving a more inclusive democratic and transparent discussion or interaction to happen between governing bodies and the public.

Open Data for the citizen can enable or support:
- Fluid links between living, working, cultural and leisure needs
- Empower people and ensure they feel in control of how their environments are shaped
- Provide access to content and experiences
- Create value and insight
- Create layers of connectivity between individuals, their communities and governing councils and parties
- Provide concrete evidence to the citizen that they are being listened to.

Recommendations

2.1 Digital/Data Literacy document with recommendations on how to support this. Integrate with education campaign.

2.2 Link to education reforms. Communicate with Education Department and ensure that open data is on their agenda and integrated within appropriate curriculum subjects.

2.3 Ad campaign – public examples of Open Data in 'real-world' practice.

2.4 Learners Programme – e.g., similar to Young Rewired State, UK

2.5 Understanding the underlying economic model that funds all this – how to make it systemic

Data Collection & Release

There is a lot of data residing in public and private bodies around the State. The data held is often under used and under analysed as it is stored in varying formats and varying quality. Accessing this data in Ireland is limited by four factors: commercial ownership, copyright and intellectual property rights, data licenses and mechanisms for data release.

In the first instance, there needs to be a commitment to releasing data. This has been stated in the Public Sector Reform Plan[7]. An immediate quick win could be obtained through the public sector bodies who currently publish data on their websites under restrictive licences if these licences were to be replaced with a more open licence – at a minimum the Irish Government PSI licence[8]. Another method of quickly releasing Open Data which would bring improved efficiencies is to release data that is subject to Freedom of Information (FOI) legislation. Those making requests under FOI could then be encouraged to request the release of the required data as Open Data.

In order to enable public sector bodies to release data as efficiently as possible, a standardised mechanism for Open Data publication should be created. This would include procedures, protocols and a standardised Open Data publication technical infrastructure (including Data Catalogue and Data Store) that can be rapidly deployed at low cost (open source tools already exist for this purpose), that are suitable for any public sector agency of any size and complexity, and that can also be utilised for internal data-sharing requirements and for inter-agency data sharing.

Open Data is generally published through portals. The Government has outlined an objective to create a National Open Data Portal. Portals should also be created at other appropriate levels of Government to ensure that data is published close to source in an efficient manner. Data portals do not necessarily have to be created by all agencies and shared service deployment should be examined where appropriate. Regardless of where portals are deployed, all portals must be designed in a manner that facilitates federation of data catalogues at Local, Regional, National and European levels. While Open Data may be hosted by individual agencies, there will be some large volume, high transaction, 'Big Data' datasets that will require alternative hosting arrangements. Cloud platforms are ideal for this type of data and should be considered for all Open Data as, by definition, issues with security and privacy do not arise with Open Data. The European Commission have published research on Open Data portals[9] which should be used to guide work in this area. While no

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[7] Public Sector Reform Plan, Department of Public Expenditure & Reform, 17th November 2011 - http://per.gov.ie/wp-content/uploads/Public-Service-Reform-181120111.pdf

[8] Irish Government PSI licence - http://psi.gov.ie/files/2010/03/PSI-Licence.pdf

[9] A study of Open Data portals - http://ec.europa.eu/information_society/policy/psi/docs/pdfs/opendata2012/reports/Deloitte/open_data_portals.pdf

Irish Open Data portals were analysed, the existing Irish Open Data sites compare favourably to those in the report, which is a good starting point to build from.

Public bodies should commence on-going audits of their data holdings. The purpose of these audits would be to highlight datasets for inter-agency data sharing and ultimately Open Data. Part of this process could include an analysis of geocoding potential where appropriate, but this should be light-touch. These audits will enable efficiency improvements for the public bodies – saving time and resources on the existing tasks of discovering and sharing data. As dataset audits are completed, information about the datasets should be published.

There can be reluctance within the public sector to release data due to quality issues or possible misinterpretation of data. In conjunction with the release of datasets, the release of comprehensive metadata and briefing notes (where required) should also be encouraged. The metadata should include clear indications of the quality of the dataset and data records. There should be an education programme within the public sector to raise awareness of the benefits of Open Data and the opportunities it presents.

Some of the most valuable data that can be released from an enterprise perspective is real-time data such as traffic, transport, water, energy, etc. The Dublin region Dublinked initiative takes an internationally distinctive approach to making this data available through the incorporation of a research zone and encouraging cross-sector collaboration in identifying appropriate mechanisms for publishing this more challenging data.

Where data is available and published, because of the lack of Postcode there is a difficulty in standardising as there is no uniformity between Local Authority Areas, Electoral Areas, Garda Districts, Health Board Areas, so even comparison between or analysis across datasets is difficult.

In the effort to improve quality and regularity of collection and collation of data, Government should adopt more crowdsourcing opportunities. Such an opportunity is Fixyourstreet.ie. It is the perfect example of crowd sourced data generation in Ireland where citizens can report issues in their area, such as road defects and vandalism, to local government, with the information being used to structure the work programmes of local authorities. To date, crowdsourcing with respect to geo-referencing or mapping (such as OpenStreetMap.org), or related to local government initiatives has been relatively muted. As such, Ireland is failing to exploit the power of crowds to address local and national issues.

Recommendations
3.1 Public bodies should make data freely available for re-use unless there is a privacy, security or data protection issue with doing so.
3.2 Government agencies should identify and release data that is subject to FOI. When making FOI requests, the public should be encouraged to utilise Open Data and to request that datasets be published as Open Data where appropriate.
3.3 Those agencies that currently publish data under restrictive licences should change to a more open licence where possible – at a minimum the Irish PSI licence.
3.4 Create a standardised mechanism for Open Data publication including procedures, protocols and a standardised Open Data technical infrastructure.
3.5 Create a National Open Data Portal and create Open Data Portals at other levels of Government as required and on a shared basis where appropriate.
3.6 Investigate the use of cloud platforms as Open Data datastores.
3.7 Public bodies should commence on-going audits of their data holdings including a cursory analysis of the geocoding potential of the datasets.
3.8 Examine the possibilities of harnessing the crowd to produce and improve data of use to citizens, state and business.

3.9 Raise awareness within the Public Sector of Open Data and its benefits, and demonstrate that Open Data is an opportunity and need not be seen as a threat. To address the issue of possible misinterpretation of datasets, encourage comprehensive metadata and the release of briefing notes in conjunction with datasets where required.

Addressing - Postcodes and Standards

When referencing data in Ireland, the biggest problem we have is that there is an on-going absence of addressing standards or postcodes. This absence means that each organisation has come up with its own method and standard of managing addressing sometimes even having differences between their business areas and thus it is difficult, costly and time consuming to make the data usable, available or part of a spatial map.

National Addressing is a routine practice in the rest of Europe and will be required when postcodes are rolled out and are needed in terms of becoming INSPIRE compliant.

Recommendations

4.1 Adopt a Standard for Postcodes across Government, use of an Open Code that can be published and referenced without material cost to the users or subsequent publishers of material

4.2 Data standards with respect to addressing to be introduced and adopted by all public agencies

4.3 The routine outputting of public administration data at the finest spatial granularity possible (preferably Small Areas or amalgams thereof) taking into account confidentiality issues

4.4 Postcodes should be either unique georeferenced address points or subdivisions of Small Areas

4.5 A representative of the Open Data group should be invited as part of the review process of Postcode tenders

4.6 All published data generation needs to INSPIRE compatible

4.7 All bodies will need to implement strong systems of data governance

4.8 Consultation should begin with the Data Protection Commissioner on suitable thresholds for administrative data output.

Data Standards

Standards efforts with regard to Open Data have been ongoing for a number of years the challenge is that without guidance public sector organisations are left to make decisions based on their own knowledge and experience. This will lead to varied experience for both providers (agencies) and consumers (end users). As yet, there are no universal data standards operating for addressing in Ireland. As such, the fields of address data collected by agencies can vary between organisations. What this means is that it can be difficult and time consuming to georeference data, even using a product like Geodirectory, and even when it is undertaken there are issues of accuracy and reliability.

Open data standards ensure interoperability between software that needs to operate on the same data. Examples of open data standards include XML and HTML. In contrast with proprietary standards, open standards are publicly available and carry no royalty fee, though various guidelines may dictate how they can be used. Open data standards are often associated with open source software. With the diversity of government organisations and suppliers, our National data is stored in a variety of Open and proprietary standards, with little or no methodology on how to change this. There is now an opportunity to use Linked Data as a method of publishing structured data so that it can be interlinked and become more useful.

It is paramount that across government we move away from proprietary standards for storing data and adopt consistency in the presentation and collection of data.

Work on standards should take place in parallel with the release of Open Data. Deficiencies in standards should not be used as an excuse for not releasing data. Standards can be developed and applied retrospectively, but the most important objective is to get data released in open formats under open licences.

Recommendations
5.1 Standards should be simple to use and understandable, useful and readily applicable
5.2 Standards adoption should be consistent across the public sector
5.3 Communities of interest should be established in the public sector for people producing and providing open data to better support initiatives.
5.4 A standard approach to Data classification should be adopted across the public sector
5.5 Emphasis should be put on specifically de-classifying data rather than classification e.g. data should be actively classified as 'open data' preferably at time it's captured.
5.6 Open Data should declare quality indicators as a part of any published data in particular where statistical or derived data is being opened.
5.7 Open Data should declare its provenance from whence it came
5.8 Guidance and education on FOI requests should be clear and explicit across the public sector
5.9 Develop catalogues of information and datasets to better understand the public sector open data landscape
5.10   Let's ask the question: Why isn't everything public? Data should be restricted by exception rather than the rule.

Data Security

Open Data is beginning to and will prove immensely useful and there have been huge innovations in moving data online, however, there is an inherent challenge for government with potential challenges to user privacy and security. There is a natural tension between the rapid adoption of technology and new media that we use personally and our trust/confidence in state institutions using similar technologies and media. With the wider adoption of new media in Government, there is a need for transparent governance in terms of where and when government publish public information. There may be data protection issues if data that was previously available in a non-electronic format, but with the addition of new technology, is matched to existing data that allows collaboration and integration. The citizen naturally will have concerns over

- Who owns their data?
- Who has access to it?
- Where is it stored?

The major difficulty results from overlapping datasets, although underlying concepts are complex the net result is that combining information about an individual from a variety of sources e.g. Facebook (public profile), Vehicle Licensing (public register), Companies Registration (public register), Domain registration (public register) could allow third parties to build a comprehensive profile of an individual. This then could be used for purposes from credit worthiness, insurance (health, vehicle), marketing etc. The reality is that there is nothing stopping this happening in the current system; providing public registers digitally simply enables the automation of these tasks.