

2014 Esri International User Conference

July 14–18 | San Diego, California

Ireland's approach to driving a Spatial Data Infrastructure

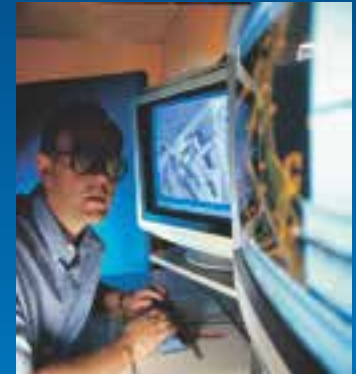
Lorraine McNerney, Ordnance Survey Ireland

Overview

- Background and challenges
- The options
- The solution
- Outcomes
- The need for a National Spatial Data Infrastructure
- Economic benefits

Ordnance Survey Ireland

- Established since 1824
- HQ in Dublin with six Regional Offices
- Mandated to create & maintain definitive spatial reference information for the Irish State
- Merger with Ireland's Valuation Office & Property Registration Authority
 - 880 staff
 - Annual budget of €59m
 - New entity will be come *Tailte Eireann* once Government legislation is complete.



Data Integration & Data Sharing Challenges

From an OSi perspective:

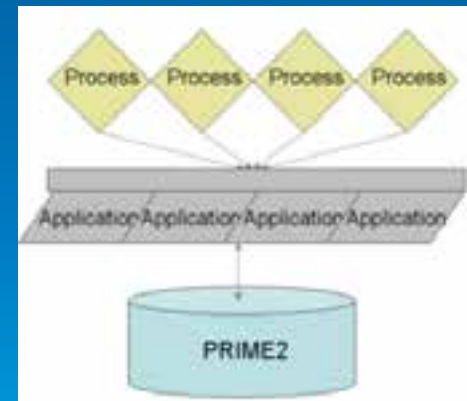
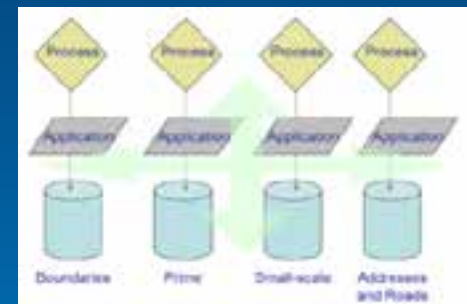
1. Making the data more useable
 - Standardisation and quality of spatial information.
2. Making the data more accessible
 - On-line access to spatial information.
3. Enabling the integration and sharing of national spatial information
 - Implementation of national Geoportal infrastructure.

...so what has OSi done to address these challenges?

Making the data more useable

Making the data more useable

- Developed next generation national core reference data
- Most significant revision to OSi's data creation and management practices in over 30 years
- Represents over seven years of effort from development of conceptual model to completion of data re-engineering
- Over 100 man-years of data enhancement.





Prime

Cartographic

No Attribution

Spaghetti Lines

Tile Based

Prime2

Real World

Rich Attribution

Polygons

Seamless

Prime2 – Benefits & Opportunities

OSi & Industry

- ü Provides Ireland with a consistent authoritative spatial referencing system for the integration and management of national spatial information
- ü Prime2 is a foundation for a modern National Spatial Data Infrastructure

Customers

- ü Provides users with high quality high intelligence reference data in an easy to use industry standard data format
- ü The standards based intelligent data storage model enables the generation of products and services via data schemas designed for user requirements

Products & Services

- ü Provides solution developers and data integrators with a robust framework for integrating 3rd party data
- ü Enables OSi to develop enhanced Web Services (Web Feature Services).

Making the data more accessible

Making the data more accessible

OSi has developed on-line Web Services using ESRI ArcGIS technology:

- Award winning, web-based mapping services that allow users to connect directly to OSi's national map database online
- Data can be used in standard Geographical Information System (GIS) software, or it can be used in web or mobile applications
- Designed to deliver rapid, easy access to map data, historic data and aerial imagery.



OSi Web Services – LPT Project for Revenue

Local Property Tax

Property Valuation Guide

The map displays average property valuation bands in different parts of the country.

Instructions

We have used the Property Price Register of Built-up areas that was entered in the My Property system.

1. Use the map to select an area.
2. Click on the 'Details' button for your selected area.

You can also display average valuation bands on period in the 'Period' dropdown menu.

Value



More Information

- [Link to local Valuation Guidance](#)
- [Link to Residential Property Price Register](#)
- [Link to Property Valuation Guidance Video](#)

© Revenue Commissioners

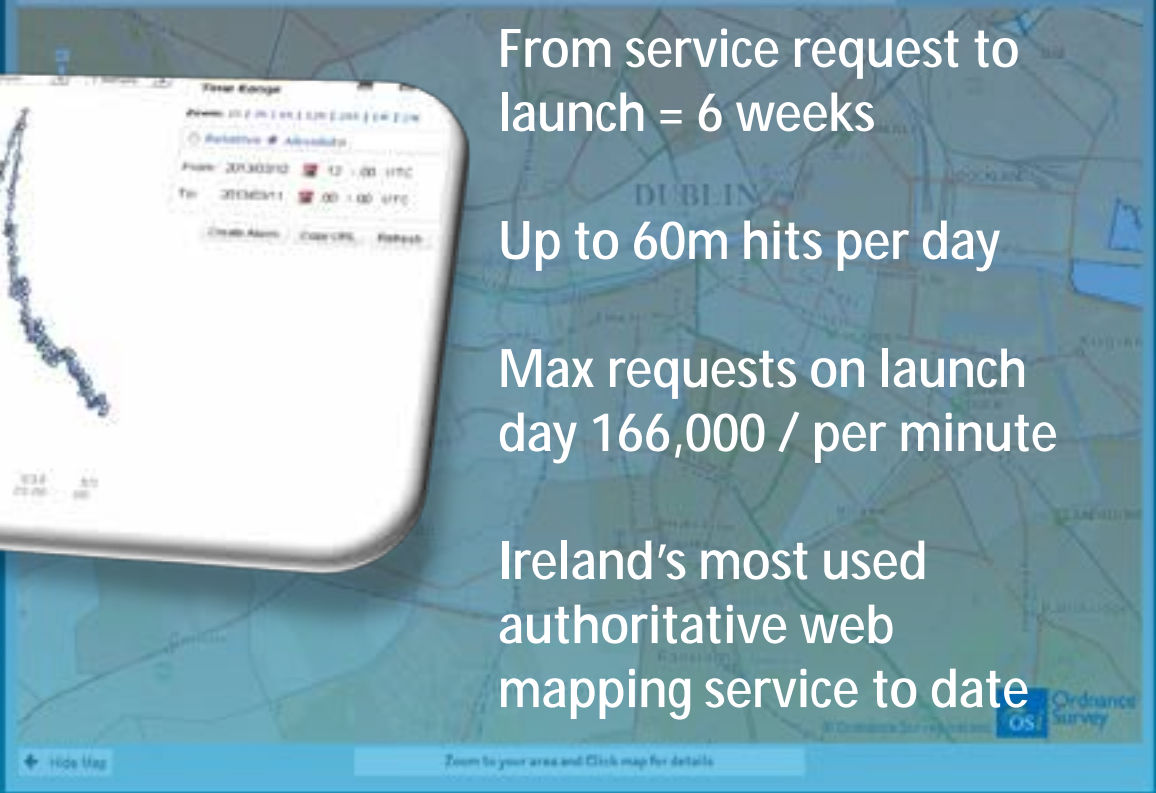
Property Location:

Property Type:

Property Built Before 2000: Yes No

Full Screen:

Highlight Bands:



From service request to launch = 6 weeks

Up to 60m hits per day

Max requests on launch day 166,000 / per minute

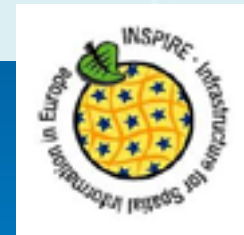
Ireland's most used authoritative web mapping service to date

Enabling the integration and sharing of national spatial information

The initial challenge = INSPIRE compliance

- Develop the central INSPIRE Portal for Ireland
- Managed service on behalf of the Irish Department of Environment
- INSPIRE Portal Services to include:
 - ü Discovery
 - ü View
 - ü Download
 - ü Transformation.

Data Themes		
Area 1	Area 2	Area 3
Coordinate Reference Systems	Division	Statistical Units
Geographical Grid Systems	Land Cover	Buildings
Administrative Units	Orthorectified Imagery	Soil
Administrative Units	Geology	Land Use
Administrative Units		Human Health and Safety
Administrative Units		Utility and Governmental Services
Administrative Units		Environmental Monitoring Facilities
Administrative Units		Production and Industrial Facilities
Administrative Units		Agricultural and Aquacultural Facilities
Administrative Units		Population Distribution - Demography
Administrative Units		Area Management/Restriction/Regulation Zones and Reporting Limits
Administrative Units		Natural Risk Zones
Administrative Units		Atmospheric Conditions
Administrative Units		Microclimatic/Geographical Features
Administrative Units		Climatological/Geographical Features
Administrative Units		Sea Regions
Administrative Units		Biogeographic Regions
Administrative Units		Natural and Botanical
Administrative Units		Species Distribution
Administrative Units		Energy Resources
Administrative Units		Green Resources



Ceannshuí, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

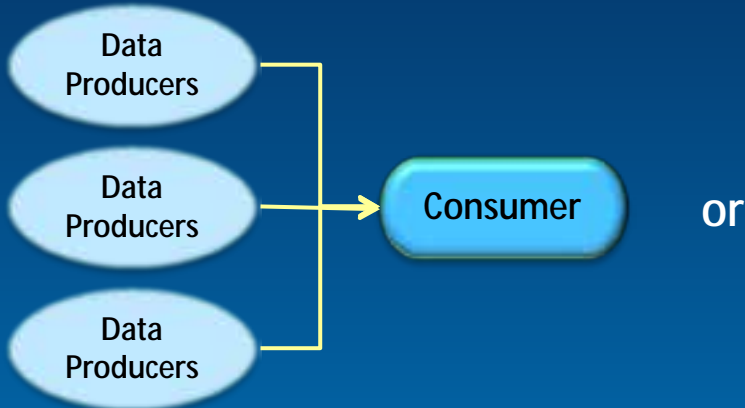


The options



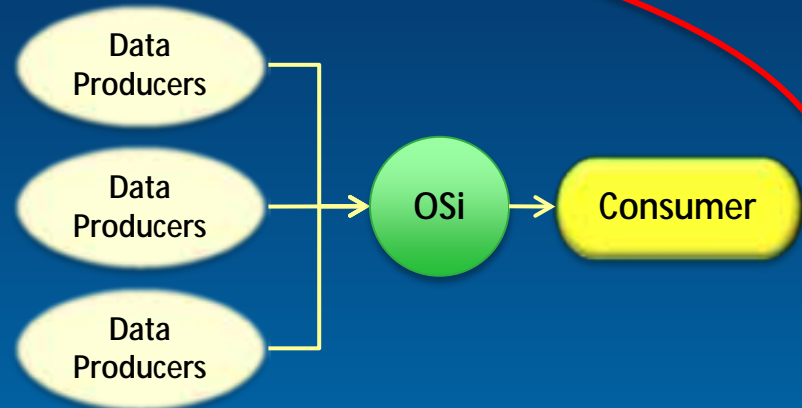
The technical options

Essentially, just 2 options...



Federated?

or



Centralised?



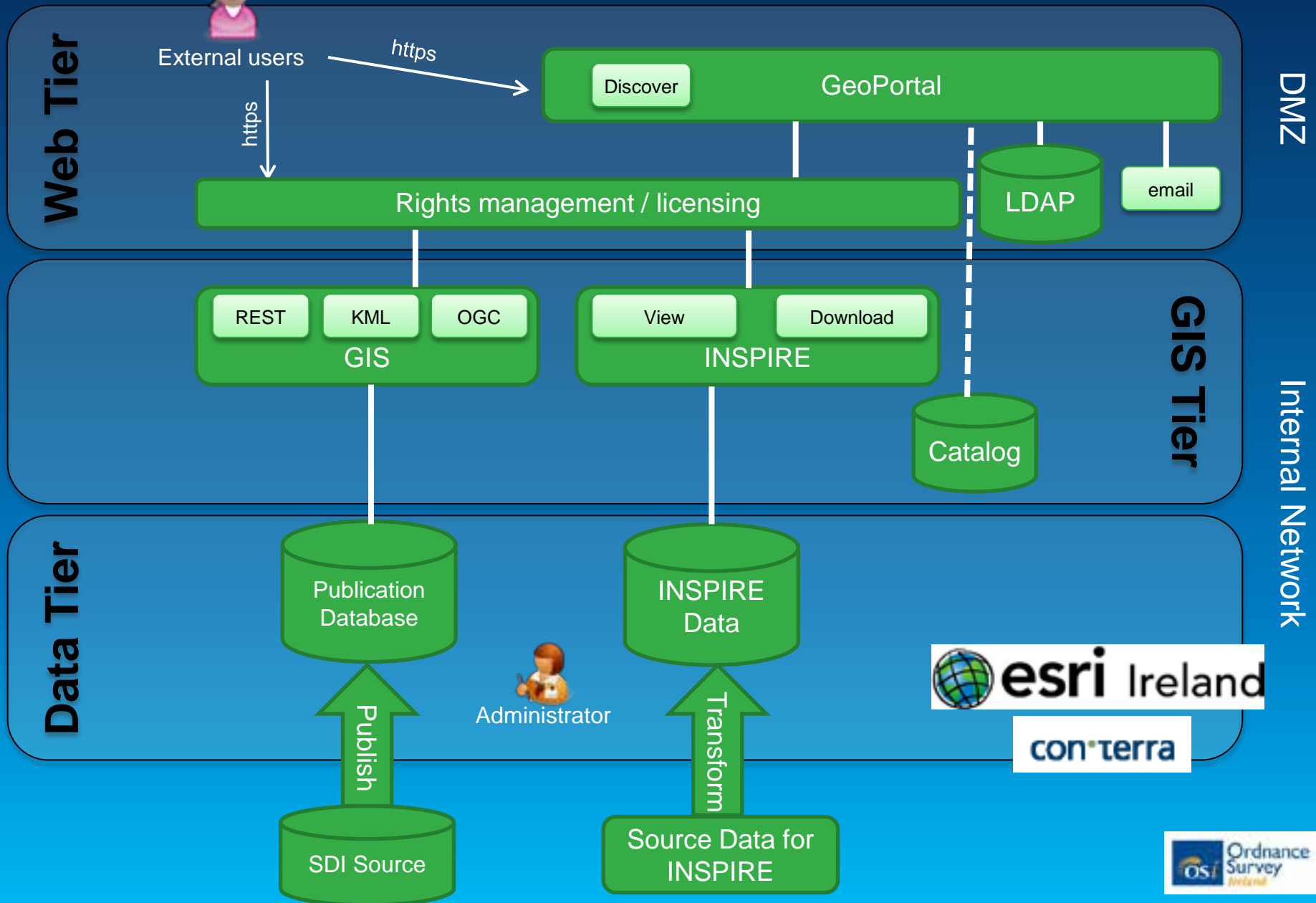
or



The solution



Geoportal.ie architecture



Outcomes



The outcome = INSPIRE compliance + more

The screenshot shows the homepage of the GeoPortal Ireland website. At the top, there is a navigation bar with links for 'Login', 'Register', 'Help', 'About', and 'Feedback'. The main header features the 'GEOportal' logo and the text 'IRELAND'S INSPIRE PORTAL'. Below this is a secondary navigation bar with 'HOME', 'SEARCH', 'BROWSE', and 'LAUNCH MAP VIEWER'.

The main content area is titled 'Home' and contains a welcome message: 'Welcome to the GeoPortal.ie website. This portal is a shared government resource that provides access to a network of spatial data from a wide variety of Irish public bodies and organisations for download and viewing. It has been created as part of the Irish Spatial Data Infrastructure (ISDI) project and is designed to facilitate the on-line sharing of spatial data according to the requirements of the Irish eGovernment Strategy and the EU INSPIRE Directive.'

Below the welcome message are two main sections:

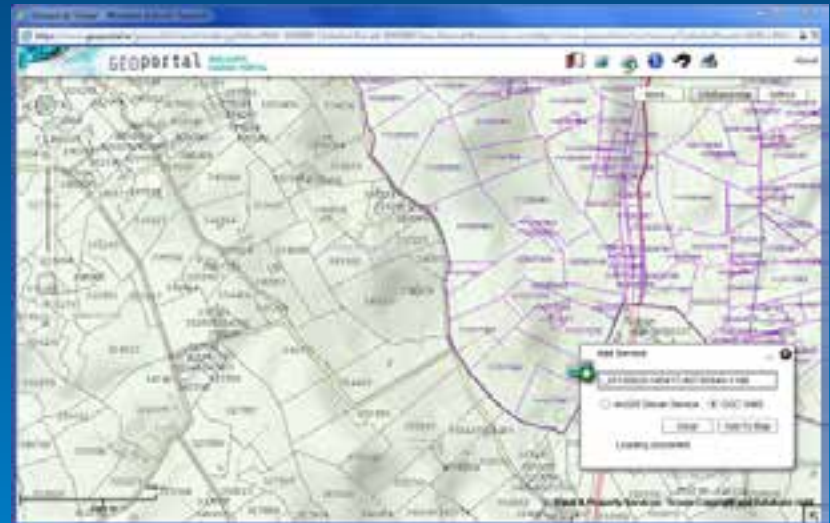
- You can simply...**: This section contains a 'Find Data' heading, a search input field with a 'Search' button, and links for 'Search Data' and 'Download Data'.
- For further information on...**: This section contains two links: 'How to use this site INSPIRE' and 'Irish eGovernment Strategy (2012-2015)'.

At the bottom, there is a 'Featured Datasets:' section with five thumbnail images and their corresponding labels:

- Administrative Units
- Marine Limits
- Natural Heritage
- Land Use
- Archaeological Survey

Benefits realised

- Centralised compliance management
- Common approach
- Data management
- Data sharing
- Shared knowledge



...but also the technical foundation for a
National Spatial Data Infrastructure Platform

The Need for a National Spatial Data Infrastructure (SDI)



What is a National SDI?

“The SDI provides a basis for spatial data *discovery, evaluation and application* for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and by citizens in general.”

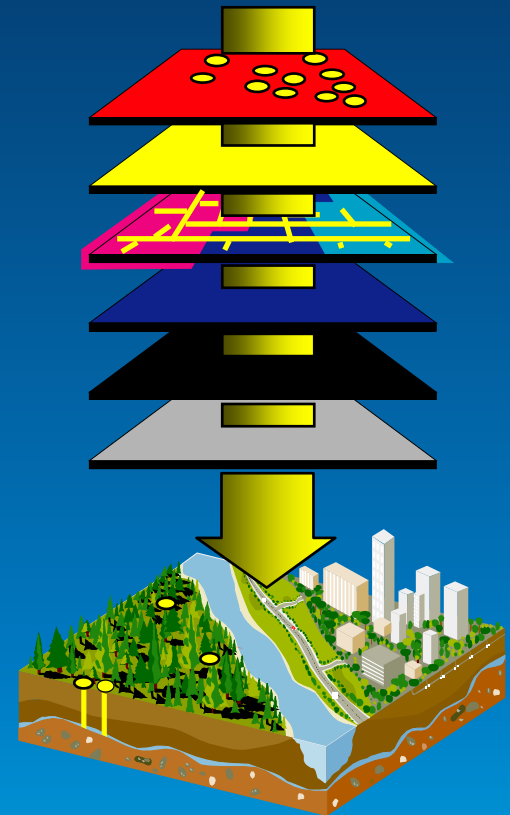
Ref. The SDI Cookbook @ <http://www.gsdi.org>

Components of a SDI

- **Policies & Institutional Arrangements**
 - governance, data privacy & security, data sharing, cost recovery
- **People**
 - training, professional development, cooperation
- **Data**
 - digital base map, thematic, statistical, place names
- **Technology**
 - hardware, software, networks, databases, technical implementation plans.

Why build a SDI?

- Build data once and use it many times for many applications
- Share costs of data creation and maintenance
- Support sustainable economic, social and environmental development
- Increased access to distributed geo-spatial information through standards for Decision-makers and Analysts.



Developing Ireland's National Location Information Strategy and SDI Platform



Actions over the next three years		Start	End
1.2.4 Improve Data Use and Sharing, including Open Data			
i.	Prepare Heads of a new Data Sharing and Governance Bill designed to deliver improved digital transactional services	Q1 2014	Q3 2014
ii.	Establish an Open Data Board and Steering and Implementation Group, and develop an Open Data portal (collaboration between OGCIO and Government Reform Unit in the Department of Public Enterprise and Reform)	Ongoing	Q2 2014
iii.	Deliver improved access to geo-spatial information for public services, businesses and citizens by developing a National Spatial Data Strategy and National Mapping Agreement	Q1 2014	Q4 2014
iv.	Improve the outcomes of existing and new public services through the increased exploitation of emerging big data analytics	Q1 2014	Q4 2016
v.	Deliver a range of new public service applications based on the Single Customer View	Q1 2014	Q4 2016

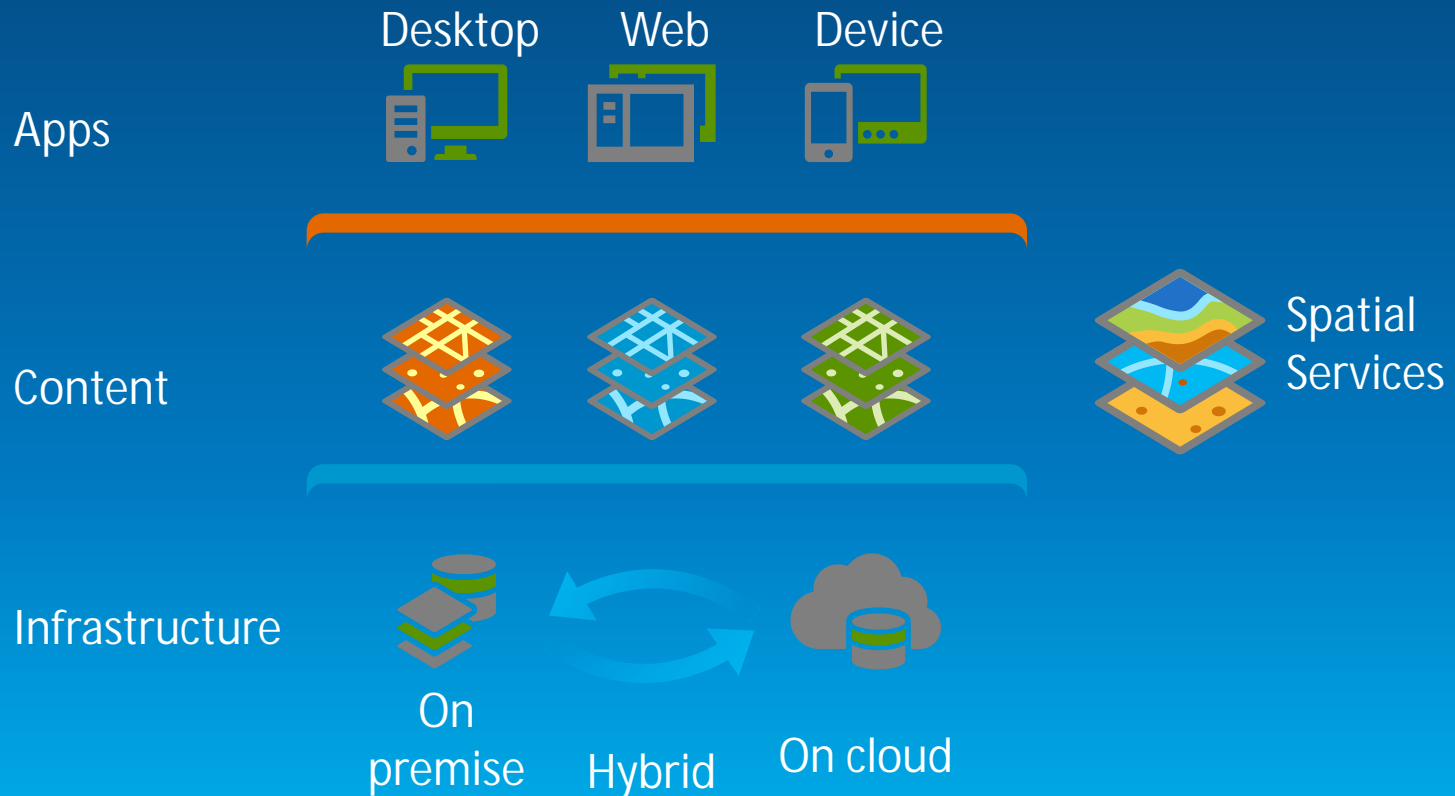
Public Service Reform Plan
2014-2016
January 2014

iii. Deliver improved access to geo-spatial information for public services, businesses and citizens by developing a National Spatial Data Strategy and National Mapping Agreement

Ireland's Location Information Strategy

Developing Ireland's SDI Platform

Next steps...to provide Ireland's Spatial Data Infrastructure Platform by expanding OSi's existing ArcGIS platform including the use of ArcGIS online



Economic benefits supporting Ireland's SDI Platform

Ireland's Geospatial Information Industry

Mapping, aerial imagery, height information, boundary data, historic maps, tourist & leisure maps

Geospatial Information puts the 'where' into business decisions. Where to find customers, to locate premises, to build property, infrastructure and networks.

DIRECTLY EMPLOYS 1,677 PEOPLE

SUPPORTS THE EMPLOYMENT OF 3,087 PEOPLE

The industry generated sales or output worth **€117.5m** in 2012

In 2012, the industry contributed over **€69.3m** in terms of Gross Added Value to the economy.

€126 million
In 2012, the sector had an economy-wide impact of **€126.4m**.

€82 million
The use of geospatial information is estimated to accrue annual savings of **€82m** in the public sector.

The estimated economic value of annual time saving generated through the use of geospatial information is **€279m**.

The use of **Geospatial Information** is estimated to generate competition benefits of **€104m**.

The industry spent a total of **€84.4m** on wages and salaries

Thank You

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