It's about Place not Space

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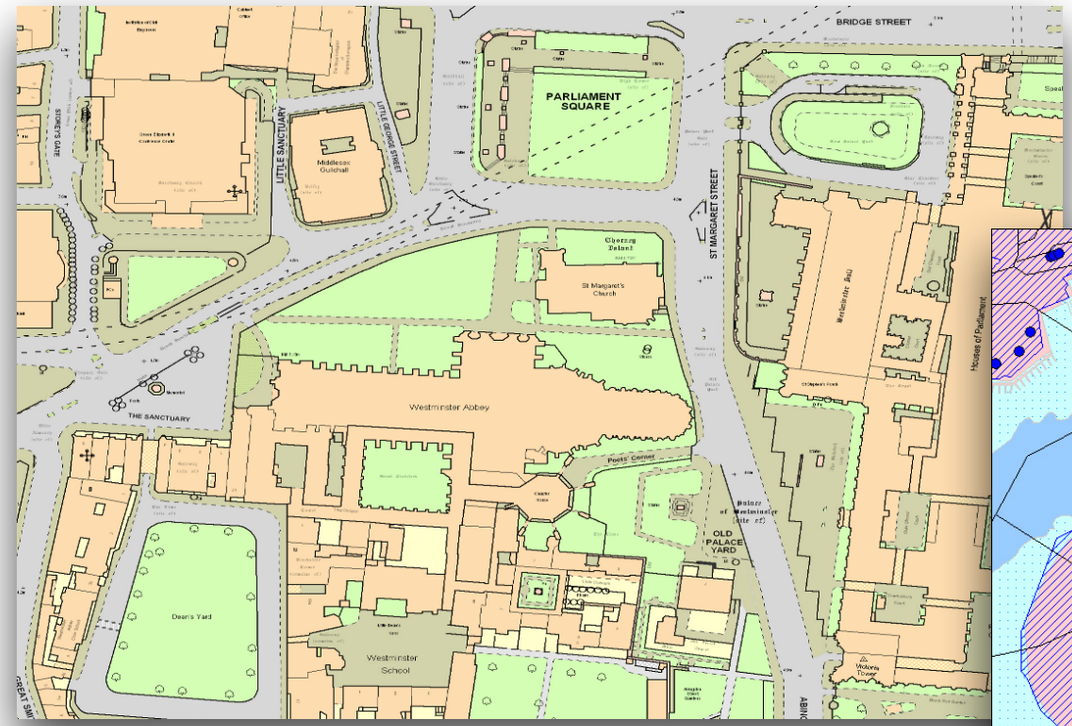
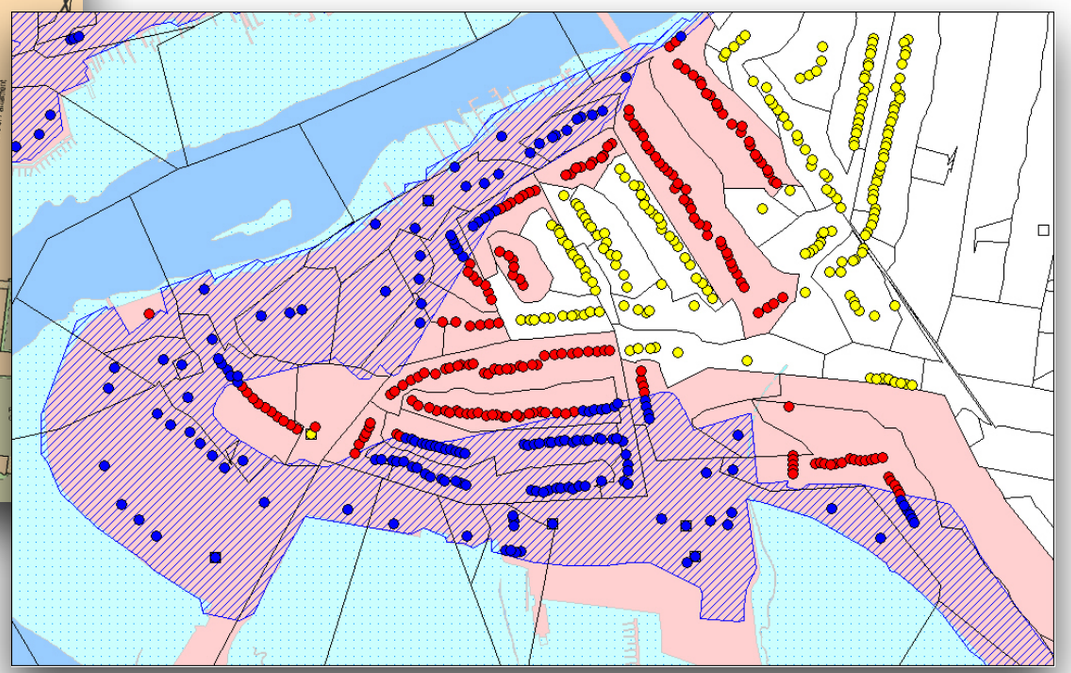
Location

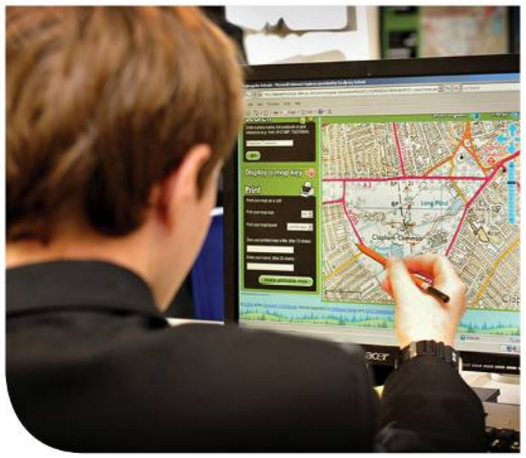
- Everything happens somewhere
- Location is a key driver of decision-making for the public and private sectors
- Over 80% of data has a spatial element





Ordnance Survey Great Britain

- Ordnance Survey is 220 years old
- Civilian organisation since 1983; 1150 staff
- Independent Government Department and Executive Agency reporting directly to a Government Minister
- Trading Fund since April 1999
- Annual Report for 2010/11: Revenue of £129.4m, profit before exceptional items of £24.1m, dividend £6.3m
- Headquarters in Southampton with 28 field offices around Great Britain

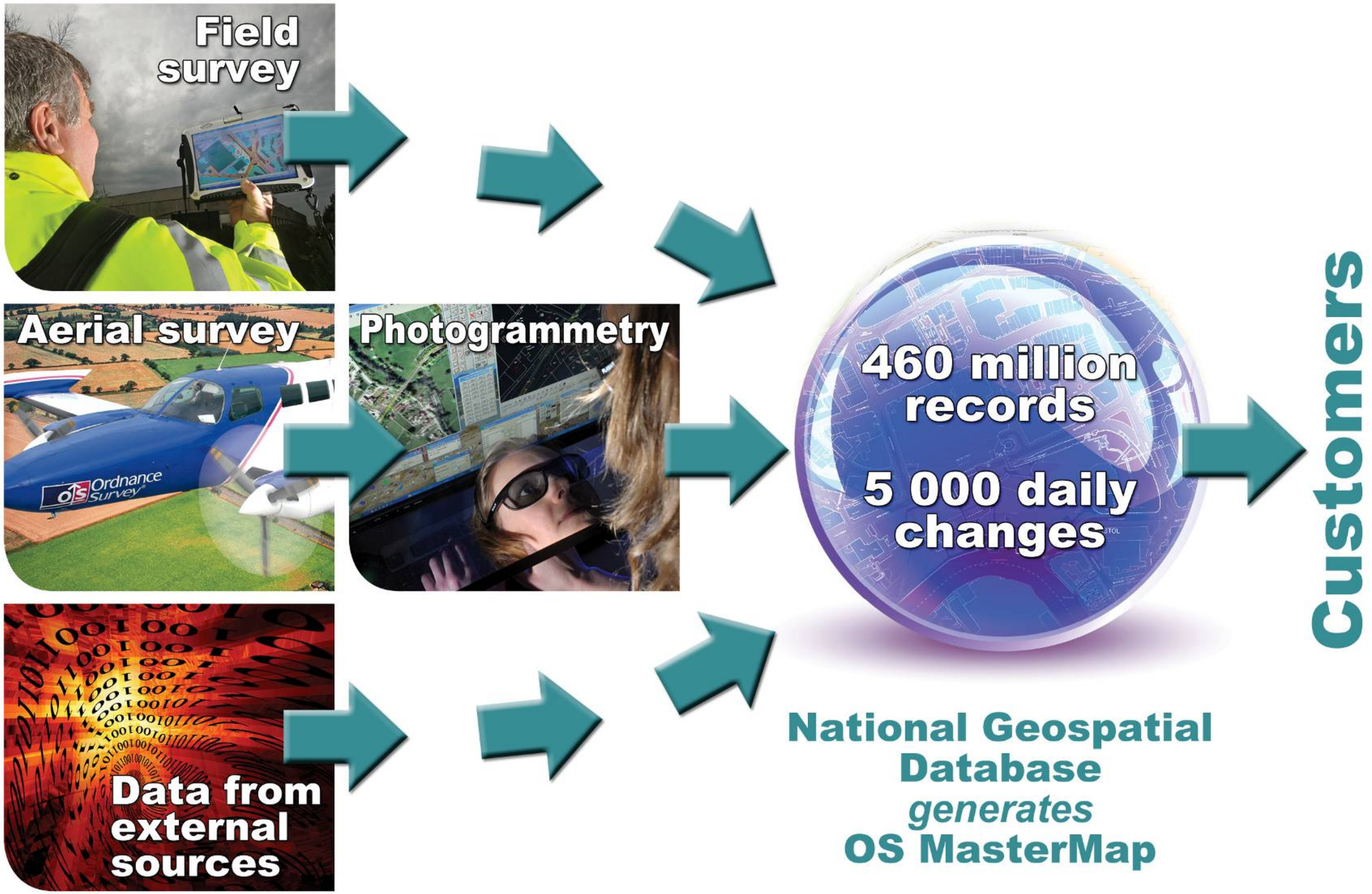


Ordnance Survey today

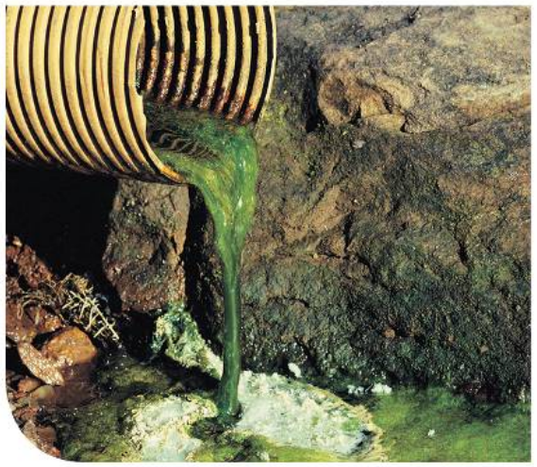
- Creates and maintains the ‘master spatial database’ of Great Britain from which others derive benefit
- Manages complete national large scale digital data down to building level detail
- Maintains a database of 460 million features with approximately 5,000 changes made daily
- In 2010/11, 99.9% of real world features were represented in the database within six months of completion on the ground
- From the database, Ordnance Survey produces a range of digital data and paper maps for business, leisure, educational and administrative use

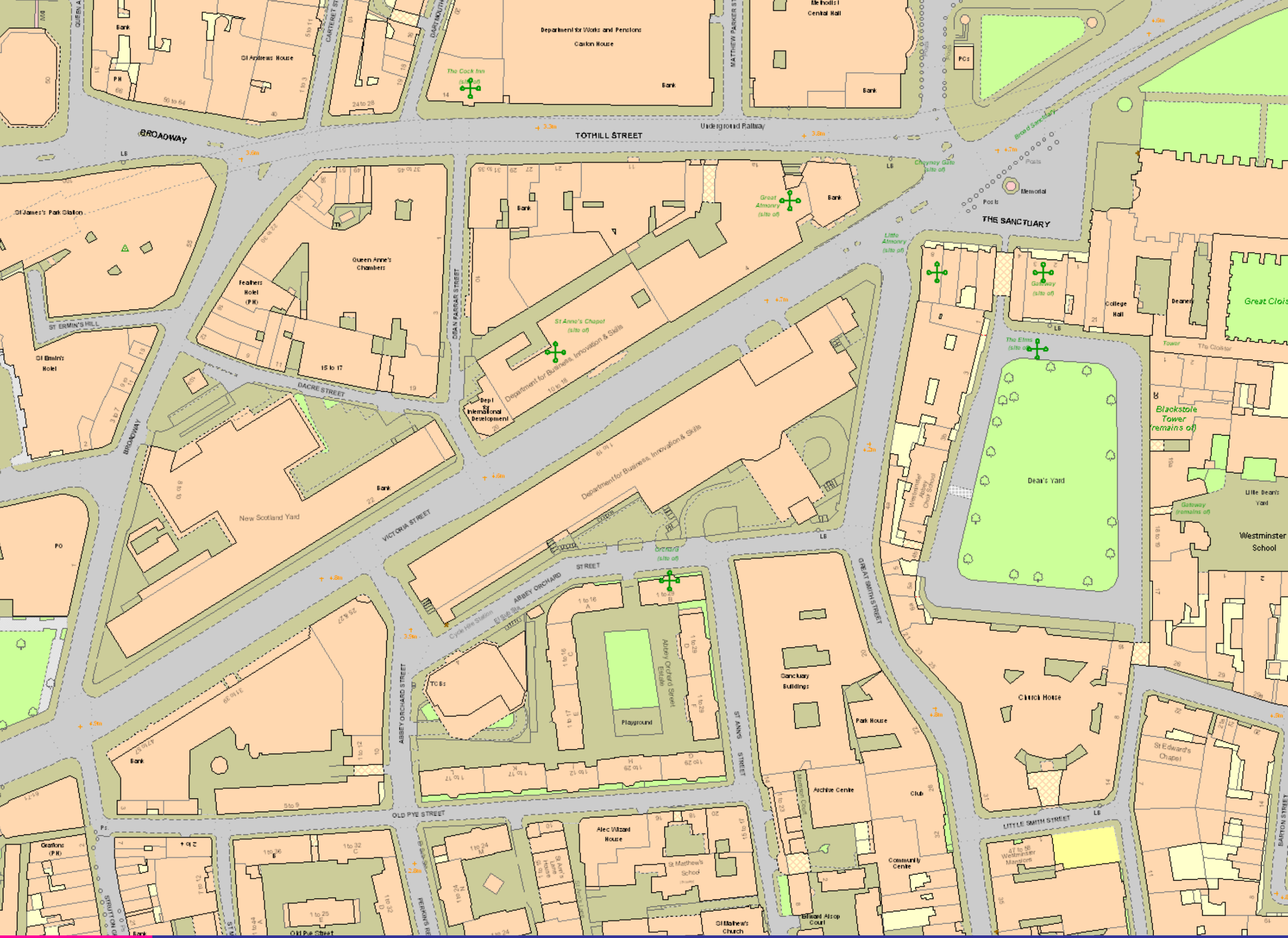
Provides the underpinning geographic framework for Great Britain

Updating the Ordnance Survey database



Wide Range of Customers and Markets

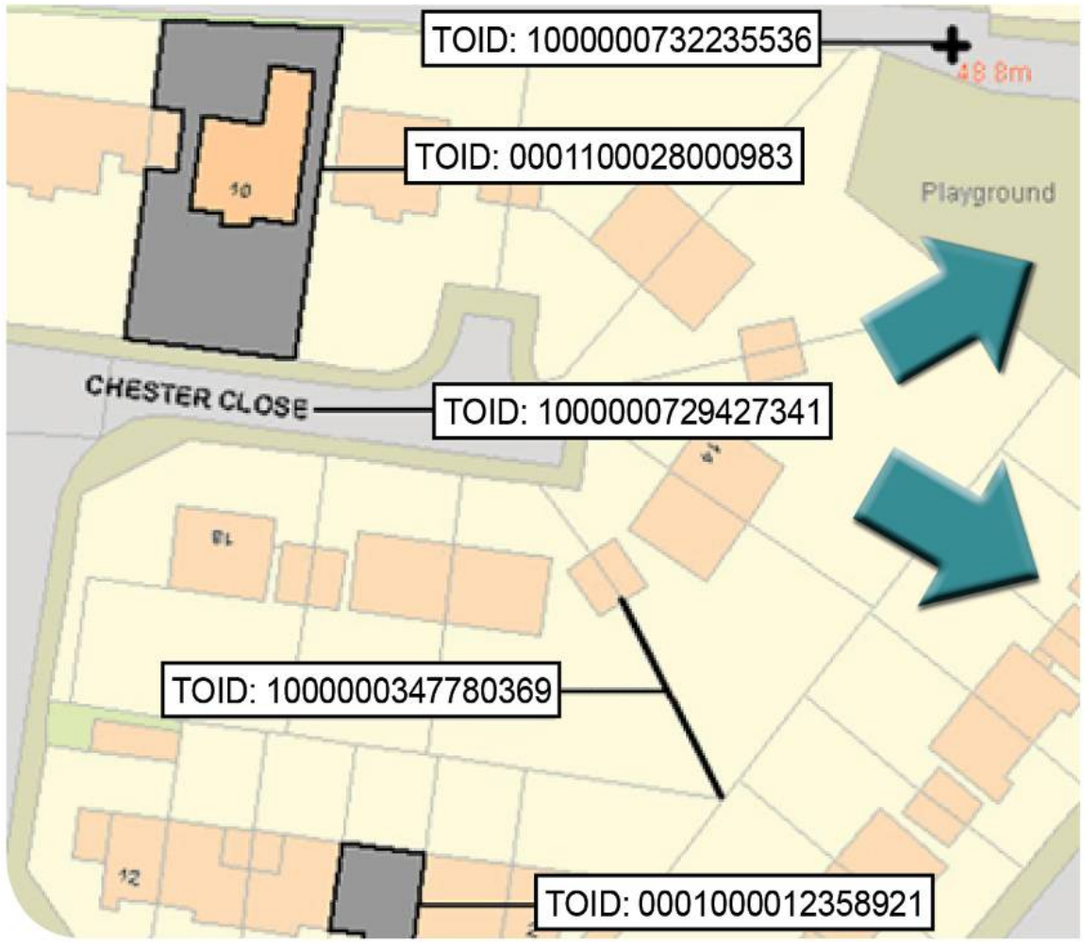




Protect Commercial

A database to connect via real world information

- Every object represented in OS MasterMap has a unique Reference identifier called a TOID. These TOIDs can be used to connect other information and are linked to other core references



Highways database

road_name: **Chester Close**

road_type: **cul-de-sac**

lighting: **none**

TOID: osgb1000000729427341

Crime report database

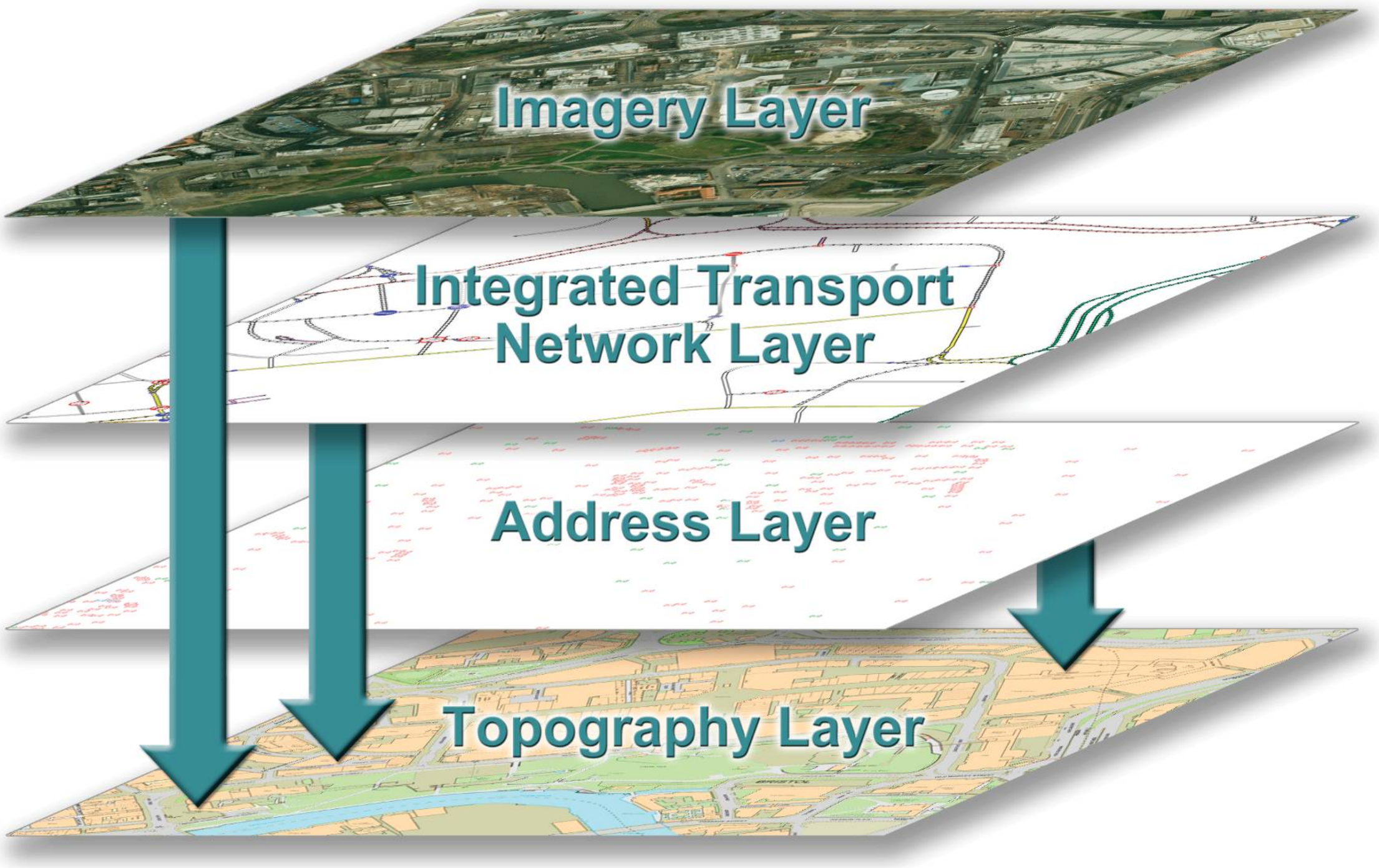
crime_type: **vehicle break-in**

date: **09/05/2003**

TOID: osgb1000000729427341

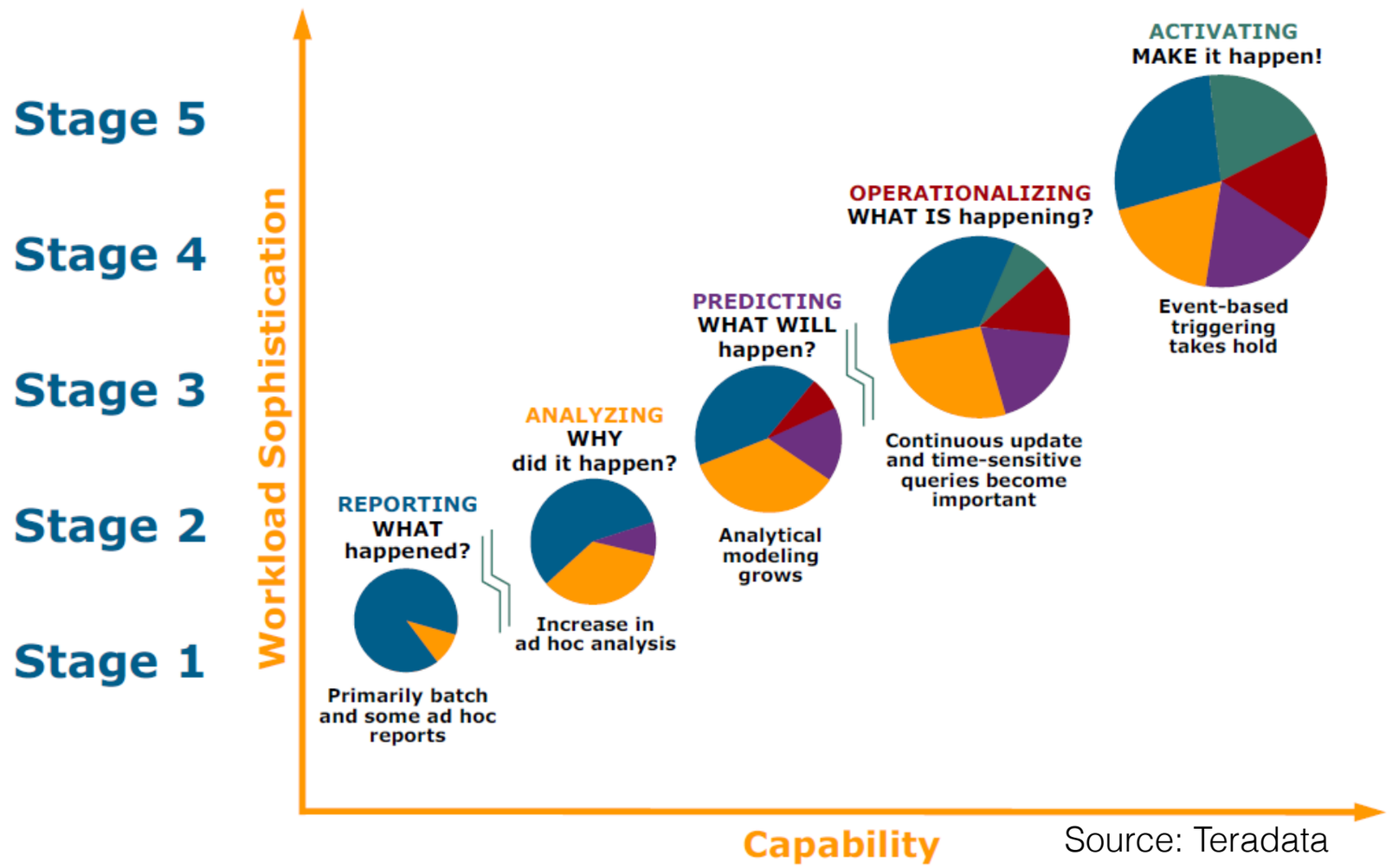
Highways and Police can share information

OS MasterMap current layers



Big data and location analytics is changing the world

- Big data gives us the ability to:
  - harness structured and unstructured data
  - ask provocative questions of it



Source: Teradata

Ordnance Survey and IBM Netezza

What does TAFKAT do for us?

Stress Testing

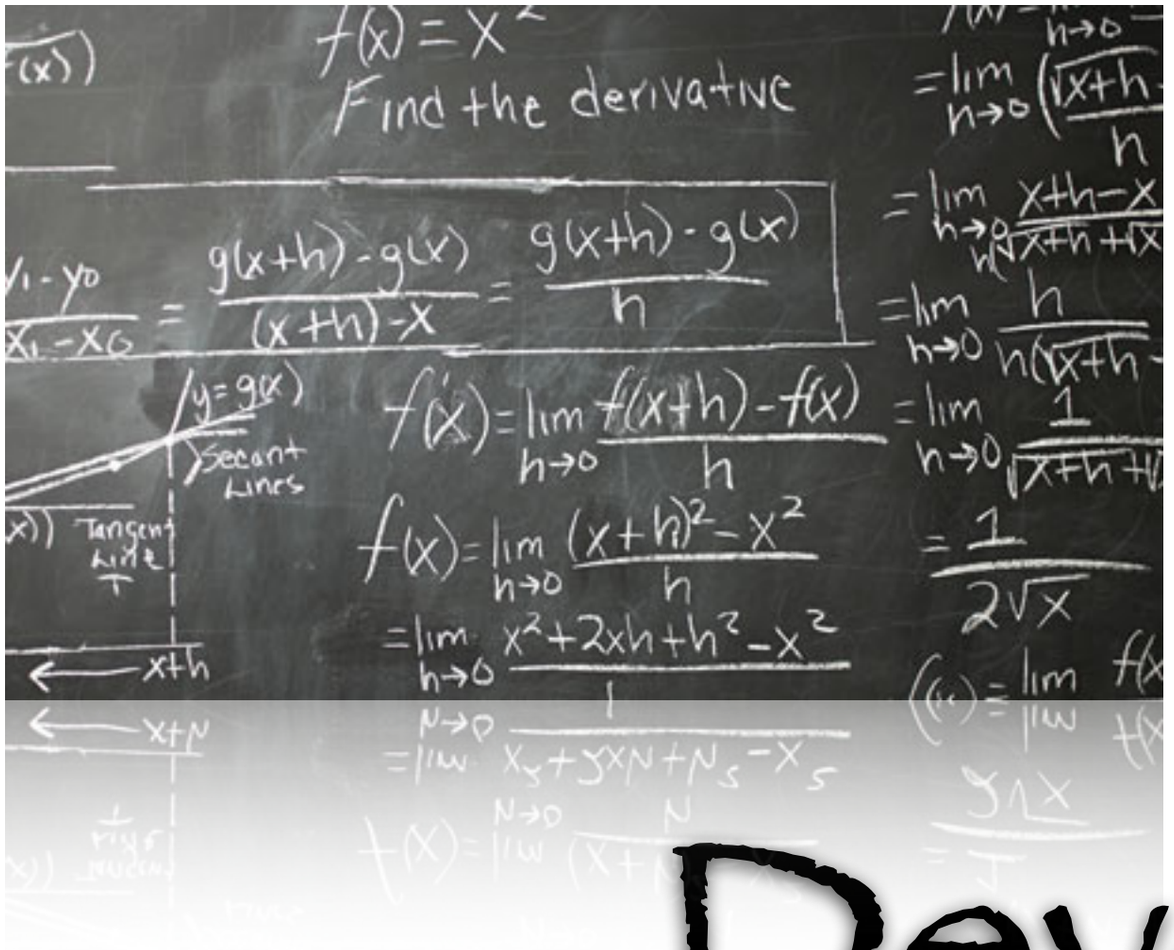
Evaluation Results – Product Testing

Internal Analytics	Status	Current	Netezza
The Address Layer 2 queries listed in AI_M2_INTERFACE_DATA_SQL.sql (which test for any invalid combinations of attributes in the dataset).	Improve	~3 hours	17 mins
Topology check of OS MasterMap Topography Layer Topo Lines and Topo Areas.	New	N/A	3 mins 3 secs
Address Layer 2 features that are matched to Topography Layer buildings (TOID reference) but do not sit spatially within them.	New	N/A	25 mins
Features within each of the OS MasterMap layers which reference a feature that no longer exists in the product (e.g. Address Layer 2 "Reference to Cartographic Text TOID" to Topography Layer "TOID").	New	N/A	6x queries at ~1 min each
Count of OS MasterMap Topography Layer Topo Lines below 5cm (by length split at 1mm intervals).	New	N/A	37 secs
Number of OS MasterMap Topography Layer Topo Lines with a Descriptive Term of "Inferred Property Closing Links" which don't have a Topo Area with a Descriptive Term of "Multi Surface" on either side of them.	New	N/A	36 hrs

Data Queries

Evaluation Results – Stakeholder Questions

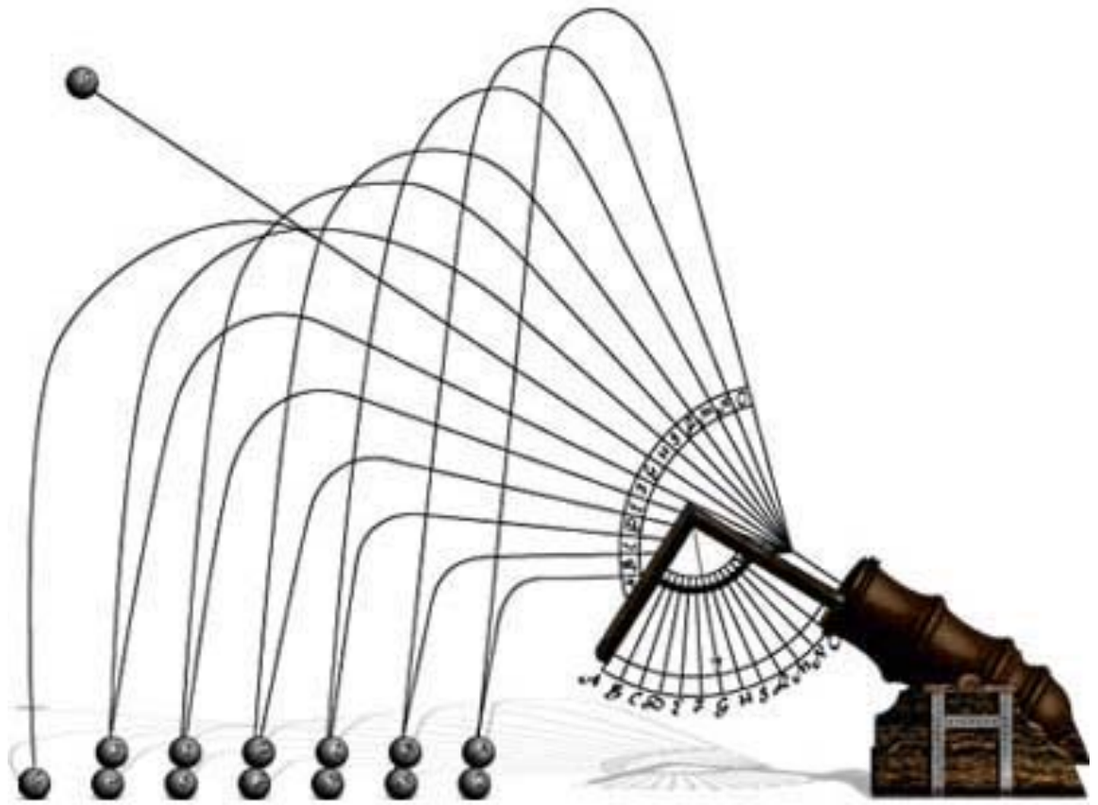
External Analytics	Status	Current	Netezza
What length of the GB coastline is made up of "beach"?	Improve	~2 weeks	4 mins 26 secs
What is the remotest point (point farthest from a metalled road) in the country?	Improve	~1 day	27 mins 22 secs
What is the farthest point from the coastline?	Improve	~1 day	9 mins 12 secs
What is the number of each Address Layer 2 base function falling within each of the GOR boundaries?	Improve	~2 days	1 min 9 secs
Locate potential high rise blocks of flats (using OS MasterMap Address Layer 2 and Topography Layer).	Improve	~3 days	49 secs



Develop Understanding

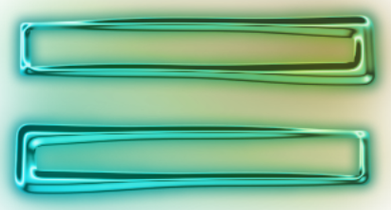
Evaluation Results – External Analytics

External Analytics	Status	Current	Netezza
Counts the numbers of postcodes [Code-Point]; addresses [Address Layer 2]; and addressable building polygons [Topography Layer] that fall with the Environment Agency flood polygons.	New	N/A	2 hrs 28 mins 24 secs

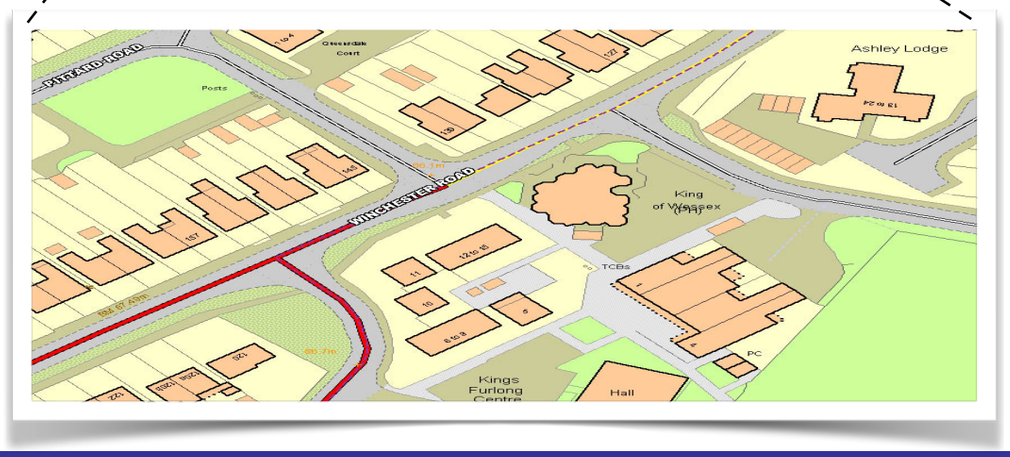


Customer Prototyping

Adventures with Customer Data



Smarter Customers



Conclusions

Stress Testing

Data Queries

Develop Understanding

Customer Prototyping

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