

The Anatomy and Social Science of the Internet

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Department of Geography and Planning

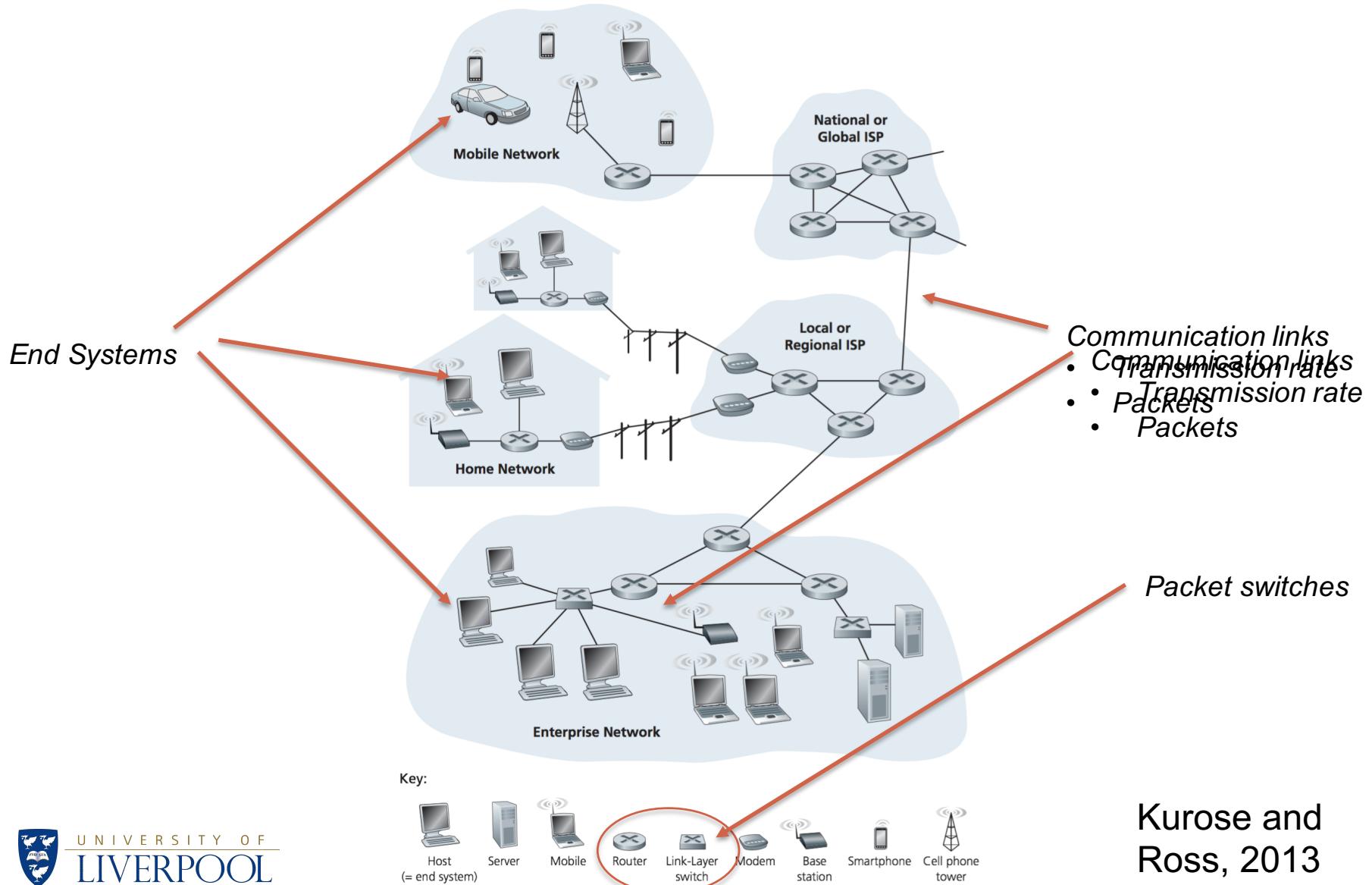


UNIVERSITY OF
LIVERPOOL

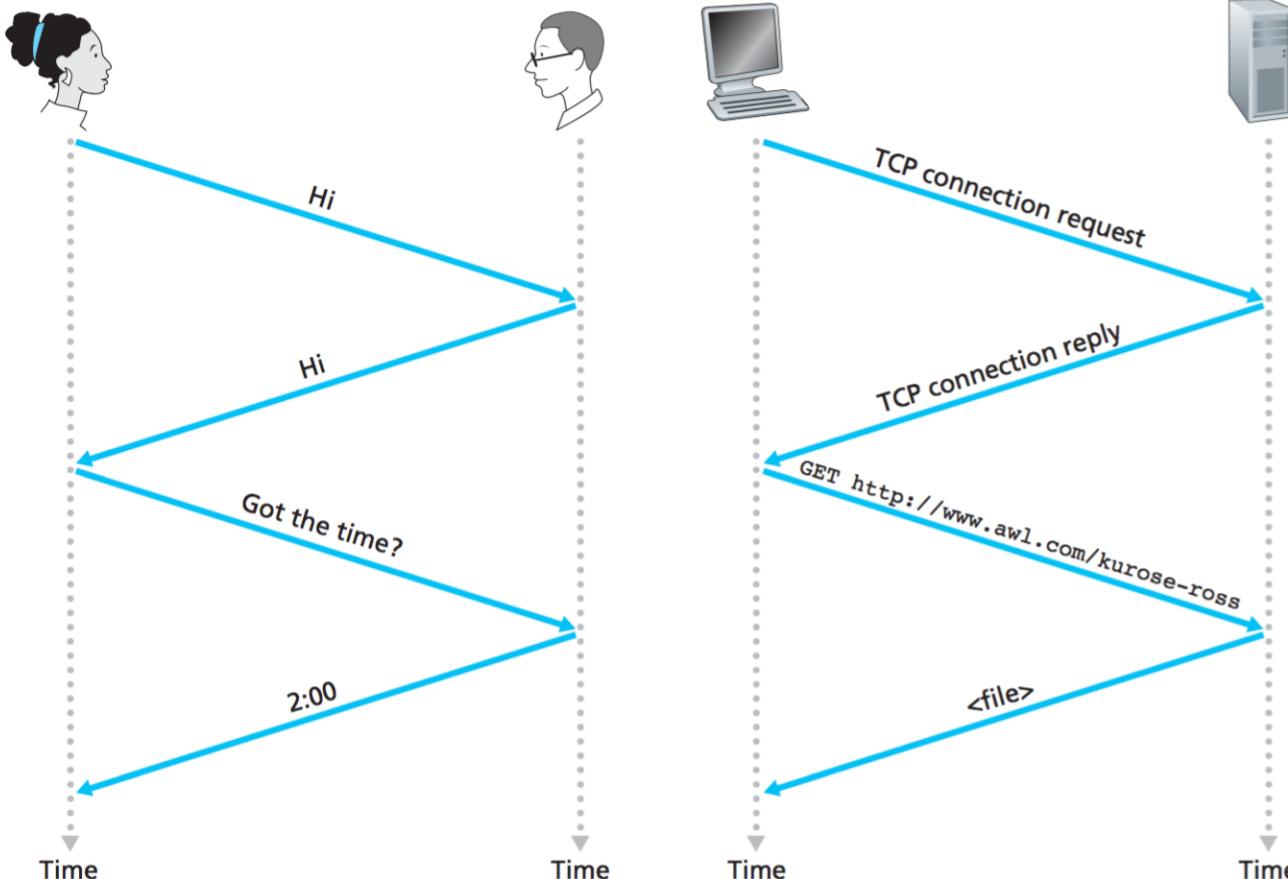
Overview and Structure

- Internet V Web
- Communication protocols and authentication
 - HTTP
 - HTTPS
 - OAAUTH
- Social Context
 - Broadband speeds and constraints
 - Use and engagement

Internet and WWW

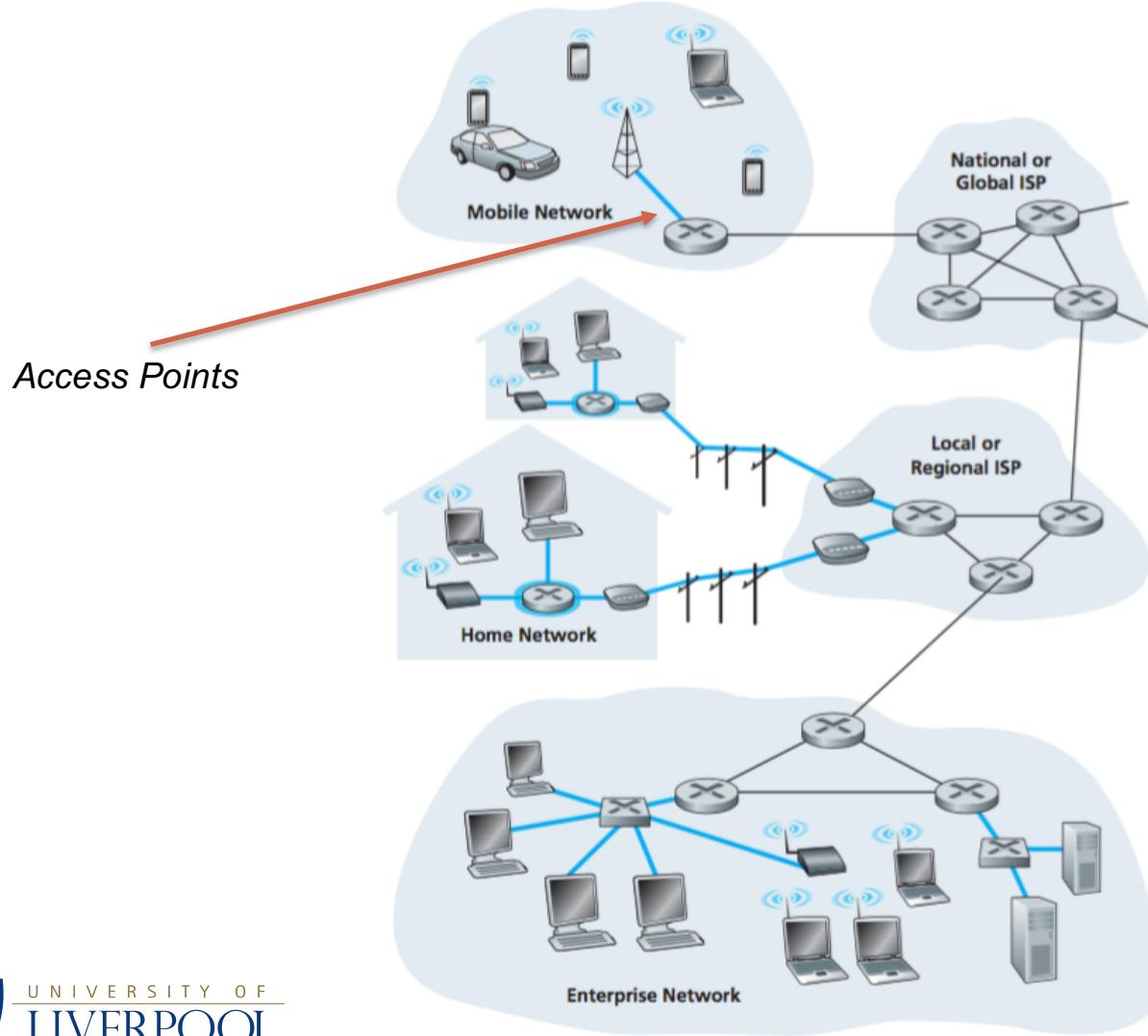


Internet and WWW



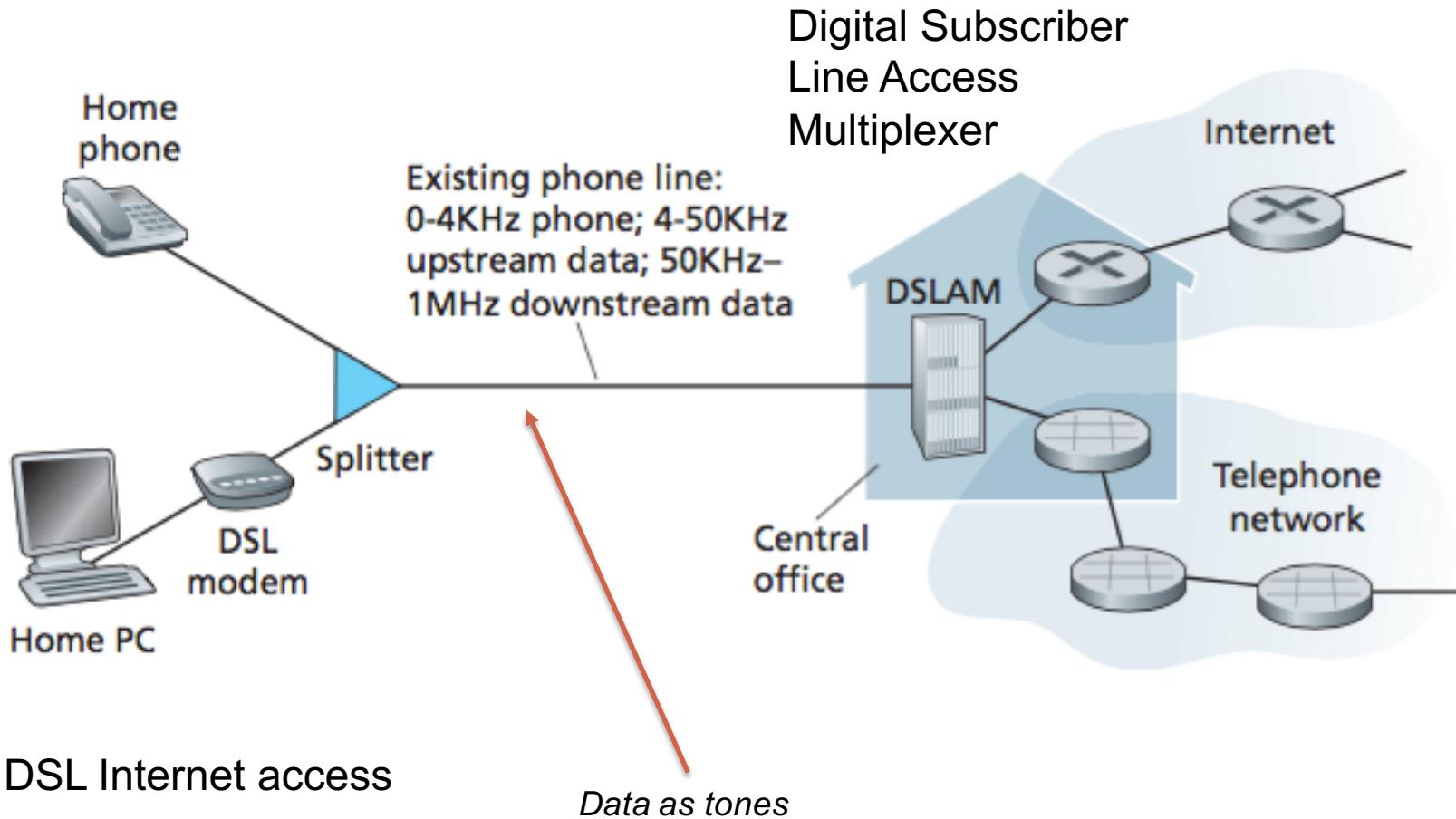
A protocol defines the format and the order of messages exchanged between two or more communicating entities, as well as the actions taken on the transmission and/or receipt of a message or other event.

Internet and WWW

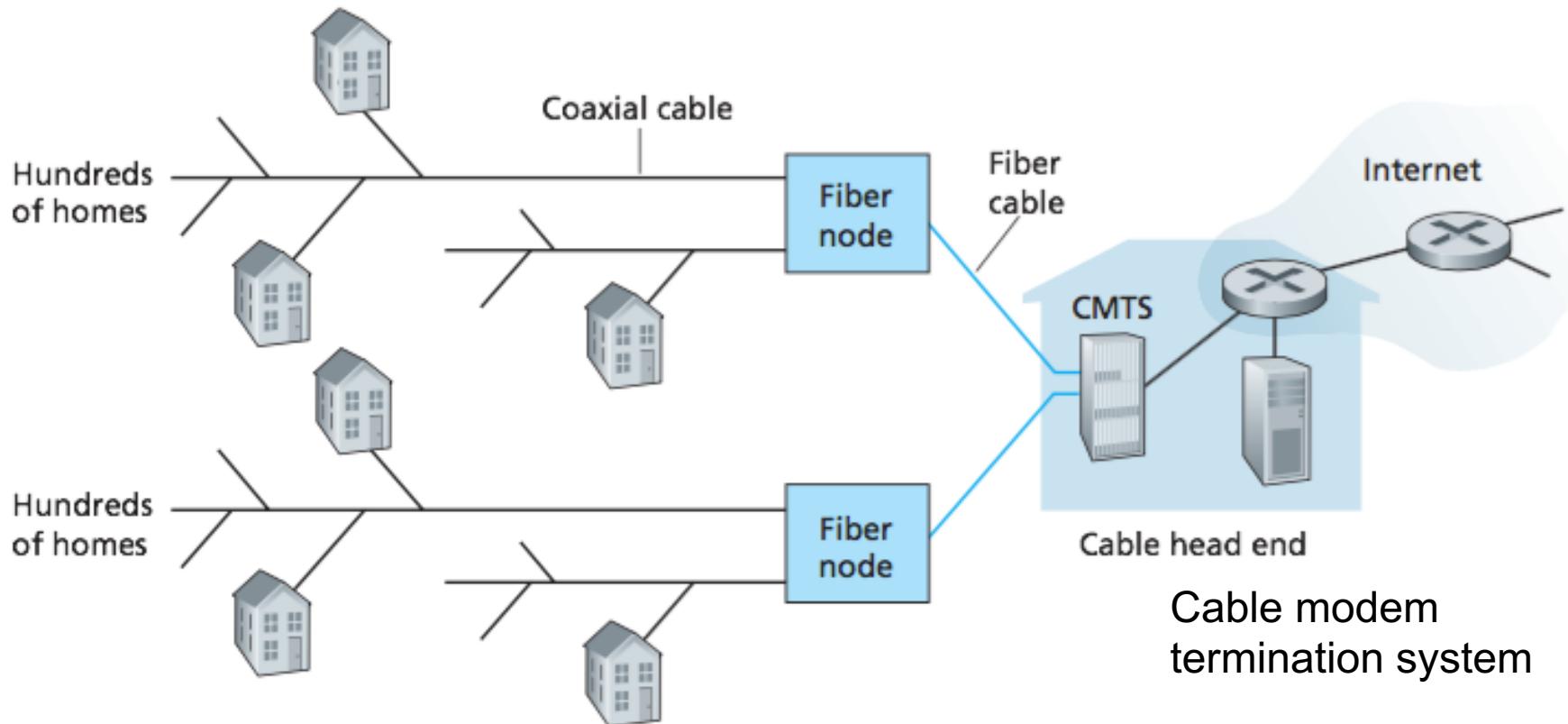


Kurose and
Ross, 2013

Internet and WWW

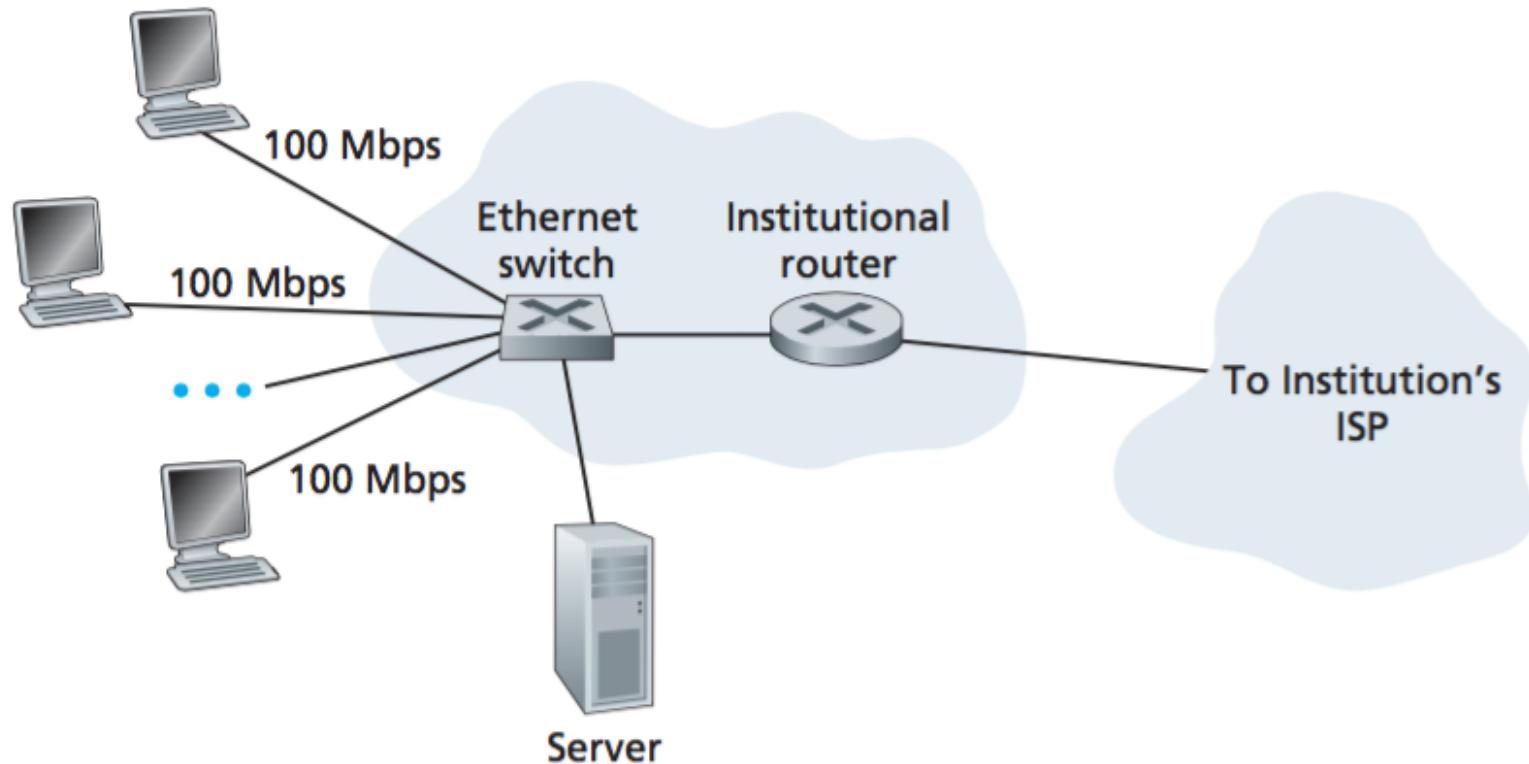


Internet and WWW

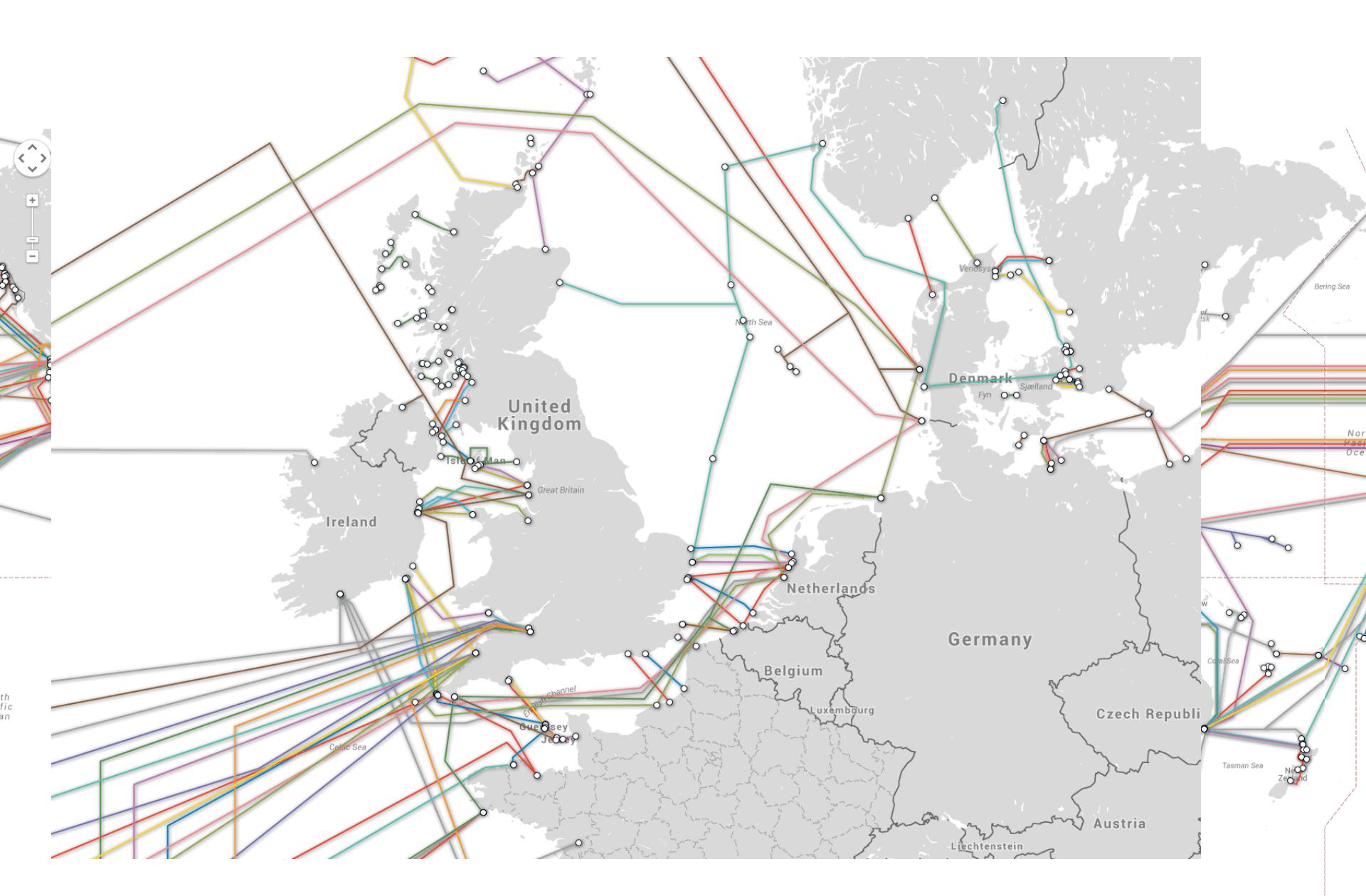


A hybrid fiber-coaxial access network

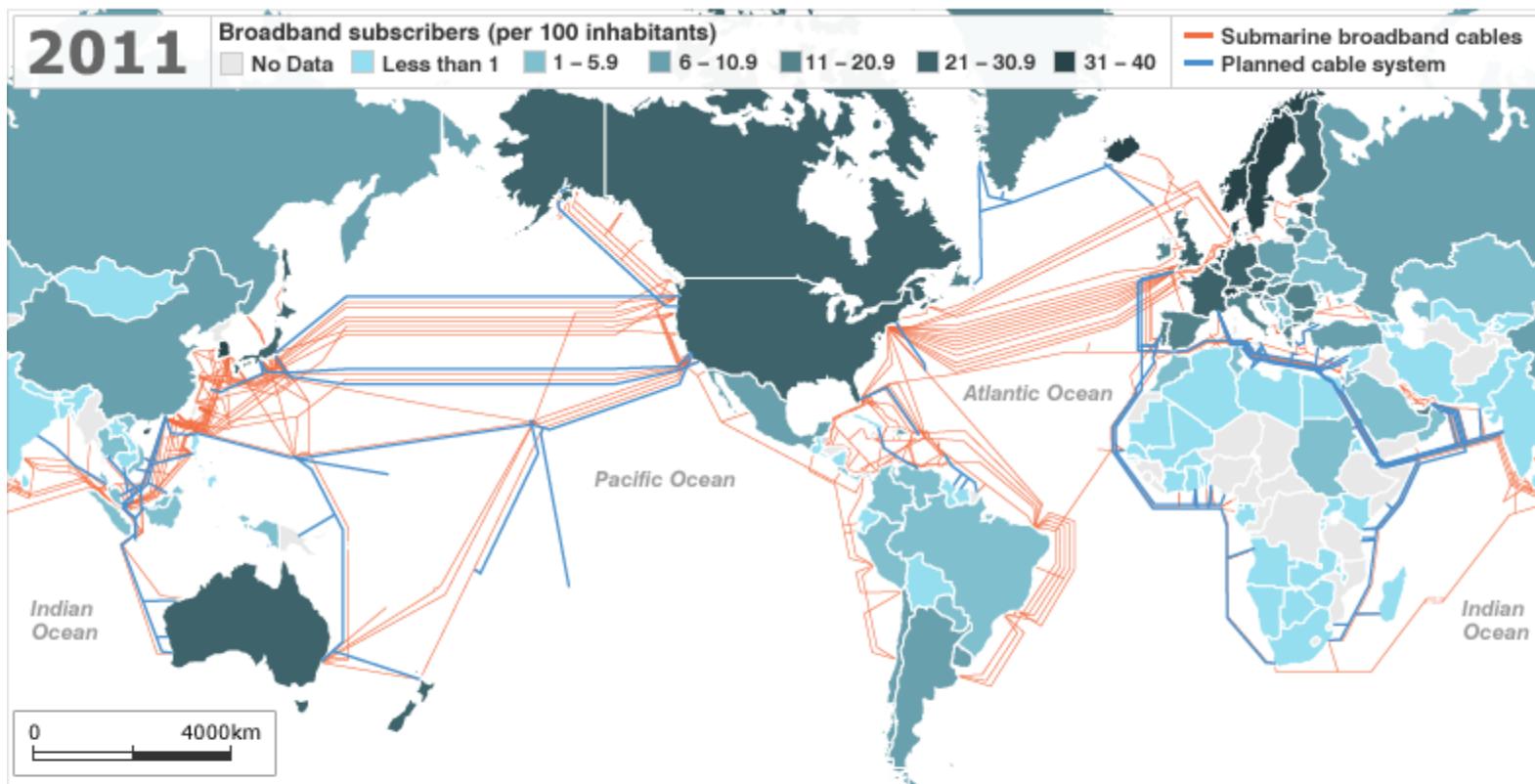
Internet and WWW



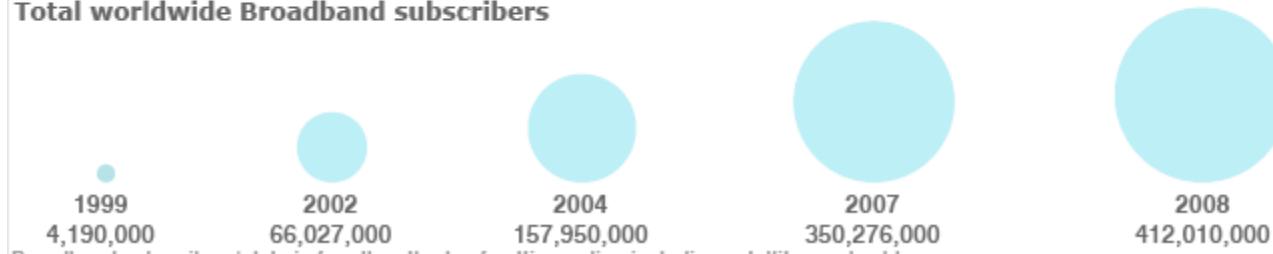
Ethernet Internet access (enterprise)



The Global Growth of Broadband



Total worldwide Broadband subscribers

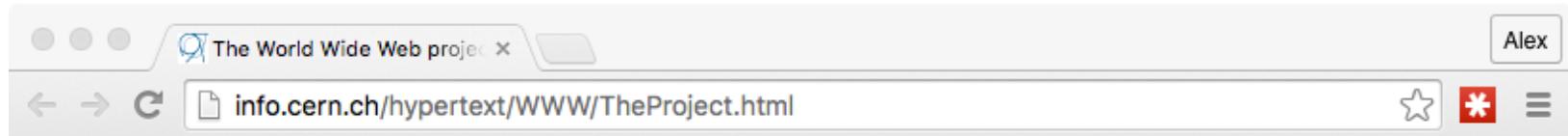


SOURCE: TeleGeography/ITU



World Wide Web

- Prior 1990s
 - Mainly file transfer
 - Academic / research users
- 1990
 - Tim Berners-Lee
 - "Hypertext project" called "WorldWideWeb" (one word) as a "web" of "hypertext documents" to be viewed by "browsers" using a client–server architecture.
- 1993 – WWW software made public domain



World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#) , [Policy](#) , November's [W3 news](#) , [Frequently Asked Questions](#) .

What's out there?

Pointers to the world's online information, [subjects](#) , [W3 servers](#), etc.

Help

on the browser you are using

Software Products

A list of W3 project components and their current state. (e.g. [Line Mode](#) ,[X11 Viola](#) ,[NeXTStep](#) ,[Servers](#) ,[Tools](#) ,
[Mail robot](#) ,[Library](#))

Technical

Details of protocols, formats, program internals etc

Bibliography

Paper documentation on W3 and references.

People

A list of some people involved in the project.

History

A summary of the history of the project.

How can I help ?

If you would like to support the web..

Getting code

Getting the code by [anonymous FTP](#) , etc.

WORLD WIDE WEB

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Everything there is online about W3 is linked directly or indirectly to this document, including an executive summary[2] of the project, Mailing lists[3] , Policy[4] , November's W3 news[5] , Frequently Asked Questions[6] .

What's out there?[7]Pointers to the world's online information, subjects[8] , W3 servers[9] , etc.

Help[10] on the browser you are using

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Technical[19] Details of protocols, formats, program internals etc

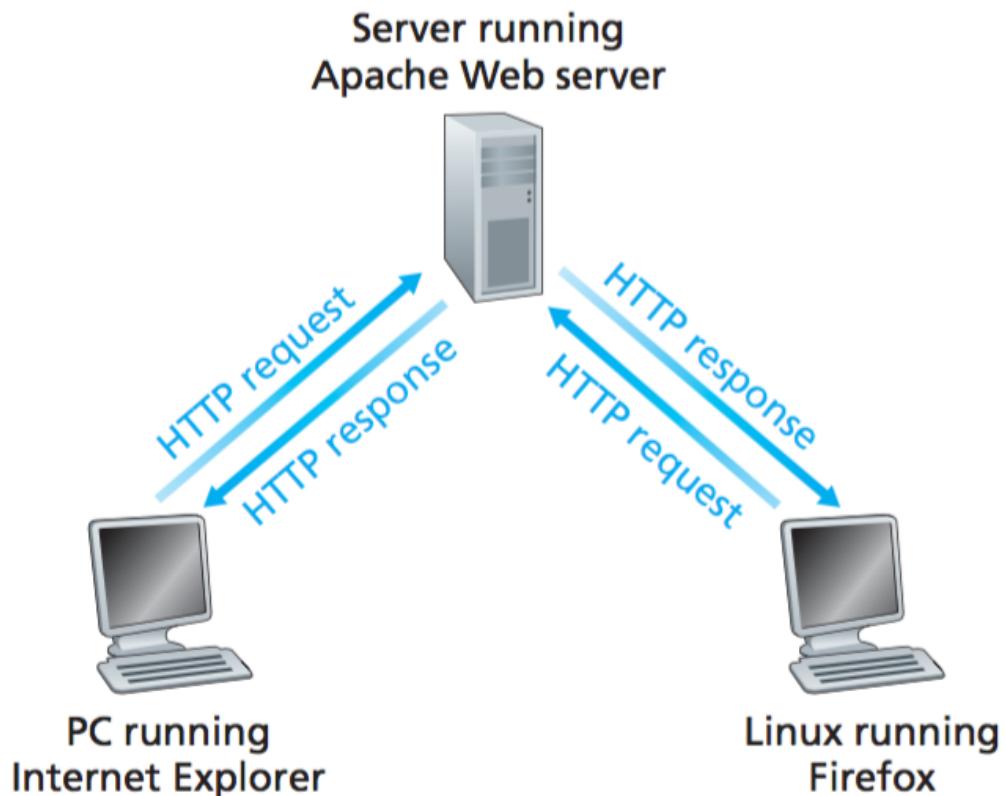
<ref.number>, Back, <RETURN> for more, or Help:



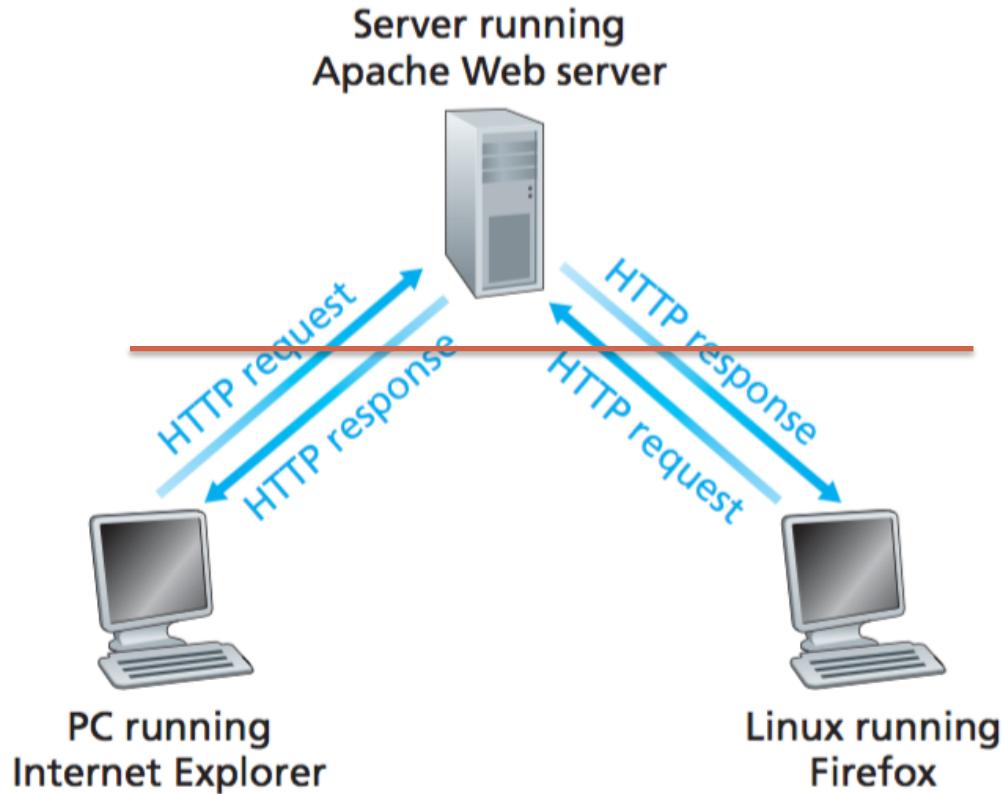
https://en.wikipedia.org/wiki/World_Wide_Web#/media/File:NeXTcube_first_webserver.JPG

World Wide Web

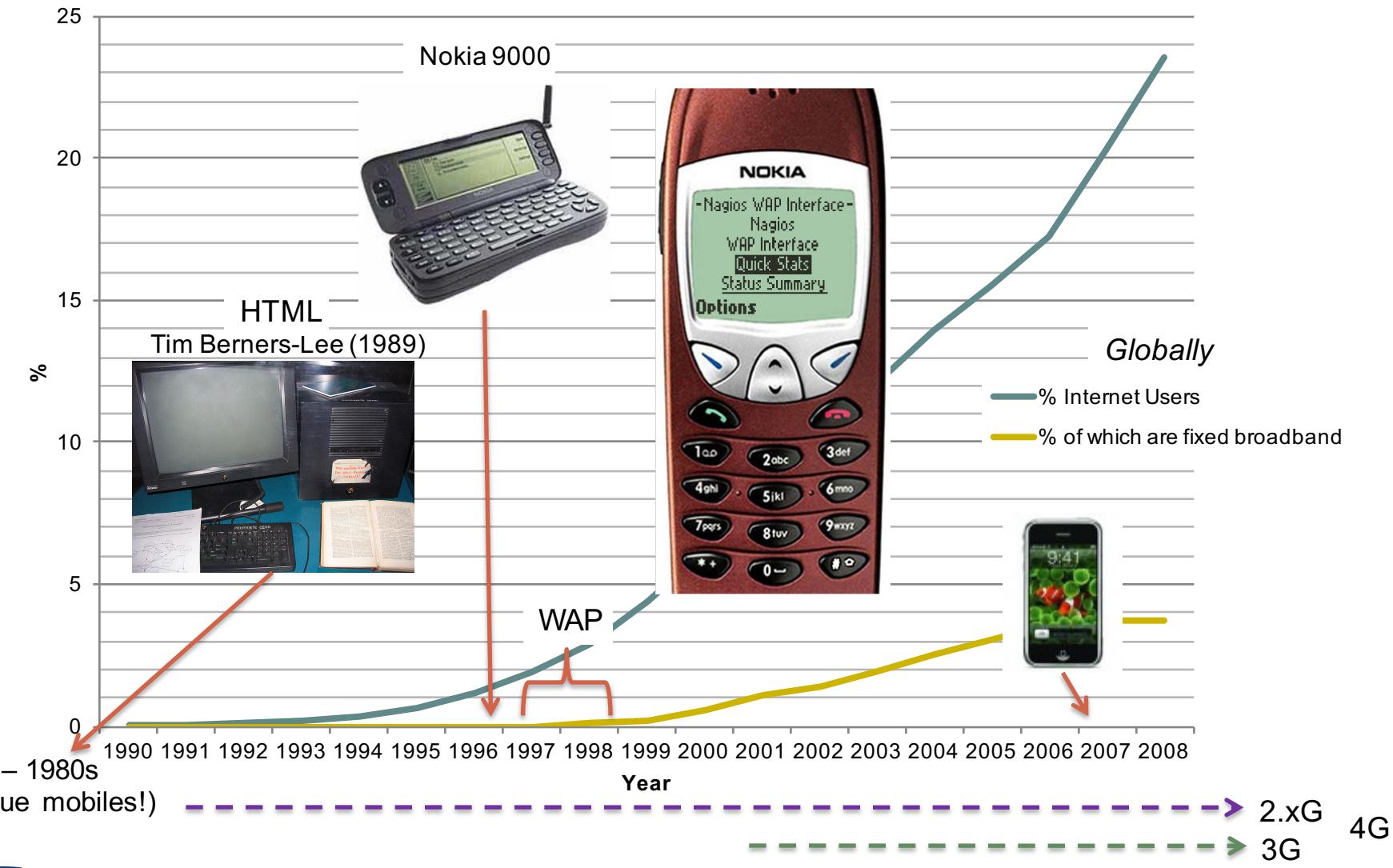
- HTTP
 - HyperText Transfer Protocol
 - 2 programs
 - Client
 - Server
 - “Talk” by exchanging HTTP messages



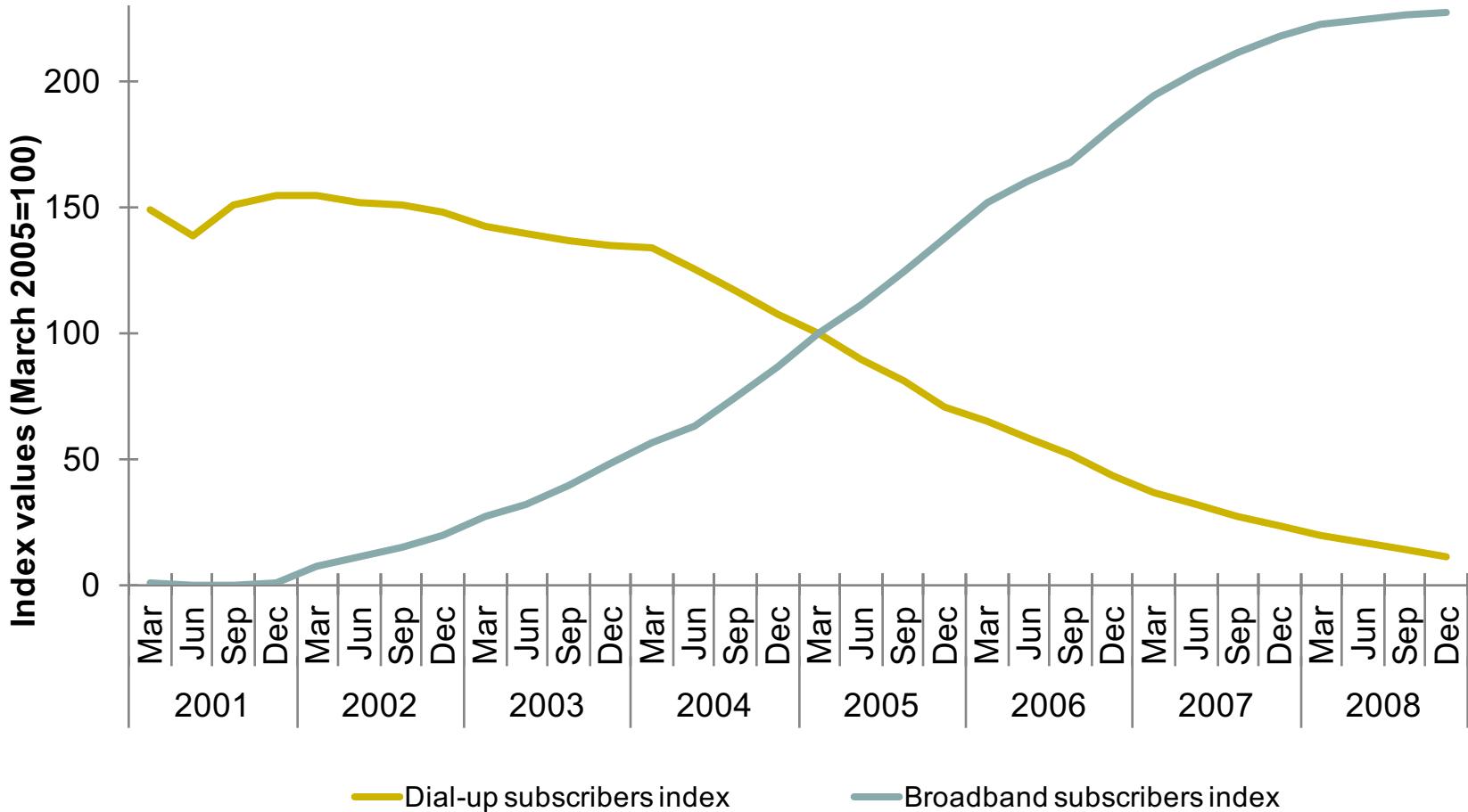
Authentication

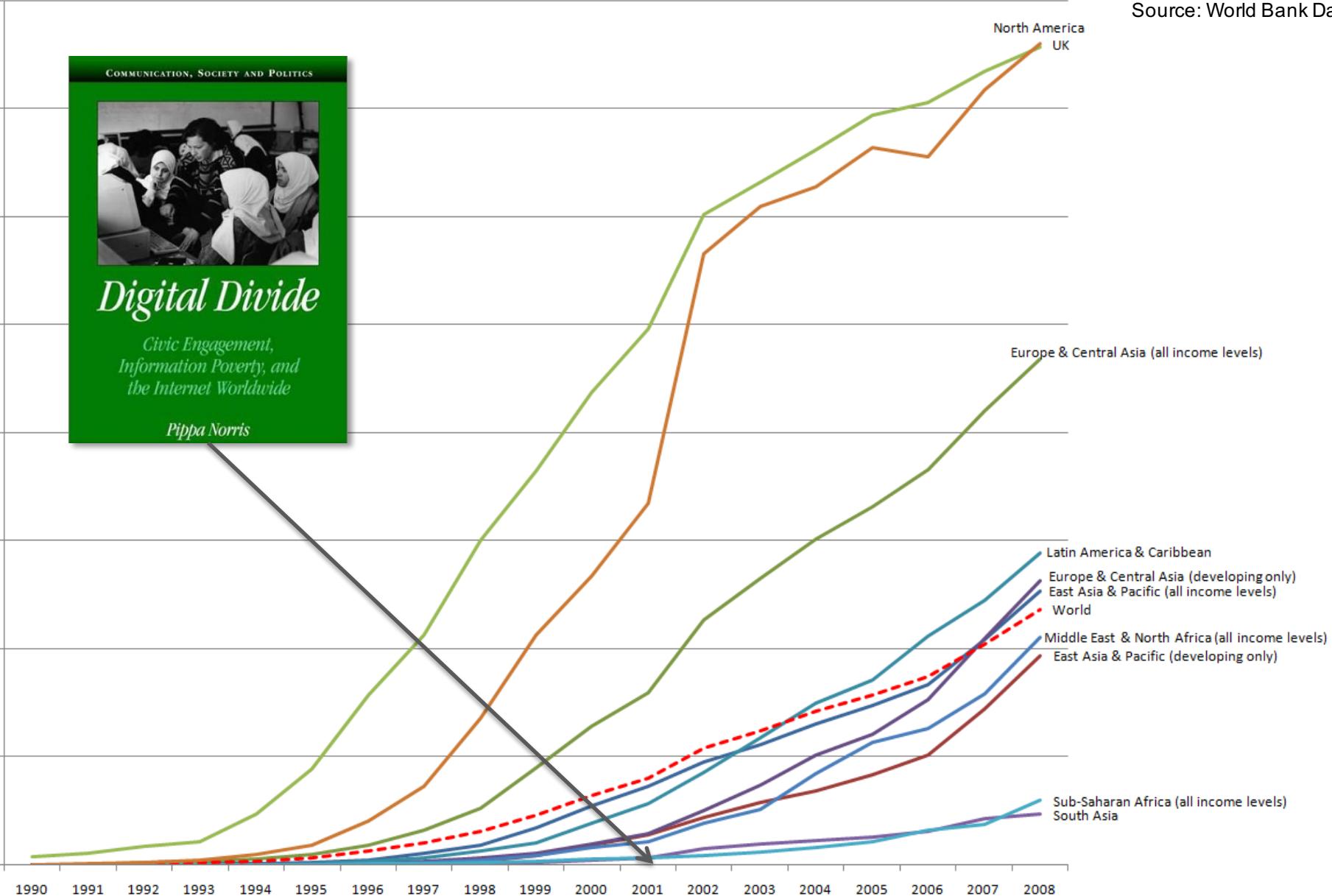
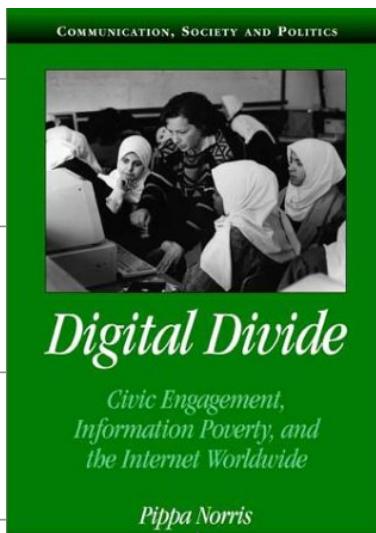


Fixed and Mobile

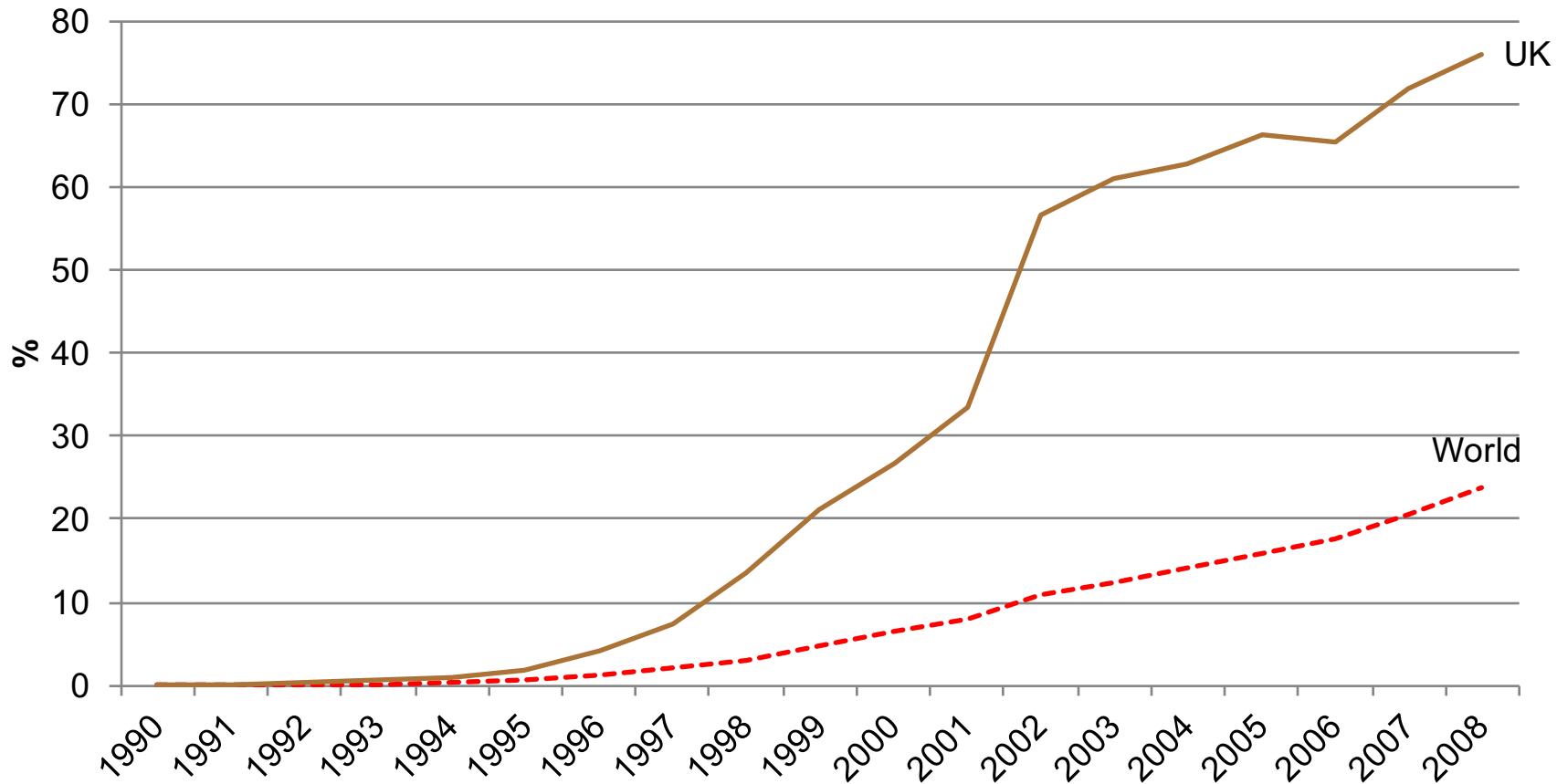


Declining Dialup





Inequalities within the UK?

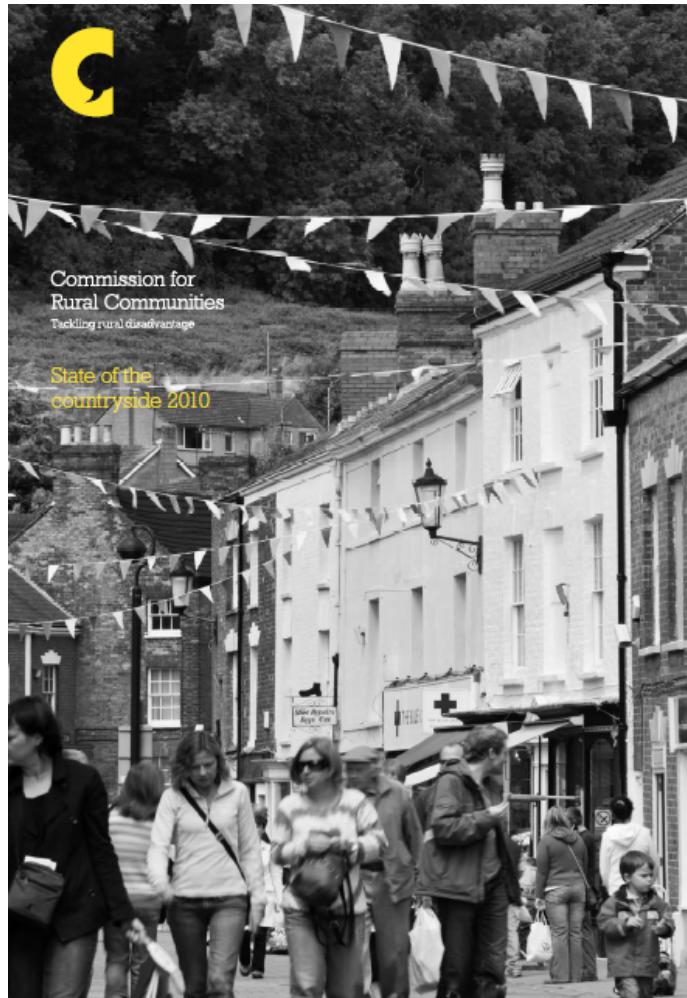


Policy 2009 / 2010

- Digital Britain Report (Labour)
 - Social and economic importance of a connected population
 - Lord Carter
 - (Previous Minister for Communications, Technology and Broadcasting)
 - reducing exclusion will in turn "**either directly or indirectly improve the lives and life chances of all citizens, particularly the most disadvantaged, and the places in which they live**"(Carter 2009)
 - Digital Champion – Martha Lane Fox (appointed under coalition)
- 2010 “Digital by Default”
 - “Digital by default proposed for government services.” Cabinet Office News Release CAB208 /10.

Use is Complex “not spots”

- Poor speed
 - New divide
- Government
 - Universal Service Commitment (USC)
- Fibre Optic!!



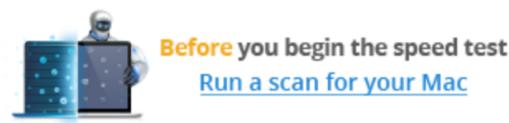
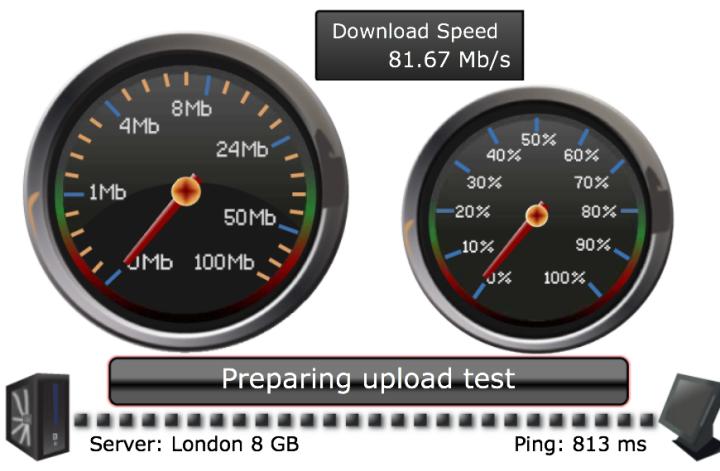
[speed test](#)[compare broadband](#)[speed in my area](#)[get your own test](#)[broadband guides](#)[license](#)[contact us](#)

Discover
your
ideal
home >



Check Your Speed

Start the speed test and check
your internet connection
speed. Try Now!



Before you begin the speed test
[Run a scan for your Mac](#)

Check Your Speed

Start the speed test and check
your internet connection
speed. Try Now!



How it works

Start the speed test by clicking on the big button in the center of the page. The check will start by downloading a file and will measure your download speed. Once the download has finished, the broadband speed test will try to upload a file and will measure your upload speed. [Find out more](#)

Advice & Tools

[How to improve your broadband speed](#)

[How to improve wireless broadband speed](#)

[Get a speed test on your website](#)

[Commercial licensing & Data access](#)

[Compare broadband](#)

Enter your postcode
below to compare
broadband packages in
your area.

Type a postcode

Search



An ESRC Data Investment

CDRC Maps

BINGLEY
Mapping selected datasets from
CDRC Data, part of the Consumer
Data Research Centre.

DATA CHOOSEN

Classifications Retail

Select a map:
2011 Area Classif/n of OAs

[Download this data](#)

MAP OPTIONS

Layers: Land Labels

Toggle: Retail Centres

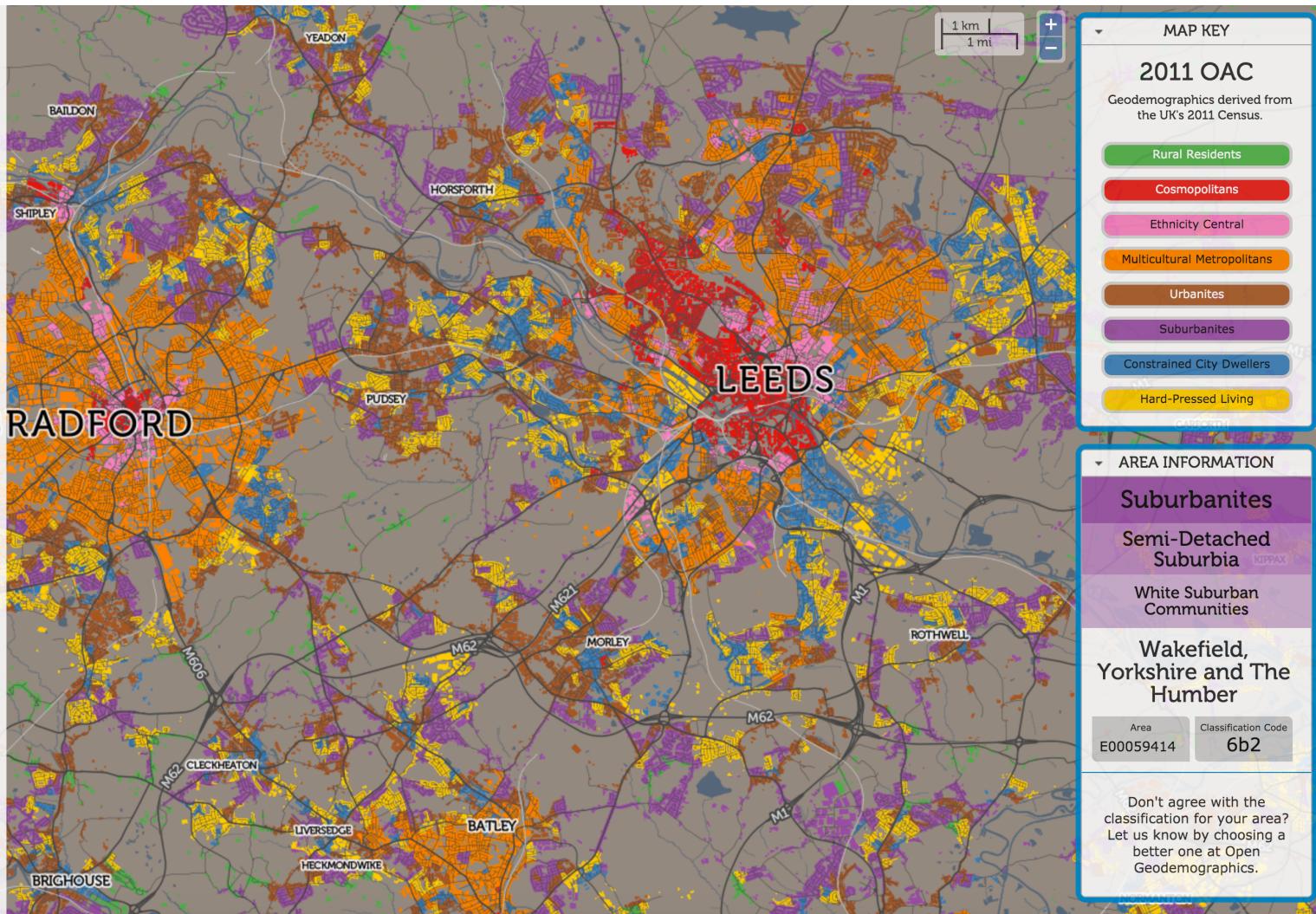
Download: [retail centre locations](#)

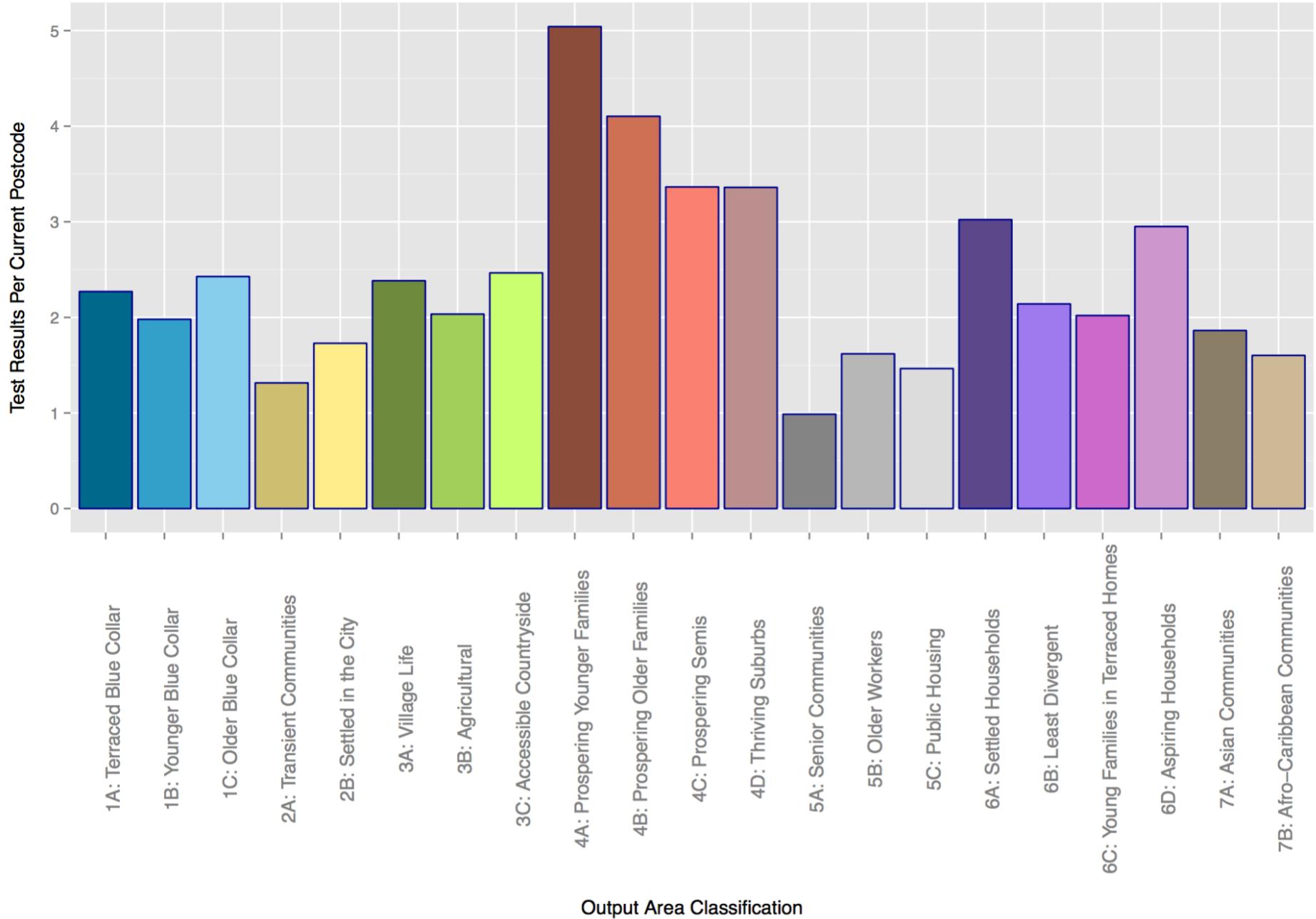
Postcode: Go

HALIFAX
[f Like](#) [Share](#) [Twitter Tweet](#)

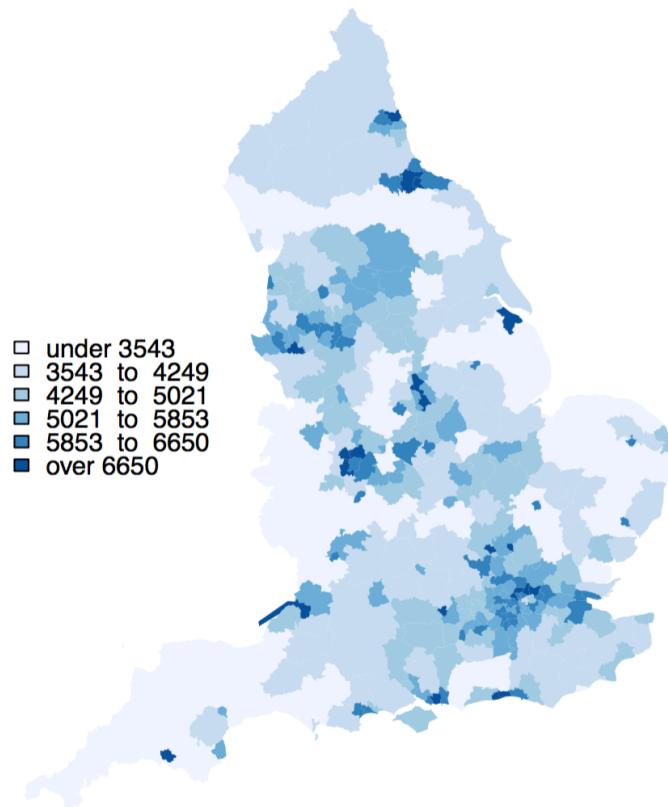
Important note: Classifications are an average across the local area, rather than for individual houses, therefore the colour coding on a building is not necessarily indicative of that building.

Contains National Statistics & Ordnance Survey data © Crown copyright & database right 2014-5.

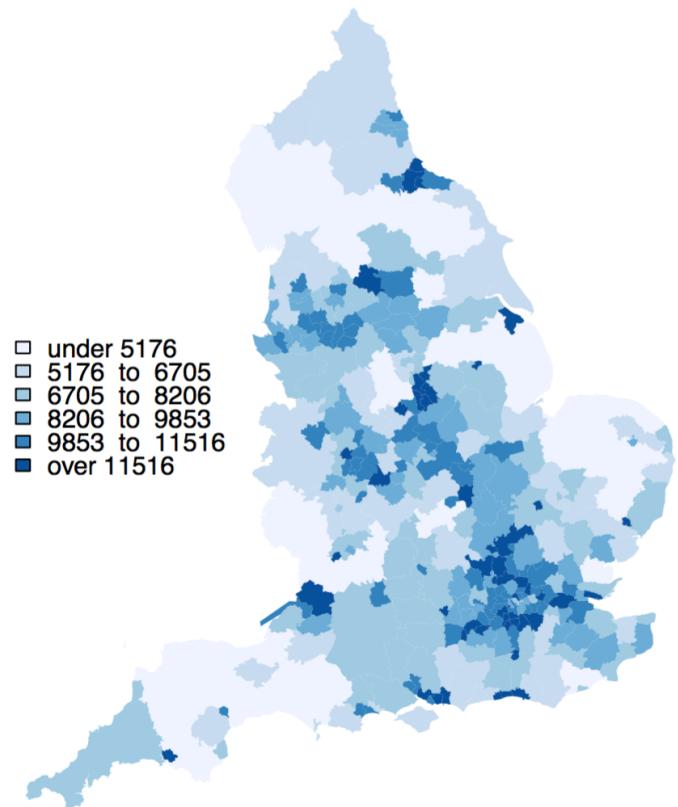


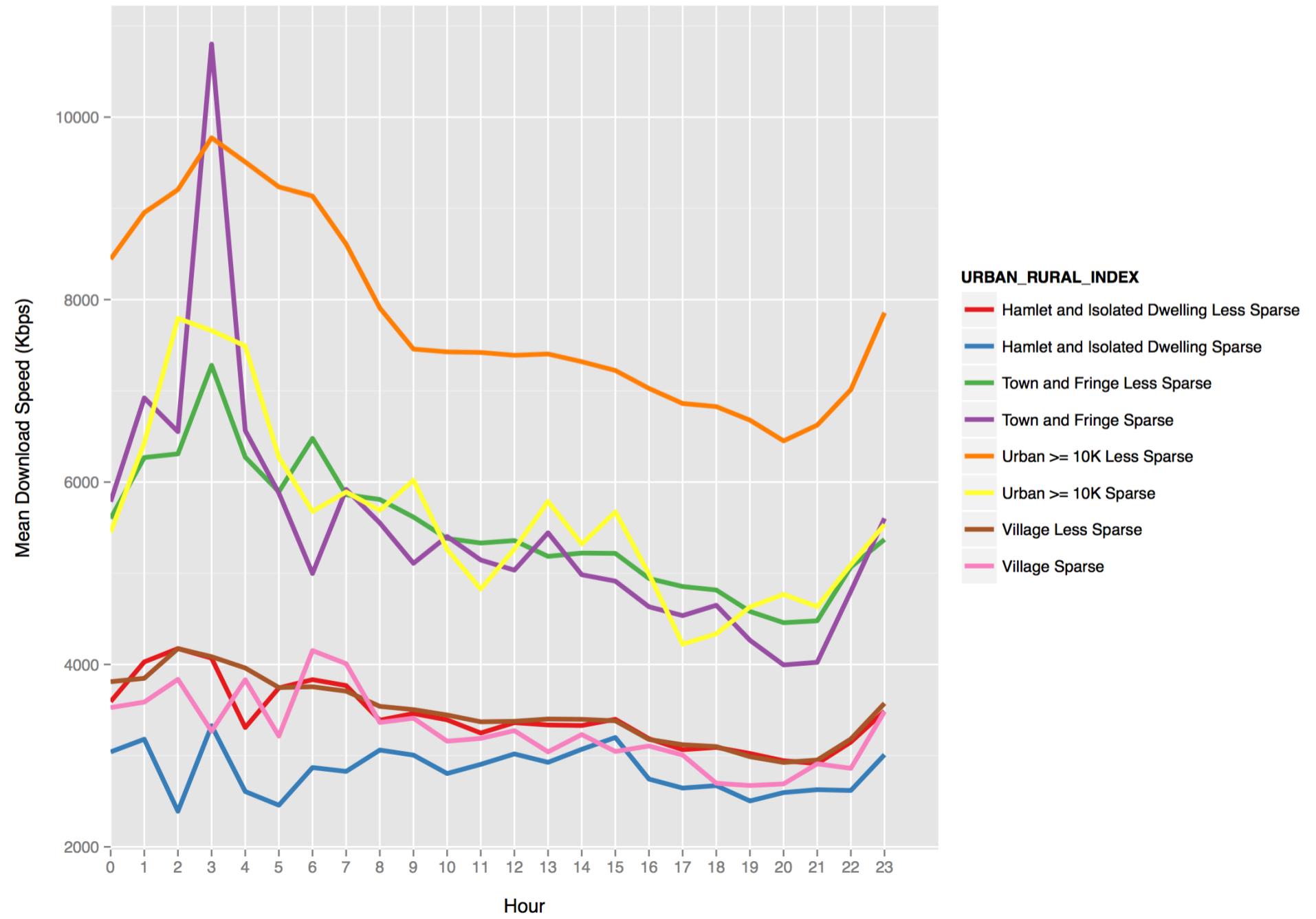


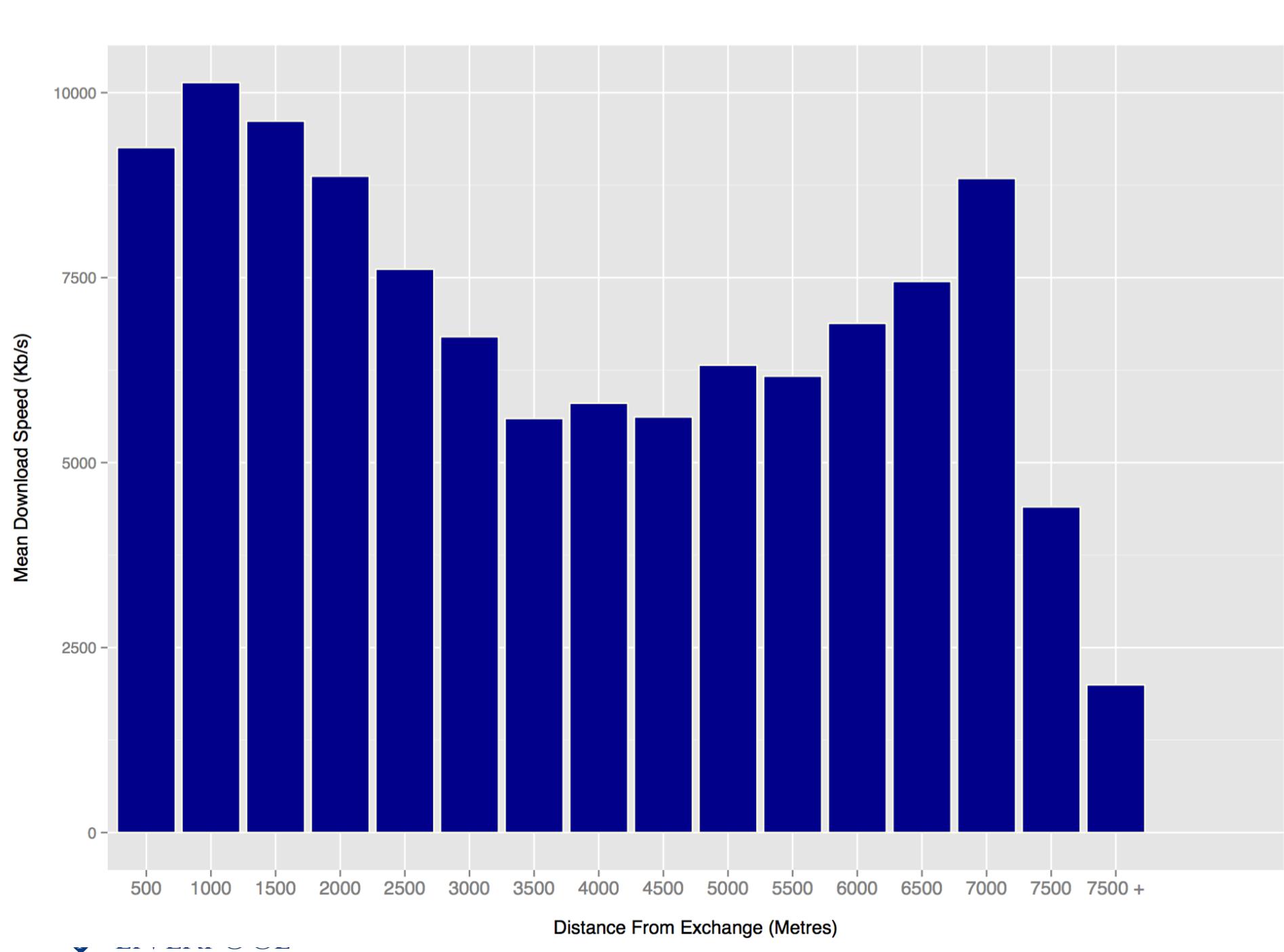
**Mean Download Speeds (Kbps)
by English District 2010/11**



**Mean Download Speeds (Kbps)
by English District 2012/13**



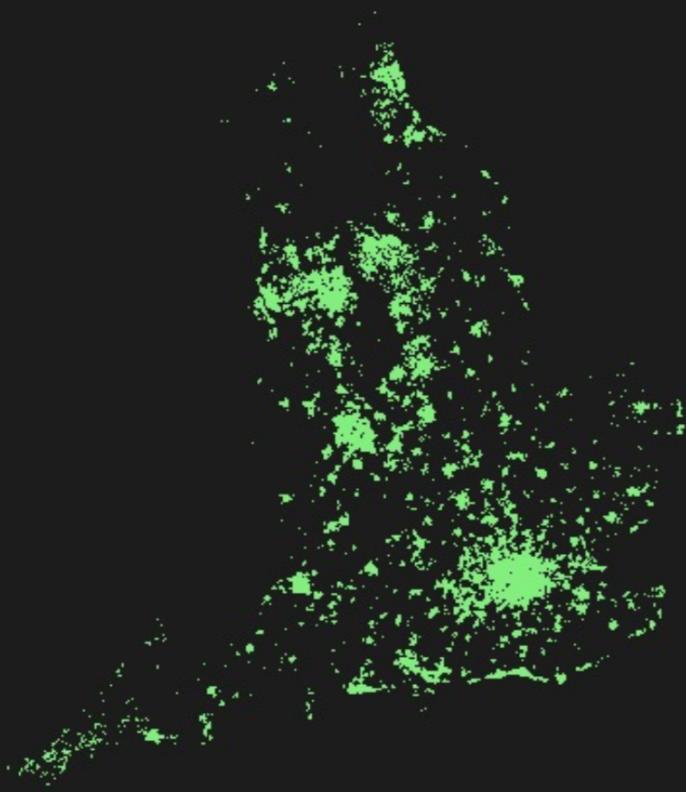




Superfast Connections Over 24Mbps 2010/11



Superfast Connections Over 24Mbps 2012/13



PUBLICPROFILER.ORG

Ever wondered how technologically enabled your neighbours are?

By **entering a postcode** in the e-Society profiler search box and **clicking "GO"**, our classification will tell you about the type of technology use in your neighbourhood and those areas with similar profiles within Great Britain.

This project has been developed by the Spatial Literacy team at UCL as an outcome of an earlier ESRC funded e-Society project.



- About the e-society
- What are the groups?
- Feedback

Enter a Postcode...

e.g. NW6 1CN

GO

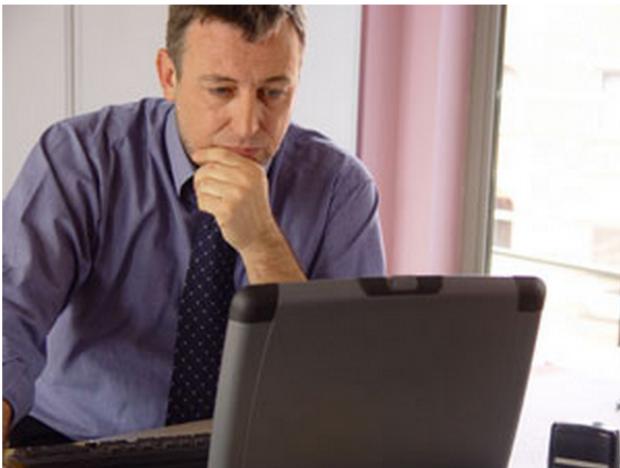
Before clicking "go" please read our data and data collection policy [[here](#)]

The E-Society profiler tool is solely for private, academic and public policy use only. Commercial use of these data is strictly forbidden. The E-Society profiler is not currently available under any commercial licence.

e-Society Profiler

	Type A01 : Low technologists
	Type A02 : Cable suffices
	Type A03 : Technology as fantasy
	Type A04 : Mobile's the limit
	Type A05 : Too old to be bothered
	Type A06 : Elderly marginalised
Group A : E-unengaged	
	Type B07 : The Net ; What's that?
Group B : E-marginalised	Type B08 : Mobile Explorers
	Type B09 : Cable TV heartland
Group C : Becoming engaged	Type C10 : E-bookers and communicators
	Type C11 : Peer group adopters
Group D : E for entertainment and shopping	Type D12 : Small time net shoppers
	Type D13 : E for entertainment
Group E : E-independents	Type E14 : Rational utilitarians
	Type E15 : Committed learners
	Type E16 : Light users
Group F : Instrumental E-users	Type F17 : Computer magazine readers
	Type F18 : E for financial management
	Type F19 : On-line apparel purchasers
	Type F20 : E-exploring for fun
Group G : E-business users	Type G21: Electronic orderers
Group H : E- experts	Type H22 : E-committed
	Type H23 : E - professionals

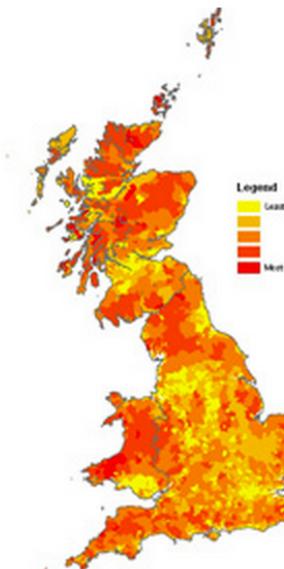
Group E : E-independents



This Group tends to take a rational and considered view of electronic communications and technologies. These people are not interested in mobile phones, texting or the Internet as lifestyle accessories; they do not feature as major topics of conversation within the social networks to which they belong and they do not provide a significant focus for leisure activity. However people are reasonably well equipped and use the Internet to search for information, to buy products and to undertake transactions where there are obvious efficiency benefits.

Type E16 : Light users

This Type contains many people who have access to electronic technologies but who are not very heavy users of them. Mostly in late middle age, these people do not view technology as a leisure activity and are not influenced by fashions or the need to keep up with peer groups. This Type, though it does have access to the internet, tends not to use it to purchase games, fashion wear, videos or holidays, preferring to deal with organisations directly. However the Type does purchase flowers over the Internet.



Click the map for a larger version. If you would like more about how these maps were created please see our help page by clicking [\[here\]](#).

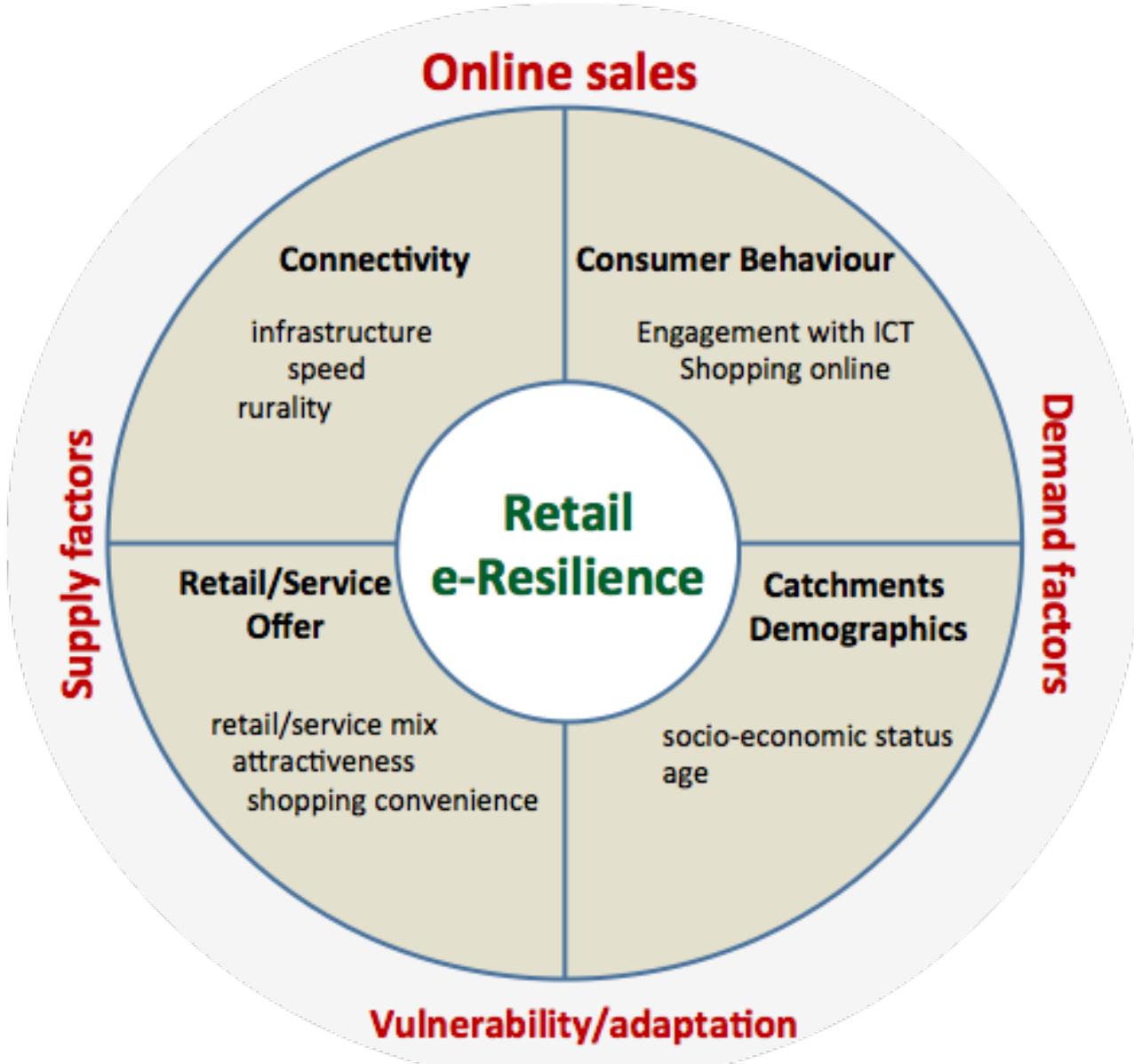
Who else is like us?

The following table shows the top 10 most similar postcode districts to "Liverpool (L18)" in terms of their technology use. Clicking the links will display a map of their location.

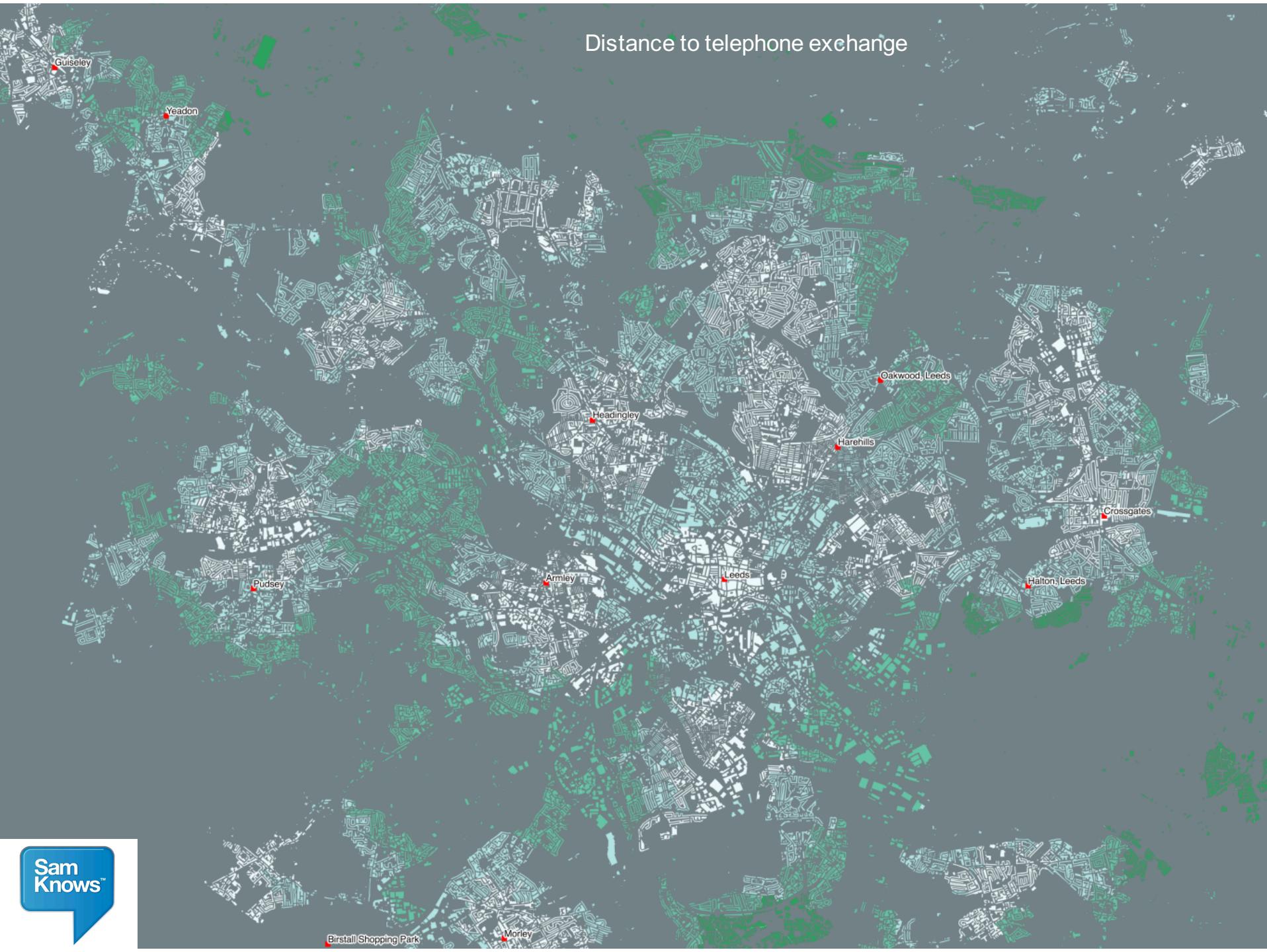
Rank	District	Town
1	EH12	Edinburgh
2	SA2	Swansea
3	GL52	Cheltenham
4	IG7	Chigwell
5	BR2	Keston
6	CT2	Canterbury
7	BR3	Beckenham
8	EH41	Haddington
9	DG1	Dumfries
10	EH4	Edinburgh

If you would like to know more about how these ranks were created please see our help page by clicking [\[here\]](#).

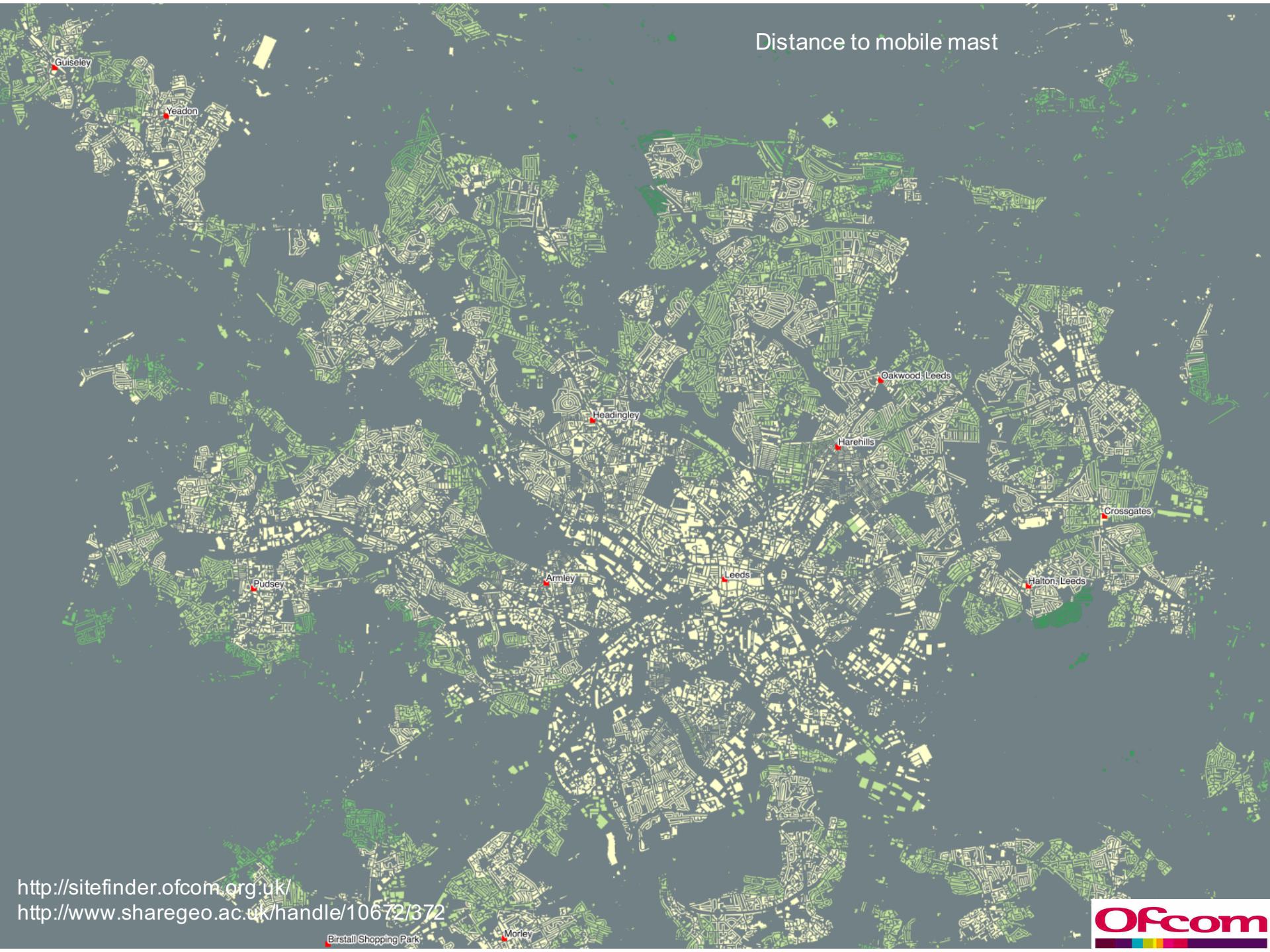
Do you agree with the E-Society classification for your postcode? If not, then please let us know what you think it should be by clicking this [\[link\]](#).



Distance to telephone exchange



Distance to mobile mast



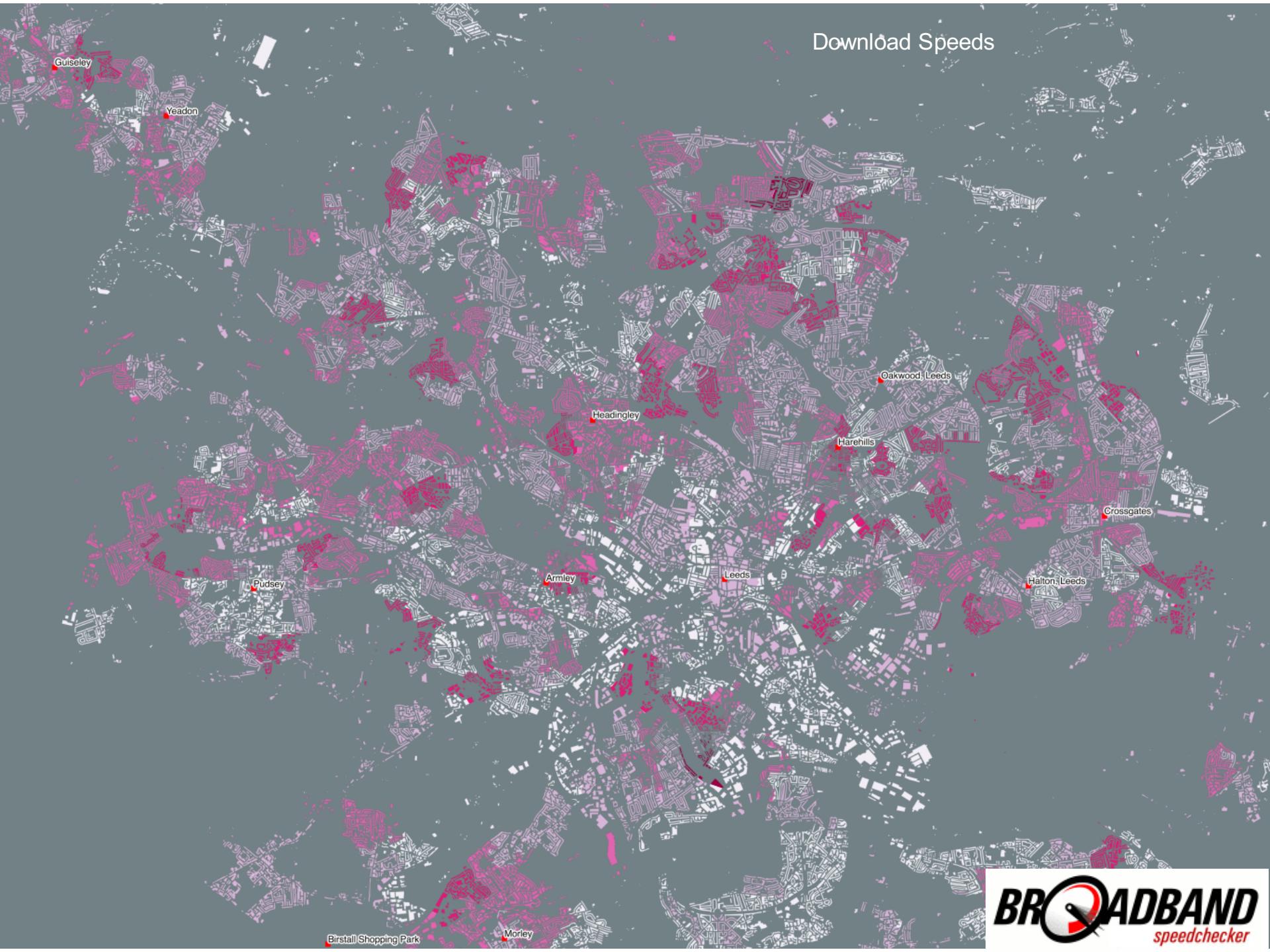
<http://sitefinder.ofcom.org.uk/>

<http://www.sharegeo.ac.uk/handle/10672/372>

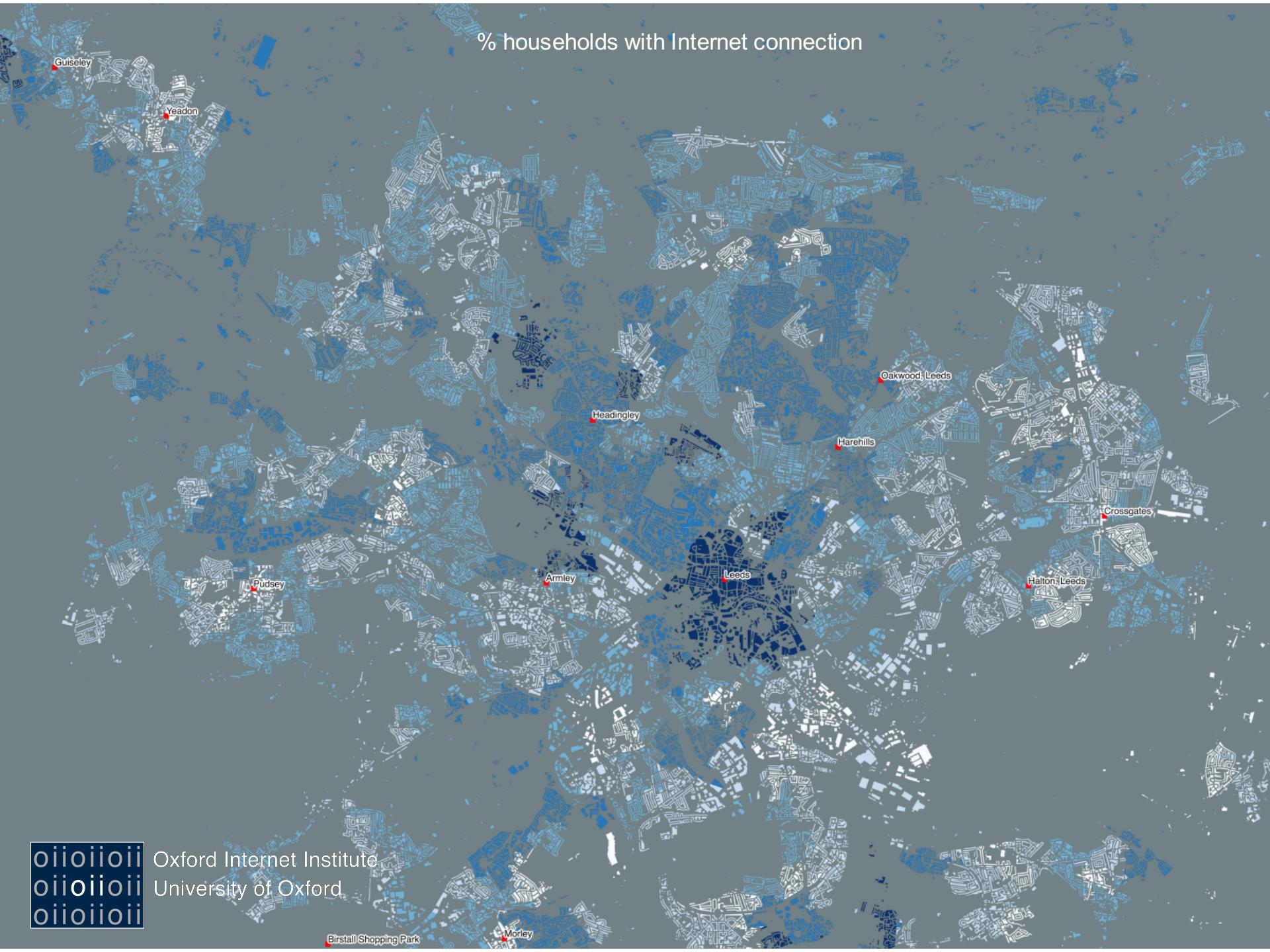
Birstall Shopping Park

Ofcom

Download Speeds

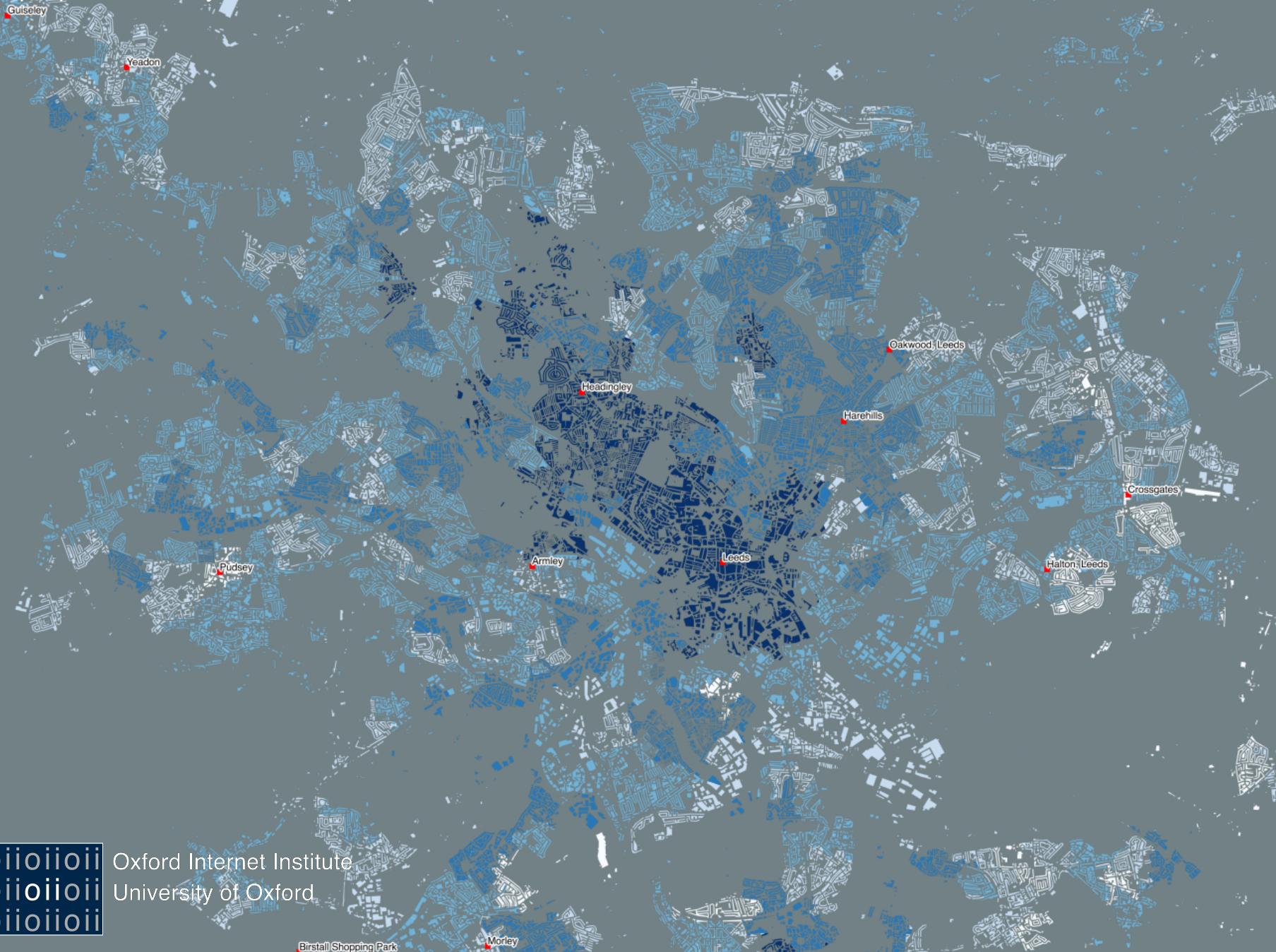


% households with Internet connection



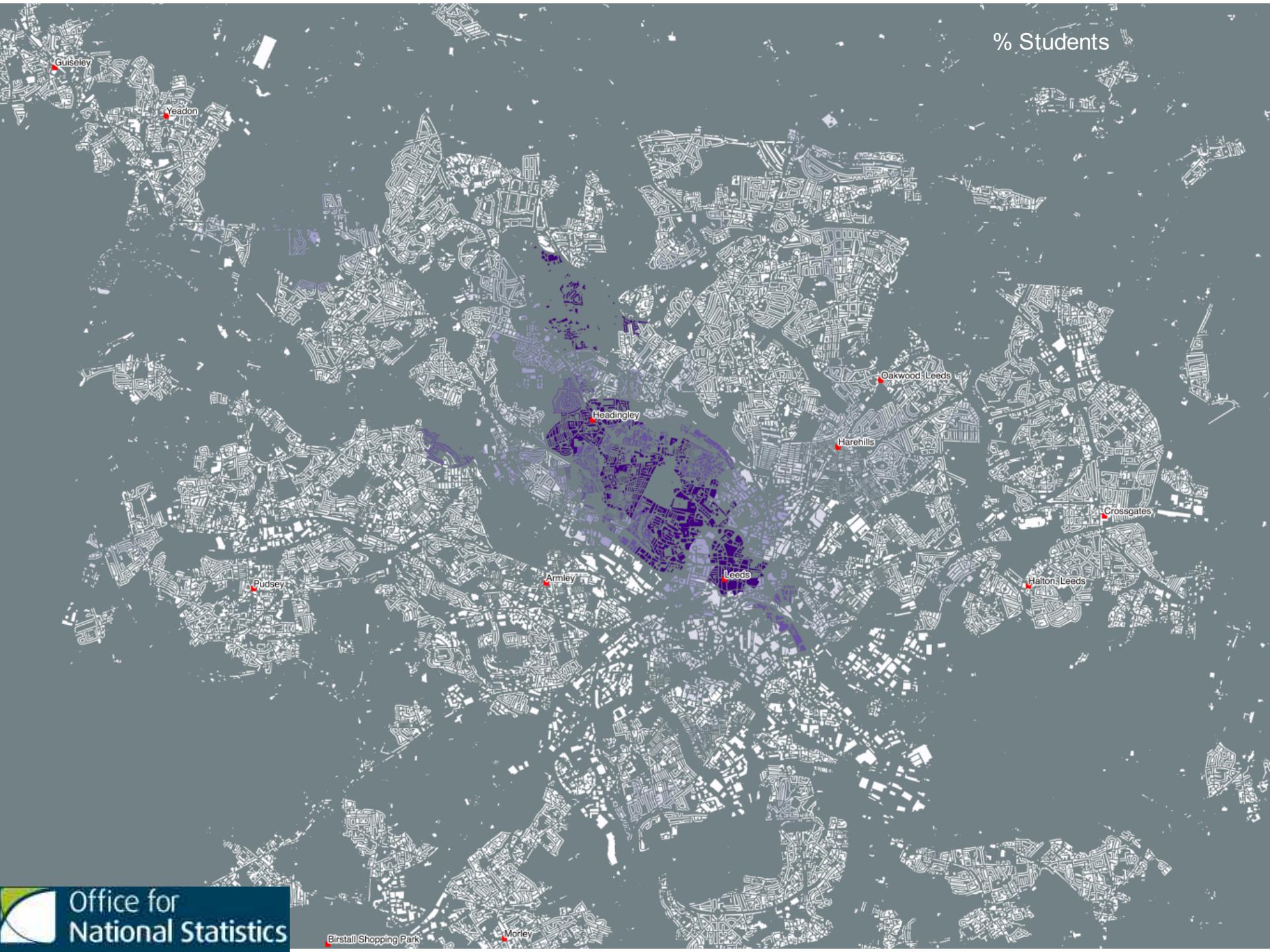
Oxford Internet Institute
University of Oxford

% of people who mostly use mobile phone for internet access

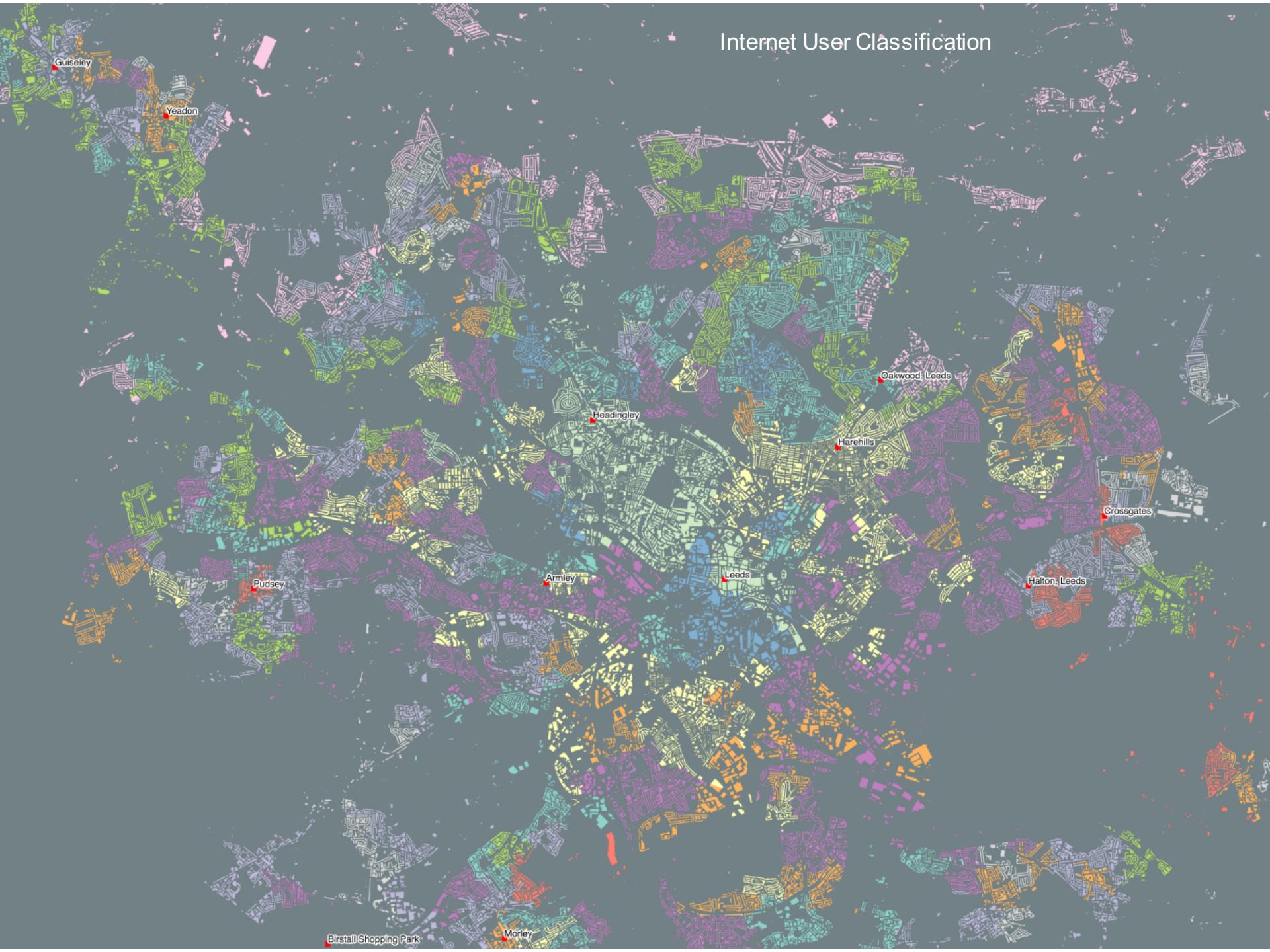


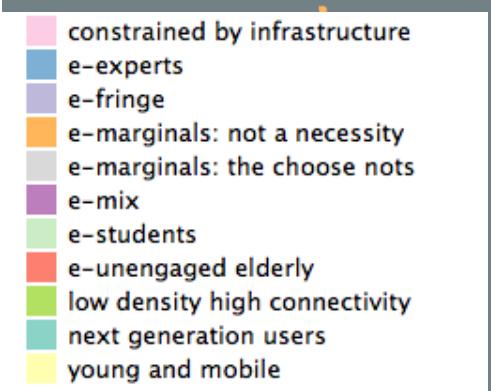
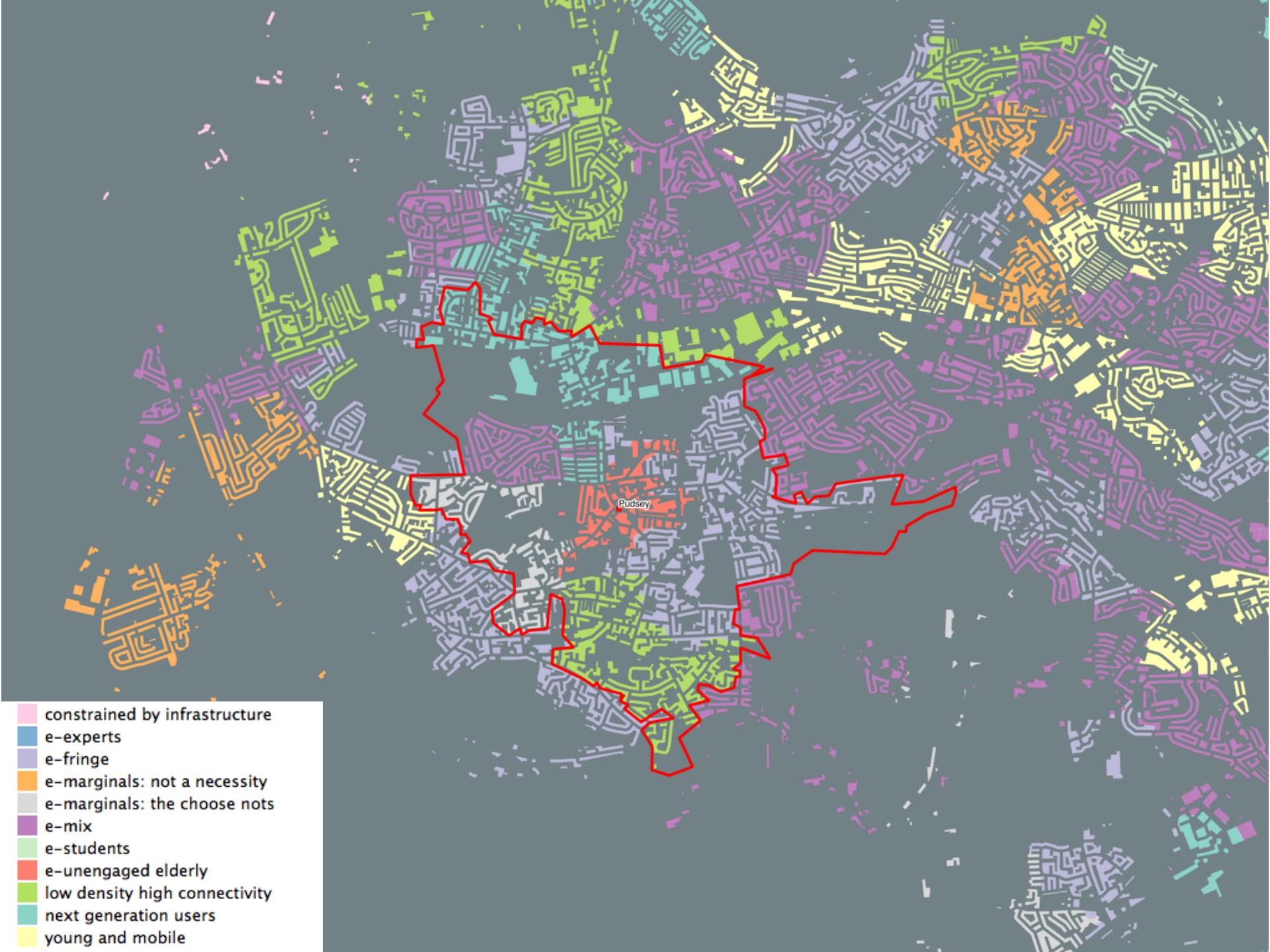
Oxford Internet Institute
University of Oxford

% Students



Internet User Classification





Better, smarter
public services



Many thanks...

