



Transforming our digital infrastructure

APPENDIX 2

**Purpose**  
*Why it's worth doing*

**Approach**  
*How we can do it*

**Application**  
*What we can do*



# ANALYZING THE EFFECT OF BROADBAND ON GDP

## A study on the socioeconomic effects of broadband speed on the economy

The world is changing. Information and Communication Technology is continuously being developed, changing how we live and creating an ICT industry that is key to supporting the fast-growing Society. Broadband is a core aspect of the Information Society, enabling increased connectivity across society, spurring innovation and collaboration. These benefits mean broadband has seen of significant interest to governments, regulators and policy makers over the past few years, and billions have been spent on ICT investments. We know that these investments have allowed countries worldwide to realize their broadband goals and increase their productivity, but what further impacts do they have? Are there specific economic benefits to faster broadband, and how can they be measured? To answer these questions, a new study has been conducted investigating the socioeconomic benefits of faster broadband, looking at various economies around the world.

This report focuses on the results of the study "Socioeconomic Effects of Broadband Speed: A Macroeconomic Investigation," conducted in 2011 about the effects of broadband speed on Gross Domestic Product (GDP). Ericsson, in collaboration with Arthur D. Little at Chalmers University of Technology, used panel data econometric methods to assess the impact of broadband speed on the global economy, using data from 33 Organisation for Economic Co-operation and Development (OECD) countries.

**Key findings**

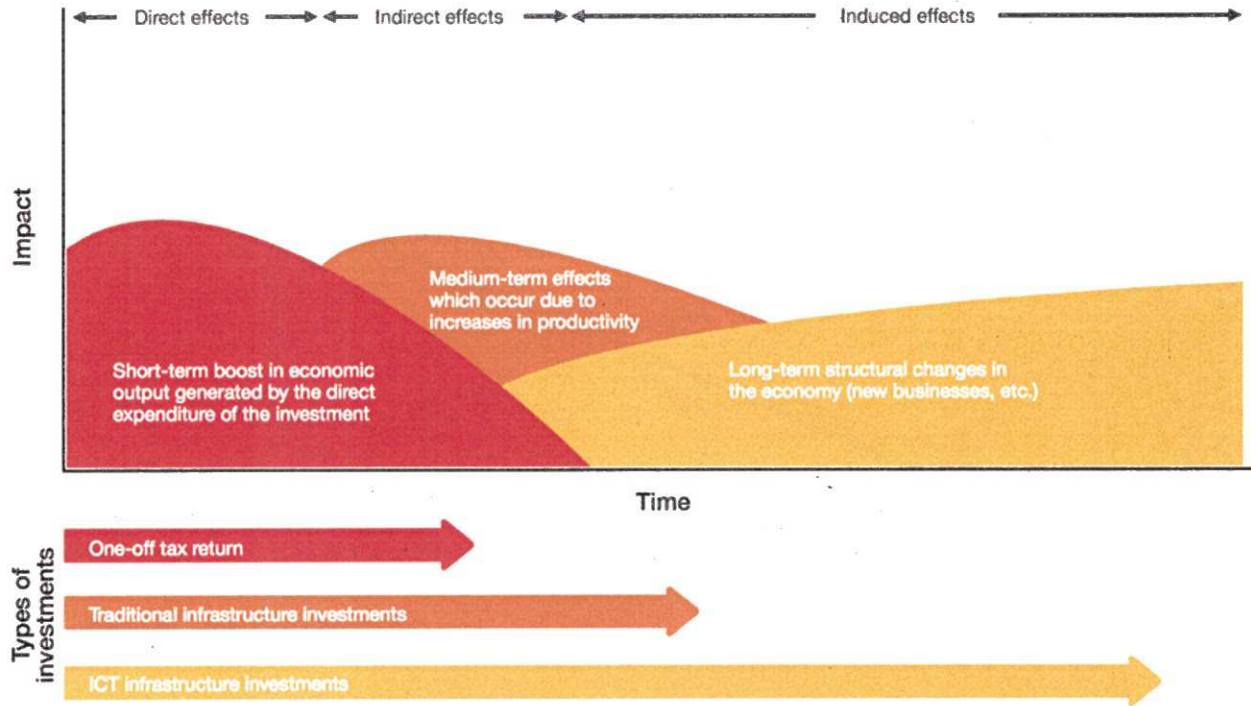
- > Doubling broadband speeds for an economy can add 0.3 percent to GDP growth, in a simulation relative to the base year 2008.
- > The benefits of faster broadband can be categorized as:
  - Economic effects, including increased innovation and productivity in business.
  - Spillover effects, including better services to workers and improved healthcare.
  - Environmental effects, including more efficient energy consumption.

**Previous research**

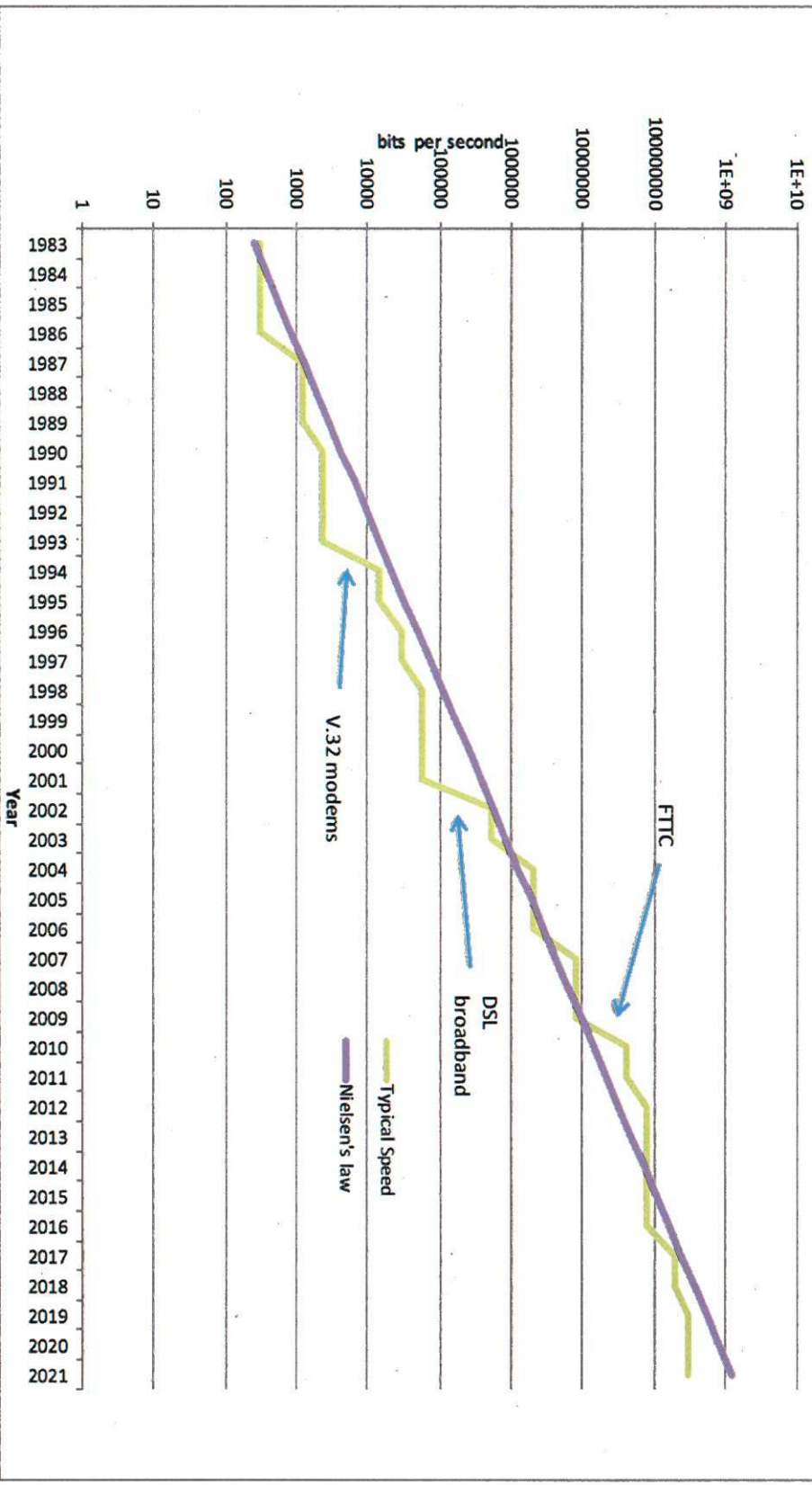
During the past few years, Ericsson and Arthur D. Little have been conducting research into the impacts of broadband speed and investments. The first study, "Socioeconomic Impact of Broadband Network Investments," was conducted in 2010. It focused on the impact of increased broadband penetration, exploring the labor global financing on the economic impact of investment in fixed and mobile broadband. The study defined in this report was conducted as a follow-up investigation to the 2010 research.

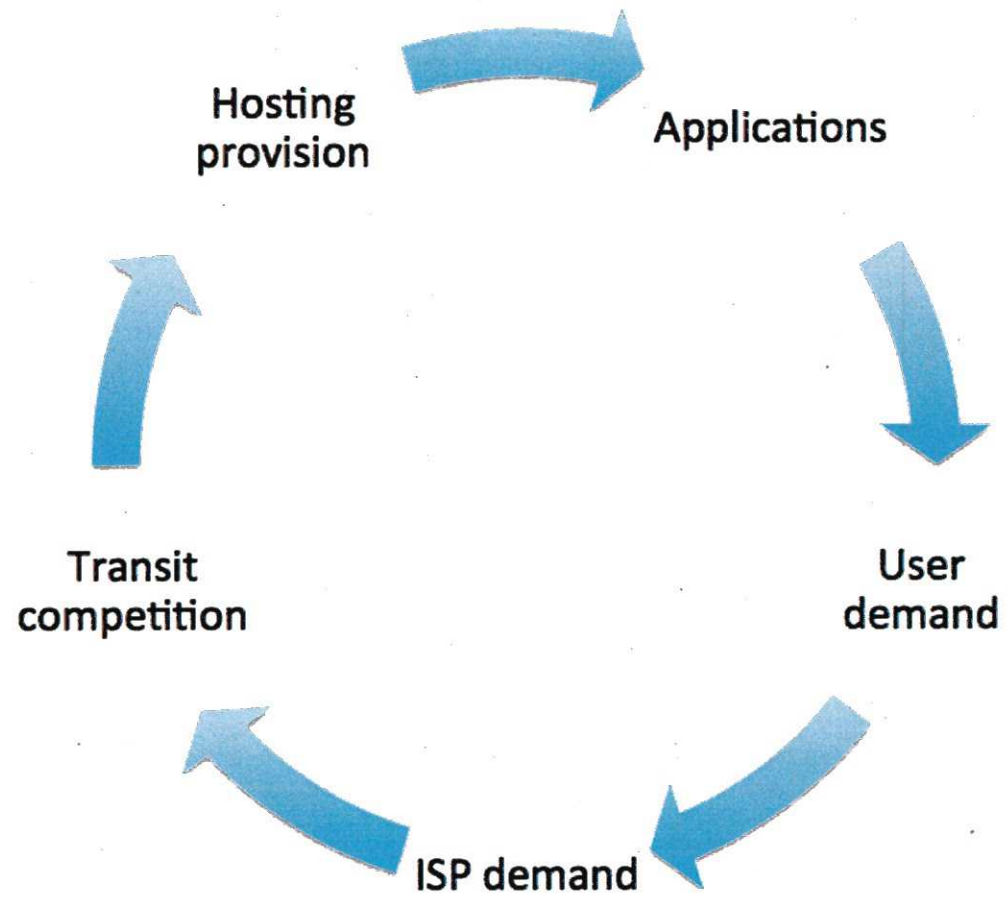
## Key findings

> Doubling broadband speeds for an economy can add 0.3 percent to GDP growth, in a simulation relative to the base year 2008

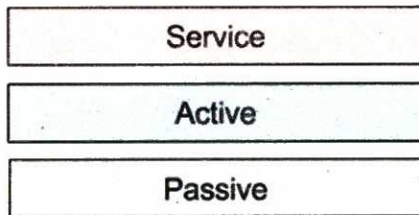


# Typical speeds (log scale)

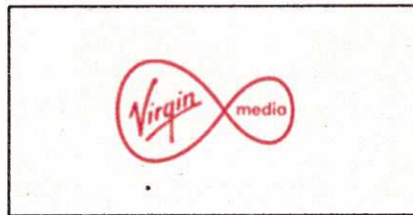




LAYER	FIXED	WIRELESS	HOSTING
Application (content)	social, websites, mobile apps, SaaS/cloud apps		
Application (network)	www, mail, voice, video, backup		
Service	Internet access (layer 3 - routers)		Virtual servers, cloud
Active	Point to point (layer 2 - switches)		Servers
Passive/base	Fibre	Antennae	Racks, power, cooling
Physical/property	Ducts and poles	Masts	Data rooms



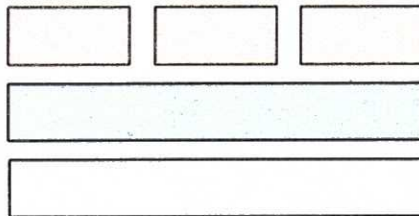
Three layer model



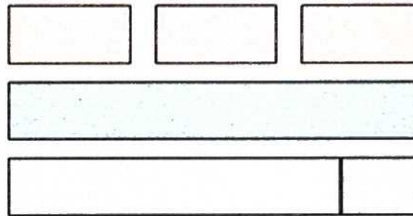
Vertical integration



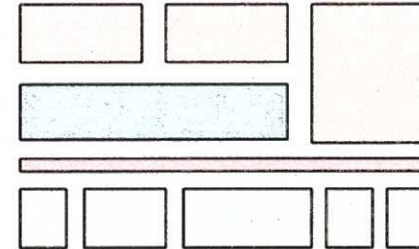
Active wholesale



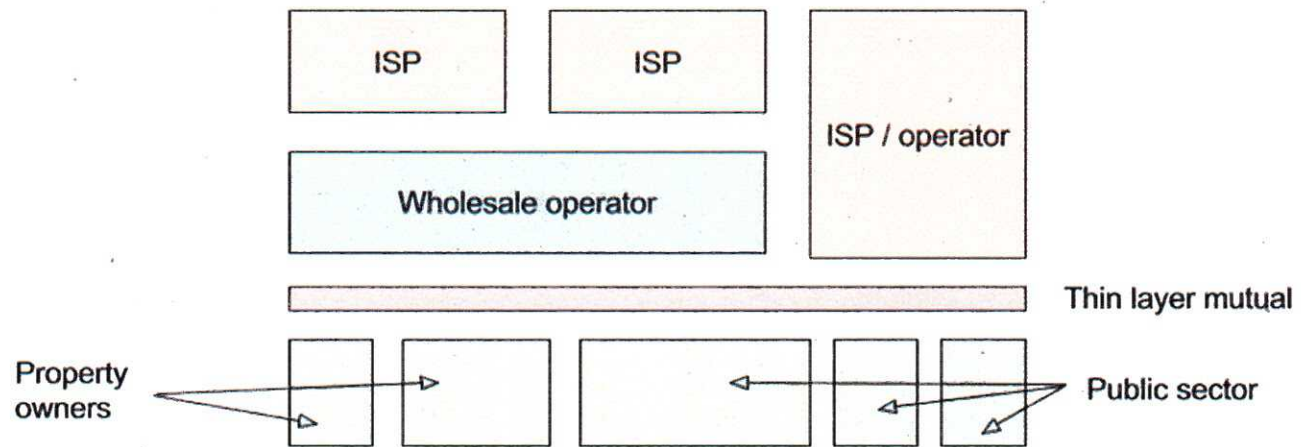
Separate passive owner and active operator (eg Amsterdam)



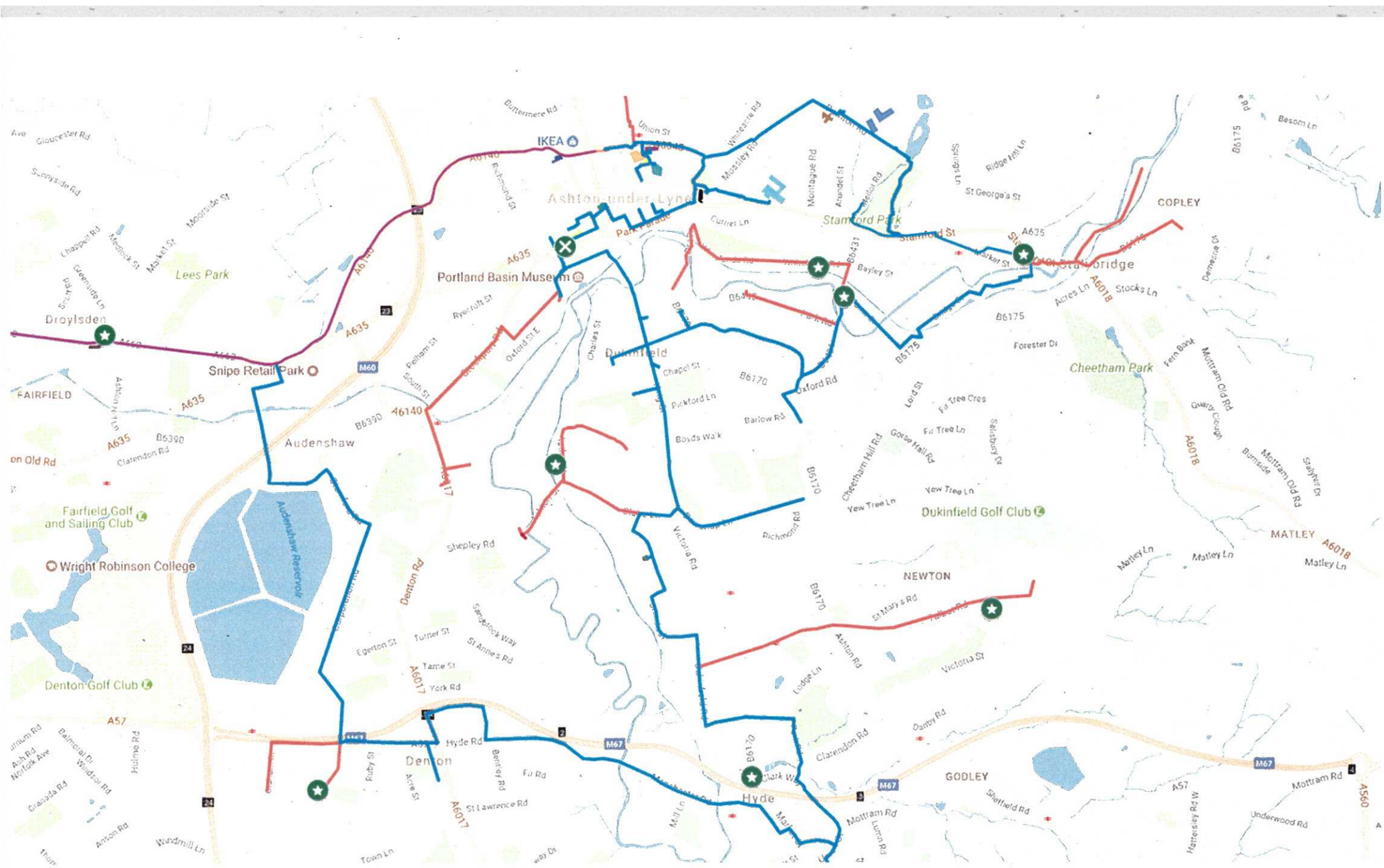
Separate in-building (eg Stockab)



Thin layer model







Ashton-under-Lyne

Lees Park

Portland Basin Museum

Stamford Park

Cheetham Park

Audenshaw

Wright Robinson College

Dukinfield Golf Club

Denton Golf Club

NEWTON

Denton

Hyde

GODLEY

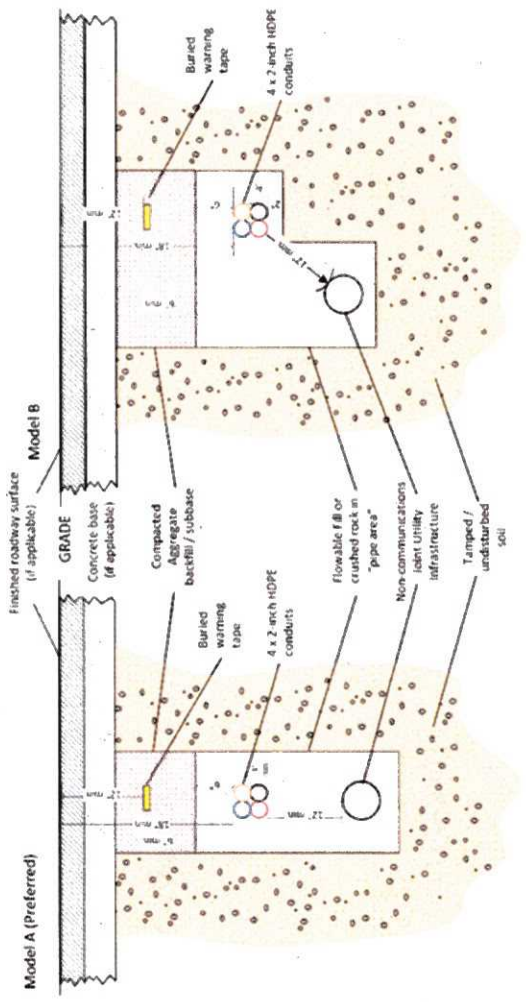
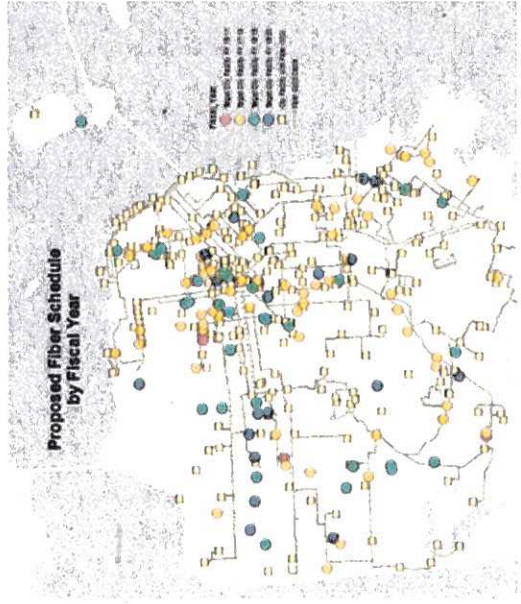
COPLEY

Stambridge

MATLEY

LAYER	FIXED	WIRELESS	HOSTING
Application (services)	social, websites, mobile apps, SaaS/cloud apps		
Application (network)	www, mail, voice, video, backup		
Network	Internet access (layer 3 - routers)		Virtual servers, cloud
Active	Point to point (layer 2 - switches)		Servers
Passive/Data	Fibre	Antennae	Racks, power, cooling
Physical/property	Ducts and poles	Masts	Data rooms





**Local authority assets**

duct, CCTV duct, data rooms, business accommodation, furniture (5G)

**Transport infrastructure assets**

rail-side duct/trough, UTC

**Local authority demand**

point to point, WAN, data room, DR

**Other public sector (NHS, HEI, RSL) asset**

data rooms, duct

**Other public sector demand**

point to point, WAN, data room, DR

**Dig once**

Developments, transport infrastructure upgrades

**Aggregated demand**

Vouchers, business parks, community investment

