

Presentation of study results

# Broadband acceleration study part 2: methodology and supporting findings

2 February 2016 • Matt Yardley, Ian Adkins, Andrew Daly

Funded by the EBRD Shareholder Special Fund



**European Bank**  
for Reconstruction and Development

# Contents

---

Our approach

Forecasting demand

Network scenario modelling

Socio-economic benefit

Results to conclusions

## Our approach

Forecasting demand

Network scenario modelling

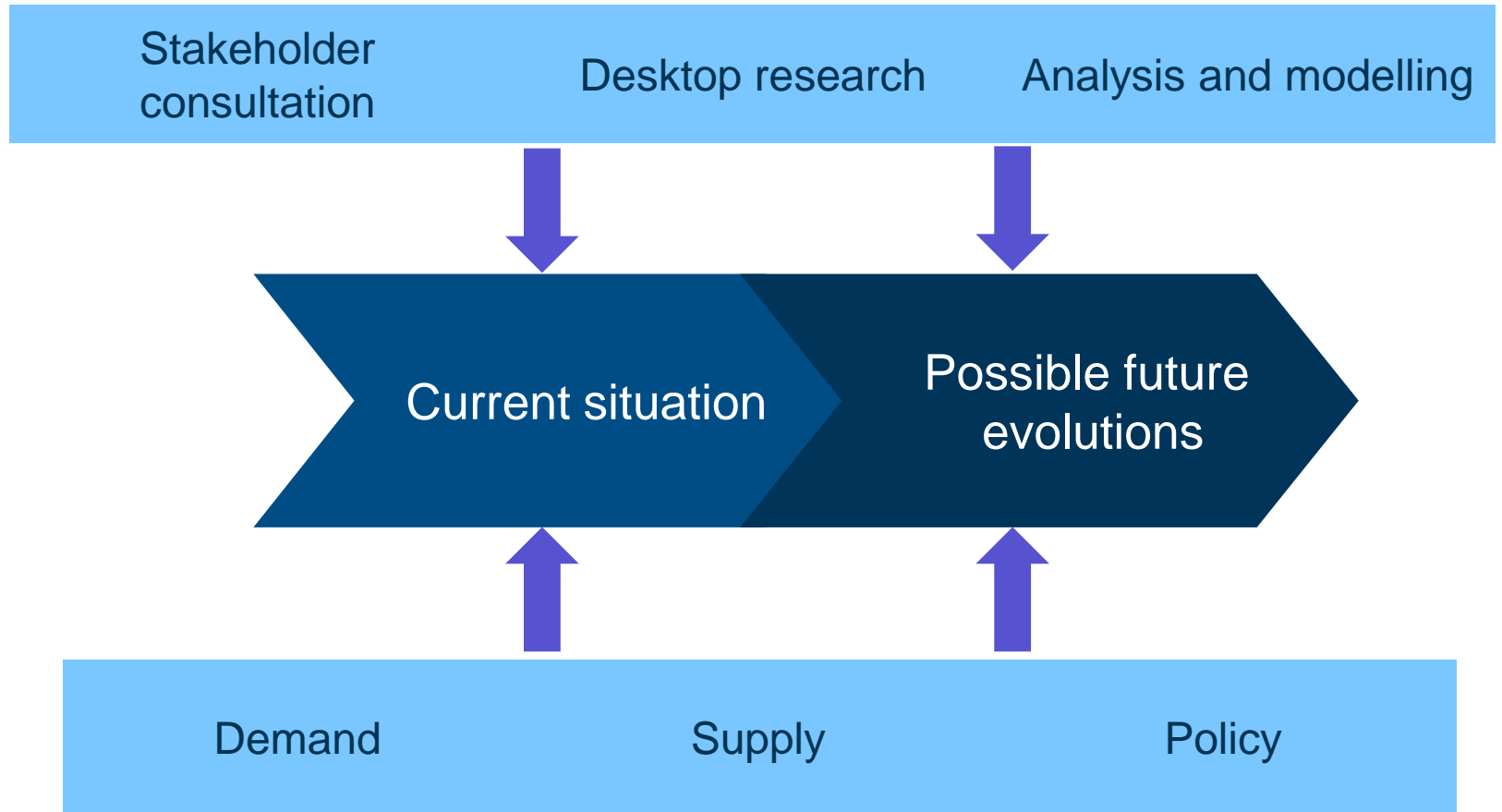
Socio-economic benefit

Results to conclusions

# We would like to thank the wide range of stakeholders who provided input to the study

- Chamber of Commerce (CoC)
- Commission for the Protection of Competition (CPC)
- Cyprus Consumers Association (CCA)
- Department for Electronic Communications (DEC)
- Department of Information Technology Services (DITS)
- Electricity Authority of Cyprus (EAC)
- European Commission (EC)
- Operators:
  - Cablenet
  - Cyta
  - Hellas-Sat
  - MTN
  - Primetel
- Municipalities:
  - Idalion
  - Limassol
  - Strovolos
  - Union of Cyprus Communities

# We undertook a structured approach



We were supported by Shepherd and Wedderburn and Dr. K. Chrysostomides & Co LLC

# Our modelling work was designed to explore the wide range of options available to Cyprus

## Modelling aspect

## Aims of our approach

Demand forecast

- Bound a range of sensible outcomes to manage uncertainty
- Create a “do nothing” forecast based on demand drivers

Network scenarios

- Analyse different technologies and forms of competition
- Consider the commercial viability of nationwide coverage

Socio-economic benefit

- Consider the socio-economic benefit of NGA for Cyprus
- Create comparisons between scenarios

Our approach

**Forecasting demand**

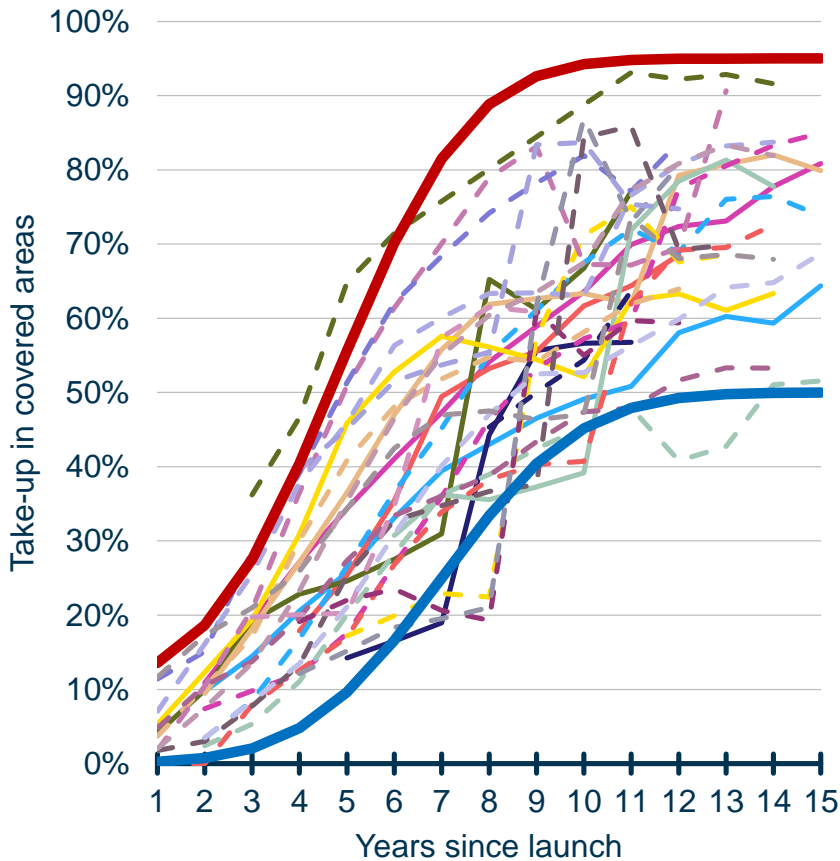
Network scenario modelling

Socio-economic benefit

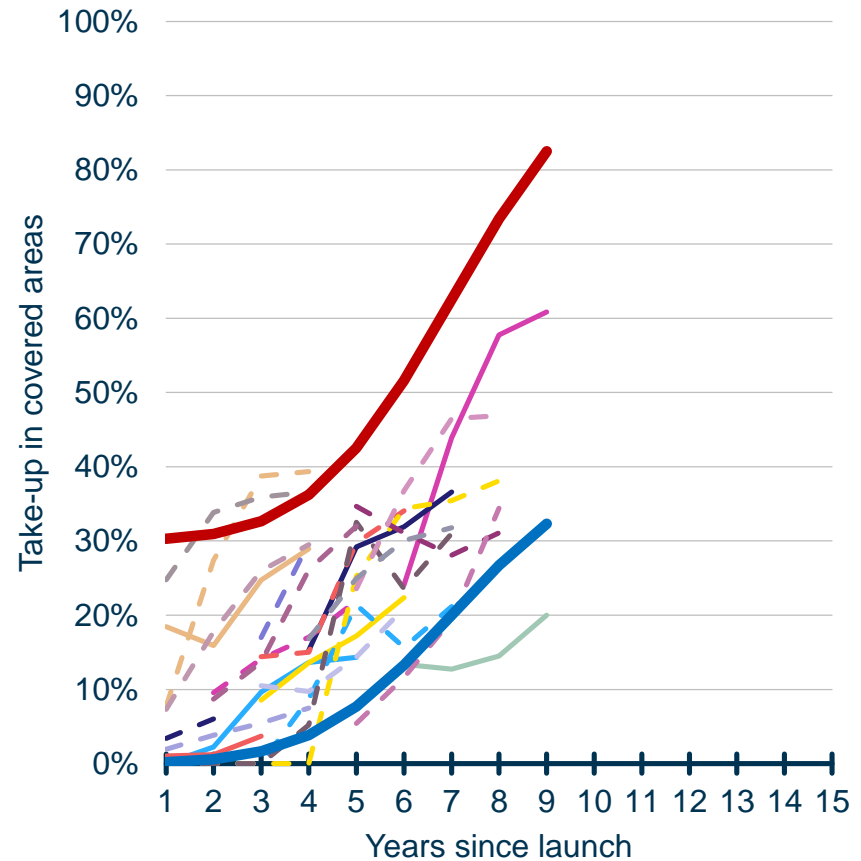
Results to conclusions

# We considered the historical take-up of current- and next-generation broadband across Europe

## First-generation broadband



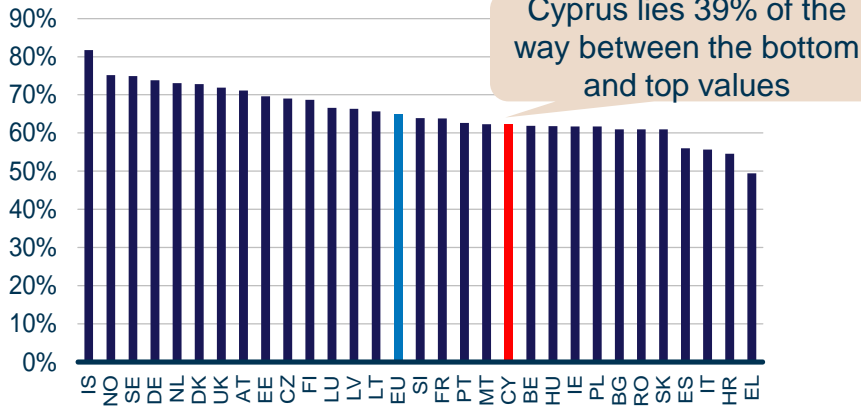
## Next-generation broadband



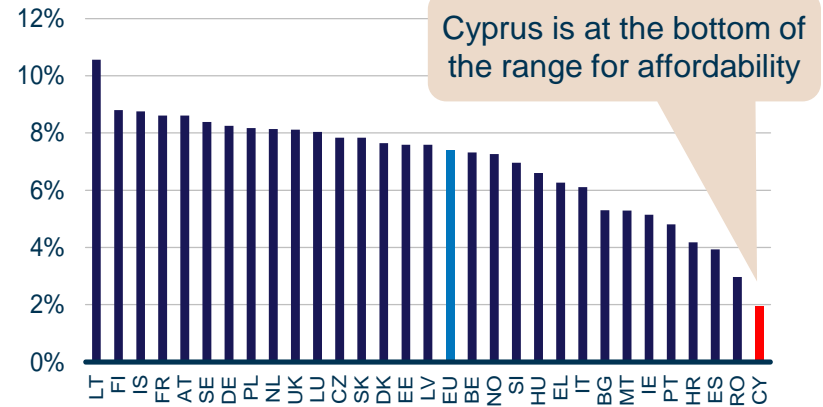


# We ranked Cyprus against other countries for drivers showing some correlation with demand

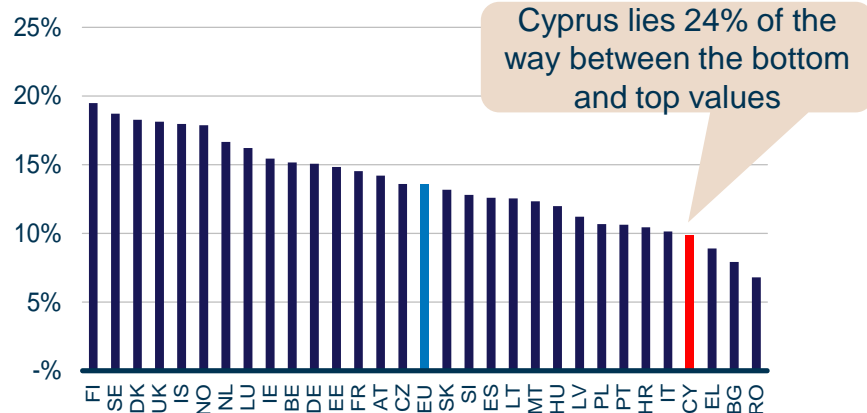
Employment rate



Affordability

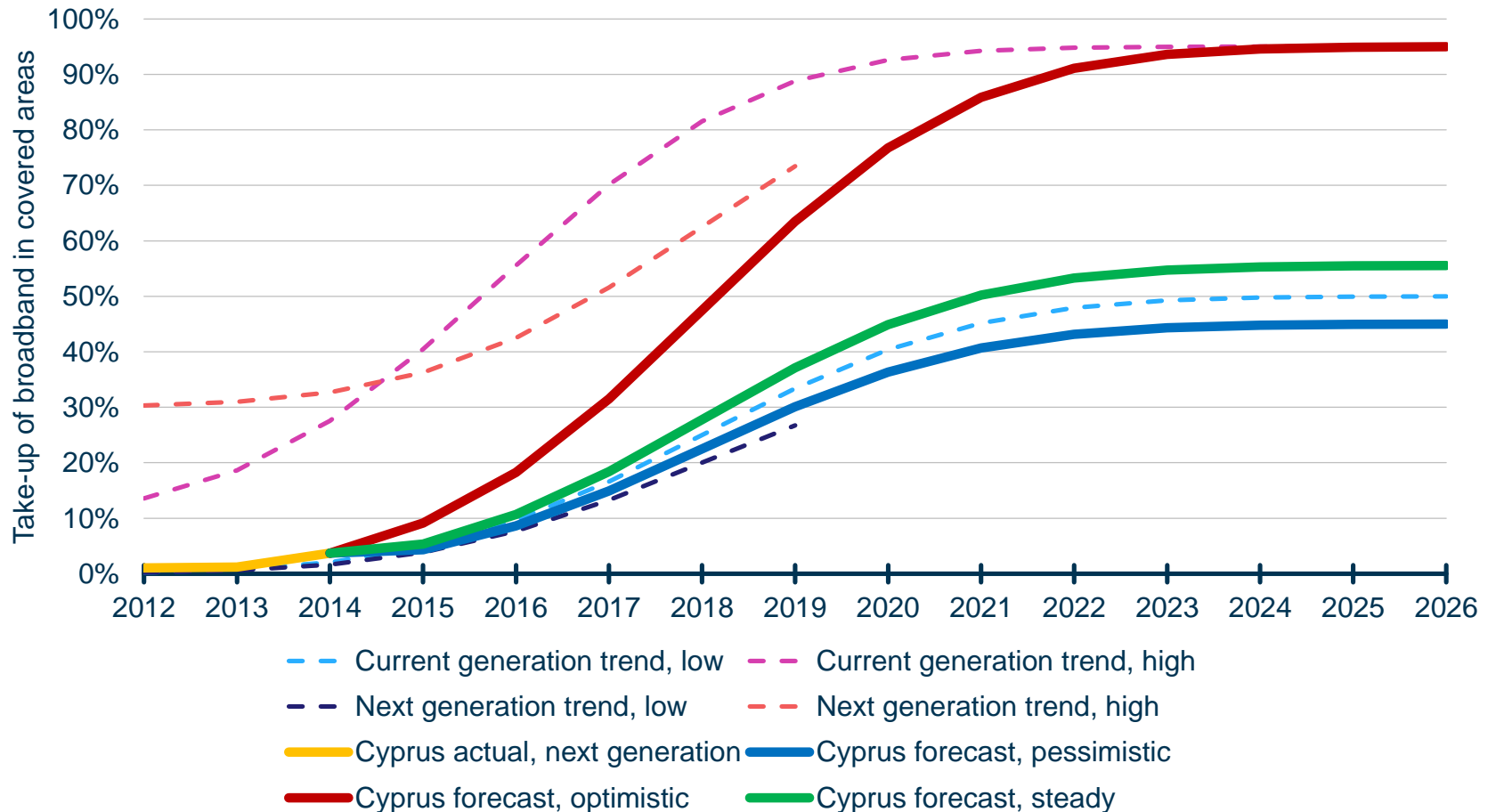


DESI human capital (digital skills)



# We used the demand driver analysis to guide where Cyprus could end up in the forecast range

## Forecast of NGA take-up in covered areas



Our approach

Forecasting demand

**Network scenario modelling**

Socio-economic benefit

Results to conclusions

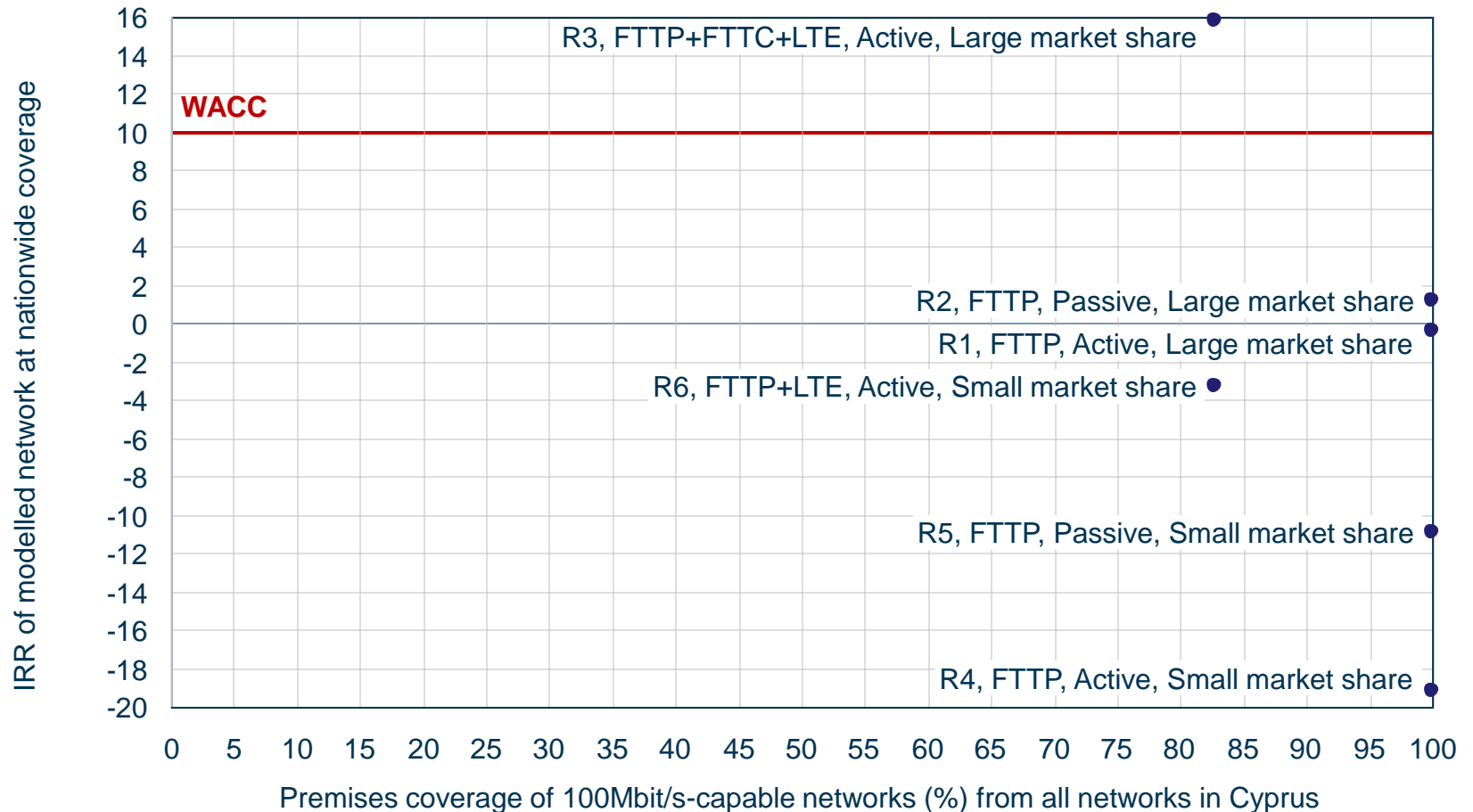
# We defined a list of six scenarios for detailed study, chosen from a longer list

## Summary of “revised” scenarios used for detailed study

Scenario	Technology for national network	Wholesale method	Long-term wholesale market share
R1	FTTP-GPON	Active only	65%
R2	FTTP-PTP	Passive and active	76%
R3	FTTP-GPON, FTTC-VDSL, LTE	Active only	65%
R4	FTTP-GPON	Active only	16%
R5	FTTP-PTP	Passive and active	33%
R6	FTTP-GPON, LTE	Active only	16%

# Our demand forecast and cost models combine to show viability against 100Mbit/s coverage

## Comparison of viability of national network and 100Mbit/s coverage



Our approach

Forecasting demand

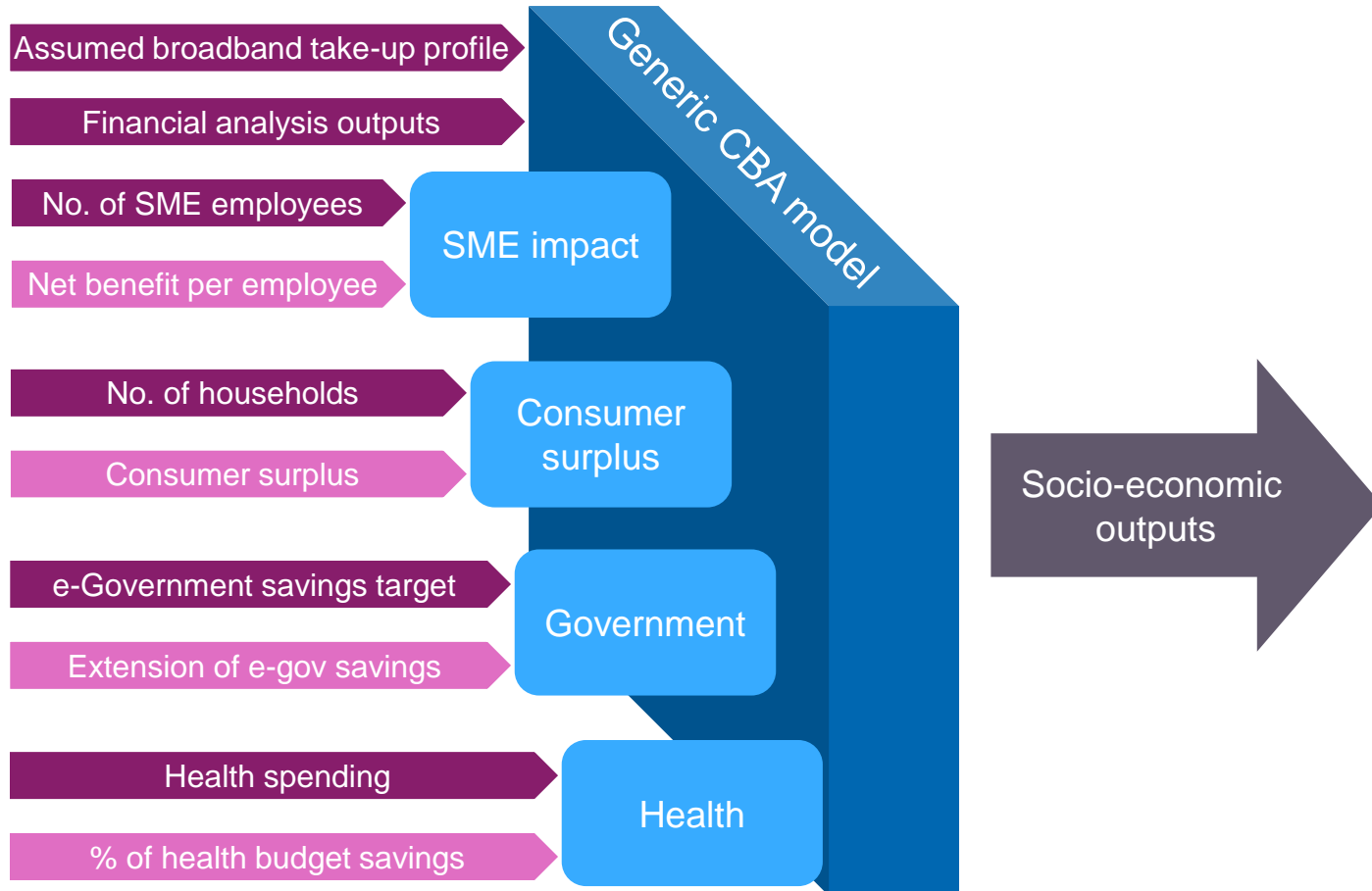
Network scenario modelling

**Socio-economic benefit**

Results to conclusions

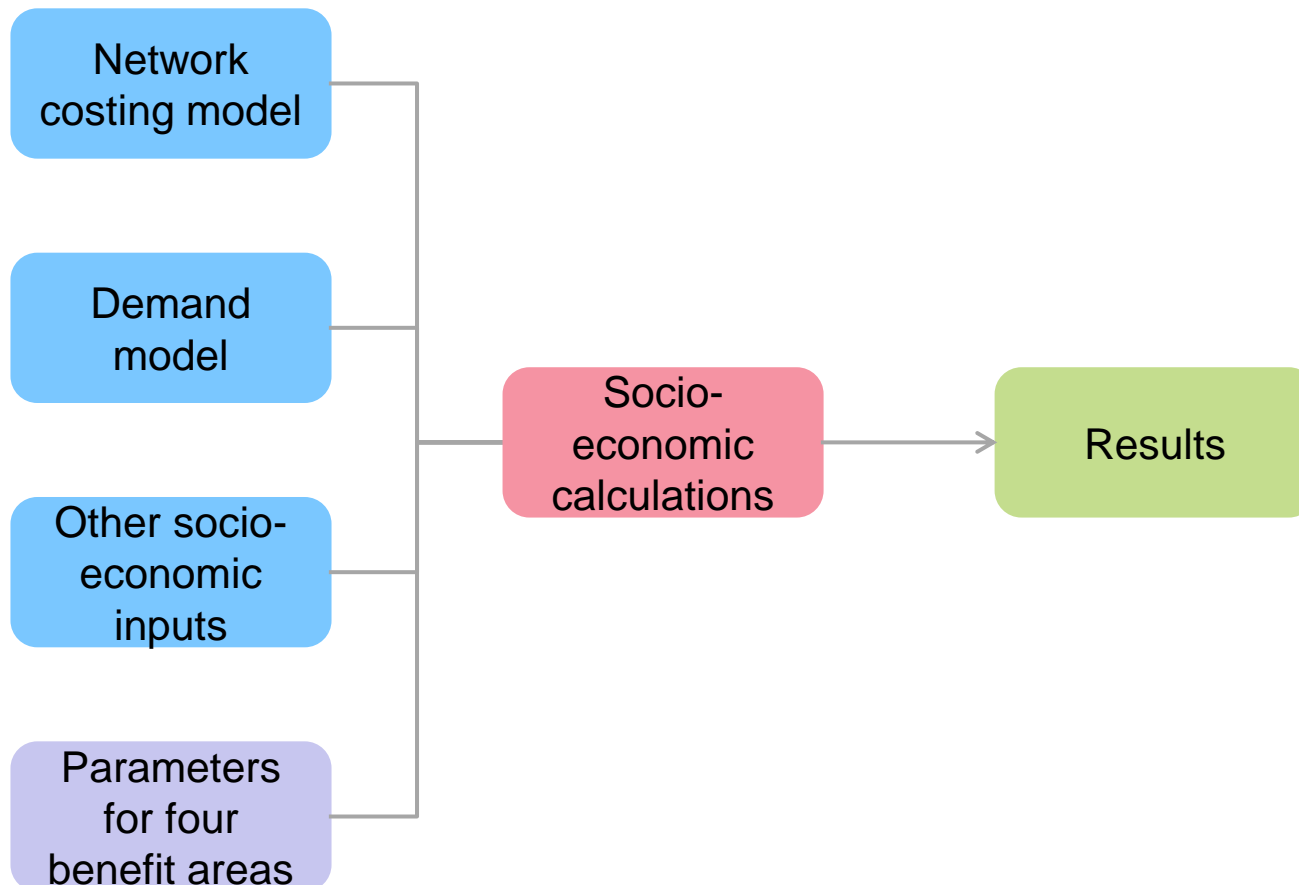
# We used a framework agreed with the EIB which considers four areas of socio-economic benefit

## Overview of approach to estimating socio-economic benefit



# Where possible we used Cyprus-specific inputs, including the outputs from our other models

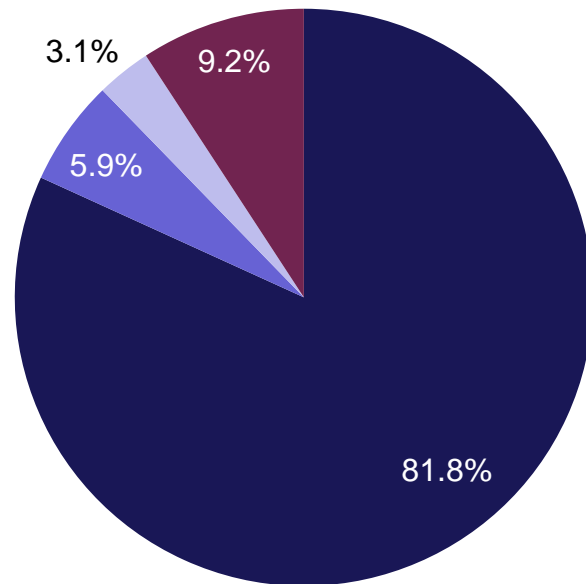
## Summary of socio-economic benefits model flow





# Most of the benefit is derived from SMEs, with the mixed-technology option offering good value

Proportion of benefits, scenario R3



- Business employee benefits
- Household consumer surplus
- e-Government savings
- Tele-health care benefits

Benefit–cost ratio by scenario

Scenario	Benefit–cost ratio
R1	2.58
R2	2.74
R3	3.89
R4	1.07
R5	1.59
R6	2.15

Our approach

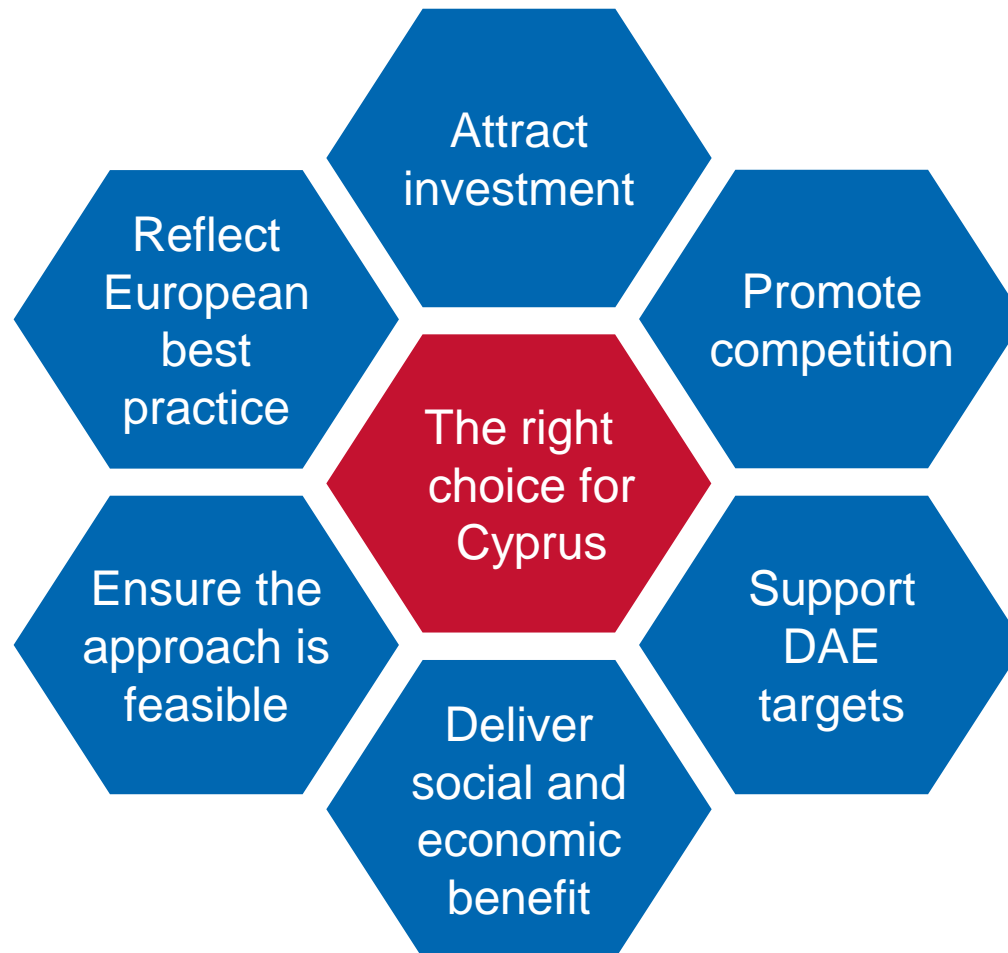
Forecasting demand

Network scenario modelling

Socio-economic benefit

**Results to conclusions**

# In making our recommendation, we considered the detailed aims of the project



# Our quantitative modelling was combined with qualitative assessments to compare scenarios

← *Decision criteria* →

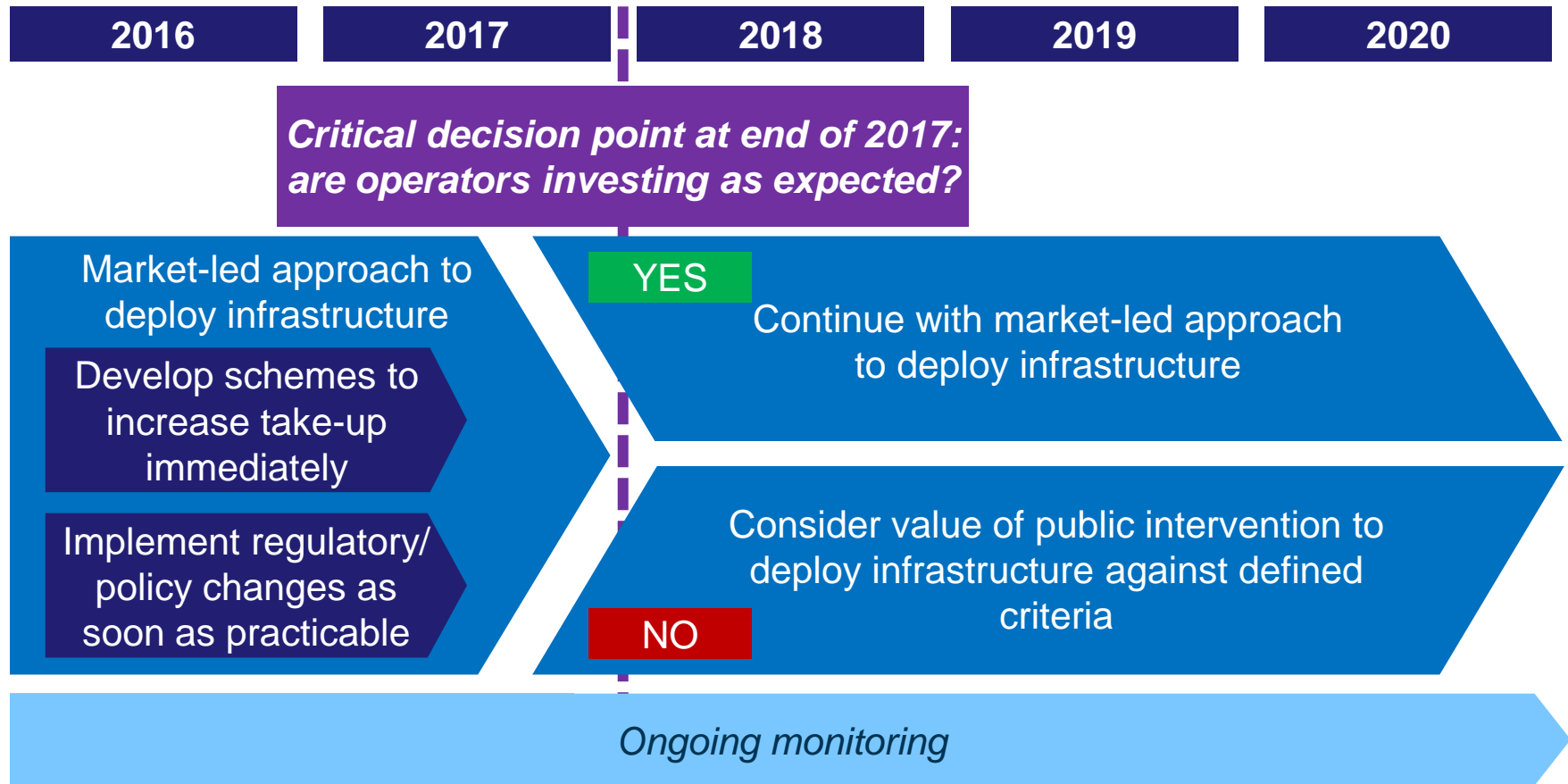
Network and competition scenarios

Scenario	Attracting investment	Encouraging competition	100Mbit/s availability	Socio-economic benefit-cost ratio	State-aid implications
R1 (FTTP, active, large market share)	-0.4% IRR	Active only	Full coverage by 2020	2.58	Moderate implications
R2 (FTTP, passive, large market share)	1.2% IRR	Passive and active options	Full coverage by 2020	2.74	Moderate implications
R3 (FTTP, FTTC, LTE, active, large market share)	15.8% IRR	Active only	Partial coverage by 2020	3.89	Minimal implications
R4 (FTTP, active, small market share)	-19.2% IRR	Active only	Full coverage by 2020	1.07	Significant implications
R5 (FTTP, passive, small market share)	-10.9% IRR	Passive and active options	Full coverage by 2020	1.59	Significant implications'
R6 (FTTP, LTE, active, small market share)	-3.2% IRR	Active only	Partial coverage by 2020	2.15	Significant implications

This scenario involves a cost-effective mix of technologies offering good broadband speeds, but falls short of the 2020 targets (though they would likely be met in future years)

**Key:**  
Green = good  
Amber = fair  
Red = poor

# We aim to secure the benefits of market-led mixed technology networks, with a review by end-2017



Market-led approach to deploy infrastructure

Develop schemes to increase take-up immediately

Implement regulatory/policy changes as soon as practicable

# Thank you for your attention

---

**Ian Adkins**

**Andrew Daly**

Analysys Mason Limited  
Bush House, North West Wing  
Aldwych, London WC2B 4PJ, UK  
Tel: +44 (0)20 7395 9000  
[www.analysysmason.com](http://www.analysysmason.com)