THE BENEFITS OF FIBER BROADBAND FOR THE REAL-ESTATE MARKET

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In assistance to

Fibre to the Home Council **Europe**

Purpose and Methodology

• The benefits of FTTH/B to real-estate players and individual home owners have long been theorized, but there is a distinct lack of primary research material expressing these benefits from the real-estate players themselves.

• The FTTH Council Europe commissioned this study to get the message back from those real-estate players who have direct experience with FTTH/B to real-estate players considering broadband solutions and network providers negociating with real-estate players.

• The methodology of this study was as follows:
   • Direct interviews with 8 real-estate companies in France, Netherlands, Sweden and the UK;
   • Analysis of existing regulation in EU countries for broadband obligations in new buildings.

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Interviews

Utility for Developers or Housing Companies

IFNL (UK)
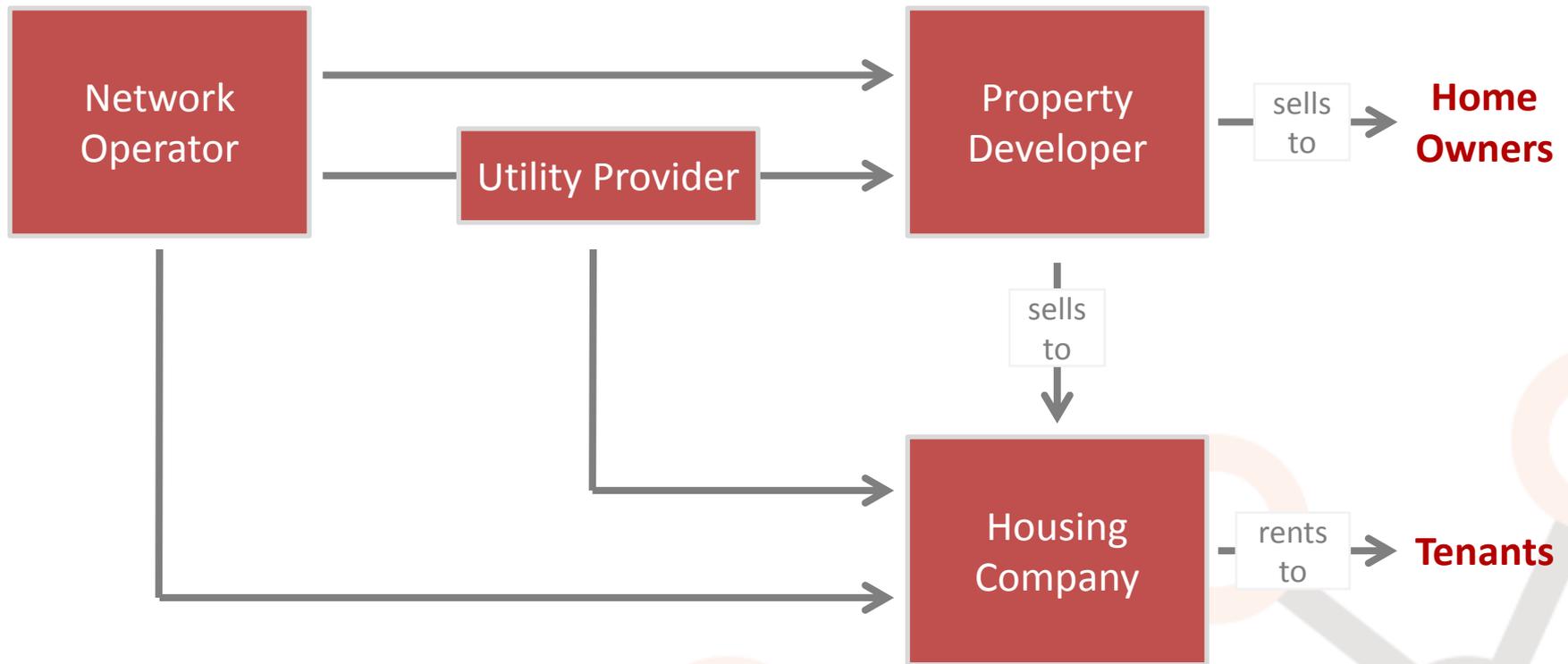Vatterfall (DE)

Developers

PFC2 (NL)
WWHC (UK)

Housing Companies

Svenska Böstader (SE)
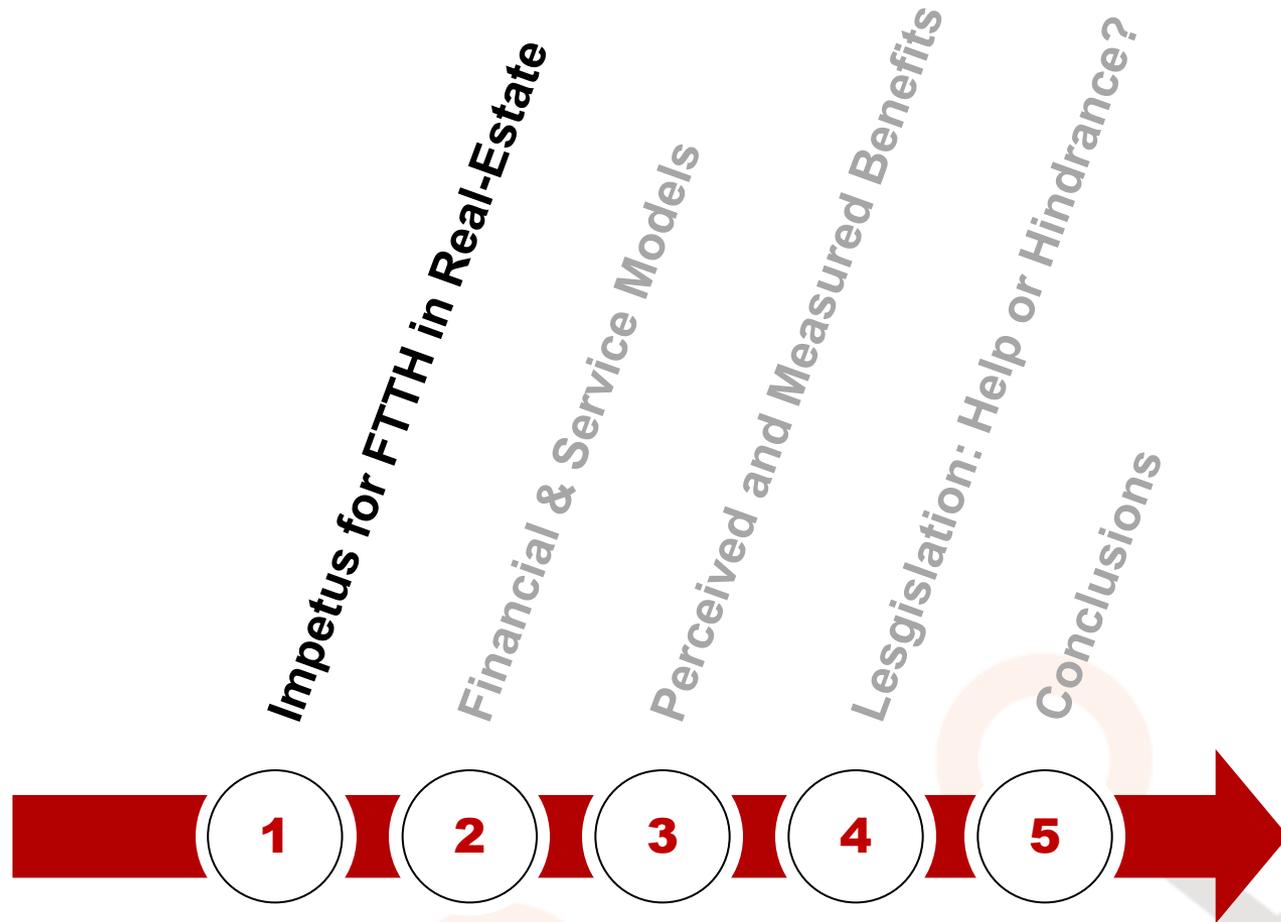SABO (SE)
UFH (France)
Eindhoven Social
Housing (NL)

Building Management Companies

Prices Court (UK)

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Mapping the Real-Estate Relationships

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Who takes the initiative for Real-Estate FTTH /B?

- The initiative for FTTH/B in real-estate can come from any of the players in the ecosystem (except the end-users, obviously) depending on the circumstances

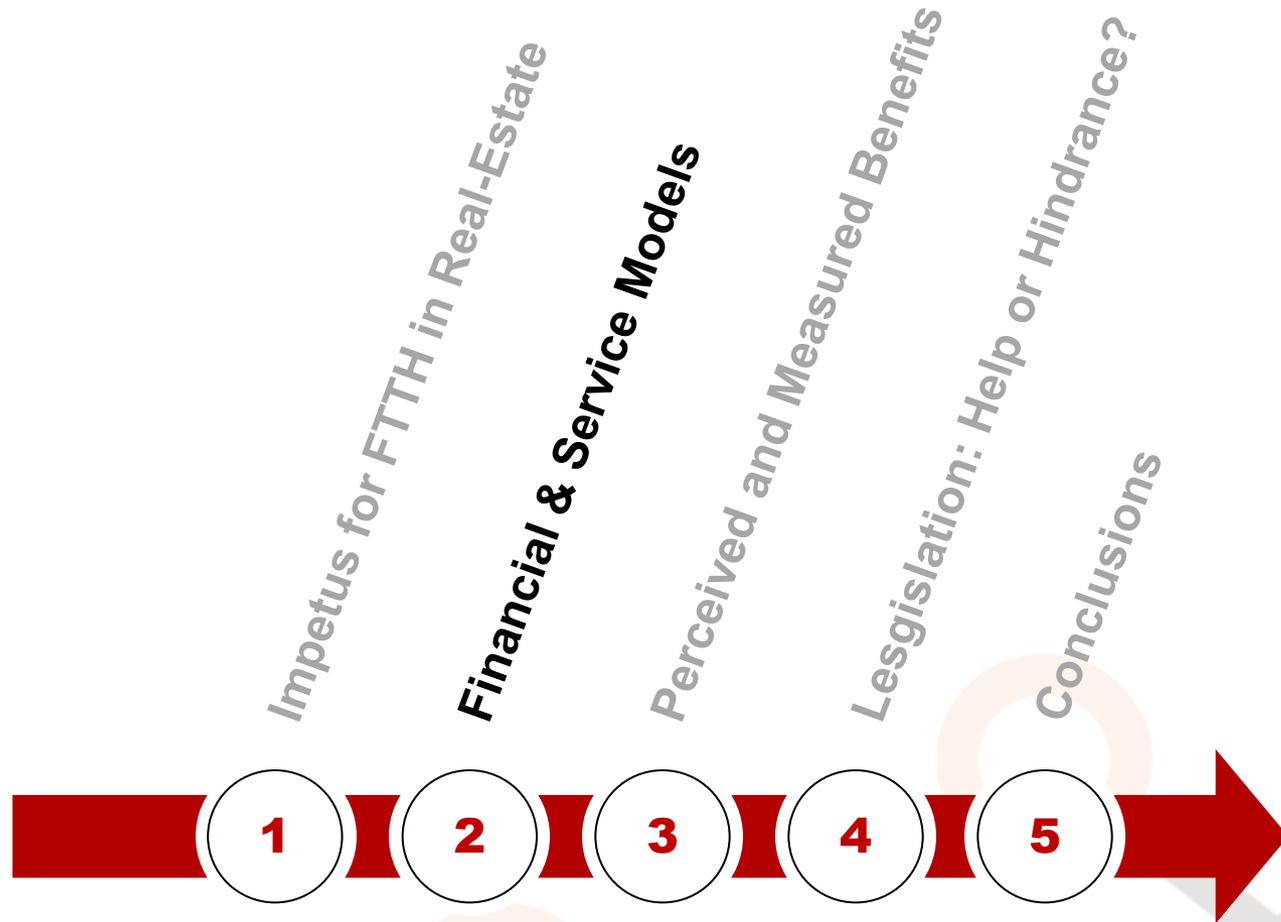| Operator	Developer	Housing Company
Operator signs a framework contract with developer for all new properties Operator signs a contract with utility wholesaler to access properties Operator approaches housing companies or building management companies to contract for a specific building	Developer contracts with an operator to connect all new properties Developer contracts with a utility company for neutral provision of all utilities including communications	Contracts to neutral operator for network services to all dwellings Contracts to exclusive operator for network services to all dwellings

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Issues of Scale

• The typical scale of real-estate driven FTTH/B deployment is between 2000 to 50 000 homes (aggregated accross locations)

• Sometimes, despite willingness and impulse from real-estate players it's complicated for projects to take off because of the comparatively small scale of said projects.

• The business of network operators and service providers is a scale game. Scale is both an issue of size and an issues of geographical concentration.

• **IFNL:** « *In order to attract service providers to the developments we serve, we have to provide an end-to-end access and aggregation wholesale service so that the 4000 homes we currently serve are seen as a single project by them.* »

• **Vattenfall**: « Our current project is too small for national broadband players to serve keenly. If they participate, it's not in a very active way. »

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Who pays to deploy, who earns from it?

- Deploying the FTTH infrastructure can be costly
  - for all brownfield projects.
  - for greenfield projects where it's an overlay to copper
  - for greenfield projects where it's the sole communication network, it's not more expensive
  - **IFNL**: « Where we have no obligation to deploy copper, it's actually significantly cheaper. »

- The financial models that emerge are the result of negociated approaches between the players are hand. Key questions in the financial models are:
  - who pays for the network deployment?
  - who owns the infrastructure deployed?
  - who earns revenues from end-users?

- Most models are fairly simple with a single party investing and earning, but some are quite a bit more complex.
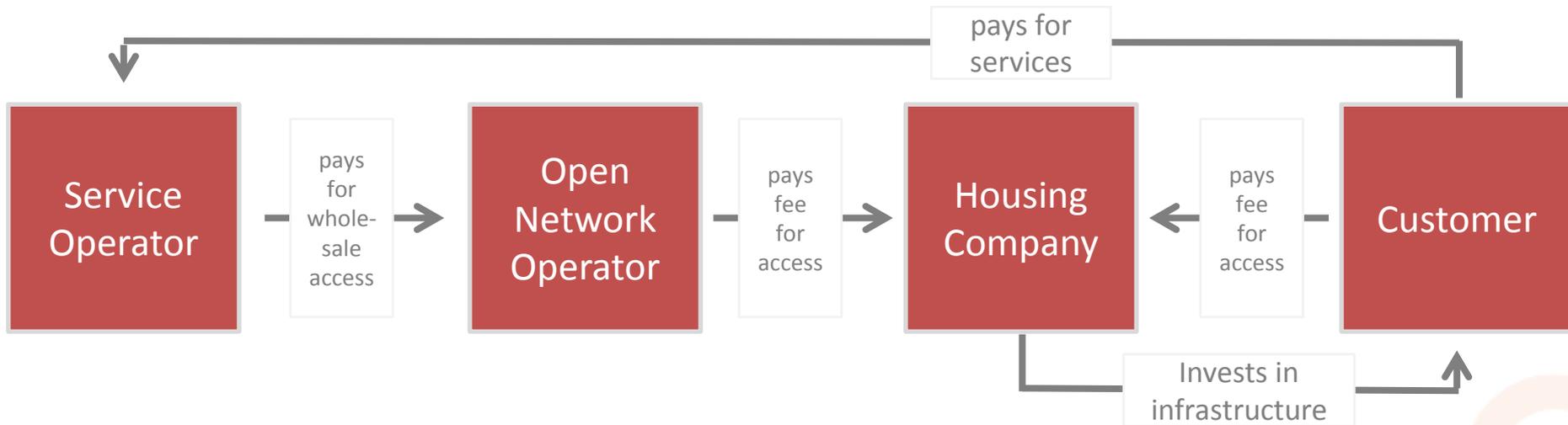
Operator Pays and Earns

- 'Classic' operator centric financial model:
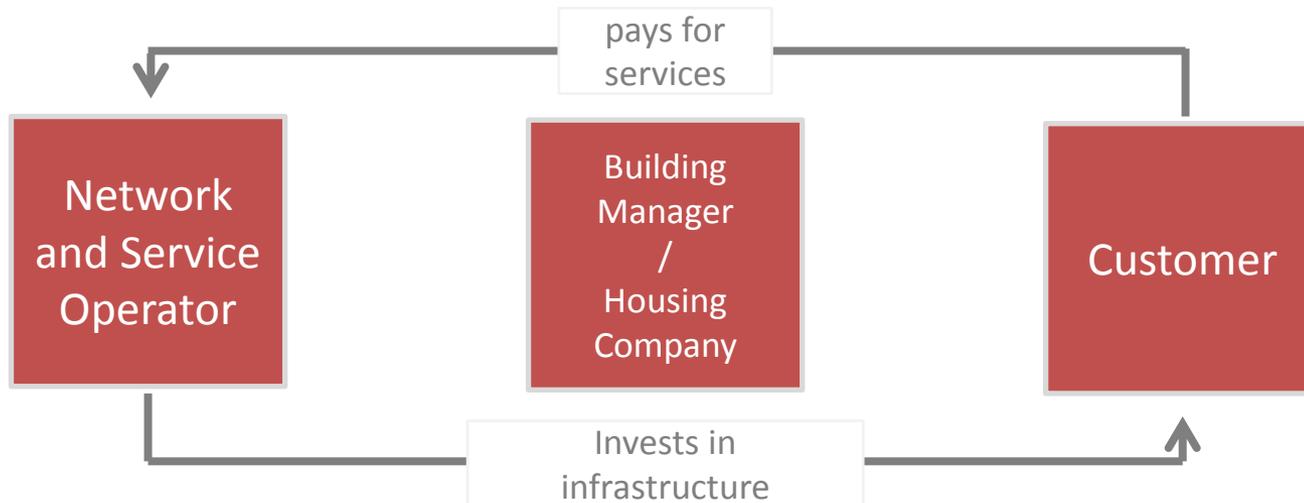
- In the case of **Prices Court** and some **SABO** members, this model applies as the Infrastructure and Service Provider.

- In the case of **UFH**, the same model applies but through the bidding process operators were encouraged to offer social tariffs in addition to their regular offerings.
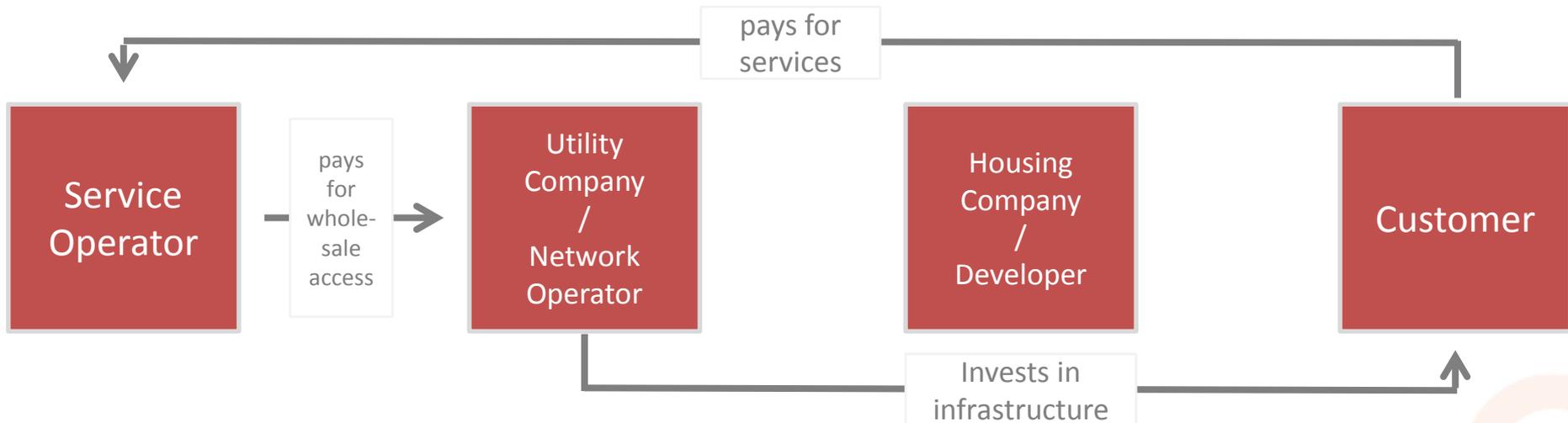
Real-Estate Pays and Earns

- The renowned Swedish open access model model:

Service Operator		Open Network Operator		Housing Company		Customer
	pays for whole-sale access		pays fee for access		pays fee for access	

pays for services

Invests in infrastructure

- In the case of **Svenska Böstader** and other **SABO** members this model applies. It's more complex but gives end-customers a choice of service providers.

- The fees earned by the housing companies in Sweden from customers and open network operators are small (~5€ per month from each).

Utility or Network Operator Pays and Earns

- Utility companies act as neutral infrastructure investor and provider:

| Service Operator | → pays for whole-sale access → | Utility Company / Network Operator | | Housing Company / Developer | | Customer |

pays for services

Invests in infrastructure

- In the case of both **Vattenfall** with housing companies and **IFNL** with developers, this model is used.

- In the Netherlands, the same model is used by **PFC2** and **Eindhoven Social Housing**, with network operator Reggefiber in the position of the utility companies.

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Services Offered

• Service Providers offer to real-estate customers the services we've come to expect from FTTH/B: high-speed broadband (often symmetric), TV content and VoD and IP Telephony.

• However, real-Estate players can be involved in various ways in service delivery:
   • Because they offer their own dedicated services
   • Because they use the network for their own operations,
   • Because they request specific services from service providers
   • Because they partner with service providers to offer specific services

• The idea is generally to ensure that a rich service portfolio is on offer in order to maximise the value to the end-user. Scale sometimes makes this difficult.

• **Vattenfall:** « We have found a local ISP willing to work with us on service experimentation, but none of the larger established players are interested. »

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Services Offered by Real-Estate

Own Dedicated Services	Services for Own Operations
In-building and garden wifi services	Building Access Management
Interaction console between tenants and landlords	Remote amenities management (elevators, doors and windows, etc.)
Utility metering console	Remote heating management
Amenities booking console	Utilities management (especially for social housing)

Services Offered by Service Providers

Services Requested by Real-Estate	Services in Partnership
On-demand bandwidth Social pricing for minimal universal internet connection Home security LAN services between tenants	Health monitoring Elderly care programs

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Theoretical Framework for Benefits

- There are three key areas in which real-estate players could theoretically benefit from FTTH/B deployment:

Financial	Customer Satisfaction	Building Efficiency
Customers are willing to pay more rent / purchase price to access the fibered property Rented property cycles faster between tenants and occupancy rates go up New developments sell faster because of customer demand for connected homes	Tenants are generally happier with their homes	Savings on utility bills for the common parts of buildings Better security allows for less degradation Better monitoring allows for faster intervention when amenities fail

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Financial Benefits for Real-Estate

- For most projects, it's too early to say if the deployment of FTTH/B has had a direct impact on sell prices.
    - **Prices Court**: « We've had a couple of sales since the fiber was deployed. Prices were rather good, and they sold quick, but is it because of the Fiber? »

- For social housing, the goal is not to increase the rent, or only in as much as it allows the deployment of the FTTH/B. Private housing may be different but there's limited real-estate driven deployment there so far.

- For property developers, it's increasingly clear that there is demand for new homes to be fibered up.
    - **PFC2:** « Despite the down market since 2008, fibered projects have sold well. »
    - **IFNL:** « One project we're developing has tranches. The first tranche was deployed in 2008 without FTTH, the new tranches in 2011 with FTTH. People from the first tranche keep writing to us and coming to see us begging for us to deploy fiber there. »

Satisfaction Benefits for Real-Estate

- For housing companies, especially social housing, the core benefit is not financial, it's in customer satisfaction.

- **Svenska Böstader:** « A few years ago, we ranked really low in customer satisfaction amongst social housing companies. Now we're in the Top 5. It may not be just fiber broadband, but it's certainly part of the story. »

- Customer satisfaction comes not only from the direct benefits of broadband fiber (better service, more bandwidth, etc.) but from the indirect benefits as well:
  - Better security in the building
  - Lower collective services bills due to more efficient utility management
  - Lower individual service bills when metering/management is in place

- **Prices Court:** « The main issue where we are is building safety. With fiber in place we're now thinking of deploying video-access control to secure the building. »

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Efficiency Benefits for Real-Estate

- One of the key aspects of FTTH/B deployment in real-estate is the ability for a housing company or utility provider to better manage the building resources.

- **Svenska Böstader:** « It used to be difficult for us to identify heating leaks. With the fiber enabled monitoring system, we can intervene immediately. Over a year for 30 000 homes, we estimate it saves us around 100 000 €. »

- Efficiency benefits have important financial impacts but also non-financial ones:
    - Building locations are cleaner and safer thanks to monitoring
    - As a consequence, tenants are less aggressive and happier

- **UFH:** « Well monitored buildings are not only safer, but the inhabitants themselves are less inclined to degrade the environment. If a broken elevator is fixed fast, people are less aggressive! »

Benefits for Service Providers

- There are clear benefits for service providers participating in such projects:
  - In new developments, even when copper is installed in parallel, the take rates for fiber are very high, in the 60-70% range.
  - In social housing, the take-rates can reach 30-50% in less than a year (depending on pre-existing contracts signed by tenants)

- There are essentially two reasons why the take-rates are higher:
  - Real-Estate companies involve themselves in marketing the FTTH/B services to tenants
  - **Vattenfall:** « We don't sell the services, but we do advertise them to our utility customers. »
  - Satisfied tenants and owners speak amongst themselves and represent a form of 'street team' for the FTTH/B services.
  - **WWHC:** « Today, fully 78% of the 100 homes on the greenfield site have subscribed to FTTH. »
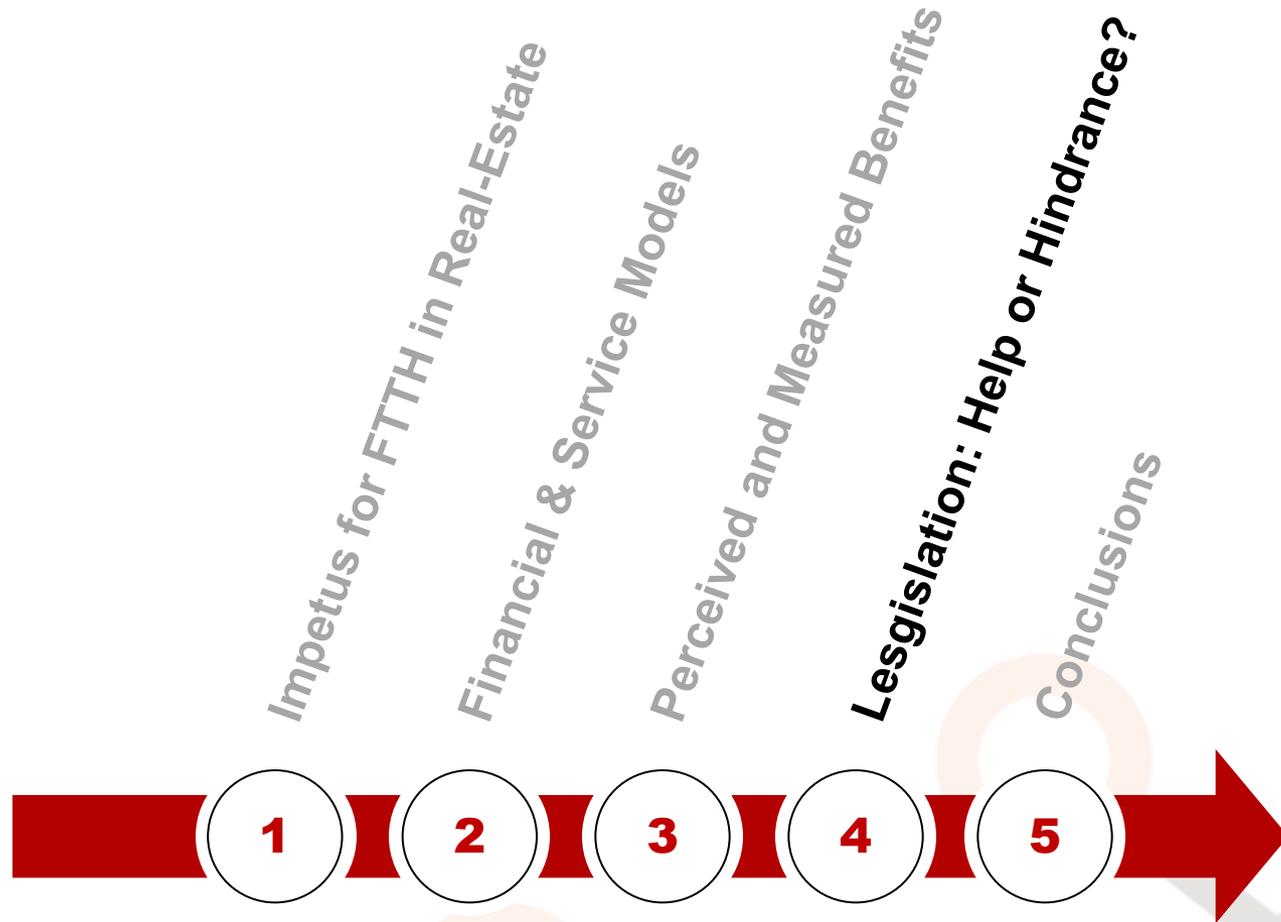
Tomorrow: Carbon Neutral via FTTH/B

• With some other real-estate partners, PFC2 has pioneered a concept for a carbon neutral home that has been one of the 5 designs selected by NiaNesto in the Netherlands for future social housing concepts.

• One of the key reasons this home is Carbon Neutral is that all of the computing power for the home (be it for actual PCs or other intelligent devices) is in the cloud.

• **PFC2:** « To meet the energy requirements, we needed minimal processing power requirements inside the home. Only FTTH gave us good enough response times for all computing intelligence to be in the cloud. »

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Legislation for Fiber in New Buildings

• For brownfield deployments, deployment models are largely dependant on regulation, but they do not specifically affect real-estate players.

• For greenfield deployments on the other hand, there are essentially three types of mandated deployments for access that do impact real-estate players:

| Obligation to deploy fiber into every new home or appartment | Obligation to deploy conduits for any network into every new home or appartment | No obligation to deploy any kind of access network into homes or appartments |

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Overview of EU Legislation

• Only a minority of EU countries (37%) have put legal obligations in place for fiber networks to be deployed in new builds or for communication risers to be open to any network deployment:

Legal Obligations for Fibering up New Buildings in the European Union*

Fiber Mandated
14%

Risers Mandated
23%

Nothing Mandated
63%
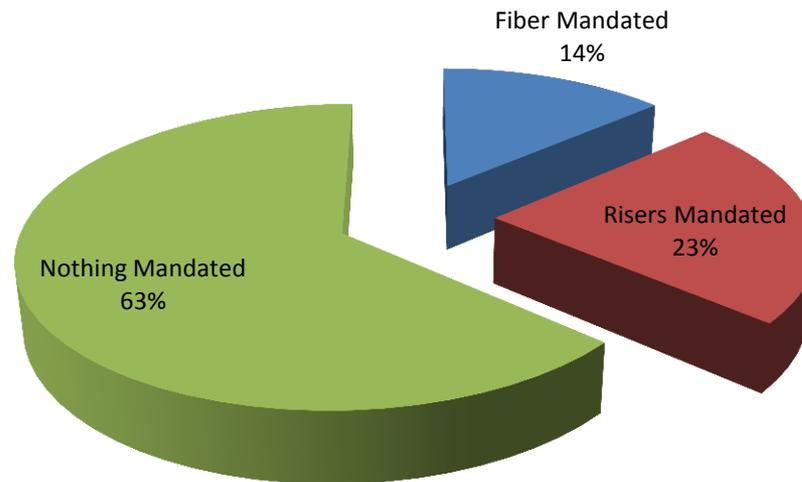
* Graph does not include Malta, Luxembourg, Latvia, Estonia or Hungary

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Example of Fiber Obligation: France

• Since January 1st 2011, all new multi-tenant buildings in France must have fiber deployed inside the building on construction.

• In dense urban areas, for buildings of more than 12 dwellings the obligation is to install a normalized patch-panel in the building basement and to pull 4 fibers from there into every appartment.

  • In all other buildings, the obligation is only for a single fiber per appartment, but pulled all the way to an agreed mutualization point outside the building (supposed to cover ~300 homes)

• Additionally, the developer must install a communications patch-panel in-home for copper, fiber and Cable/Aerial TV.

Appt #4

Appt #3

Appt #2

Appt #1

Basement Mutualization Point

Operators' Fiber Cable

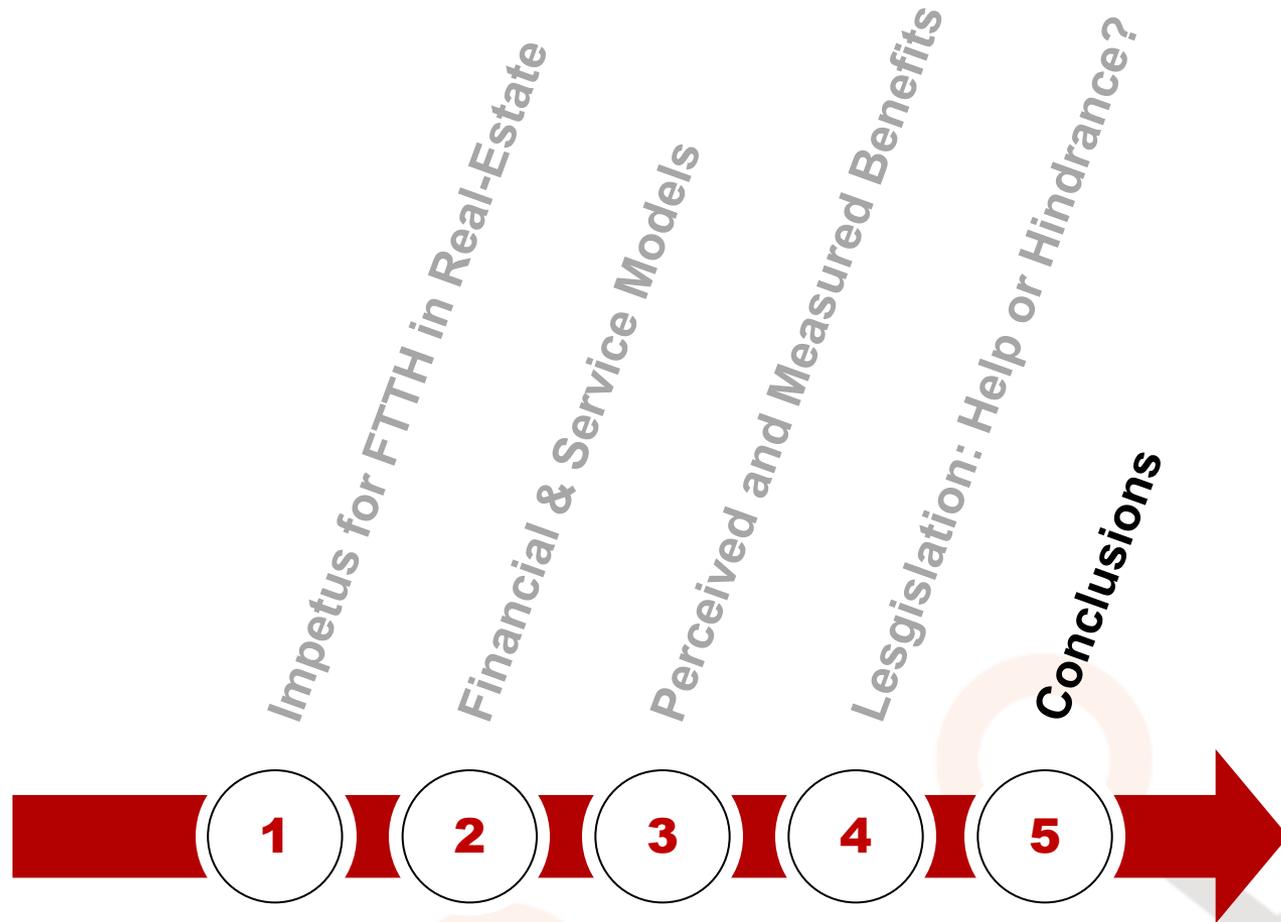DIFFRACTION
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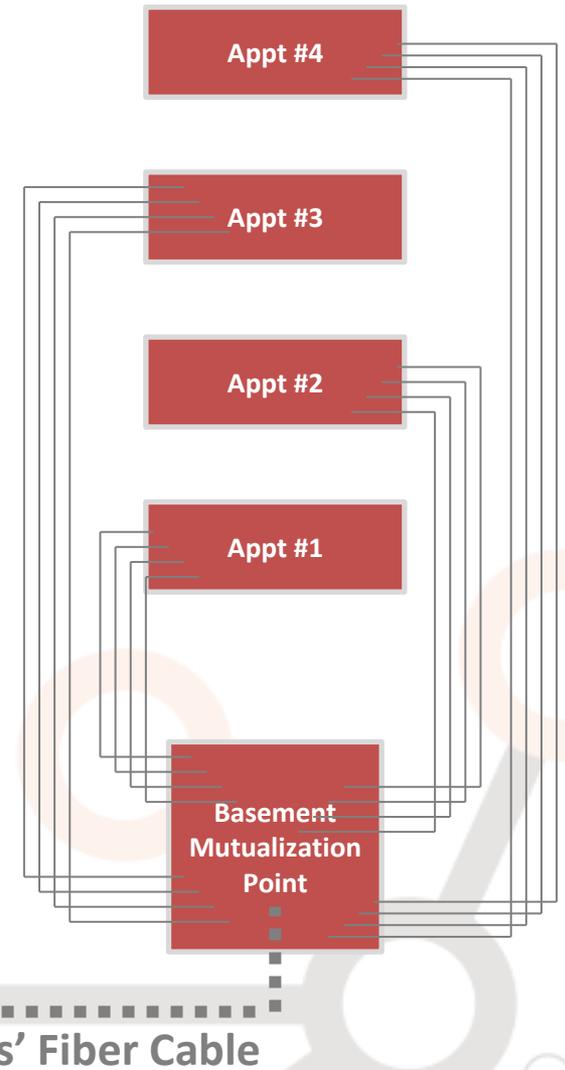
Example of Riser Obligation: Lithuania

• Since May 13th 2009, all new multi-tenant buildings (of more than 2 dwellings) in Lithuania must have a neutral communications chamber in the basement and risers for all types of communication technologies deployed inside the building on construction.

• The minimal sizes of the communications chamber and the risers are strictly imposed, and designed to accomodate multiple networks of all natures (copper, coax, fiber and satellite TV).

• Each dwelling must have a communication distribution box capable of accomodating all types of networks to distribute inside the home.

Appt #4

Appt #3

Appt #2

Appt #1

Communications Chamber

Operators' Fiber Cable
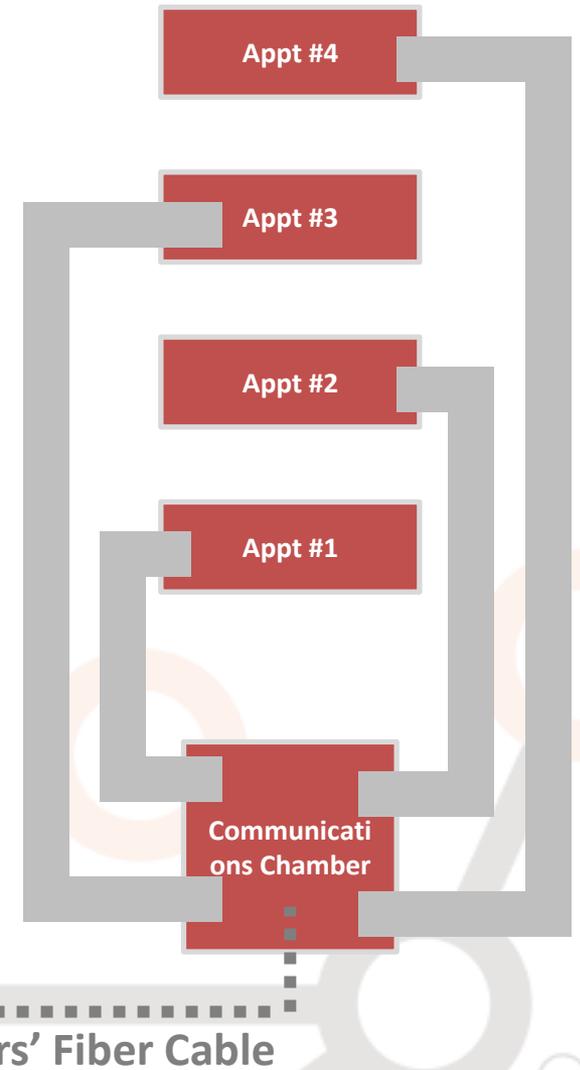
Feedback on Legislation

• Despite the perception that mandated fiber or riser legislation is a positive step, the feedback from real-estate players is generally that it hasn't been much help, and sometimes even a hindrance.

• Legislation tends to impose models that may become obsolete fast.
  • **UFH:** « The legal obligation comes from a law in 2009 that mandated 4 fibers per home, but market consensus has now moved to 2 fibers per home. If we deploy 4 we meet the obligation but service providers don't want to work with us, if we deploy 2, the fiber providers are happy but we're breaching the law... »

• Sometimes the proposed legislation is so comprehensive (so as to allow any kind of network to be pre-deployed) that it's too expensive to deploy.

• Often, the legislation is not strictly enforced and only respected if the construction players derive a direct benefit from it.

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A good match that needs more visibility

• Real-estate players are very satisfied with FTTH/B involvement and all agree that they have derived various benefits from it.

• They also stress that awareness in their field is still too limited. Despite their successes, real-estate remains a slow moving industry.

• They all perceive an increase in customer awareness though: customers value fiber services more and more and value homes that are enabled.

• The breakthrough will be:
    • in the ability to combine communications with other utilities (metering, etc)
    • in the ability to drive more energy efficient homes to the market
    • in the ability to enable services that service providers have a hard time providing (health, elderly care, on-demand, etc.)

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