



# Stockholm IT-infrastructure

# Stokab – a wholesale only network provider

- Owned by the City of Stockholm and founded in 1994
- Only PIP (Physical Infrastructure Provider)
  - Dark fibre operator
- Limited to greater Stockholm area
- Aim for ubiquitous coverage
- Planning for long time horizon
  - 30 years+
  - Future capacity
- Market-driven expansion – no public funding.
- Provide an open and neutral ICT-infrastructure in order to secure a free and fair competition regarding services
  - Not competing with customers
  - Non-discriminatory and transparent pricing policies.
- Thereby also contribute to growth, jobs and a sustainable development

# Stokab today

- The demand for leasing dark fibre is rapidly growing and still exceeding all our expectations
- 2012. Buildings with 400 000 (90 %) house-holds, e.g. apartment houses, are connected Stokab's node structure with a multi fiber solution (2 fibre/houshold)
- 2015 -2016. Nearly all of the commercial buildings are or being connected to Stokab's node structure with a multi-fibre solution.
  - Creating new business possibilities not only for big companies but even more so for SME:s, that has been reliant on XDSL.
- In all creating a neutral infrastructural platform:
  - That stimulate service development and innovation
  - An foundation for the further build out of a still more dense network in order to enable the creating of a Smart City.



Winner of the European Broadband Award 2015  
Category "Future proof quality and service"

# Experiences from Stockholm:

## How to promote fibre rollout and stimulate a functioning market

- If at least one of the market players does not act further up the value chain (wholesale-only), it has a great impact on competition and end customer benefit.
  - Low threshold to establish business - there are over 900 customers and over 100 operators and service providers in Stokab's fibre network.
  - The network is an example of asset sharing - lower price through sharing of civil works cost between many customers
  - Four 4G (LTE) networks due to the access of operator neutral dark fibre.
- This jointly promotes service development and lower prices for end customers e.g.
  - Price per month for households: 1 Gbps (down and up) €20-25 and 100 Mbps €15.

# Experiences from Stockholm:

- The market model determines the openness of the infrastructure and the design of the network, which is crucial for competition at the service level. Vertically integrated operators design the network for their own needs.
- Promotion of non-vertically integrated players (**wholesale only**), e.g. municipalities or regions:
  - Access to fibre on equal terms – incentives to give access to all players
  - Foster competition and thereby create incentives for investments in both infrastructure and on the service level
  - An openness for alternative operators/service providers, supports the development of new technical solutions and enables a new business approach
- Creates a infrastructural platform for the development of the digital market – a future proof platform for a smart city, IoT and 5G.
- An ICT infrastructural platform for the entire society not only for telecom.

# Obstacles and challenges for wholesale only models

- 
- Heavy investments
  - Operators want to own the network
  - Regulatory framework-risk hampering the business model
  - Obtaining market confidence:
    - Stability and endurance
    - Predictability
- Market-driven expansion - long term perspective – pool revenues from many market actors
  - Create conditions for operator neutral asset sharing - access on transparent and equal terms
  - Predictable regulatory framework that takes into account the specifics of wholesale only model and it's positive impact on retail competition
  - Ownership
    - Publicly owned - political consensus
    - Privately owned – long term perspective and no connection to vertically integrated actors
  - Transparent pricing models and not competing with the costumers (wholesale only)

# European Electronic Communications Code

Stokab welcomes the EC:s proposal

Important principles for a new Code:

- Establishment of Very High Capacity Networks (VHCN) will be crucial for European competitiveness and investments need to be promoted
- Broadband investments must be future proof, such as fibre networks
- Access regulation should not be the only focus of the legislative reform – focus on that all service providers can reach the end-user via VHCN
- Vertically separate undertakings – only active on whole sale level – have an inherent incentive to sell to all actors and thereby fostering competition on the retail market – motivates reduced regulatory burden.
- The new access regulation shall focus on promoting retail competition