



Strategic Changes in the Telecom Business



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Where are Incumbent Telco Operators Today?



Smaller in
size and
employee
s

Working
with lower
margins
Lowering
the price
levels



**Alternative
Operators**



**Incumbent
Telco
Operator**



**Mobile Only
Operators**

Easy to
deploy
network
Convenience of
mobility



**Cable
Operators**

Parallel
network
3Play
capable
Business
offers



**Internet
Companies**

New
customer
needs
Web 2.0



So, where could Incumbent Telco Operators move tomorrow?

Away from the traditional path



But what is the Natural Fit Diversification? Connected Life and Work

Residential customers - seeking for complete compelling experience, a connected life.

Business customers - seeking for managed services who can solve business challenges and bring additional benefits.



From access to holistic experience and
innovations with everything integrated



If that is true, how does it work?

By completely moving into new and untested waters



New business model: Telco 2.0

Upstream customers



Developers



Retailers



Government



Brand
Advertisers



Content
Owners



Telco -
Retail



Telco Operator

Downstream



Access/content sales
Managed services for
enterprises



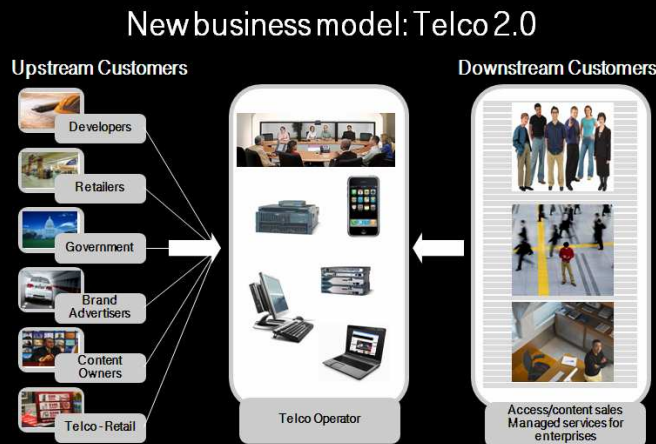
Telco 2.0 only works by stepping out of the box

Future: bandwidth “unlimited” fiber infrastructure combined with new generation of managed services

Precondition: Telco operating as „Experience manager“ and “Innovator” of its many clients – residential and business

Has to fulfill a complete new and different set of roles:

- New technical requirements - fibre optic networks, IP services management, intelligent content distribution
- Content acquisition and management
- Media and interactivity management
- Managing the consumer experience



Are we prepared to step up?



But “experience and innovations” needs lots of bandwidth!

More than
21 Mbps

Make Wait Time
Productive



Make international
VoIP Calls



Download the
News as Podcast



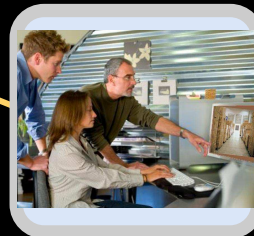
Work From Home



Text and Voice
Chat
via WLAN



Video Surveillance
over the Internet



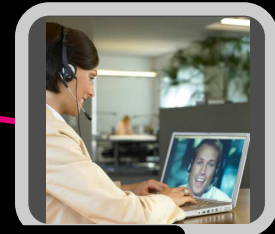
Schedule a
meeting



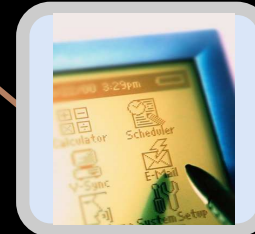
Find fleet GPS
location on
Internet/TV



Conference Face-
to-Face



Use Push e-mail
service via WLAN



TelePresenc
e meeting



Fiber offers virtually unlimited

Why fiber optic cable bandwidth is better?

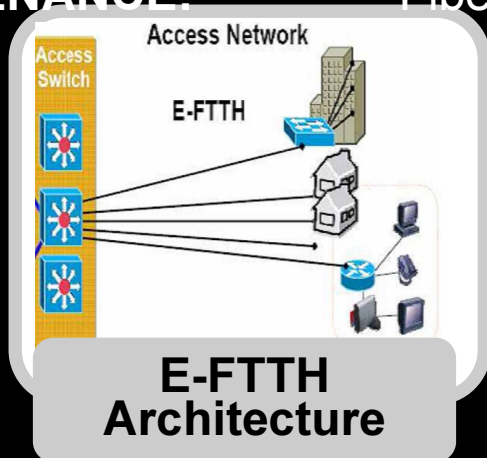
SPEED: Fiber optic networks operate at high speeds - up into the gigabits.

BANDWIDTH: Large carrying capacity.

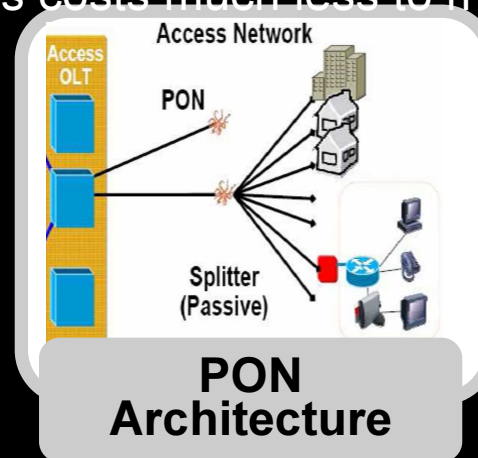
DISTANCE: Signals can be transmitted further without needing to be "refreshed" or strengthened.

RESISTANCE: Greater resistance to electromagnetic noise such as radios, motors or other nearby cables.

MAINTENANCE: Fiber optic cables costs much less to maintain.



Main advantage: No unused ports, maximum future-proof



Main advantage: Fiber saving between splitter and POP, Port saving in the POP

Both technological scheme has its own merit!

started

StarTel Fiber-to-the-Home – Pilot project 2008

- Fiber-to-the-home (FTTH) connection of 4 buildings in Skopje downtown area.
- 117 customers testing Voice over Internet Protocol (VoIP) and Ultra fast internet services, as well as Internet Protocol Television (IPTV) after platform installation.



1. Palata Makedonija
2. Risticheva Palata

Fiber-to-the-Business 2009

- **Connection of Key Customers** with optical infrastructure. Unlimited access through an infrastructure with high reliability and high performance. Deployment of point to point optical infrastructure using Active Ethernet.
- **Connection of Top Industrial Parks in Macedonia** with optical infrastructure and offer advanced platform, which provides fast and high-quality simultaneous services.

Fibre Infrastructure and Managed Services

Managed Voice

VoIP

Protocol optimized for the transmission of voice through the Internet.

IP Centrex

Managed Central Exchange that handles voice signals under Internet protocol, bringing benefits of internet telephony

IP PBX

Private Branch Exchange. All services without the need to buy expensive equipment. Functionally, it performs all the main call processing duties.

Managed Data

IP VPN

Virtual Private Network, company network without own leased lines

Managed LAN

Local Area Network, but the company doesn't need to buy expensive equipment.

Teleworkers

Access of corporate networks from home. The employee can be reached at their office extension number and can also use the system functions.



Managed security



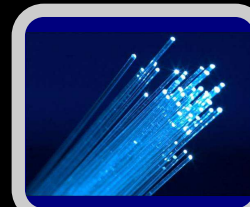
Managed voice



Managed IP VPN



Managed LAN



architecture to use optical fiber to replace all or part of the copper local



CUSTOMER

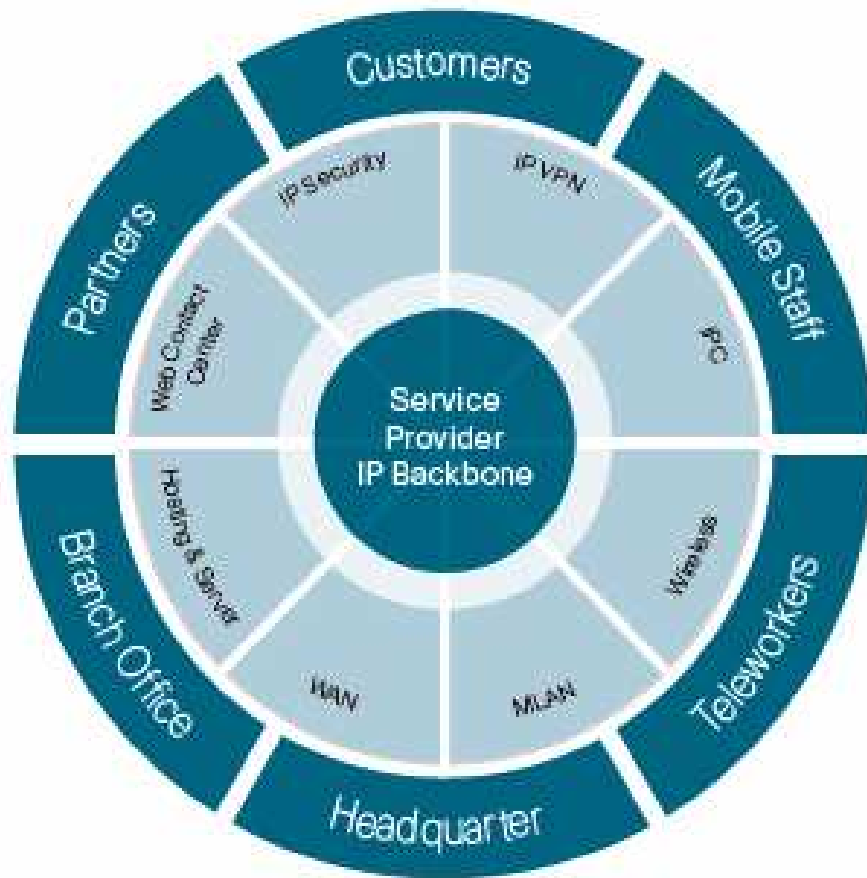
FIBRE ACCESS

SERVICE PROVIDER
IP BACKBONE

INTERNET



Managed services can solve business challenges and bring additional benefits



BENEFITS

- access to latest technology with limited risk
- easy adoption of new business processes
- make it easier to adopt dynamic business changes
- enables focus on core business
- increases level of support and network availability

Let's step up for Telco 2.0

Many thanks for your time!



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