Výstavba a servis FTTH sítě

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EXFO

FTTH HIGHLIGHTS

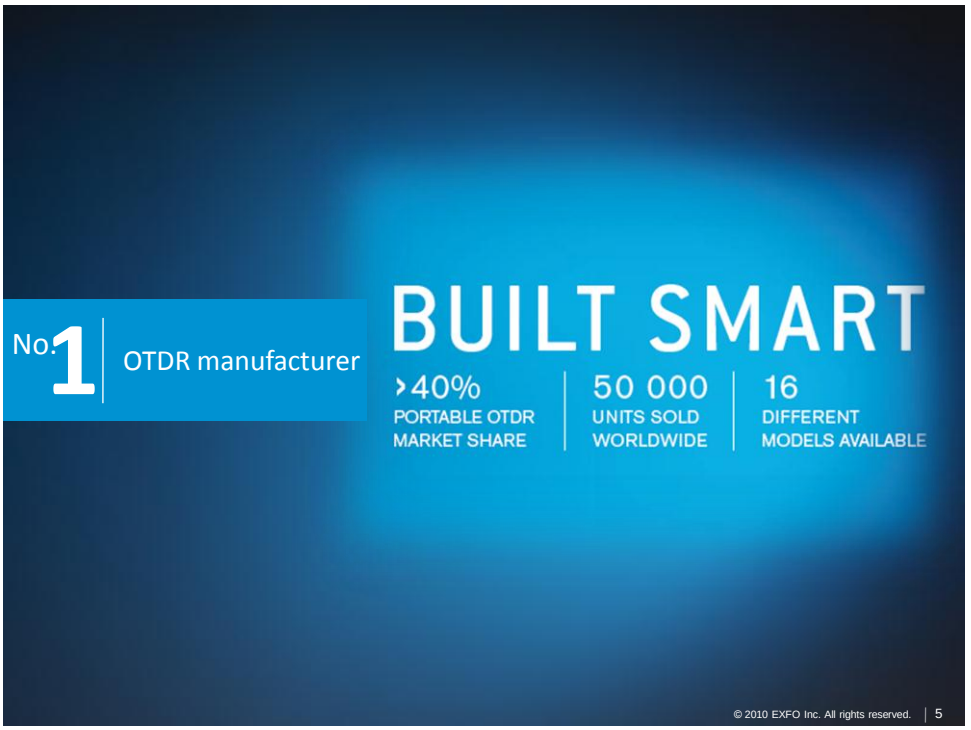
- +100M homes to connect till 2014
- 2010-2014 CARG of +58%
- Up to 10% repeated truck rolls

Source : Infonetics 2010
EXFO survey

EXFO : A strategic partner for FTTH

No.1 portable fiber testing

- Present in **80%** of world's major FTTH deployments
- Present in over **50 countries** deploying FTTH
- **17 years** of OTDR expertise, with **the most recognized line of OTDRs** on the market
- **Market-driven** innovation: **40%** of revenues generated by products on the market two years or less
- Fiber characterization solution that **improves fiber deployments efficiency**


No.1
OTDR manufacturer
BUILT SMART
>40%
PORTABLE OTDR
MARKET SHARE
50 000
UNITS SOLD
WORLDWIDE
16
DIFFERENT
MODELS AVAILABLE
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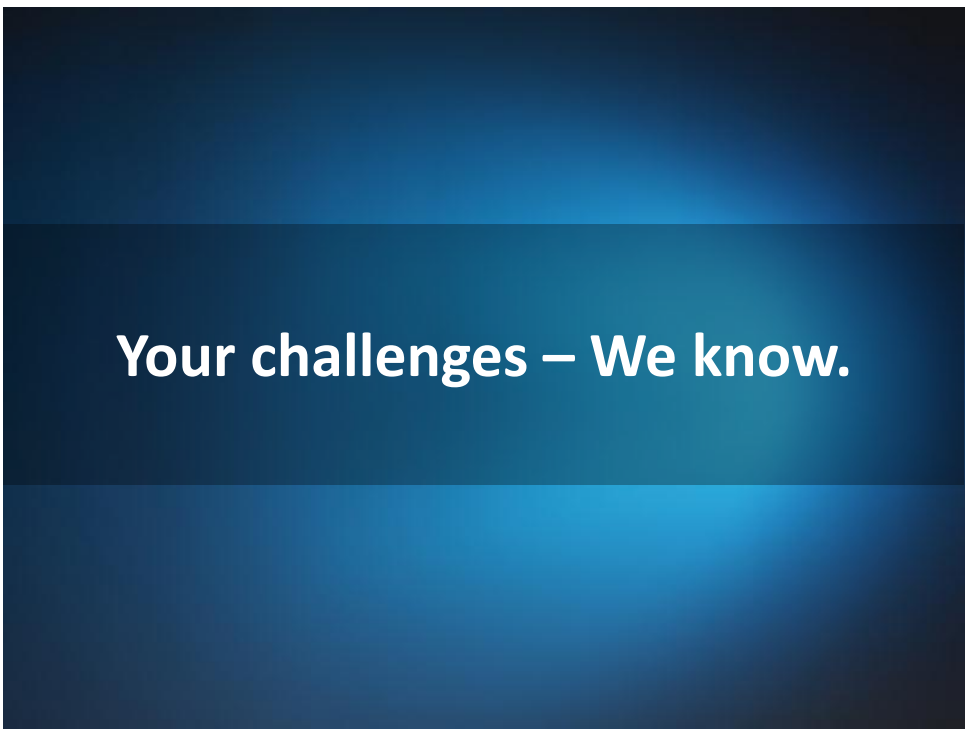

Your challenges – We know.

FTTH RISING CHALLENGES

- Massive deployment efforts in a short timeframe with limited resources
- Inconsistent competencies across teams in expertise level of service validation (tier 1/2 technicians) or mix of contractors
- Limited budget expenses and OPEX due to unnecessary truck rolls

Avoid the pitfalls!

- "It's plug'n play !"
  - NSPs are told there is no need to test
- "We had No problems in trials !"
  - controlled environment, known technicians, field trials with aware clients/employees
- "We don't know what's next !"
  - Invest today in deploying healthy networks and be future-proof

Why testing in construction ?

- To qualify the outside plant section of the network and document for future references
- To make sure it meets transmission-system requirements (standards)
- To avoid delays and costly repairs when the system is turned-up

Why testing in service activation?

- Power Level Assessment of active components
- Service Activation Reporting
- Ensure Quality of Experience (QoE) and successful turn-ups

Why testing ORL ?

- Strong fluctuations in laser output power
- Potential permanent damage to the OLT
- Higher bit-per-error rate (BER) in digital systems
- Distortions in analog video signals

Important:
Measure ORL in the same direction as the transmission of the 1550 nm video signal.
ORL is direction dependant

Testing at 1490nm in FTTx

1490 increases CAPEX and OPEX without ROI

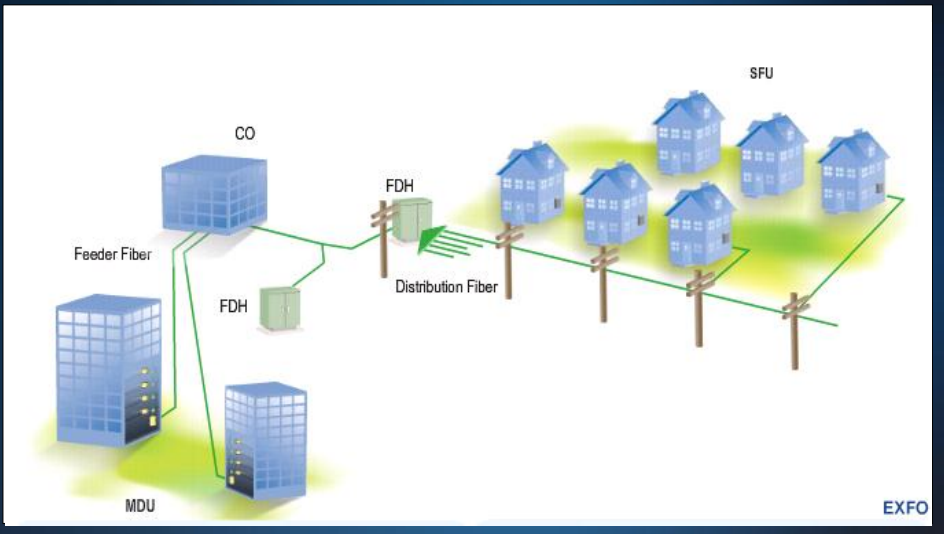
- Very low added-value with 1310/1550 results (CAPEX ++)
- 1625 nm measurement in construction is a added-value when used in template mode for troubleshooting
- 1490nm has lower dynamic range and requires more averaging time (OPEX ++)

What needs to be tested?

- optical power budget (end-to-end loss)
- Optical power levels at ONT
- Connectors cleanliness
- Component insertion loss (IL)
- ORL and reflectance
- Macrobends

Best test methods and practices

Typical topology -- FTTH / FTTB (MDU)



More information available on EXFO's Expertise Hub

Here is why testing is required!

A real case study from a FTTH service provider in China
In one month, 600 000 home passed in a dense city area

Problem types	Qty	Qty12M	Notes
ONU failures	119	1428	internal to unit
OLT failures	50	600	Internal to unit
ODN failures (fiber related)	4600	55200	ODN failure requires min. one truck roll

Here is why testing is required!

A real case study from a FTTH service provider in China
In one month, 600 000 home passed in a dense city area

54% — FAILURES ON SPLICES AND CONNECTORES → characterize properly during construction

16% — FAILURES FROM SPLITTERS → importance of testing through the splitter

FOUNDATION OF EXFO'S SOLUTION

Knowledge	Tools	Environment
Industry's best test methods and procedures	Innovation: Intelligent and powerful test solutions	Deployment data & assets management services
		EXFO Connect — Make your data mean business.
> Over 25 years of field-proven expertise enhancing methods and procedures while deploying to reduce costs of inefficiency	> The most advanced technology paired with intelligent automation and field-smart design for improved operational efficiency	> A cloud-based data management environment for field test operations providing better "business intelligence" (KPIs).

TOOLS

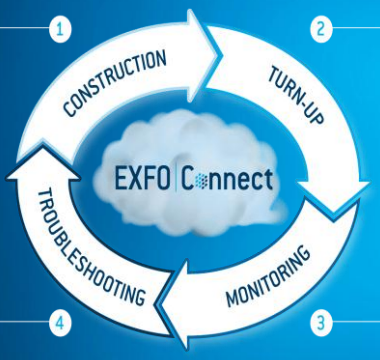
A solution serving the entire FTTH network lifecycle

1
- AXS-110 All-Fiber OTDR
- FTB-720 LAN/WAN Access OTDR
- FTB-730 PON FTTx/MDU OTDR
- FTB-730-iOLM Intelligent Optical Link Mapper
- FOT-930 Multifunction Loss Tester
- FiberBasix50 Handheld Testers
- FIP-400 Fiber Inspection Probe
- ConnectorMax Analysis Software
- FastReporter Data Post-Processing Software

2
- PPM-350C PON Power Meter
- FastReporter Data Post-Processing Software

3
- NQMS*fiber* Network Quality Monitoring System

4
- FTB-730 PON FTTx/MDU OTDR
- FTB-730-iOLM Intelligent Optical Link Mapper
- LFD-300B/TG-300B FiberFinder Live Fiber Identifier/Tone Generator
- FIP-400 Fiber Inspection Probe
- ConnectorMax Analysis Software
- FastReporter Data Post-Processing Software



Build quality networks!

FTB-1 – 1-slot modular platform

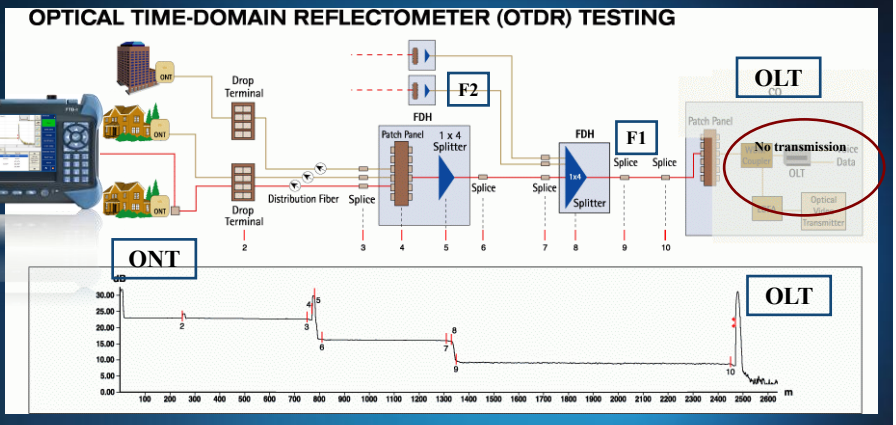
EMPOWERING FRONTLINE TECHNICIANS

- 7-INCH TOUCHSCREEN DISPLAY
- UNIQUE HYBRID-TOUCH CONTROL
- SMALLEST AND LIGHTEST FTTx/10G PLATFORM (33% THINNER)
- UNMATCHED BATTERY LONGEVITY
  - OTDR: 8 hours
  - 10 Gbit/s Ethernet: 4 hours

wi Fi 1000 Mbit 2x USB 2.0 Bluetooth

OTDR test method

Total Link Loss & Reflectance



- Testing from the optical network terminal (ONT) provides an OTDR trace that is easier to interpret.
- Testing from the optical line terminal (OLT) will present an OTDR trace with up to 32 or 64 branches combined after the splitter.

A revolution in fiber testing

EXPEDITE THE TRANSITION
FROM COPPER TO FIBER TESTING

No training required with self-set device

A revolution in fiber testing

AVOID REPEATED TRUCK ROLLS

With smartest analysis technology and consolidated results—powered by Link-Aware™

EXFO

A revolution in fiber testing

OPTIMIZE FIBER DEPLOYMENT

No more trace misinterpretation thanks to prompt diagnosis and clear optical link view

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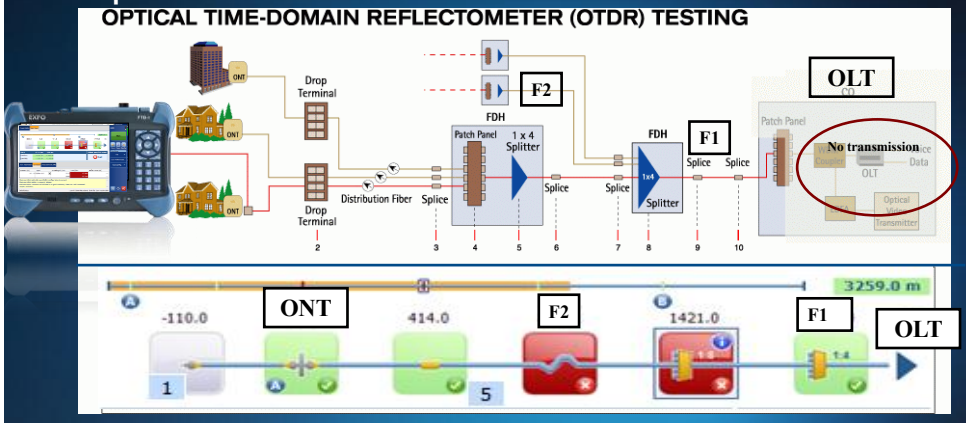
iOLM test results

Complete fiber characterization



Using a multi-pulse appraoch, all sections are accuratly characterized.

No trace analysis, icons recall the network plans with split ratio associated

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Save time and troubles

Save time where it matters the most: in the field

first analytical software to be integrated into a test instrument

Automatically provides:

- Connector certification against IEC and IPC
- Detailed analysis information
- Full report documentation

How it works

Workload

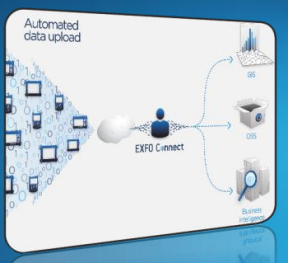
FTTH Reports

Performs service activation
5x faster

IN THE CLOUD WITH EXFO:

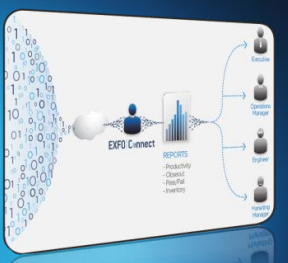
CENTRALIZE AND AUTOMATE

inventory management to provide global visibility



STORE AND CONSOLIDATE

data across the entire company



CREATE AND CUSTOMIZE

reports from collected data

Thank You!

Hands-on session

Český překlad: **Děkujeme!**

Pojďme na pivo.