FUJITSU

REVOLUTIONIZING
Broadband Services with
GPON

FLASHWAVE ®

Higher Performance at a Lower Cost

Service providers face intense competition to provide triple-play services in today's broadband access markets. Meeting this competitive challenge requires an access infrastructure capable of supporting a new-generation of rich, interactive and personalized voice, video and data services. The FLASHWAVE 6100® multiservice access platform overcomes the limitations and constraints of DSL and legacy Fiber-To-The-Premise (FTTP) solutions, leading to dramatically higher performance and lower overall network costs.

The FLASHWAVE 6100 platform enables a true revolution in media, entertainment and productivity. Imagine surfing the Web over fifty times (50x) faster than your current DSL or cable modem services. Purchase and download entire movies in less than 10 minutes, less than the time it takes to travel to the local video store and back.
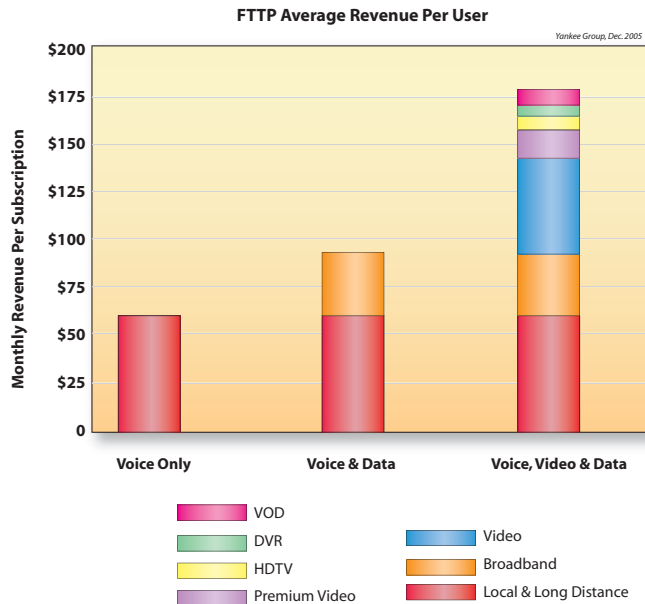
Making the Case for FTTP

Service providers are facing ever increasing loss of access lines due to voice competition from cable companies (VoIP), Vonage (VoIP), and simple customer substitution of their landlines with wireless services. Fiber-To-The-Premise (FTTP) provides the broadband access infrastructure needed to provide a truly competitive set of rich, multimedia services. With these new services, service providers can reverse the erosion in access lines and dramatically increase their residential access earnings per subscriber.

In addition to increasing revenues, an FTTP architecture lowers costs and ongoing OPEX by removing all active electronics from the outside plant. In fact, the cost savings alone justifies the investment in a FTTP architecture.
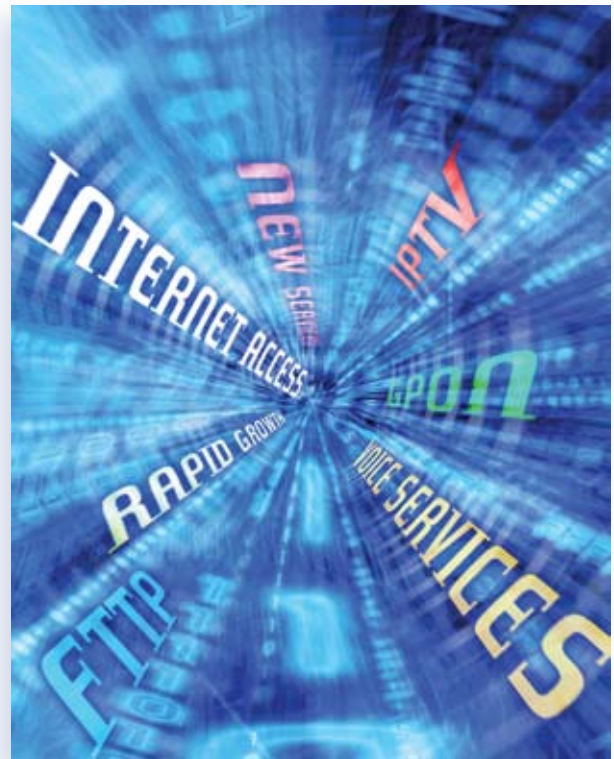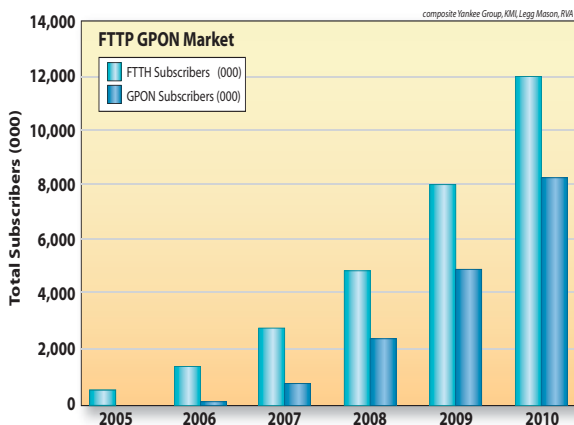
Potential FTTP Expense Savings by Function vs. Legacy Copper Network Infrastructure	
Field Operation	FTTP Labor Savings
Customer Service Orders & Trouble Reporting	48 %
Central Office Operations	87%
Outside Plant Operations	81%
Network Operations	31%

Source: Bernstien/Telcordia Analysis

FTTP Average Revenue Per User

Yankee Group, Dec. 2005

Legend:
- VOD
- DVR
- HDTV
- Premium Video
- Video
- Broadband
- Local & Long Distance

FTTP – Market Projections

Although FTTP is not a new concept, lower per-home costs and advances in technology are fueling rapid adoption in the industry. The installed price for a FTTH deployment has dropped from $2500 per home three years ago to approximately $950 per home today. In addition, newer systems based on GPON technology are enabling new services, like IPTV video. The combination of these factors is leading to an inflection point with projected rapid growth almost all of which utilize GPON technology, such as the FLASHWAVE 6100 platform.

FLASHWAVE 6100 Platform – Key to Triple Play Services
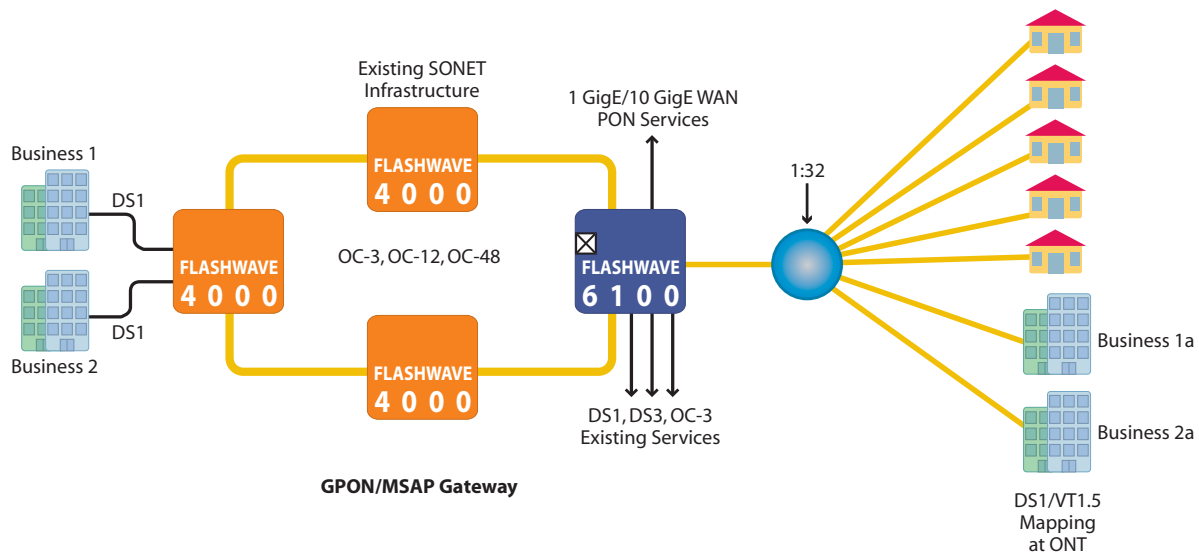
The FLASHWAVE 6100 GPON platform is designed for next-generation triple-play applications. Supporting over 75 Mbps per home, the FLASHWAVE 6100 platform provides the ideal platform for RF or IPTV advanced video services, blazing Internet access speeds and advanced voice services.

composite Yankee Group, KMI, Legg Mason, RVA

FTTP GPON Market

Total Subscribers (000)

- FTTH Subscribers (000)
- GPON Subscribers (000)

14,000 · 12,000 · 10,000 · 8,000 · 6,000 · 4,000 · 2,000 · 0

2005 · 2006 · 2007 · 2008 · 2009 · 2010

With over 320,000 Fujitsu SONET / DWDM network elements deployed in North American networks today, Fujitsu understands the costs, quality and operational issues required by service provider deployments.

Efficient Network Transition

Service providers are in the midst of evolving their networks from circuit switching to a packet architecture, a transition likely to take many years. During this transition, there is a real need for systems that can co-exist in both the TDM and packet worlds. The FLASHWAVE 6100 platform combines an IP based GPON system with traditional SONET and TDM-based capabilities.

Services can be provisioned to either the IP packet interface or to the SONET interface, on a per service basis, allowing telcos to manage the transition to a packet network efficiently and on their own timeframe.

Business 1

Business 2

DS1

DS1

Existing SONET
Infrastructure

FLASHWAVE
4 0 0 0

FLASHWAVE
4 0 0 0

FLASHWAVE
4 0 0 0

OC-3, OC-12, OC-48

1 GigE/10 GigE WAN
PON Services

FLASHWAVE
6 1 0 0

DS1, DS3, OC-3
Existing Services

1:32

Business 1a

Business 2a

DS1/VT1.5
Mapping
at ONT

GPON/MSAP Gateway

Comprehensive MSPP Services

Business services, such as DS1s, DS3 and OC-3s, are

a vital revenue component for all service providers.

These legacy interfaces will continue to be dominant

business services for many years. The FLASHWAVE

6100 platform supports a wide array of TDM business

services, including DS1, DS3/STS-1, OC-3, OC-12,

Ethernet, and Fibre Channel, along with the GPON

interfaces, all from a single platform.

Hybrid GPON Upgrade

With downstream speeds of >75 Mbps per user,

GPON provides sufficient bandwidth to allow

enhanced triple-play services. However, tomorrow's

network demands are unknown and it is highly

unlikely that the customer's insatiable appetite for

bandwidth will be satisfied for a prolonged period.

After spending billions to upgrade their networks

to GPON FTTP architectures, telcos could be faced

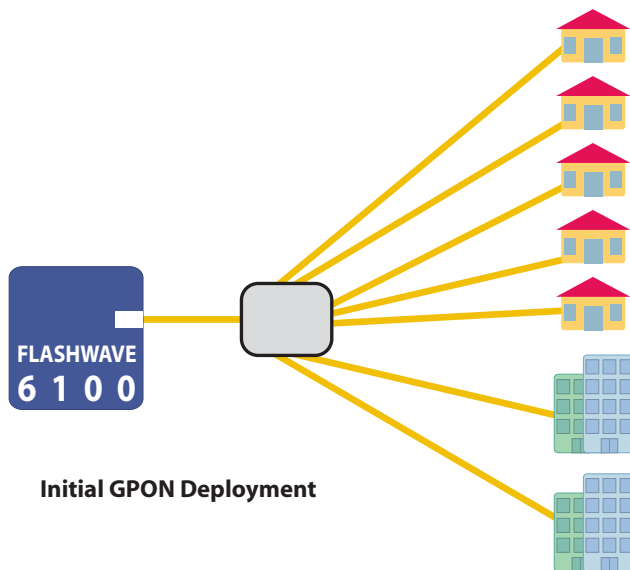with yet another round of expensive and disruptive

overbuilds in 5 – 10 years.

The FLASHWAVE 6100 platform provides a simple and efficient method to grow beyond current GPON speeds, without replacing ONTs or requiring residential truck rolls.

The upgrades can be implemented with minimal impact and investment. The Hybrid GPON option uses the same GPON protocol, downstream rates and upstream rates, but combines CWDM with the GPON ports to offer dramatically increased capacity.
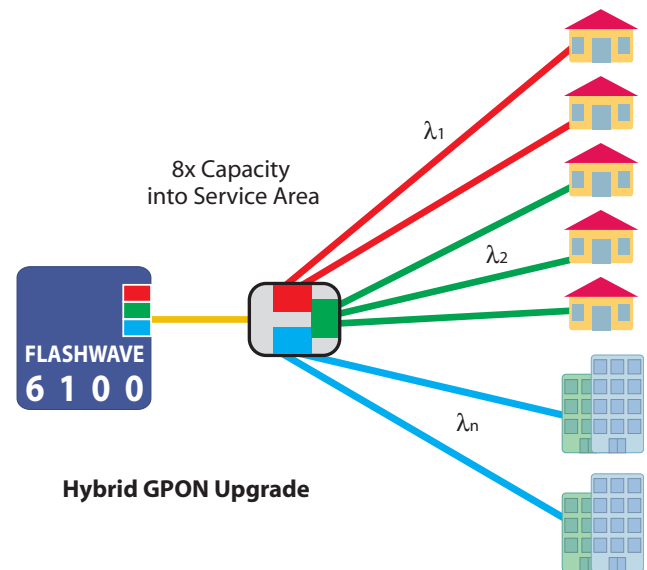

Simple Management and Administration

End-to-end network management and operations are provided by NETSMART® 1500 Element Management System (EMS).

Initial GPON Deployment

8x Capacity into Service Area

λ_1

λ_2

λ_n

Hybrid GPON Upgrade

The NETSMART 1500 software lowers costs by consolidating and automating operations, such as provisioning, alarm monitoring, visibility, control, remote software upgrades and database back ups. The GUI is easy-to-use, intuitive and provides simple point-and click-operation. The NETSMART 1500 EMS supports all Fujitsu optical transport equipment.

About Fujitsu

Fujitsu Network Communications is a division of Fujitsu Limited, a $42 billion per year provider of comprehensive networking solutions for the global marketplace.

Located in telecommunications corridor in Richardson, Texas, Fujitsu Network Communications is dedicated to building innovative, highly reliable optical networking solutions for telecommunications service providers.

Our U.S. located optical research facilities, hardware and software product development and manufacturing provide the local resources for leadership in GPON FTTP solutions.

P O W E R I N G   T H E   C O N N E C T E D   E X P E R I E N C E

Contact Your Fujitsu Sales Representative For More Information On How To Order This Product

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