Addition Revenue Streams for Service Providers Using GPON Solutions

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ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

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ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Lecture Outline:

1. Introduction to GPON FTTx Cabling
2. GPON FTTx Cabling Architecture
3. GPON Business Models
4. Sample Additional Revenue Streams Thru GPON FTTx
5. Sample Project/s
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Introduction to GPON FTTx Cabling

GPON OVERVIEW

PON/GPON grew from a requirement for more bandwidth in the Service Provider Market. (Higher access speeds than DSL could deliver) More Bandwidth (2.5G Downstream and 1.2G Upstream)

- Higher Subscriber density
- Best replacement for aging copper / coax infrastructure
- Environmentally friendly - green
- Reduce power and TCO (Total Cost of Ownership)

- Long term life expectancy of the fiber infrastructure
- Lower capital expenditures, since AN eqpt. and components are considerably reduced and/or completely excluded in the FTTx network
- Lower operating costs through reduction of active components, support for greater distances between equipment nodes
- Reduced re-occurring operating and maintenance costs
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Introduction to GPON FTTx Cabling

GPON OVERVIEW

- The adoption and worldwide acceptance grew as GPON FTTH proved that it has contributed much to the service providers in terms of time, money and human resources.

- Contributes to the improved client service levels and over-all customer satisfaction; thus enhancing retention rates.

- And most notably, GPON FTTH technology solutions; introduced new opportunities and services applications to service providers, introducing additional revenue streams which can be adopted and integrated into their present services offering; thereby increasing top line revenue without increasing cost.
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Introduction to GPON FTTx Cabling

All over the world operators go for PON = PON subscribers will dominate PTP subscribers
Introduction to GPON FTTx Cabling

Basic Parameters of GPON

- GPON identifies 7 transmission speed combinations as follows:
  - 0.15552 Gbit/s up, 1.24416 Gbit/s down
  - 0.62208 Gbit/s up, 1.24416 Gbit/s down
  - 1.24416 Gbit/s up, 1.24416 Gbit/s down
  - 0.15552 Gbit/s up, 2.48832 Gbit/s down
  - 0.62208 Gbit/s up, 2.48832 Gbit/s down
  - 1.24416 Gbit/s up, 2.48832 Gbit/s down
  - 2.48832 Gbit/s up, 2.48832 Gbit/s down

  Among them, 1.24416 Gbit/s up, 2.48832 Gbit/s down is the mainstream speed combination supported at current time.

- Maximum logical reach: 60 km

- Maximum physical reach: 20 km

- Maximum differential fibre distance: 20 km

- Split ratio: 1 : 64, it can be up to 1 : 128
Introduction to GPON FTTx Cabling

GPON Principle----Data Multiplexing

GPON adopts Wavelength Division Multiplexing (WDM) technology, facilitating bi-direction communication over a single fiber.

To separate upstream/downstream signals of multiple users over a single fibre, GPON adopts two multiplexing mechanism:

- In downstream direction, data packets are transmitted in a broadcast manner;
- In upstream direction, data packets are transmitted in a TDMA manner.
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Introduction to GPON FTTx Cabling

GPON Principle----Downstream Data
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Introduction to GPON FTTx Cabling

GPON Principle----Upstream Data

- TDMA mode
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Introduction to GPON FTTx Cabling

Consumer’s Bandwidth Reqmts. Met By FTTH

GPON are premium for ALL services!!!

VDSL2 can cover even the HDTV service!

ADSL2+ can cover the Triple-play service bandwidth requirement.

FTTH

Upstream

Downstream

150
100
25
20
10
5
0
Mbps

Web Surfing
Video Conferencing, Premises Surveillance
SDTV VOD, Telecommuting
File Sharing, Home Video Sharing/Streaming
Real Time SDTV, Network PVR
Multi-Player Gaming, Interactive Distance Learning
Premises Web Hosting
Telemmedicine
Large File Sharing
HDTV VOD
Next Hosted Applications & Storage

(per sub)
Additional Revenue Streams for Service Providers Using GPON FTTx Solutions

Introduction to GPON FTTx Cabling

Ethernet Vs. PON FTTx

- There are 2 choices for Fiber Access:
  - Point to Point
  - Point to Multi-point

- Point to Point is sometimes called Active Ethernet
- Point to Multi-point is called PON (passive optical network)
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Introduction to GPON FTTx Cabling

- **OLT**: Optical Line Terminal
- **LCP**: Local Convergence Point
- **NAP**: Network Access Point
- **IOO**: Indoor Optical Outlet
- **ONU**: Optical Network Unit
- **FD**: Floor Distributor
- **POP**: Point of Presence
- **CPE**: Customer Premises Equipment
- **FTP**: Fiber-to-the-Premises
- **FTTx**: Fiber-to-the-X (where X is the last mile network access point)

**Key**
- **BEP**: Building Entry Point
- **ONT**: Optical Network Termination
- **OTO**: Optical Telecommunications Outlet

**Figure 1** FTTH in-house installation reference model

Bicsi
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

FTTx Cabling Architecture
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

FTTx Cabling Architecture

OPTICAL DISTRIBUTION NETWORK WITH POLE MOUNT NAP AND LCP

Fig 8 Drop Cable Clamp
House Bracket
Cable Clip
Fig 8 Drop Cable Clamp
Optical Outlet (with SC-UPC/APC adapter)
Low friction indoor cable
Bend-insensitive patch cord (SC-APC or SC-UPC)
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

FTTx Cabling Architecture

SINGLE LINE PICTOGRAM – TYPICAL UNIT
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

FTTx Cabling Architecture

GPON FTTH EQPT. REQUIREMENTS (FOR TELECOMS AND ENTERPRISE NETWORK)

<table>
<thead>
<tr>
<th>AUXILIARY SYSTEMS</th>
<th>OLT EQUIPMENT</th>
<th>LOCAL CONVERGENCE POINT (LCP)</th>
<th>OPTICAL DISTRIBUTION FRAME (ODF)</th>
<th>FDB / NAP (Network Access Point)</th>
<th>INDOOR OPTICAL OUTLET (OTO / IOO)</th>
<th>OPTICAL NODE TERMINAL (ONT / ONU)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSTN</td>
<td>GPON OLT</td>
<td>LCP 1:8</td>
<td>NAP 1:32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internet</td>
<td>1:08 FTTx SPLITTER BOX</td>
<td>FIBER PATCH PANEL OR OPTICAL DISTRIBUTION FRAME (ODF)</td>
<td>1:32 PLC RACK MOUNT SPLITTER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPTV</td>
<td>GPON ONU</td>
<td></td>
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<tr>
<td>CCTV</td>
<td></td>
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<tr>
<td>Paging</td>
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<tr>
<td>Digital Signage</td>
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</tbody>
</table>

GPON OLT 1:08 FTTx SPLITTER BOX

GPON ONU (AK-6461 / 6461W)
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

FTTx Cabling Architecture
ADDITIIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

GPON FTTx Business Models

1. HOSTED SET-UP / MANAGED SERVICES
2. INFRASTRUCTURE AS A SERVICE (IaaS) / Software As A Service
3. NEUTRAL HOSTING
4. LEASE TO OWN MODEL AND/OR
5. SUBSCRIPTION MODEL
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS
Additional Revenue Streams : Thru GPON FTTx

1. CATV + INTERNET + CCTV
2. CATV + INTERNET + CCTV + ACCESS CONTROL (BIOMETRICS) + DIGITAL SIGNAGE (Public Information Display Systems)
3. CATV + INTERNET + CCTV + ACCESS CONTROL (BIOMETRICS) + DIGITAL SIGNAGE (Public Information Display Systems) + Home Automation Systems
4. CATV + INTERNET + LGU STREET CCTV + INTELLIGENT TRAFFICE MANAGEMENT SYSTEMS + FLOOD WARNING SYSTEMS + PARKING MANAGEMENT SYSTEMS

NOTE:
CATV Operators also means other Service Operators such as Telecoms Operators, ISP’s, VAS providers
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

LGU HOTLINE

Concept:
• Set up a local multimedia hotline for the entire city, wherein residents can reach the contact center using landline phones, mobile phones and pc
• A centralize Network operating center for the entire local government unit

Purpose:
• 911 service
• General inquiry
• Survey and feedback
• Control center
• Public information services
• Etc…
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx
Implementation: In Partnership with telecom operators / PAPTELCO’s

- Hosted set up and managed services on a call center platform
- Agents can be located anywhere
- Use of existing infra
- Publish new hotline number per municipality
- Use of CRM for incident logging, caller profiling and escalation procedure
- Create database for all partner establishments
- Create inquiry and dispatch procedure for the partner establishments
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

Digital Signage

Private Network Program
Create and manage your own, exclusive digital signage network thru DS Solutions
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

to provide PCTA member-operators with additional revenue streams by availing the Digital Signage Network Program as reseller-operator of Digital Signage Business in their area/s of operations.
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

Utilizing our DS Solutions and subscribing to its “Software as a Service” platform, PCTA member-operators can now provide new value add service delivery enhancements to its existing and new corporate clients by bundling Digital Signage solutions w/ its CATV and internet subscription.

Other SaaS applications such as time and attendance solution, general inquiry or concierge assistance, public service, etc. combined with DS can also provide value add service delivery enhancements to PCTA member-operators customer – clients.
What is Digital Signage?

Digital signage is more than a flat screen display running full screen TV or Powerpoint. Digital signage is about centrally controlling your network of displays enabling you to get your message to your audience at the right time.

The simple structure of an INDOOR DIGITAL SIGNAGE PRIVATE NETWORK looks like:

- **SaaS Central Server**: Updates content via internet or LAN connection
- **Content administrator**: Pulls new content and ping for updates
- **New content is pushed to PCTA local servers**
- **Local servers**: Pulls new content and ping for updates
- **Wi-Fi ping update**
- **Main Lobby**: Call Terminal Counter / Manual Queuing Call Pad
- **School Entrances/ Public Rooms/ hallways**
- **Ticketing Machine Kiosks**
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

The simple structure of an OUTDOOR DIGITAL SIGNAGE PRIVATE NETWORK looks like:

The Network Setup
via LAN or Internet

Content administrator updates content via internet or LAN connection.
New content is pushed to local servers.

Outdoor LED Billboard Display
Outdoor Pedestrian Overpass Billboard Display
Locations without LAN cabling
Unipole Outdoor LED Billboard
Outdoor LED Billboard Display
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

- LOCAL SERVER
- CONTENT ADMINISTRATOR
- MEDIA PLAYER/S
- 42" Smart LED TV
- INTERACTIVE KIOSK

INTERACTIVE KIOSK

E-PLDT
GSIS
Information Kiosk

Dimensions:
Height 6Ft
Width 20in.

Material:
Steel

Finish:
Acrylic paint
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

Ticketing Machine with 6 service buttons
Call Terminal Counter

Ticketing Machine Kiosks

an interactive kiosks with Queuing SW
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

PROJECT BACKGROUND AND OBJECTIVES:

1. Create a concierge type contact center to cater to all tourists in Boracay
2. To address the requirement of Boracay Island to consolidate all the telephone numbers of hotels and restaurants and other establishments into a single hotline number.
3. The intention is to cater to local and tourist customers mainly for hotel bookings and reservations, tourist assistance, general inquiry, bus and ferry ticketing system and public service

E-PLDT GSIS Information Kiosk

Dimensions:
Height 6Ft
Width 20in.

Material:
Steel

Finish:
Acrylic paint
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

• TARGET MARKET

• All hotel, restaurants and other establishments in Boracay including other tourist destinations

• Estimated total number of establishments in and around Boracay is 500

• MARKET OPPORTUNITY

• Cost Drivers:

<table>
<thead>
<tr>
<th>CAPEX</th>
<th>OPEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>VARIABLE (subscription or purchase model)</td>
<td>VARIABLE (subscription or purchase model)</td>
</tr>
</tbody>
</table>

• PRICE STRUCTURE

  1. One Time set up fee
  2. Monthly recurring cost
  3. Pay per use scheme
**Revenue stream opportunities**

1. Monthly recurring cost MRC for all subscriber
2. Commission or referral fee from establishments for confirmed bookings
3. Advertising fee for ad placement in our “kiosk”
4. Revenue from telemarketing or outbound campaigns
5. One time set up fee
6. Cloud computing platform usage

<table>
<thead>
<tr>
<th></th>
<th>BASE</th>
<th>STRETCH</th>
</tr>
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<tbody>
<tr>
<td>Year 1</td>
<td>10 establishments/ mo @3k set up fee</td>
<td>20 establishments/ mo @ 3k set up fee</td>
</tr>
<tr>
<td>One time fee</td>
<td>= 30k / mo OTF</td>
<td>= 60k / mo OTF</td>
</tr>
<tr>
<td>(OTF)</td>
<td>= 360k / yr OTF</td>
<td>= 720k / yr OTF</td>
</tr>
<tr>
<td>Year 1</td>
<td>MRC of 1k / mo</td>
<td>MRC of 1k / mo</td>
</tr>
<tr>
<td>Monthly recurring cost</td>
<td>= 10k / mo MRC</td>
<td>= 20k / mo MRC</td>
</tr>
<tr>
<td>(MRC)</td>
<td>= 120k / yr MRC</td>
<td>= 240k / yr MRC</td>
</tr>
</tbody>
</table>

***Additional revenue streams if client/s requested PCTA member-operator on customized content solutions, content management system maintenance, and supply of additional hardware appliance.***
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

SUGGESTED CLIENTS:

1. Local Gov’t. Public Information Display System (LGU TV)
2. Government Public Offices and Other Institutions (MED TV)
3. Schools, Universities, etc. (CAMPUS TV)
4. Bus Terminals, Airports, etc. (IN TRANSIT TV)
5. Malls, and other public places (SM TV)
6. Corporate Offices (CORP. TV)
7. Hospitality Institutions / Hotels (HOTEL TV)
8. Convention Halls, etc (INFO TV)
9. Restaurants, food courts, etc.
### ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

**ADVERTISING RATES**

<table>
<thead>
<tr>
<th>PRIMARY LOCATIONS</th>
<th>LOCATION</th>
<th>NUMBER OF UNITS</th>
<th>CAPTURED AUDIENCE</th>
<th>NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) PHLHEALTH</td>
<td>Isla Ave, Mas</td>
<td>1</td>
<td>28,000</td>
<td></td>
</tr>
<tr>
<td>2) Quezon Ave</td>
<td>1</td>
<td>62,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Ayala Ave</td>
<td>1</td>
<td>65,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Ayala St, Makati</td>
<td>1</td>
<td>61,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Del Norte, Caloocan</td>
<td>1</td>
<td>52,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Real Ave, Las Piñas</td>
<td>1</td>
<td>49,000</td>
<td></td>
<td></td>
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<tr>
<td>7) Monumento, Cainta</td>
<td>1</td>
<td>46,000</td>
<td></td>
<td></td>
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<tr>
<td>8) NLEX, Caloocan</td>
<td>1</td>
<td>43,000</td>
<td></td>
<td></td>
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<tr>
<td>9) NATIONAL STATISTICS OFFICE</td>
<td>1</td>
<td>39,000</td>
<td></td>
<td></td>
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<tr>
<td>10) C. Macapagal Ave, PC</td>
<td>1</td>
<td>29,000</td>
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<tr>
<td>11) SECURITIES AND EXCHANGE COMMISSION</td>
<td>3</td>
<td>59,000</td>
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<tr>
<td>12) SOCIAL SECURITY SYSTEM</td>
<td>1</td>
<td>187,000</td>
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<td>13) MAKATI CITY HALL</td>
<td>2</td>
<td>55,000</td>
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<td>14) OVERSEAS WORKERS WELFARE ADMINISTRATION</td>
<td>1</td>
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<tr>
<td>15) DEPARTMENT OF FOREIGN AFFAIRS</td>
<td>1</td>
<td>42,000</td>
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**SECONDARY LOCATIONS**

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<tr>
<th>LOCATION</th>
<th>NUMBER OF UNITS</th>
<th>CAPTURED AUDIENCE</th>
<th>NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>16) AFP/LAI</td>
<td>1</td>
<td>26,460</td>
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</tr>
<tr>
<td>17) Bonifacio</td>
<td>1</td>
<td>26,460</td>
<td></td>
</tr>
<tr>
<td>18) Bonifacio</td>
<td>1</td>
<td>26,460</td>
<td></td>
</tr>
<tr>
<td>19) Crame</td>
<td>1</td>
<td>22,000</td>
<td></td>
</tr>
<tr>
<td>Total Number of Units</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;Total Monthly Audience&quot;</td>
<td>1,62M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GIVES ADVERTISERS OPTIMAL REACH AT MINIMAL COST**

**ADVERTISING RATE** *(30 Sec. TVC)*

- **PRIMARY**
  - PhP 16,000.00 / location / month
  - 16 30s / day

- **SECONDARY**
  - PhP 12,000.00 / location / month
  - 16 30s / day

**NEWS CRAWLER WITH LOGO**

- PhP 16,000.00 / location / week with 16 Daily TVC30s spot

**FULL-SCREEN WEATHER UPDATE WITH LOGO**

- PhP 15,000.00 / location / week with 16 Daily TVC30s spot

**TERMS**

- 3 months minimum contract

**ADVERTISING MATERIALS**

- Requirement: DVD or AVI format
- We accept production or editing of ad materials. Costs subject to negotiation.

Visit us at www.pdposterads.net
## ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Sample Additional Revenue Streams: Thru GPON FTTx

<table>
<thead>
<tr>
<th>ADS TYPE</th>
<th>Exposure Time Span</th>
<th>1 Cycle Span (in minutes)</th>
<th>Number of Exposure</th>
<th>Number of AD Spots</th>
<th>COST OF AD PLACEMENT (1 Month, per Site)</th>
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<tbody>
<tr>
<td>Video/Board Type Airing</td>
<td>15 Seconds</td>
<td>10 Minutes</td>
<td>6X</td>
<td>60X</td>
<td>1 Ad Spot 3,500.00</td>
</tr>
<tr>
<td>Video/Board Type Airing</td>
<td>15 Seconds</td>
<td>5 Minutes</td>
<td>12X</td>
<td>120X</td>
<td>1 Ad Spot 6,500.00</td>
</tr>
</tbody>
</table>

**NOTE:** Above prices are based on Package Price meaning Ad will be placed on all sites and is VAT EXCLUSIVE.

### Available Sites:

**Meralco Business Offices:**
1. Meralco Pasig
2. Meralco Makati
3. Meralco Kamuning
4. Meralco Cainta
5. Meralco Marikina
6. Meralco Mandaluyong
7. Meralco Tutuban
8. Meralco Novaliches
9. Meralco Roosevelt
10. Meralco Baliuag
11. Meralco Caloocan
12. Meralco Batangas City
13. Meralco Commonwealth
14. Meralco Valenzuela
15. Meralco Calamba
16. Meralco Balintawak
17. Meralco Paranaque
18. Meralco Rosario
19. Meralco San Pedro
20. Meralco Bacoor
21. Meralco Las Pinas
22. Meralco Lucena
23. Meralco Balagtas

**Philippine Airlines – Makati Ticketing Office**
**Philippine Heart Center – OPD and Billing/Cashier Dept.**
**Manila Central University Hospital – OPD**
**Hi-Precision Diagnostic – Del Monte Branch**
ADDITIONAL REVENUE STREAMS FOR SERVICE PROVIDERS USING GPON FTTx SOLUTIONS

Thank You

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