Myanmar ISP Update

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Optimity

• About Presenter

Sai Nyan Lynn Swe : B.E (Electronics), YTU .
 3 x CCIE #38501 (R&S,SP, DC) , VCIX-NV

- More than 18 years of professional working experiences in Telecom, ISP and Datacenter Industry @ Regional and International

- Past Companies - SingTel, M1, TATA Communication, Bagan CyberTech, ACE Data Systems

- Specialized in Routing & Switching , Service Provider and Datacenter

- Providing Consulting Services to a few Local ISPs.

- Active Member in SGNOG , MMNOG and Technical Leader of MM-IX

History of ISP in Myanmar

Started in 2000 by

Myanmar Post Telecommunication

Bagan Cyber Tech IDC and Teleport (BaganNet)

- # New AGE of ISP

2013 – The Telecommunication Law

Network Facilities Service (Individual) License –((the "NFS-I License");
all types of telecoms activities and would arguably apply to fixed or mobile telecoms operators.

Network Facilities Service (Class) License,(the "NFS-C License");
allows for the construction, deployment, maintenance and lease of passive telecommunications network infra-structure.

- # New AGE of ISP

Network Service License, (the "NS License");
      to lease transmission capacity from an NFS-I licensee for the purposes of providing national or international telecommunication services.

Application Service License, (the "AS Service License")
      for lease of capacity from an operator, but only allows for the provision of domestic telecommunications services.

LICENSING CATEGORIES SUMMARY

	NFS (I)	NS	AS	NFS(C)
Facilities Based?	Yes	No	No	Yes (only Passive)
Permitted to offer telecom services?	Yes	Yes	Yes	No
Access to Number?	Yes	Yes	No	No
Access to Spectrum?	Yes	Yes	No	No

LICENSING FRAMEWORK

A multi-service licensing framework

- to simplify licensing processes

- encourage entry and expansion of services, and

- increase End User access to Telecommunications Networks and Telecommunications Services.

NFS (I)

NS   **NFS (C)**

AS
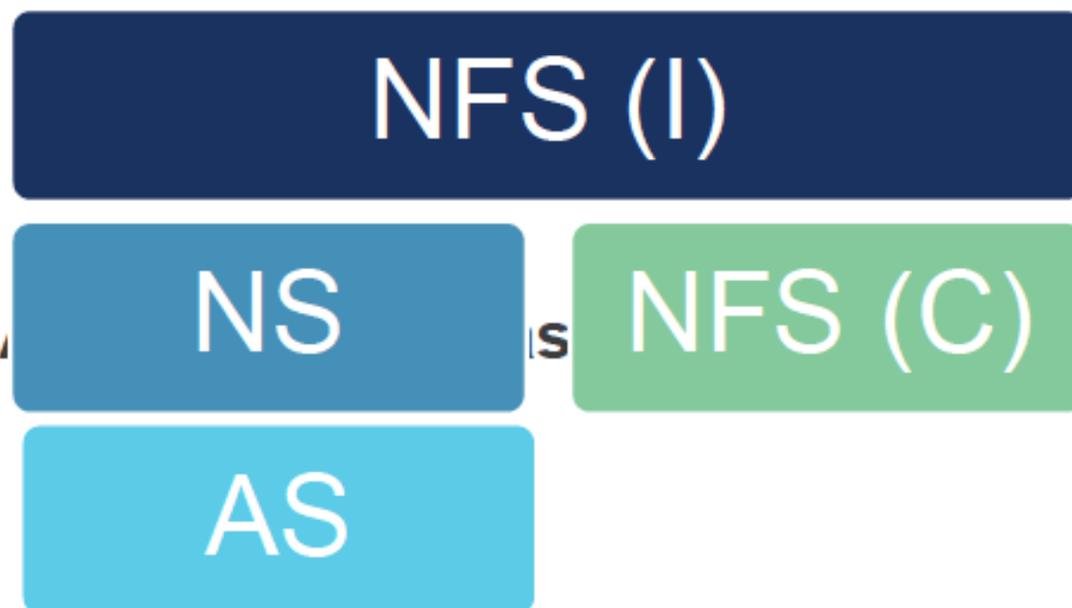
A maximum of two Telecommunications Service Licenses

NFS (C) **+** NS **OR** AS

LICENSE FEE

Licensing Fees for Telecommunications Service Licenses

	NFS(I) License	NFS(C) License	NS License	AS License
Application/ Registration Fee*	MMK 10,000,000	MMK 2,500,000	MMK 5,000,000	MMK 2,500,000
Initial Fee*	MMK 50,000,000	MMK 12,500,000	MMK 25,000,000	MMK 10,000,000
Annual Regulatory Fee	2% of relevant revenues	0.5% of relevant revenues	1% of relevant revenues	0.5% of relevant revenues
Fee to Provide Additional Services	MMK 5,000,000	MMK 1,250,000	MMK 2,500,000	MMK 1,250,000
Renewal Fee	MMK 50,000,000	MMK 12,500,000	MMK 25,000,000	MMK 10,000,000

** Spectrum fees and numbering fees shall be paid separately

LICENSE ISSUED LIST (Updated of 1-Oct-2019)

Total Issued License List (1–10–2019)

No.	Type of License	Local	International	Total
1	Nationwide Telecommunication License	2	2	4
2	Network Facilities Services License (Individual)	46	26	72
3	Network Service License	13	4	17
4	Network Facilities Services License (Class)	43	23	66
5	Application Service License	29	10	39
	Total	133	65	198

- Total 146 in 2018 May

Myanmar ISP Update

- Total IGW : 17

- Active ASN : 98 ASN

- Total IPv4 Prefix : 834 Prefix

- Total IPv6 Prefix : 75 Prefix

  - Total 75 IPv6 Prefix from Telecom International Myanmar

- ## WINNER OF LTE (FIXED BROADBAND For 2600 MHZ

Region	Lot Number	Bidder Name	Price USD (Million)
Region 1 (Nay Pyi Taw, Magway, Bago, Mon, Kayin, Tanintharyi)	Lot 1.1	Fortune International Ltd	6.09
	Lot 1.2	Global Technology Co.,Ltd	7.03
Region 2 (Yangon, Ayeyawaddy, Rakhine)	Lot 2.1	Amara Communications Co.,Ltd	95.81
	Lot 2.2	Yatanarpon Teleport Public Co., Ltd	83.44
Region 3(Mandalay, Sagaing, Chin, Shan, Kachin, Kayah)	Lot 3.1	Yatanarpon Teleport Public Co., Ltd	27.24
	Lot 3.2	Amara Communications Co.,Ltd	24.55

Roll Out Requirement for LTE

	Roll out Requirements in Regions (by population)		
	Region 1	Region 2	Region 3
By Year 5	30%	50%	35%

• Services From ISP

➢ ADSL

➢ IPSTAR / VSAT

➢ Wireless

➢ FTTX

➢ Metro Fiber

➢ 3G/4F Mobile Internet

➢ MPLS (Layer2/Layer3)

➢ IPLC

➢ LTE (Fixed Broadband)

- # Current International Connectivity

- SEA-ME-WE3 (Oldest Submarine Cable)

- SEA-ME-WE5
  - Newly Submarine Cable . Landed in Ngwe Saung & Link to CMI Cable System

- AAE-1
  - Newly Submarine Cable . Landed in Ngwe Saung (Feb/2017) & Link to CMI Cable System

- MYTHIC (Myanmar-Malaysia-Thailand-International Connection)
  - Funded by Campana , Build by Alcatel-Lucent. Design for 300 Gigabits per second
  - Will be landed in Thanlyin

- **Current International Connectivity**

- Cross-Border Link to Muse (CMI) (to China)

- Cross-Border Link to Myawady (to Thailand)

- Cross-Border Link to Tachileak (to Thailand)

- Cross-Border Link to Tamu (To India)

- **Domestic Connectivity**
  - Long Distance Fiber Connectivity
    - Myanmar Fiber Optic Communication Network Co., Ltd.
    - Ministry Of Defense
    - Myanmar Railway (Source MR EOI announcement)
      - Yangon to Mandalay (Ready to use)
      - Yangon to Pyay (EOI process)
      - Mandalay to Myitkyina (EOI Process)
      - Yangon to Dawei (EOI Process)

- **Domestic Connectivity**
  - YANGON METRO FIBER
  - Underground Cable
    - EAGER COMMUNICATION (Micro Trench)
  - Electric Poles
    - Global Technology
    - Shwe Than Lwin
    - Myanmar Information High Way
  - MPT Poles

    MPT is in the process of poles sharing plan

- **Domestic Connectivity**
  - MANDALAY METRO FIBER
  - Underground Cable
    - MFOCN (Approximate 180 KM) Traditional Trench (Source MCDC)
    - EAGER Communication (Micro Trench System)
  - Poles sharing plan by MCDC
   - Allow 10 companies to share the poles and charged by MCDC

- # IPv4 And IPv6 Address Usage for Myanmar

  - ✧ Total 195,531 IPv4 address are assign to Myanmar .
    (Total 152,555 in May-2018)
  - ✧ Less than 10 % of IPv6 traffic from Myanmar.

- **Broadband Internet Update Status for Major Cities**

  ✧ Household in YANGON : 897,116 in 27 Townships

  ✧ Household in Mandalay : 177,966 in 4 Townships

  ✧ Question : How many Internet subscription customers from both Cities ?
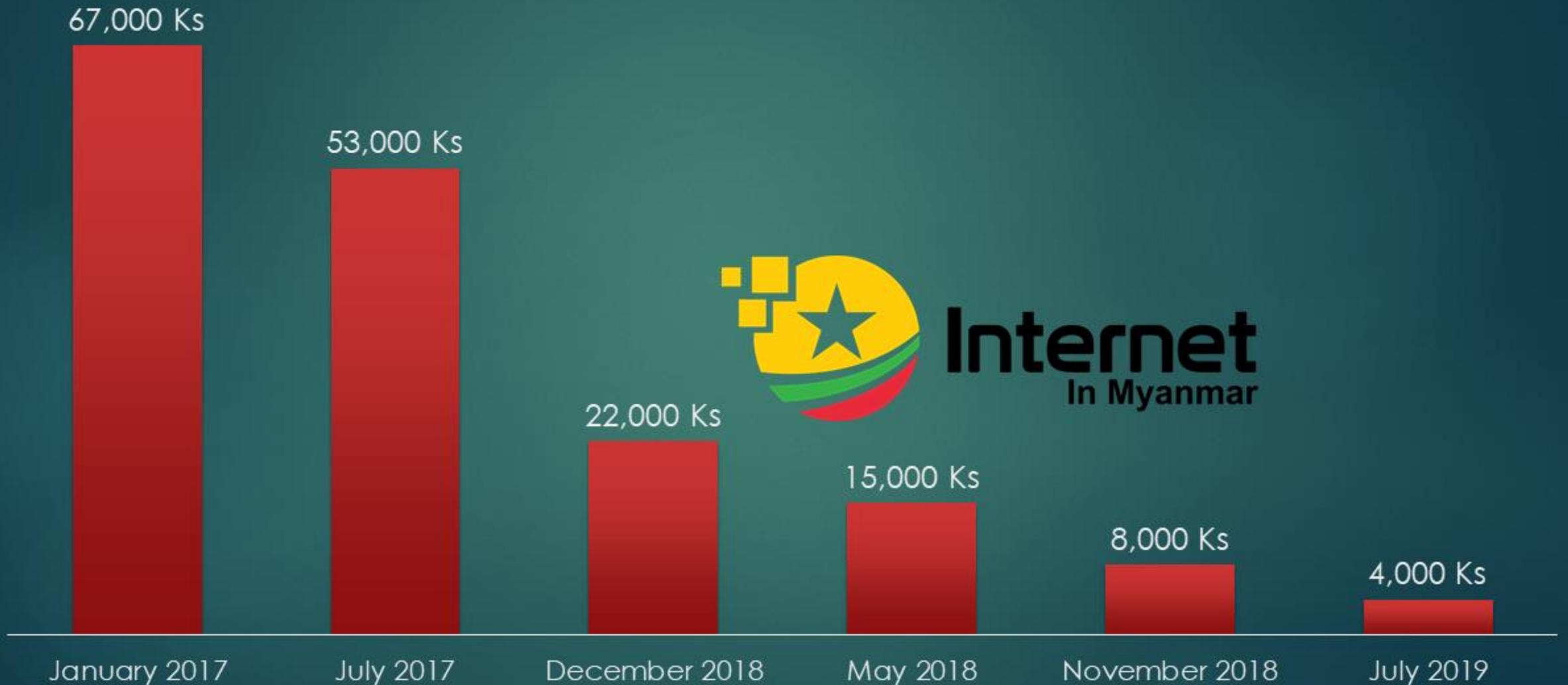
Residential Unlimited Packages
July 2019

|	Average price per mbps	Installation cost (max)	4M	5M	8M	10M	15M	16M	20M	25M	28M	30M	40M	45M	50M	60M	100M
AGB	1300	49,000											45,000			79,000	105,000
WeLink	1500	50,000							31,500					59,050		84,000	
MPT	1500	50,000							39,000						69,000		109,000
Truenet	1900	50,000							35,000	47,500					89,250	126,000	
Myanmarnet	2000	Free			24,000			32,000									
NetCore	2300	60,000				25,000	33,000		39,000								
Unilink	2800	100,000		20,000		30,000			54,000				76,950	81,000		118,000	
Myanmar Speednet	3100	Free				38,000			68,000			88,000			108,000		
5BB	3200	40,000		25,000		40,000		49,500						99,500			249,500
Fortune	3600	Free	24,000			38,000	45,000				85,000			99,000			
Streamnet	3800	35,000		25,000		39,000	49,500		62,000			84,900					
Myanmar Link	4000	50,000	18,000				55,000		80,000			120,000					
Mytel	4200	Free				39,000		49,000		75,000		89,000	122,000			239,000	779,000
Goldenet	4400			28,000	38,000	44,000	54,000		64,000								
Yatanarpon	4600	Free	30,000			39,000		52,000	69,000								
Telenor	5000	80,000				50,000	75,000							200,000			
Ooredoo	6400	50,000				40,000		50,000		75,000		140,000				600,000	1,150,000

Internet In Myanmar

CUSTOMER SURVEY RESULT FIXED BROADBAND INTERNET SERVICE IN YANGON

Demographic Data

Gender (top left):
- Male — 79.6%
- Female — 20.4%
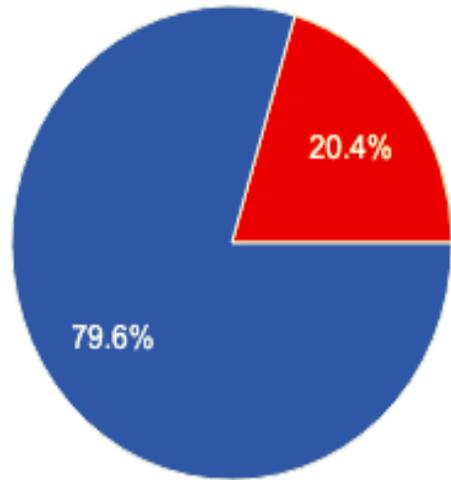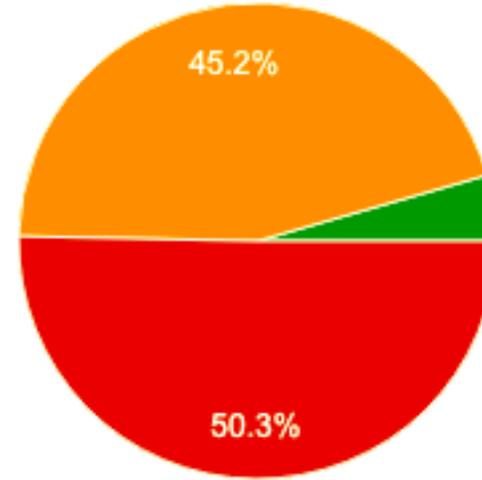
Age (top right):
- under 20 years
- 20-30 years — 50.3%
- 31-40 years — 45.2%
- 41-50 years
- 51-60 years
- above 60 years
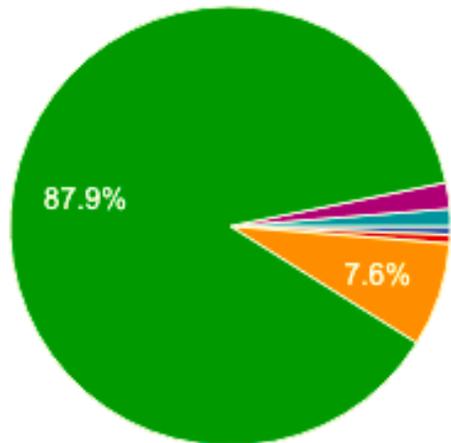
Occupation (bottom left):
- Student
- Unemployed
- Self-employed — 7.6%
- Company Staff — 87.9%
- Government Staff
- Others
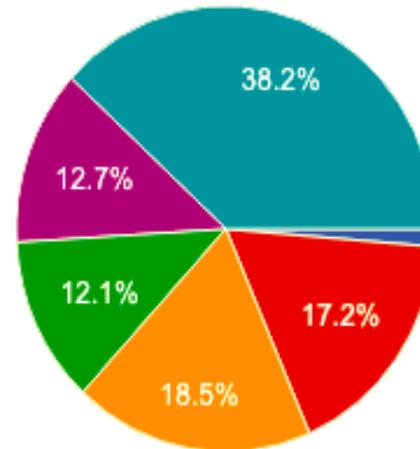
Income (bottom right):
- under 300,000 Kyats
- Kyats 300,000 – 600,000 — 17.2%
- Kyats 600,001 – 900,000 — 18.5%
- Kyats 900,001 – 1,200,000 — 12.1%
- Kyats 1,200,001 – 1,500,000 — 12.7%
- More than 1,500,001 Kyats — 38.2%

CUSTOMER SURVEY RESULT FIXED BROADBAND INTERNET SERVICE IN YANGON

Customer Experiences

Legend:
- Less than 1 year
- 1 to 2 year
- More than 2 year
- Above year

Pie chart values: 36.8%, 8.4%, 26.5%, 28.4%

CUSTOMER SURVEY RESULT FIXED BROADBAND INTERNET SERVICE IN YANGON

Customer Experiences

Pie chart legend:
- under 4 Mbps
- 4 Mbps to 10 Mbps
- 10 Mbps to 20 Mbps
- 20 Mbps to 40 Mbps
- above 40 Mbps

Pie chart values:
- 25.5%
- 15.3%
- 11.5%
- 42%
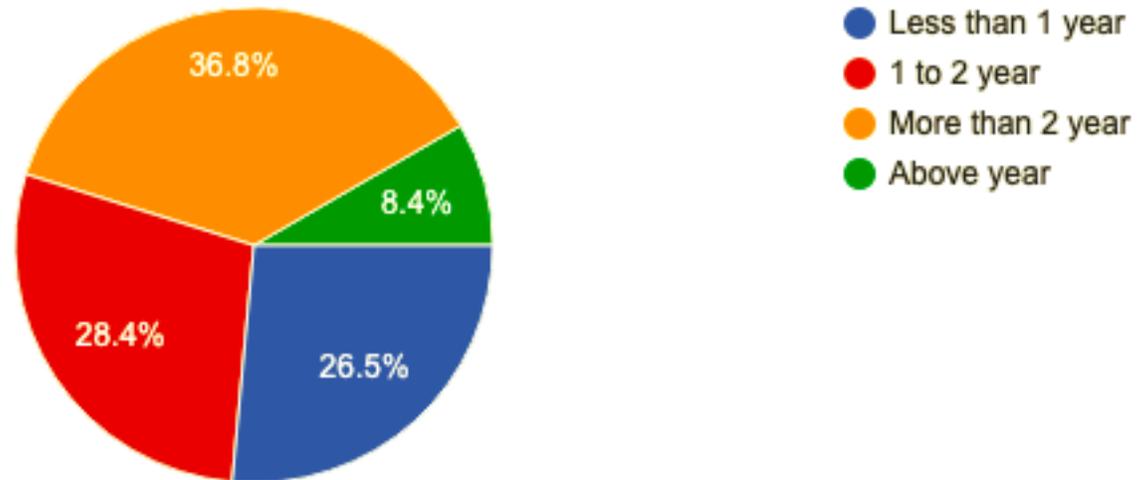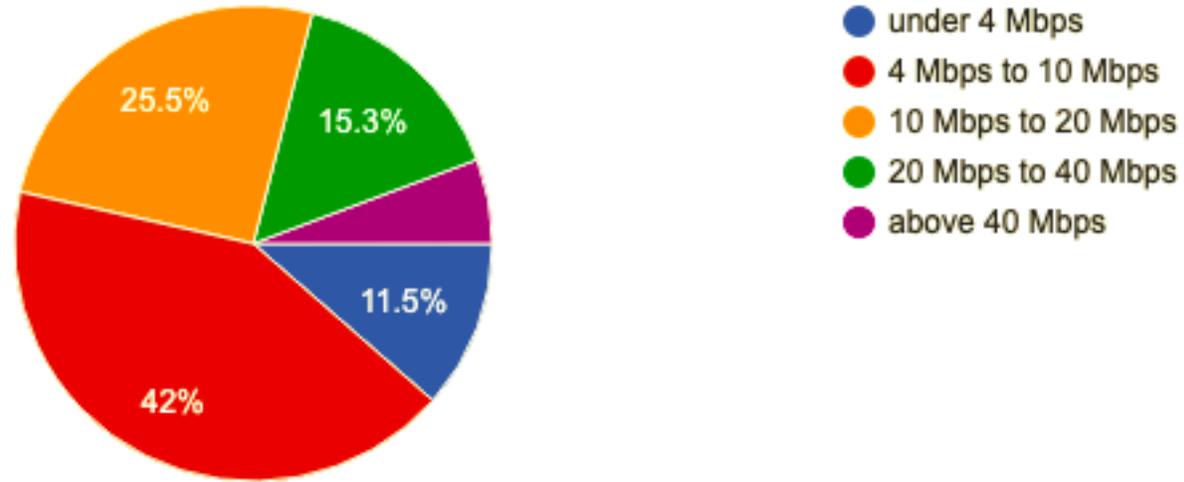
CUSTOMER SURVEY RESULT FIXED BROADBAND INTERNET SERVICE IN YANGON

Table (4.1) Service Provisioning

No	Description	Mean	Std. Deviation
1	Consultation about Internet Service	3.60	.968
2	Easy and flexible	3.67	.948
3	Everyone can get Fixed Broadband Internet Service	3.77	.891
4	Provisioning days	3.49	.926
5	Provisioning requirements	3.61	.868
	Overall Mean	**3.63**	

Source: Survey Data (2019)

Table (4.2) Technology

No	Description	Mean	Std. Deviation
1	Up-To-date end-user equipment	3.40	.977
2	Variety of Technology product	3.49	.900
3	Customized product for the user need	3.26	1.014
4	Value-added-service of the products	3.32	.966
	Overall Mean	**3.37**	

Source: Survey Data (2019)

Table (4.3) Price

No	Description	Mean	Std. Deviation
1	Subscription and installation fee	3.50	.982
2	Usage charge (monthly fee)	3.40	.942
3	Encourages subscribers to subscribe higher bandwidth.	3.45	.881
4	Bill for only active connections	3.31	1.042
5	Better service compared to the payment	3.44	.862
	Overall Mean	**3.42**	

Source: Survey Data (2019)

Table (4.4) Quality

No	Description	Mean	Std. Deviation
1	Consistent speed	3.46	.997
2	Access the actual bandwidth	3.46	.968
3	Less interruption.	3.31	.883
4	Reliable service based on the SLA	3.23	1.089
5	ISP use up-to-date equipment	3.19	1.001
	Overall Mean	**3.33**	

Source: Survey Data (2019)

Table (4.5) Customer Service

No	Description	Mean	Std. Deviation
1	Sufficient information to solve the problem	3.18	1.042
2	Professional and respond promptly	3.30	1.019
3	Time to solved the problem	3.22	.927
4	Automated phone system (helpdesk)	3.02	1.032
5	The process of customer service	3.19	.887
	Overall Mean	**3.18**	

Source: Survey Data (2019)

Table (4.6) Summary of Customer Perceptions on Fixed Broadband Internet Service

No.	Description	Mean
1	Service Provisioning	3.63
2	Technology	3.37
3	Price	3.42
4	Quality	3.33
5	Customer Service	3.18

Source: Survey Data (2019)

Table (4.7) Customer Satisfaction

No	Description	Mean	Std. Deviation
1	Satisfied for Fixed Broadband Internet service	3.53	0.872
2	Meet expectation	3.46	0.908
3	Affectively provide the services	3.49	0.903
4	Helpful and Informative from the website	3.25	0.938
5	To inform the new and improved packages	3.24	1.022
	Overall Mean	**3.39**	

Source: Survey Data (2019)

Table (4.8) Customer Loyalty

No	Description	Mean	Std. Deviation
1	Continue to use this service	3.53	1.000
2	Loyal to current Provider(Company)	3.35	0.938
3	Not to switch even better attractive offer	3.16	1.079
4	Choose current Provider to others	3.46	0.990
5	Say positive things about this Provider to others	3.58	0.902
	Overall Mean	**3.42**	

Source: Survey Data (2019)

Table (4.9) Factors Influencing Customer Satisfaction

Variable	Un-standardized Coefficient		t	Sig	VIF
	B	Std Error			
(Constant)	.280	0.121	2.319	0.021	
Service Provisioning	0.163***	0.045	3.594	0.000	2.331
Technology	0.039	0.039	0.997	0.320	2.061
Price	0.115***	0.043	2.673	0.008	2.150
Quality	0.359***	0.054	6.634	0.000	3.981
Customer service	0.252***	0.043	5.853	0.000	2.576
F value	172.706 ***				

Source: Survey Data (2019)

Notes: *** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level

Table (4.10) Relationship between Customer Satisfaction and Customer Loyalty

Variable	Un-standardized Coefficient		t	Sig	VIF
	B	Std Error			
(Constant)	.217	0.114	1.909	0.057	
Customer Satisfaction	0.943***	0.033	28.895	0.000	1.000
R value	.831				
R Square	0.691				
Adjusted R Square	0.690				
F value	834.906***				

Source: Survey Data (2019)

Notes: *** Significant at 1% level; ** Significant at 5% level; * Significant at 10% level

References

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Thank you for your attention