INTERNET ECONOMICS: Urban and Rural perspectives

UTHANT RABBANI  Head of Sales, InterCloud

SAYEEF RAHMAN  Head of Systems and Strategy, Digi Jadoo
“A BRIEF HISTORY OF TIME”
- STEPHEN HAWKING
1985-90
We started with a bad luck of missing the train leading to SEA-ME-WE-2 and SEA-ME-WE-3 submarine cables.

1990
First Mobile Cellphone Operator Citycell using CDMA technology.

1991
ILD / UUCP Dial-up to Hong Kong for offline e-mails back in early 1990's through Kaifnet and BanglaNet.

1993
First VSAT established by Pradeshta Net.

1997
First GSM Operator license awarded to Grameen Phone.

2003
First Mobile Internet (GPRS) service launched by Grameen Phone.

2005
First submarine cable for Bangladesh – the SEA-ME-WE-4 commissioned by BSCCL.

2009
First private fiber cable NTTN service provider Fiber@Home commences service.

2012
3G service starts with Teletalk being the first mover.

2018
Bangladesh launches 4G services.

>>> WHAT NEXT >>>
The scale of Internet subscribers in Bangladesh

* Updated as of June 2018 from BTRC website.

- Mobile Subscribers: 150.945 Million
- Internet Subscribers: 87.79 Million
- WiMax Subscribers: 0.081 Million
- Broadband + PSTN Subscribers: 5.685 Million

Technology trend is leading towards a Wireless future
How Internet reaches the last mile in Bangladesh

Optimization is possible here as **70%-80%** of the cost lies in this part

Considering the cost points how can we try to

**Standardize the cost at the last mile?**
Lack of infrastructure limits economic growth at last mile

Development is always centered around Metropolitan cities and Economic growth centers which are facilitated with basic infrastructure, access to education, financial institutions and communication infrastructure.

Proper physical infrastructure reaching other rural areas

Educational institutions; as a result less qualified resource building options

High yielding economic activity

Financial infrastructure

Development

Interest for service providers to invest

This is why Government can’t decentralize

AND AS A RESULT

LACK of...
A lot of people are flocking towards Urban cities while others are contributing to the Digital Divide;

From Regulatory perspectives network operators have a lot to do here...
Our Regulatory Framework needs more support from us

**URBAN**
- Create more Business friendly environment
- Empowerment of Associations / Trade Bodies
- Fair play
- Are we doing enough to educate customer?

**RURAL**
- Price protection for sustainability in market
- Creating policies for Digital Inclusion
- Help Enforce law and build communities for better future
- Raising awareness and offering VGF to build infrastructure
For better economics hack different **stages of growth**

<table>
<thead>
<tr>
<th></th>
<th>Stage-1</th>
<th>Stage-2</th>
<th>Stage-3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subscribers</strong></td>
<td>0 – 1,000 subs</td>
<td>1,001 – 10,000 subs</td>
<td>10,000+ subs</td>
</tr>
<tr>
<td><strong>Bandwidth usage</strong></td>
<td>Upto 500Mbps</td>
<td>Upto 10Gbps</td>
<td>Over 10Gbps</td>
</tr>
<tr>
<td><strong>Coverage</strong></td>
<td>Locality</td>
<td>City</td>
<td>Multiple city (Urban and/or Rural)</td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td>Residential broadband and some corporates and small scale FTP</td>
<td>Residential, Corporate, Small scale providers, FTP services, Gaming,</td>
<td>Residential, Corporate, Small providers, Cloud, Infrastructure, other VAS such as FTP Services, Gaming, Cyber Café, Hardware sales, PC repair, etc...</td>
</tr>
<tr>
<td><strong>Service optimization</strong></td>
<td>Transit</td>
<td>Routing optimization, CDN</td>
<td>Peering, Multiple CDN, Cloud, Portal</td>
</tr>
<tr>
<td><strong>Technology</strong></td>
<td>Ethernet</td>
<td>Ethernet, GPON</td>
<td>Ethernet, GPON and yes Legacy tech such as P2P Radio's!!!</td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>3-10</td>
<td>11-100</td>
<td>100+</td>
</tr>
</tbody>
</table>
Why can’t we grow above Stage-3

• Low education
• Lack of vision
• Lack of educated personnel
• Lack of Business analysis capability
• Meagre investment (din ani din khai)

• Basic Internet barely satisfies the needs of the customers. We need access to international content as well as create proper localized Content

• We use FB, Youtube and recently live TV is catching up as a trend which make up 90% of our user base

• Dark content being served as an alternative to facilitate demand

• This is where there is room for investment and growth. Businesses can see potentially positive revenues from such sector.

• Foreign organizations are bringing their focus here.
Big Data is the way to grow by consumer data behavior analysis

Traffic usage pattern (Time of day, Weekend, Holidays)
Types of traffic being used
What are these traffic entities
Routes being taken by such traffic
How you are connected to these routes
What more you can do to optimize these routes
Cost factors involved for optimization (at times you don’t)
Can you bring in such content and cache them
Plan on how you can offer similar services
Are there any regulatory constraints
Customer charging and packages
Better service brings better yield
Happy customer is willing to pay more
More Revenue = More Growth options
Which is better: **Transit vs Peering vs CDN**

- **Transit**: Start small and don’t have in-depth analysis capability (Stage-1).

- **Peering**: Once you have grown to a level (talking about having multiple Gbps of traffic), optimize your costs by connecting other SP’s offering more routes (Stage-2).

- **CDN**: After a certain level you will realize Peering is not enough, and you will need multiple dedicated CDN to enhance customer experience and drive traffic (Stage-3).
Transit and Peering bottlenecks + complexities

Routing | Capacity Limits | Path Limits

Content resides here; Where art thou?
Shifting Economic Trends of the Industry

- **10Gb Ethernet** is becoming mainstream; **100GbE** will be accessible in few years
- **Neutrality rulings** in US and EU
  - Highly varying benefits and downside between US and EU
  - Fight with the big boys, bringing benefits to us
  - China has secured its own position within this
- The “dumb” pipes problem: Transport and IP services increasingly commoditized
- Resultantly; the **global IP Transit market compresses 16- 18% per year**, depending on region
- Movements to **Private Data Center / Cloud Interconnection**
- Massive **improvements in measurement and monitoring traffic**
- Content providers are willing to take **content experience to new levels**
- Customers looking for **rich, yet simple / seamless service experience**
- Innovation is fueling the Tech disruption
Over the years Mankind has evolved

Our needs have evolved too
IS IT TIME TO BRING A DISRUPTIVE PRODUCT / SERVICE IN BANGLADESH?
How to design a disruptive product / service

“If you design first and think later, you may be left with the tower of Pisa.” – Famous quote

UNDERSTANDING

• Customer demand
• Technology trend
• Market development
• Infrastructure (available and required)
• Purchasing Capacity of people
• Service mindset
• Innovation
And the most essential ingredient

WOW FACTOR
Case Studies of big boys: Tech Disruption 101

Except this guy everyone started off small

Reliance Jio

Google Fiber

Singtel

Virgin Media UK

Youtube

Whatsapp

Amazon

Tencent

Facebook

Case study reference:
IDC; Gartner; Researchgate.net; Case Center;
THANKS A LOT FOR YOUR VALUABLE TIME