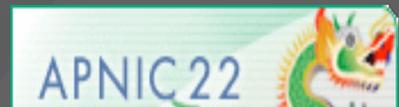


Impact of SMW-4 on Bangladesh

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The Beginning...

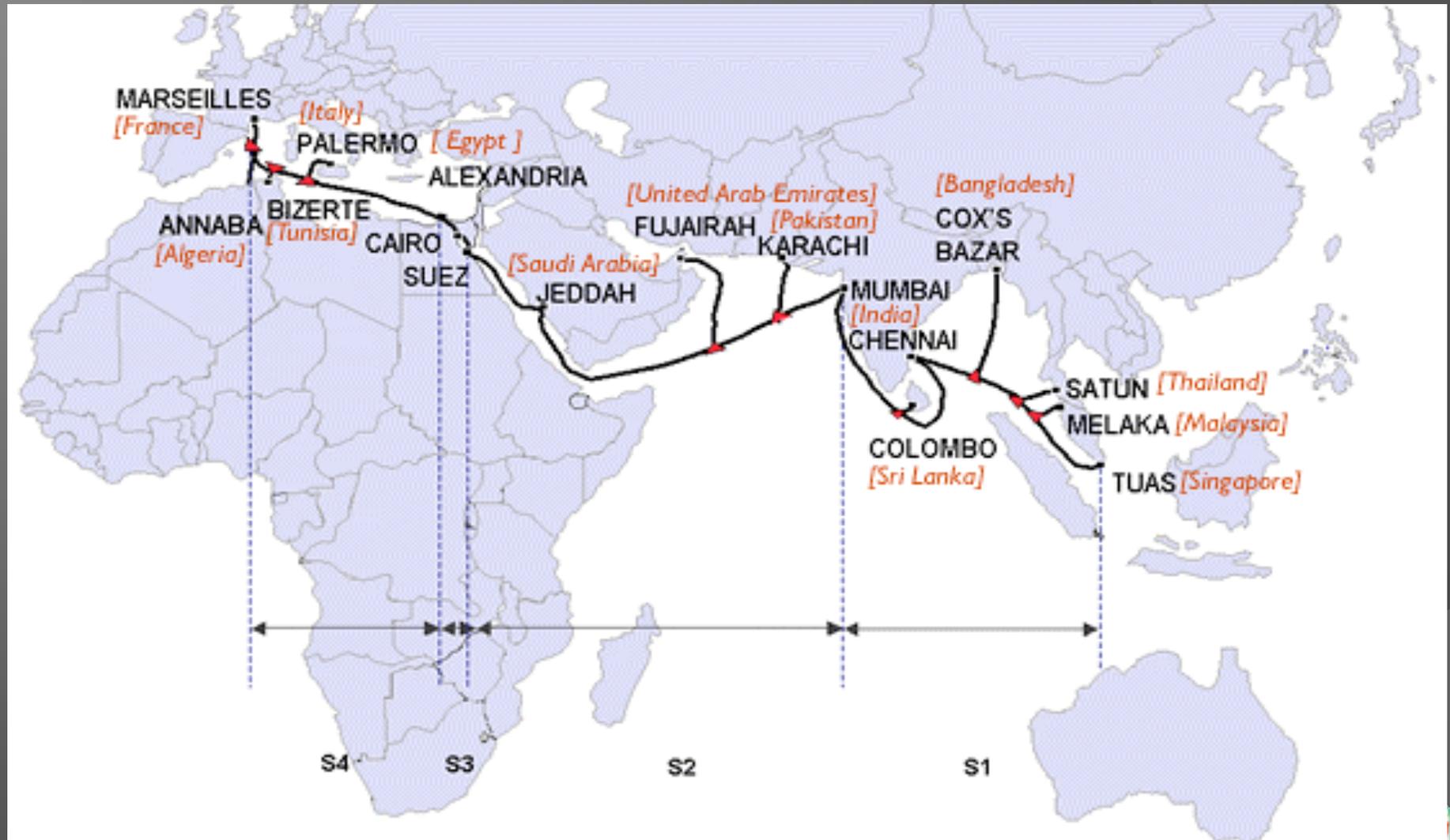
- First Internet connectivity in May, 1996 through a 64kbps VSAT Circuit.



Today

- In 2006 number of ISPs grows to 150+. Mostly concentrated in Dhaka City.
- approximate bandwidth utilization through VSAT is 400mbps

SEAMEWE-4 Cable System



SEAMEWE-4 Cable System

- Cable landed in October 2006
- Took another six month to reach Capital Dhaka
- Internet connectivity through SEAMEWE-4 Submarine cable established in May 20, 2006 (STM-1 to MCI)
- At present 2 STM-1 links are up(with MCI and Singtel)

- ◉ Another 2 STM-1 and 2 STM-4 link is in the pipe line. Expected within this year.

Improvements

- Ping time reduced from 520ms-900ms to 180ms-500ms
- Significant improvement in performance. Specially in Voice and Video conferencing.
- People started playing Online games, watching streaming movies!
- Demand for high bandwidth increased

Hurdles

- ⦿ But it was not quite easy!!
- ⦿ BTTB was not ready at all to provide connectivity
- ⦿ BTTB does not have skilled Manpower to handle a transit point.
- ⦿ No infrastructure to connect ISP's.

Hurdles

- ⦿ No good routers to connect with the backbone
- ⦿ No good routers or switches for connecting ISPs.
- ⦿ No redundancy yet for any infrastructure failure

Initiatives

So ISPs extended their cooperation to resolve the issues.

- ISPs laid their own fiber to reach BTTB.
- ISP Association co-ordinated among the ISPs and BTTB to make things easier.
- Helped out BTTB as well as other ISPs to configure their routers.
- Assisted them how to get IP Address and AS number from APNIC

Splicing Fiber at night



APNIC 22



Climbing Electric Pole



Preparing NOC



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APNIC 22



Challenges

- ⦿ Its another link! So all the ISP's become multihomed!
- ⦿ Most of them does not have own IP address and AS Number!
- ⦿ BTTB does not have enough IP to assign.
- ⦿ APNIC Registers record growth in IP and AS number allocation for Bangladesh.

Challenges

⦿ BGP Woes

- All the ISPs are mostly out of Internet for 3 hours as one ISP become transit for the others through its tiny VSAT link!
- Several times a part of the Internet becomes invisible for BGP Misconfiguration!!

Challenges

- ⦿ Packet loss, Packet Loss, Packet Loss!!!!
 - Almost every body experienced packet loss from 5% to 60%
- ⦿ Causes:
 - Duplex and Speed mismatch, High CPU load. Mostly due to wrong router configuration and overloaded routers.

Negative Impact

- ⦿ ISPs faced more downtime in last three months than last 10 years!!
- ⦿ There are 500KM fiber over land from capital Dhaka to the landing station.
- ⦿ This cable was cut 3 times in last 3 months. and each time it takes about 6 to 10 hours to repair!
- ⦿ SMW-4 cable cut near Suez canal. Took 5 days to repair.

Impact on BDIX

- There were 17 ISPs exchanging local traffic through BDIX(Bangladesh Internet Exchange)
- But today I found only 12 and it was 9 in last month
- Good thing is that still traffic is increasing day by day
- And missed out ISP's are coming back!

Business Impact

- ⦿ Bandwidth Cost for the ISP's reduced significantly. A rapid growth of Broadband users is expected.
- ⦿ Some ISPs having costly Satellite backup some moved to Fiber only.
- ⦿ Bandwidth price varying significantly among ISP's.
- ⦿ User Migration becomes a major concern for the ISPs.

ISP's Connected Till date

- Number ISPs connected to SMW-4 Backbone are 34 till date
- BTTB is getting another 2 STM-1 and 2 STM-4 in this year.
- Another 10/15 ISPs in Pipeline waiting for the new STM-1 links

Initiatives

- ISP Association organising training on BGP routing and Multihoming
- Organising seminars on benefits of Internet Exchange Point
- BTTB is procuring new hardwires considering future need.
- Still lot to do
- We are expecting a robust and better Internet Soon.

Thank you!

