APNIC

COMMUNICATIONS REGULATORY COMMISSION OF MONGOLIA

Mobicom Networks

APNIC Regional Meeting

Shangri-La, Ulaanbaatar

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CONTENT

- Who we are
- Internet development in Asia-Pacific region and Transit Mongolia services
- Internet Ecosystem
- Reliable & high quality Network
- Safe and trustable Internet & Privacy issues

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MobiCom
Who we are

MobiCom Corporation is a world-class communications services and technology company that pioneered mobile technology in Mongolia

- **Mission:** To be the leading communication partner in Mongolia providing our customers with world-class communication services and technology that facilitate the country's development.
- **Vision:** Mobicom will connect citizens to each other and to the world – however whenever they choose – making life easer more enjoyable
- **Values:**
  - **Customer focus**: our customers is at the center of everything we do. Always
  - **Simple**: we subtract the obvious and add the meaningful, ensuring our products and services are easy to use and relevant
  - **Responsible**: The interest of our customers and stakeholders is the guiding principle for everything we do.
  - **Result oriented**: Meeting and exceeding the needs of our customers with exceptional service that can always be trusted, will not only delight our customers but it will deliver results that will benefit shareholders employees alike.

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MobiCom Networks LLC was established in 14 February 2014 and has officially launch the service since 1st April 2014.

100% subsidiary company of MobiCom Corporation LLC.

Owns No.2 the longest transmission network in Mongolia.

- IP Wholesale
- IEPL/IPLC, MPLS VPN, Network solution
- Transit Mongolia

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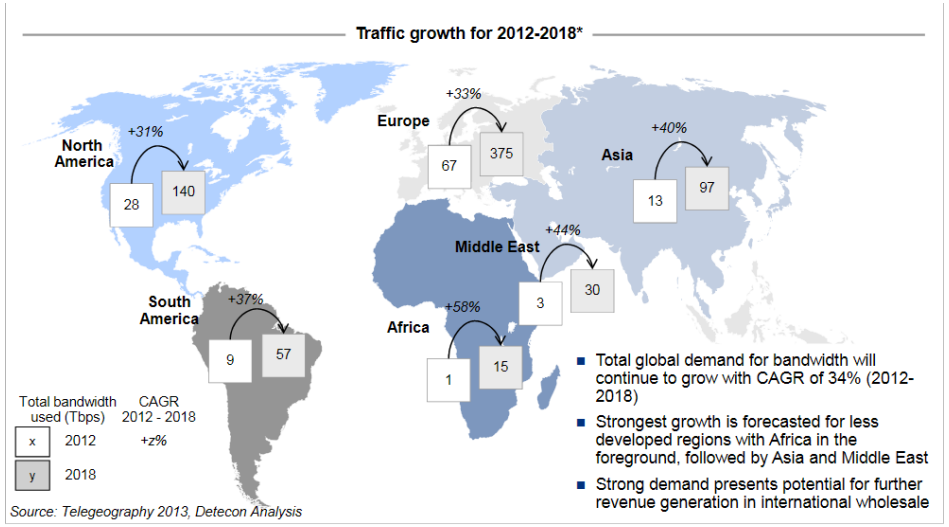
Internet development in Asia-Pacific region and Transit Mongolia services



Regional data traffic demand:

- Global Data traffic (including Internet traffic) growth will continue for coming 10 years
- Asia Pacific region the traffic will grow nearly 40% coming 3 years
- Europe traffic will grow about 33% for coming 3 years
- The capacity between Asia-Europe will increase +130% for coming 5 years
- Nearly 300 independent Submarine optic cable systems handling big majority of Global data traffic between continents. However terrestrial cable system getting significant portion of the traffic.

Source from Detecon Consulting & Telegeogrpahy

Transit-Mongolia Service:

- The majority of traffic handled by submarine cable systems, however new terrestrial cable system getting significant portion of the traffic.
- One of new terrestrial optic cable routes as alternative to Subsea systems are:
  1. Russia – China route
  2. **Russia – Mongolia - China route**
  3. Russia – Kazakhstan - China route
- Russian carriers very actively promoting new Cable systems like ERMC-2, Eurasia Highway, DREAM, TEA-2/3/4.
- The Transit Mongolia route is subset of via Russia route between Asia-Europe information infrastructure.
- Transit Mongolia network must fulfil Russian & Chinese carriers Capacity, Quality requirement

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Transit Mongolia business

OPPORTUNITY

- Mongolia is located strategically important location. The route Russia-Mongolia-China is shortest latency route, which important factor for mission critical services
- The main buyer is Chinese carrier & South East Asian carriers
- The main supplier is Russian, Mongolian, Kazakhstani carriers
- Key promoter is Russian & Chinese Carrier
- Transit-Mongolia route should handle 1.6 Tbps capacity. This is big enough capacity to share all Mongolian carriers.
- But, if we cannot fulfill quality, financial, standards Mongolian portion will decreased and moved to other routes.
- (Current Transit Mongolia traffic volume is just ~200 Gbps only. Nearly 8 times lower performance)

TIMING FACTOR

- Year by Year price is deceased due to supply increases
- The price erosion is about 18% year over year.
- It means yearly $480K will loss every delayed contract for 100G transit service. It means time is important.

COUNTRY BENEFIT

- If all Mongolian carriers work together and fulfill all 1.6 Tbps capacity then expected revenue should be $3M every month. In full year expected revenue will be **$36M which will be directly taxed by Mongolia**.

REGIONAL INFORMATION HUB

- The Transit Mongolia network not only bring Transit revenue to Mongolia. Also can facilitate Global & Regional Information infrastructure
- With multiple in/out networks & hundreds of Gbps connections with several Tbps capacity Mongolia can be Regional (even Global) information HUB with:
  - Super Internet Data Centers
  - Hosted Information from Apple IDC, Google IDC
  - Cloud infrastructure for modern Information services
  - Virtualized services for Financial and Banking applications
  - Regional CDN especially Russian & Chinese speaking populations

MOBICOM NETWORKS POSITION

- we're happy that now MCN has its license,
- we hope to operationalize it as quickly as possible
- our ambition is that MCN can (alongside the other players) play its role in providing Trans-Europe-Asia services.

Transit Mongolia business is not domestic competition, it is competition between routes via Russia or via Mongolia or via Kazakhstan. If one of Mongolian carrier lost, then all Mongolia will loose

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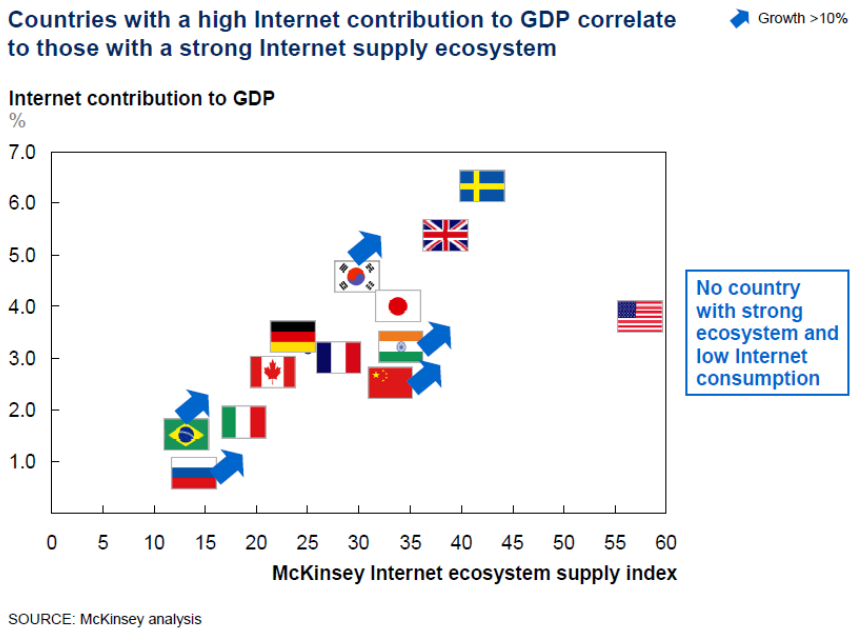
Internet Eco-system



ICT sector accounts for round 4-6% of GDP contribution in global average. Mongolia case the contribution is just 2.4%. This number decreased 0.1% year over year last 3 years.

- However such economy have great opportunity to “leapfrog” in their use of Internet technologies, just as some developing countries implemented modern 4G mobile technology to reach the goal.
- The research shows that strong Internet Ecosystem – one that foster competition, encourage innovation, develop human capital and builds out a comprehensive Internet infrastructure and boosts access, will enables a country to capture to maximum value of this technology transformation.
  - **Foster competition:** Countries that make their markets more open & competitive archives greater productivity. The countries that have benefited most from Internet’s contribution to growth have tended to have open & competitive Internet ecosystem.
  - **Encourage innovation:** an environment that encourage innovation and entrepreneurship is vital to capturing Internet-related growth. Government must support access to start-up capital, protection of intellectual property right, support for R&D initiatives.
  - **Develop human capital:** The United State and other highly developed counties are used its vast talent pool supported by most diverse structure within the global Internet Ecosystem, garnering relatively equal contributions from hardware, software, service & telecommunications. The countries like Mongolia must stimulate invite expertise and promote return back talent to home country.
  - **Build infrastructure:** Infrastructure is the foundation of the entire Internet Ecosystem, is a prerequisite for growth. The strength of their telecom operators has made a major contribution to their success in this area. Now need to expand in an area of cloud computing, big data and IT infrastructures developments.

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Reliable& High quality network

MobiCom Networks effort is to build **reliable networks:**

- Fully protected optic network for International connections & domestic long distance networks
- High capacity DWDM/OTN network (2.5-10G, n*100G)
- Partner with other network providers to make 100% reliable, Zero downtime network
- Much us possible share network resources, share investments and Operation maintenance

MobiCom Networks goal to operate high **quality networks:**

- Multi-homed BGP network with several Gbps IP ports
- Optimized fast web services
- Localized content
- Directly peered with key internet contents
- Save for surfing
- Protected from any attacks like DDoS type

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Safe and trustable Internet & Privacy issues

Network Operation Center, Security Operation Center NOC/SOC

- 24 hour operation
- Equipped with most sophisticated systems IDS/IPS, WAF

CONCERNS ABOUT PRIVACY:

- On-line fraud
- Identity theft
- Hacking of sensitive materials & data
- Database destruction

NOC/SOC statistic of 2015

- Total 628 DDoS Attacks detected and neutralized
- Average size of attack 400Mbps (biggest one was 8.5Gbps)
- Most common type of attack:
  - DNS
  - TCP SYN
  - UDP

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SUMMARY

- Mongolia located very unique location in between China & Russia and in the path “the shortest route between Asia & Europe”. The Transit Asia Europe traffic business is the key to succeed Internet development of Mongolia. Our ambition is that together with other players play its role in providing Trans-Europe-Asia services
- Internet Ecosystem is the stimulator & tool to facilitate fast growth of national economy. ICT sector player should work together to build sophisticated Internet Ecosystem in Mongolia.
- Network is the foundation of Internet Ecosystem. Mongolian operators has made a major contribution to their success in this area. Now need to expand in an area of cloud computing, big data and IT infrastructures developments. Now is the time to build National & Regional Internet Data Centers.
- MobiCom Networks we are doing our job to accelerate Internet development in Mongolia. Our network is reliable, high quality and safe.

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Thank you