

BROADBAND FEVER

The true story



Broadband has taken much attention recently in the Media to the extent of it featuring on the Ministerial Statement. While there is a genuine shortage of 'true broadband', and that the lack of it restricts growth of the economy and affects other sectors, the underlying reasons behind this shortage are not clear to Politicians or to the public at large. This article reviews broadband indicators in Lebanon in comparison to world norms and highlights the reasons behind the under-developed service. It is found that Internet prices by ISPs sold to the public stand at around 2.5% of GDP-per-capita which is similar to world averages, while speeds are around ten times slower than in European and OECD nations. Lebanon has a huge shortage of international connectivity, and the price of bandwidth sold to ISPs by the Ministry are 100 times more expensive than in Europe and among the highest in the world.

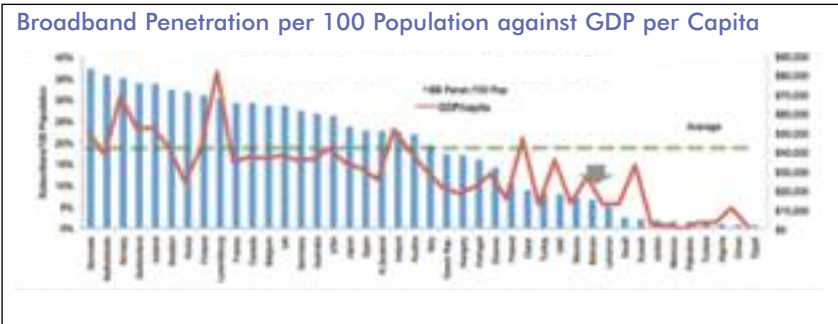
Broadband Indicators

The availability of broadband in a country is described by 'Penetration', which indicates the number of connections per population or per household. Penetration is usually compared to GDP-per-capita as this is linked to the 'purchasing power' of the population, and since growth of IT and broadband directly influences the economy. This is depicted in Figure 1 where the average BB penetration for selected countries stands at around 20%, and it is fair to say that countries below the average have lower broadband penetrations than their GDP allows, while countries above have

broadband penetrations higher than their GDP indicates. Correlation between GDP of countries shown and their broadband penetration is strong at 0.77 which is also noted between penetration of fixed telephony and GDP.

depends on how an ISP shares his bandwidth and access (the telephone line that interconnects the subscriber) and quality is not always delivered even on a 28Mbps connection.

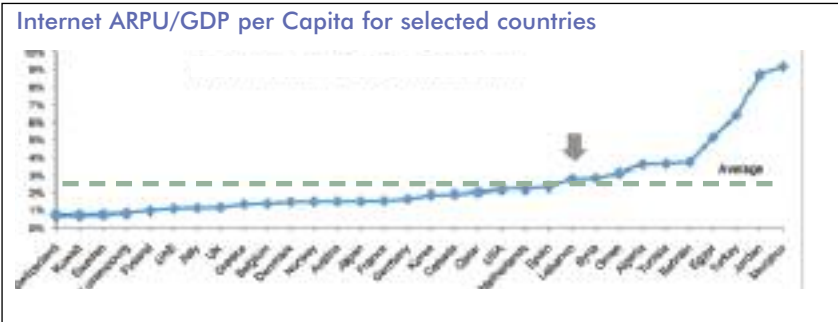
Pricing of Internet packages directly



Broadband capacity or speed (in kb/s or kbps, Mb/s or Mbps) refers to the speed at which information is exchanged to and from the Internet. This varies between countries, and in general being a function of infrastructure, price and availability of bandwidth, regulations and unfair competition by Incumbents. As benchmarks, dial-up speeds are 33.6kbps, while broadband speeds in Lebanon vary from 128kbps to 1Mbps (or 1,024kbps). A 256kbps DSL connection is typically around 8 times faster than dial-up. Some OECD countries have DSL speeds to 28Mbps, which is a 100 times faster than a 256kbps connection. However, in general speed de-

influences the take-up of broadband hence penetration. Pricing is a function of (1) bandwidth availability, (2) pricing of wholesale bandwidth by international carriers, which in Lebanon is an exclusive right to the Ministry of Telecommunications, and (3) levels of competition. Comparing prices can be difficult as speeds, quality of service and levels of mobility vary for different technologies. Additionally, packages have asymmetric up/down speeds and some have volume limitations (amount of bytes that can be exchanged within a specific period).

In most countries, broadband is becoming affordable, with subscriptions standing at around 2.5% of monthly



IN LEBANON

in facts & figures

GDP-per-capita. ARPU/GDPc for selected countries is presented in Figure 2 and describes cost of Internet use averaged over monthly income. Although it widely varies and is a function of speed, volume, bandwidth pricing and other factors, it is an indication of what a user is expected to pay.

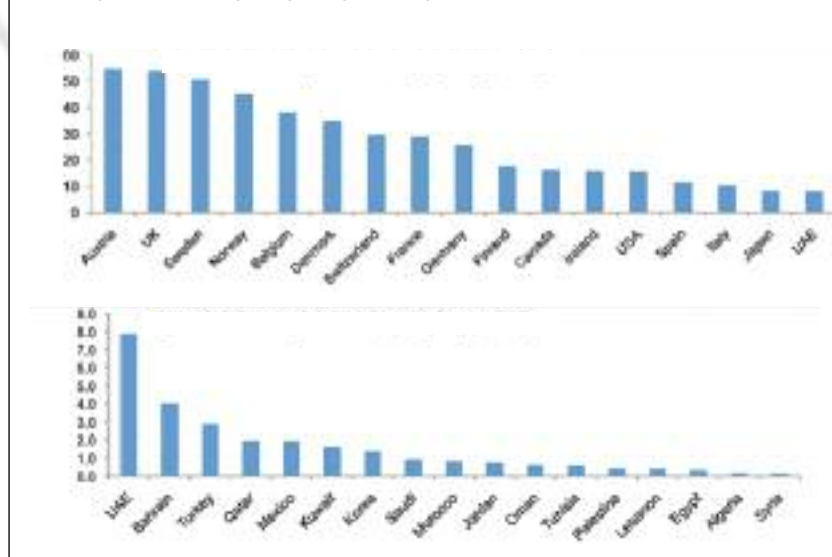
Shortage of Bandwidth and High Ministry Prices

As in any other trade, Internet connectivity is a wholesale to retail activity and its price depends on supply and demand. In Lebanon today, demand far exceeds supply in that the public and the business sector have a demand for Internet connectivity which cannot be met by ISPs, as ISPs are only allowed to buy their fibre bandwidth from the Ministry of Telecom.

As an indication of bandwidth supply, total country bandwidth is translated to kbps-per-capita and is used as an indicator of what bandwidth is available per person or Mbps per 1000 people in a particular country (or city). In Lebanon today, the total international bandwidth is

1.4Gbps and translates to 0.36kbps per person or 360kbps for 1000 population. This is 150 times less than available in the UK and around 100 times less that available in France. Non-availability of bandwidth to meet market demand is the

Country Internet capacity /capita, kbps



Country	BW/capita, kbps
UK	53.60
France	28.91
USA	15.61
UAE	7.87
Qatar	1.94
Kuwait	1.56
Jordan	0.77
Lebanon	0.36
Syria	0.13

prime factor for higher prices of Internet to the public. The figures depicted below show Internet capacity for selected countries, (Figure 3a) where ample capacity is available, and (Figure 3b) for countries with less capacity.

ADVERTORIAL

Higher wholesale Internet charges by the Ministry result in higher prices to the public. ISPs sell Internet capacity at a rate fractionally higher than they purchase to cover transport costs, customer support, redundancy links, and operations for bandwidth management such as filtering, fire-wall and so on. For instance, the cost of 1Mbps duplex Internet in Lebanon today is \$1350, hence for ISP to sell 1Mbps Internet circuit to the public at \$30, this has to be shared over 100 users, part of the price to cover last-mile access cost. Sharing over 100 results in extremely poor quality and a ratio of 30 at the most is more realistic. For comparison, typical wholesale prices are: Dubai (\$100/Mbps), Amman (\$100), Europe main landing points (less than \$10).



1. Eliminate unfair competitive practices by incumbent MoT/Ogero such as in DSL where the Ministry of Telecom controls supply of bandwidth to ISPs, dictates price, determines what ports and clients ISPs are to have, controls equipment clearance, yet competes with the Private Sector on these services.

2. Open-up infrastructure for sharing and to allow peering. ISPs in Lebanon are today interconnected on an Internet-Exchange-Point (IXP), with the exception of MoT/Ogero which has so far refrained from doing so. The IXP allows all local traffic to 'remain local' including that to highly-accessed local web-sites (news, media, etc.) which all now goes international and back.

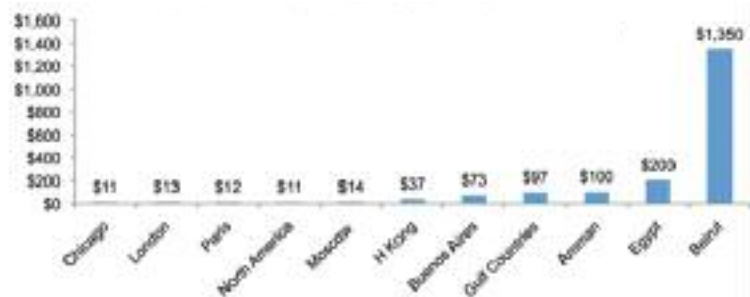
3. Reconsider and reduce royalties, licensing and spectrum fees to encourage Operators in investing in networks rather than on fees which are automatically passed to consumers as extra price.

4. Involve more sector stakeholders: regulators, operators, investors and consumers in the decision-making processes to create investor confidence.

In summary, the lack of true Broadband in Lebanon is mostly due to shortage of bandwidth supplied exclusively by the Ministry of Telecom, at excessively high prices which are dictated by the Government rather than market forces. Progress in developing true broadband is hampered by unfair competition exercised by the Ministry (Ogero), which while competing with the private sector in selling DSL, yet has full control over what is supplied and installed to ISPs, and still exercises backdated old practices and policies awaiting true liberalisation.

Khaldoun Farhat, PhD
CEO, TERRANET, Lebanon

Internet Capacity Prices (\$/Mbps) in selected locations



Location	Price
Chicago	\$11
London	\$13
Paris	\$12
North America	\$11
Moscow	\$14
H Kong	\$37
Buenos Aires	\$73
Gulf Countries	\$97
Amman	\$100
Egypt	\$200
Beirut	\$1,350

Internet Transit Capacity Prices in Selected Locations (\$/Mbps)

What Governments should Do

Governments and Policy Makers can take effective steps to substantially grow broadband penetration hence providing stimulus to economic growth. Recent Cabinets and Ministers have given attention to Broadband and suggested solutions but these are yet to materialise. Current plans for deploying a national fibre backbone and new submarine fibre cables are justified and encouraged, provided these are in the context of a national broadband plan which is not the case. Governments must act proactively to: