THE CASE FOR "OPEN ACCESS" IN AFRICA

MAURITIUS CASE STUDY

Russell Southwood

INTRODUCTION

This case study looks at the relationship between international bandwidth prices in Mauritius and the impact of its Cyber Island strategy. Whilst other countries along the SAT3/SAFE cable have struggled to find ways to address the high costs of monopolised international bandwidth on this cable, Mauritius has used a price determination to address the issue. Interestingly, once the process was announced, the incumbent Mauritius Telecom itself decided to lower prices ahead of the determination.

The example of Mauritius perhaps has lessons for other countries in Africa that want to find ways of changing the basis of their economies so that they can add "smart exports" alongside raw materials extraction, agriculture and tourism. Whilst it is always hard to draw direct causal links between bandwidth prices and wider changes in the economy, it is clear that Mauritius' call centre/BPO sector began to achieve significant growth in the years when international bandwidth prices came down.

The nature of "smart exports"–where countries use brain-power to add value to basic tasks– may change in the coming period. Although multinational companies have been driven to reduce their operating costs, they are also reflecting on the successes and failures of outsourcing. But there will also be new waves of outsourcing: for example, Lucas Films (responsible for the Star Wars movies) has set up a new major operation in Asia to do animation and special effects. But whatever happens next, competitive international bandwidth will be essential to any country that wants to obtain this kind of work in the future.

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APC ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS

BACKGROUND

The liberalisation process in Mauritius has in some ways been different from elsewhere in Africa. Mauritius Telecom's mobile subsidiary Cellplus launched in 1996 was followed by Emtel launched in 1998. Two years later in 2000 the government privatised Mauritius Telecom by selling 40% to France Telecom for USD 261 million.

Although other telco operators and ISPs have been licensed, most have remained small alongside Mauritius Telecoms' operations in these fields. However, unusually the regulator, the ICT Authority (ICTA) licensed a couple of VoIP service providers whose primary purpose was to offer cheaper international calling rates.

The telecoms sector in Mauritius currently has seven main companies: Mauritius Telecom (40% owned by France Telecom), MTML (Indian-owned Mahanagar Telephone Mauritius Ltd); Emtel (a joint venture between local owners, Currimjee Jeewanjee & Co Ltd and Millicom); NOMAD (owned by Dubai-based Galana); DCL (Data Communications Ltd), Outremar Telecom (French-owned) and Hotlink Co Ltd.

Of these, three have licences to offer mobile services (Emtel, Cellplus-recently rebranded as Orange–and MTML) and two, Mauritius Telecom and MTML, have licences for fixed services. The latter offers a fixed wireless product to customers. At the end of 2007, there were 843,791 mobile subscribers and 361,319 fixed line subscribers. Unusually Mauritius Telecom is still adding fixed line customers. Cellplus has a 60% share and Emtel a 40% share of the mobile market. MTML's share is currently negligible.

Although estimates vary, there are some 50-60,000 internet subscribers. Of these, Mauritius Telecom has 32,000 DSL subscribers and it has launched a triple play service offering television and video downloads.

Emtel introduced HSDPA[1] in 2007 in some areas and offers a USB modem for the service with packages costing as little as USD12 per month. These services are available in all the main locations on the island, including Cybercity. It also introduced data services in the same year through its own Wi-MAX network. Currently it runs a microwave backbone but by October 2008 will have built its own fibre backbone.

NOMAD was created after a local ISP called Network Plus was taken over by the current owners, African Digital Bridges Networks Ltd, which in turn is owned by Galana. DCL specialises in international internet telephony (with its VoIP Easicall product) and in providing services to the BPO and call centre sector. Hotlink also offers international internet telephony under the brand name of Yello International Call Carrier and has a partnership with an international wholesaler. Outremar Telecom is owned by a company of the same name in France that built its reputation on offering cheap international calls and is doing the same in Mauritius.

The combination of liberalisation and VoIP has considerably reduced international calling prices with even mobile rates falling to as little as 16 cents a minute for major destinations.

The ICT Act of 2001, it Amendment Act of 2002 and the Telecommunications Directive No 1 of 2008 are the key framework legislation instruments for the sector. The first of these acts set up the regulator ICTA. In the same period, the Mauritius Government also set up many of the enabling agencies that have played a part in the changes described below. These included the National Computer Board and the Board of Investment and other bodies covering among other things business parks (responsible for Cybercity), the Freeport and the export processing zone.

The government realised that, in a shifting global economy, the economic significance of commodity exports like sugar would diminish in value and that Mauritius would have to carve itself a new vision to be part of this changing world. It wanted to move into the "smart" exports sector where peoples' brain work adds value to basic tasks.

Mauritius remains unique in its region in having identified ICT as a fifth pillar of its economy alongside sugar, textiles, tourism and financial services. However, it not only described a compelling vision but went out and put it into practice. As demonstrated later, the need for cheaper bandwidth became an essential part of delivering this vision. Mauritius was connected to the SAFE cable in 2000 at the start of this process.

1. With speeds of up to 1.8 mbps.

The vision had various components: firstly, Mauritius wanted to attract call centres, business process outsourcing (BPO) and computer software programming; secondly, it wanted to take advantage of the bilingual capability of its citizens who speak both French and English; and thirdly, it wanted to attract computer assembly work.

Its Cybercity project was launched in Ebene, 15 kilometres south of the capital, in November 2001. The "anchor tenant" was a 12-storey double tower block to attract companies that could take advantage of a number of existing corporate incentives including low company taxes (15%), free repatriation of profits and exemption from customs duties on equipment and raw materials.

To address ICT skills shortages it allowed international professionals to come and work with a new Green Card.

Mauritius also wanted to take advantage of its geographical location between Asia and Africa and make this an advantage companies would find attractive: the new SAFE cable gave it the means of communication to make this point a practical reality.

Although there was considerable scepticism about the strategy actually delivering change and fears that the government-constructed double-tower in Ebene would become a "white elephant," the strategy has mostly been successful.

WHY AND HOW MAURITIUS TACKLED THE ISSUE OF FIBRE PRICES

With the Mauritian Government deeply committed to the idea of developing the country as a "cyber island," it made little or no sense if the price of the international private leased circuits was too high: the price of international fibre would be a significant obstacle to the overall goal of attracting more outsourcing jobs.

In early 2006, Mauritius Telecom was charging USD 12,600 for an EI (just over 2 mbps per month): in other words, USD 6,300 per mbps per month. These high prices for international bandwidth were seen as one of the obstacles to developing the country's cyber-island strategy. As one of the major shareholders in Mauritius Telecom, the government was in a position to take action on this issue.

But within the terms of the ICT Act, the regulator ICTA was only able to initiate action on these prices if Mauritius Telecom made an application to change its prices. Within the terms of prevailing legislation representations from the private sector that prices were too high could not be used to initiate a price review.

Therefore Mauritius Telecom was asked to submit an application to change its prices as the trigger for the price review process. It proposed reducing its existing tariff by between 10 and 12%. Under section 31 of the ICT Act, the regulator then had three options:

- It could approve the price reduction as submitted
- It could discard the proposed reduction
- It could amend the proposed price reduction.

It chose the third option and said it would amend the price by going through a cost determination process. This meant that ICTA asked Mauritius Telecom to submit capital investment and cost details on its involvement in the SAFE cable.

Mauritius Telecom was given spreadsheets with cost headings covering the following:

- Investment (a 10% rate of return on investment was indicated by ICTA)
- The number of MIU kilometres assigned to the carrier
- Cost for its MIU kilometres
- The distance between Mauritius and an agreed telehouse in Paris.

After a certain amount of discussion over what figures could be made available, the spreadsheet was eventually filled in. During the process of the price review, Mauritius Telecom challenged the 10% rate of return on investment and expressed a desire to take the matter to Tribunal for appeal. However, during the period when the appeals Tribunal would be making its judgement, Mauritius Telecom would have had to abide by the initial price determination.

In the event, the price determination gave an overall reduction of approximately 25%. The new price for an E1 was USD 7,900 and there was a five tier volume discount with a 25% discount on the E1 price for over ten E1s and above. The latter was only likely to be of relevance to two to three customers on the island. The highest level of discount represented a 47% decrease on the original price (see full determination in appendix A):

France Telecom chose not to challenge the rate of return on investment specified by the regulator. Mauritius Telecom made a further 20% cut on these rates in November 2007.

Mauritius Telecom has issued a paper giving its response to accusations of over-charging and this is worth quoting at some length to give an insight into their position. It points out that the shift from satellite only access for the island to fibre represented a drop in costs:

> "The monthly rental of a 2mbps full circuit IPLC link from Mauritius to Paris, for example, was around USD 39,000 on satellite medium in 2001, prior to the entry into operation of the SAFE cable. After the cable was put into service in 2002, this price was reduced to USD 22,000, representing a reduction of 43.5%."

Furthermore it points out that in order to assist the bid to promote the Business Process Outsourcing and call centre sector it took the initiative of installing a POP in Paris in 2003. This allowed it to reduce tariffs to USD 12,300, a further drop of 43%. The determination took this down to USD 7,900 and it further reduced its tariff in September 2007 to USD 6,300.

It went on to make a number of global comparisons some valid and others less so. It states that the cost

TABLE 1: LOW CAPACITY PRICES FROM THE 2006 ICTA DETERMINATION

CAPACITY	INSTALLATION	MONTHLY COST (USD PER M)		MB EQUIVALENT
	2006	2006	2008	2006
512k	USD 3,000	USD 3,400	USD 2,700	USD 6,800
1024k	USD 3,800	USD 5,600	USD 4,400	USD 5,600
2048k	USD 3,800	USD 7,900	USD 6,150	USD 3,950

NB: Installation charges for the capacities shown have fallen considerably to between USD 700 and USD 1,000.

of a 2mbps full circuit including backhaul and last mile from Morocco[2] is USD 11,375. Furthermore, it says that its USD 6,300 compares favourably with USD 6,110 from Bangalore to London for backhaul, restoration and last mile. The former is a monopoly provider on its international route and the latter (if distance-based charging has any meaning) is surely much cheaper than the Mauritius Telecom equivalent.

On wider issues of access and competition, the regulator ICTA is believed to have submitted a paper to the Ministry of ICT suggesting five different ways in which these might be improved:

- To allow other consortium members (particularly international ones) to sell directly to companies within the country
- To allow local access providers to co-locate their equipment at the Mauritius Telecom-run SAFE landing station
- To unbundled at the level of the landing station itself, allowing other international cable operators who might want to connect to the island to connect at the SAFE landing station
- To separate the wholesale and retail elements from the landing station using local loop unbundling, in which Mauritius Telecom would allow reselling of its international capacity
- To add to the competition by authorising an alternative backbone operator at the national level and to encourage another international cable operator to connect to the island.

The ministry has received the paper from the regulator but not yet acted upon it.

There are three potential international cable operators that might add a second cable to the island's connectivity: EASSy, Seacom and the NEPAD-sponsored Uhurunet. The latter has largely been overtaken by the existence of the two other cables.

The government has taken the position that a second cable is desirable but that it is not in a position to fund any part of it, leaving the industry to work out how it will meet future demand. The estimated cost of a second cable is put at USD 25 million.

Lower prices have meant that Mauritius Telecom took up its option to upgrade its capacity on the SAFE cable in February 2007 but anticipating future demand, it would still like to add additional capacity. Mauritius Telecom along with Orange Madagascar and their parent company France Telecom say they are investing in a second cable called Lion. It will connect Mauritius to Toamasina (Madagascar) and from there onwards to one of the new east coast cable systems. The companies involved claim that it will be completed by July 2009.

he regulator believes that the impact of a second cable not directly associated with the incumbent would be to lower prices and its existence would provide a paradigm shift in the fundamentals of pricing. A number of operators who said privately that they would prefer an independent second cable would not speak publicly for fear of upsetting their existing relationship with Mauritius Telecom. Inevitably, Mauritius Telecom will match the price offered by others and perhaps anticipating competition it has instituted a loyalty scheme that rewards customers with one month's free rental after 24 and 36 months.

There is also a clear relationship between the cost of international and national bandwidth. If international bandwidth falls into or below the USD 500-1,000 range, then it becomes much more difficult to justify national bandwidth prices that exceed these prices. At present, one provider is getting an E1 from Mauritius Telecom between the capital Port Louis and Rose Hill for USD 2,300 a month. It believes that when it has completed provisioning its own network it will be able to obtain a price that will be 60% or more cheaper.

2. Chosen because Mauritius competes for French-speaking BPO/call-centre work with Morocco.

THE IMPACT OF LOWER FIBRE PRICES

Lower fibre prices have meant increased traffic volumes. Two sets of price reductions – one caused by the regulator's determination and the other made by Mauritius Telecom itself – have since July 2006 almost halved prices from their 2003 levels.

In 2006, Mauritius Telecom was using 440 mbps of international bandwidth[3] and after the price cuts this figure rose to 1,603 mbps in 2007[4], over three and a half times as much bandwidth. Mauritius Telecom has begun the switch from a "high price, low volume" strategy to one of "low price, high volume."

In 2003 the call centre/BPO sector on the most optimistic estimates employed around 2,000 people. At that point the more frank would have admitted that the island was struggling to find a foothold in this brave new world and was scrabbling around for low-value telemarketing work.

In 2008, the more pessimistic estimates indicate that this figure has at least doubled in the last five years. It is now attracting a much broader range of work including that of providing the Help Desk function for Orange serving France and several other countries.

Now the ambition as Pratima Sewpal of the Mauritius Board of Investment puts it is for the sector to "move up the value chain."[5] It has now targeted high-end finance work, architectural design and hospitality.

More ambitiously, the next phase involves pitching the island as a place to establish data centres for business continuity and disaster recovery. The one drawback is that with only one optic fibre cable, there is no redundancy if the cable is broken. The Mauritius Board of Investment says it has an investor that would come to the island if that issue were to be overcome.

The other targeted sector is to develop the media and entertainment sectors but this needs more bandwidth for the activities envisaged that include production; animation and games, and production studios.

With the reduction in fibre prices, the cost of connectivity has moved from first to second place for most in the call centre/BPO sector. The biggest challenge is the quality and quantity of available human resources, something the government hopes to address through the setting up of the Human Resource Development Council and empowerment programmes that address the unemployed.

According to Francois de Grivel, chair of the Outsourcing and Telecommunications Association of Mauritius (OTAM)[6] "The number one challenge now is human resources. Local people are bi-lingual in French and English. The market is largely European focused on France, UK and Germany with a small amount of work from the USA, particularly telemarketing. Costs have to be lower than for European companies which generally seem to be between 8 and 12 Euros per hour."

> "People work hard but the turnover is quite high, somewhere between 15-35%. It is difficult to retain people. We recruit Higher School Certificate graduates and they are trained on-site in the company but there is still a skills problem."

OTAM is involved in creating an ICT academy with the government to train people. Students would obtain their Higher School Certificate and then come to the academy, where they would be offered vocationally-focused courses. It wants a public-private partnership with the University of Technology of Mauritius that would also offer training to people in Reunion and Madagascar. It would be government-funded but much more oriented to the private sector.

But beyond the challenge of getting enough of the right people, the cost of bandwidth has become the second most important issue. Benchmark countries for BPO/call centres in Mauritius on the French-speaking side are North Africa, Senegal and probably in future Madagascar. On the English-speaking side they are India, China, Kenya and Uganda in future. Interestingly, South Africa is not seen as a competitor because its bandwidth costs are higher. Many in the industry talked about this possible arrival but one of them crystallised widespread scepticism: "I simply don't think it is going ahead[7]."

3. Mauritius Telecom Annual Report 2006
4. ICTA: Incoming 820 mbps and outgoing 783 mbps
5. Interview with author, April 2008
6. Interview with author
7. Confidential interview with author, April 2008

According to Grivel: "We are negotiating with the government and Mauritius Telecom to get a better rate (on the fibre). There is also the question of security of communications as there is no redundancy on the route. If there is down-time on the SAFE cable, we have to go to satellite and that is not very satisfactory. There is also the issue of the high intercommunication costs between Mauritius Telecom and private service providers. The latter want lower prices and we are also negotiating on these costs." There have been cable breaks, most notably caused by the Tsunami of 2004.

So why are bandwidth prices not lowered further? "ICTA cannot take decisions independently from the government and there is pressure from the government not to liberalise too quickly. The government is protecting the incumbent. You have to open the market to newcomers and the competition will be very strong." However, Mauritius Telecom has planned another decrease for the end of 2008 and a further decrease in the third quarter of 2009. The latter it believes will double bandwidth demand.

The main complaint beyond price that was voiced both by the telecoms industry and the call centre/BPO sector was that fibre access was sometimes slow and that this factor was acting as a damper on further expansion. The call centre/BPO sector is a major bandwidth customer: for example, one of the larger operations is buying 1.5 mbps for voice and 2 mbps for data.

One of the largest local companies is Rogers Outsourcing which started as Rogers.com in 2001. In 2005 it formed a joint venture with a large insurance company to create Axa Assistance. It covers the full range of services: inbound calls, telemarketing, BPO, IT Help Desk – levels 1 and 2 and does all this in three different languages.

It employs 306 people and is currently recruiting for new business that it has acquired that will take the staff complement up to 400-420. The ambition is to run a company probably not exceeding 500 employees. The human resource pool in Mauritius is too small to support a larger staff and it is possible at this level to be profitable. It offers clients a fully transparent service so that they can see everything that goes on in the company's offices online and they have real time access, again something that requires reliable bandwidth.

In spite of all the success, there is still some way to go. Three years after the Mauritius government launched its first online services, the National Computer Board reckons that a large part of the population remains reluctant to use the online application forms implemented by the administration. The organisation argues that this slow adoption is partly due to the fact that only 24% of the 350,0000 Mauritian households have computers.

The current position – low but not low enough?

Although international fibre prices have come down considerably, they clearly still have some more way to fall. With operators buying large volumes in South Africa getting USD 1,300 per mbps per month and the new fibre operators on the East coast of Africa promising prices ranging between USD 500 and 1,000, overall prices will continue to drop.

Price decreases lead to increased demand that will probably keep ahead of the losses caused by price reductions. For example, operator Emtel currently takes 8 mbps from Mauritus Telecom but expects its capacity requirement to more than triple over the next three years. The call centre/BPO operators spoken to talked about doubling their requirements if cheaper bandwidth was available.

Whilst it is difficult to draw direct causal links between the lowering of prices and the island's increasing success at attracting outsourcing business, there is undoubtedly some connection. Both of the towers of Cybercity in Ebene are now full and overall employment has doubled.

And whilst arguably, Mauritius is different from other countries in Africa for reasons of distance and geography it cannot be immune to wider price shifts. This reality is already acknowledged by Mauritius Telecom's two planned reductions in these bandwidth costs. The only question is whether after those reductions, the prices will help Mauritius to remain competitive in the changing global economy.

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