

**Presentation for Botswana Telecommunications Authority**

Market study of the telecoms and ICT sector  
in Botswana

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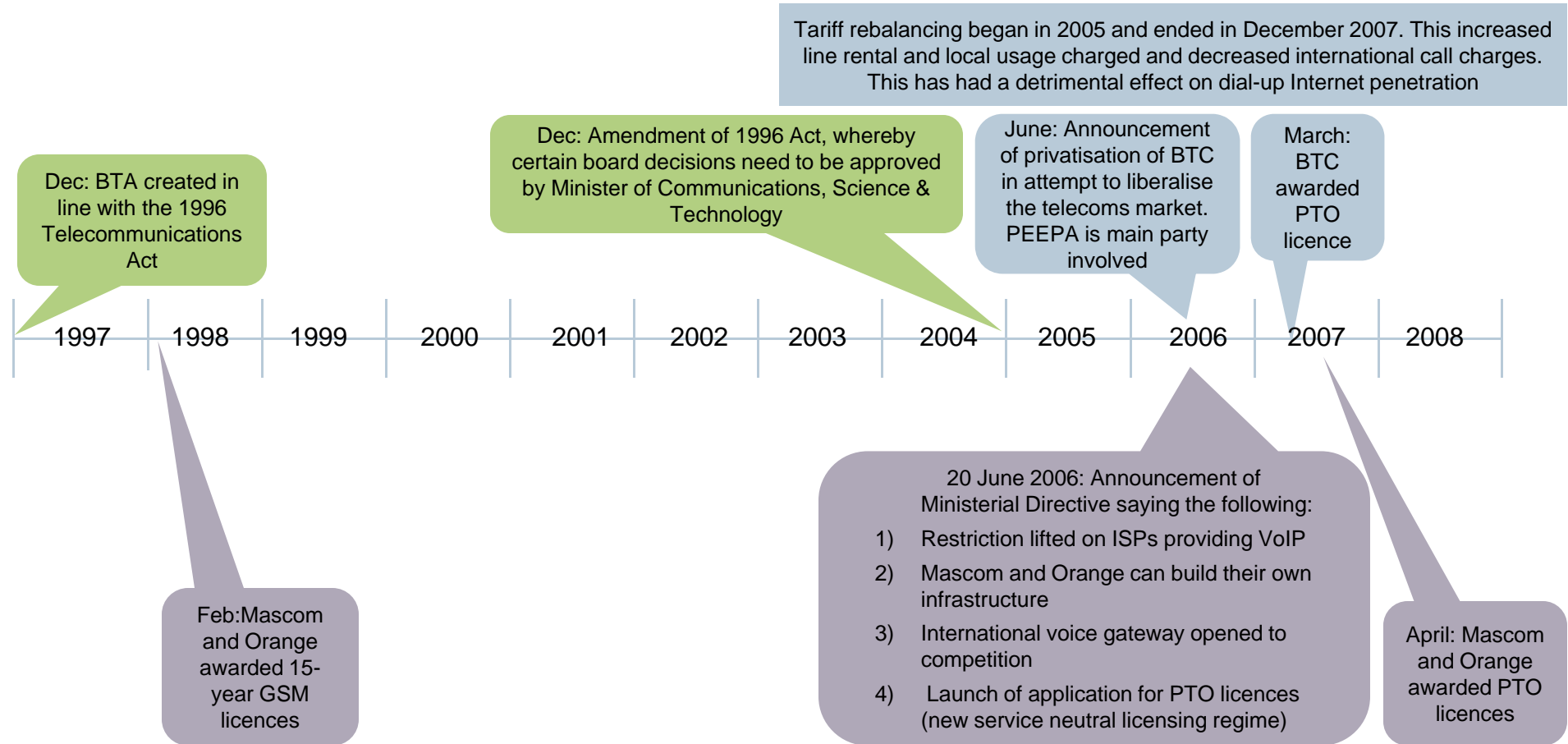
Summary

# We conducted a market study from 1996 to the present day and made recommendations for future intervention

- This presentation is a brief summary of the market study commissioned by BTA and conducted by Analysys Mason, in partnership with Project3, from October to December 2008. The main objectives of the study were to:
  - ◆ critically examine the evolution of the market since liberalisation in 1996
  - ◆ review the current market situation
  - ◆ make recommendations for future regulatory intervention to promote development of the market
- To facilitate this study we gathered data from many sources, including:
  - ◆ meetings with senior staff members of all three PTOs
  - ◆ meetings with VANS licensees
  - ◆ secondary data from BTA
  - ◆ secondary data from other Analysys Mason sources
- Our project was conducted in four main phases:
  - ◆ data gathering
  - ◆ data analysis – review of market evolution from liberalisation to the present day
  - ◆ determination of recommendations
  - ◆ development of report and telecoms database

# The Botswana market has changed considerably since 1996, largely due to a progressive policy of liberalisation

## Fixed / Internet timeline



## Mobile timeline

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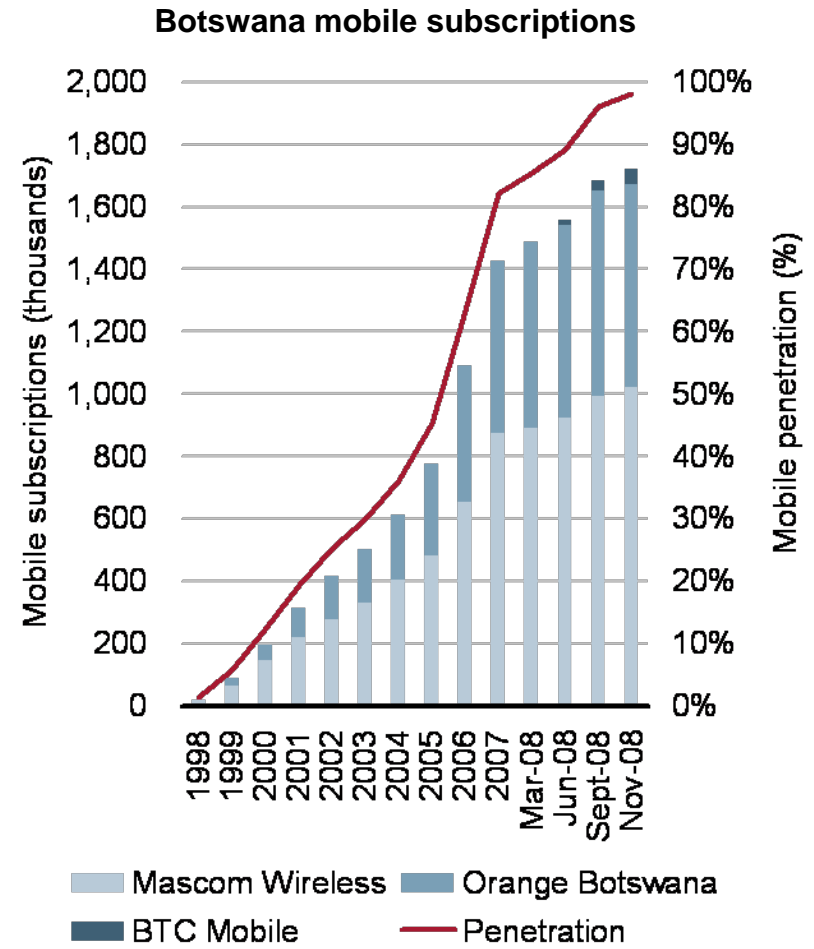
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# The mobile market is functioning well, with 1.7 million subscriptions, representing 98% penetration

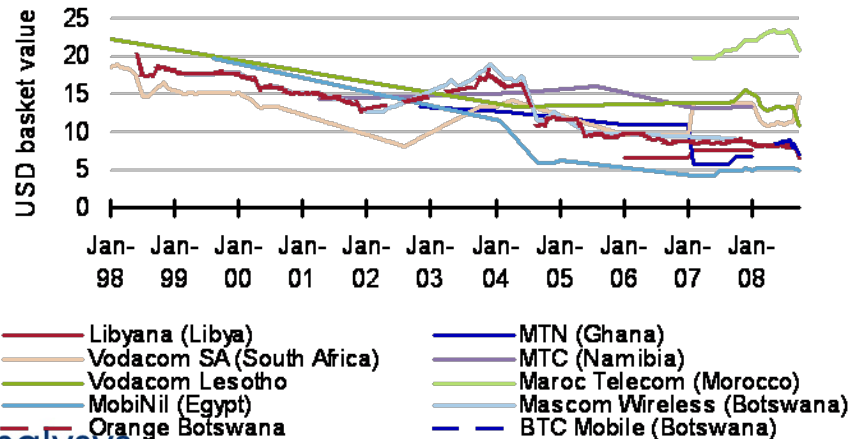
- The mobile market in Botswana has expanded rapidly, rising from zero subscriptions in 1998 to 1.7 million as at the end of November 2008:
  - this equates to a mobile penetration of 98%
  - this number is high in comparison to appropriate regional benchmarked countries
- The proportion of prepaid subscribers is high and has driven rapid growth, as these tariffs are more accessible and easier to afford for less affluent subscribers:
  - prepaid subscribers made up just 23% of the subscriber base in 2002, but by September 2008, this had increased to 98%
- Churn rates are in the middle of the range of benchmarks:
  - Mascom Wireless reported 2007 annual churn of 31%, while Orange Botswana reported much higher churn of 47%



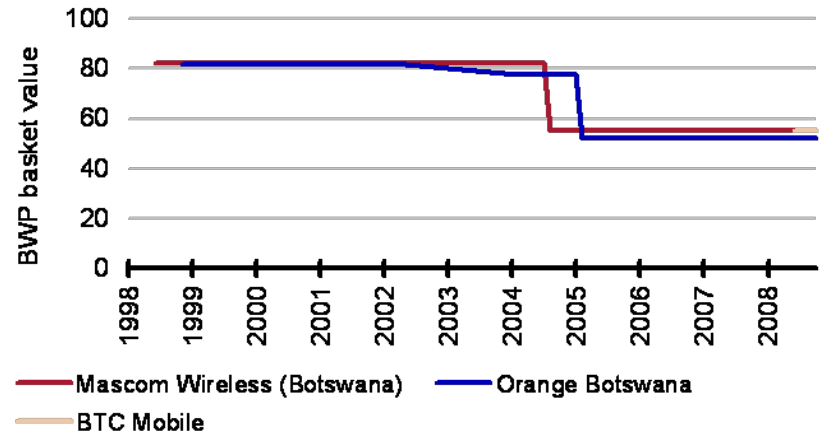
# The three operators have different pricing structures, but typical usage reveals cost levels similar to international benchmarks

- Orange Botswana, Mascom Wireless and BTC Mobile have different tariffs, representing different combinations of on-net and off-net and peak and off-peak:
  - Be Mobile has introduced 'flat-rate' prices
- We used the OECD low-end user residential baskets of usage to compare tariffs between operators and with benchmarks
- Botswana's tariffs have decreased significantly in real terms since 1998, as in many years tariffs have remained the same in nominal terms despite high inflation

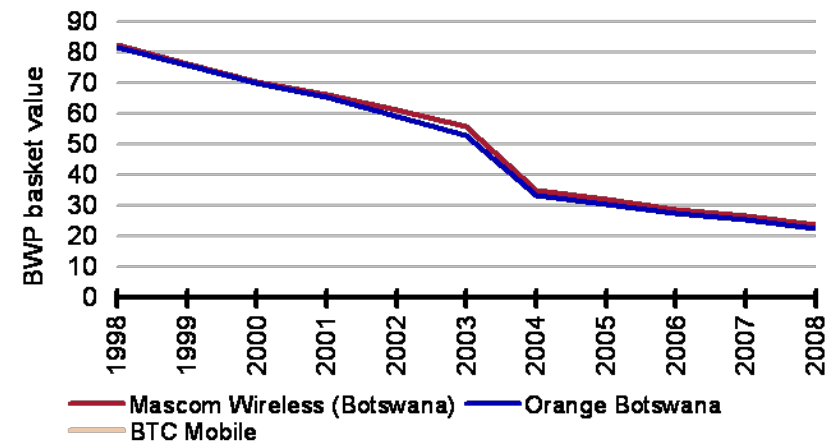
**Benchmarked mobile tariffs**



**Botswana mobile tariffs**



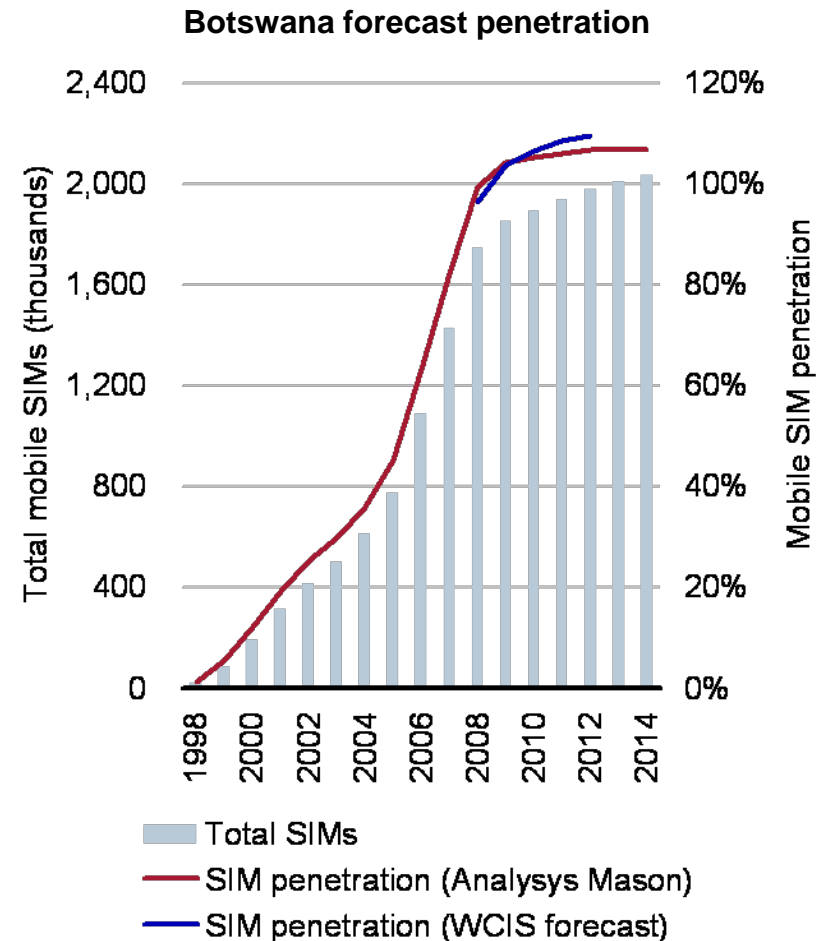
**Botswana mobile tariffs in real 1998 terms**





# We forecast that the mobile market will continue to grow at a slower rate as it nears saturation, reaching 107% by 2014 ...

- The mobile market has significant 'dual-SIMs', meaning the number of subscribers with more than one SIM:
  - as of November 2008, 57% of the population owns a mobile phone
  - this will increase to 61% by 2014, with increases in coverage, wealth and changes to social norms
  - the remaining 39% will consist of elderly people, children, those unable to afford mobile services and those who do not wish to have a mobile phone for other reasons
- The 61% mobile population penetration will equate to 107% SIM penetration once dual-SIMs are factored back in



## ... although there are a number of factors which will have an influence on the rate of market growth

- A number of elements will have a significant impact on the future evolution of the mobile market. These include:
  - mobile number portability (MNP)
    - MNP (the ability to transfer operators and keep the same telephone number) often encourages mobile market growth
  - future PTOs:
    - additional PTOs may increase competition, driving down prices and increasing take-up ...
    - ... however they may have the adverse impact by encouraging all operators to focus exclusively on high profit areas and neglect less wealthy / rural communities
    - this is discussed in more detail in our 'recommendations' section
  - rollout and take-up of 3G services:
    - 3G services have strong potential to encourage mobile take-up by providing new services not currently available

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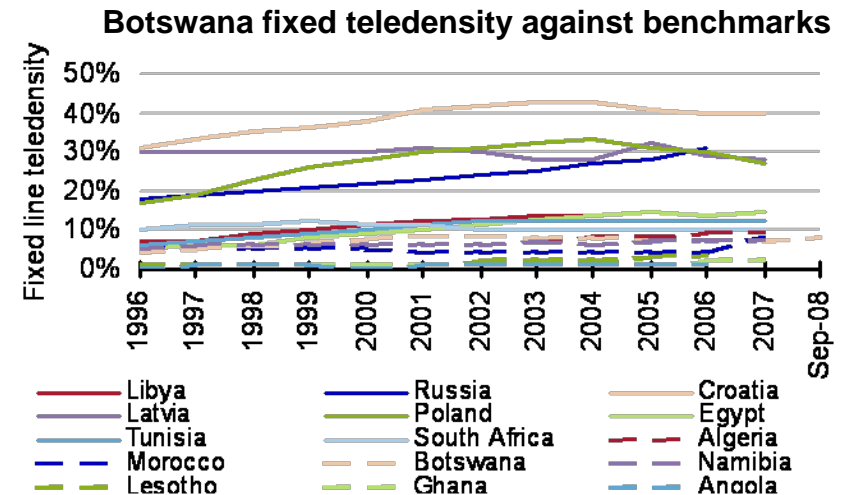
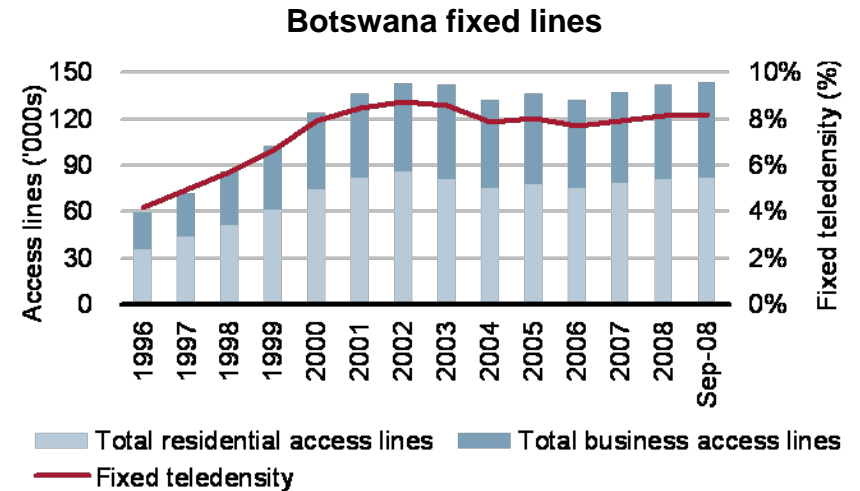
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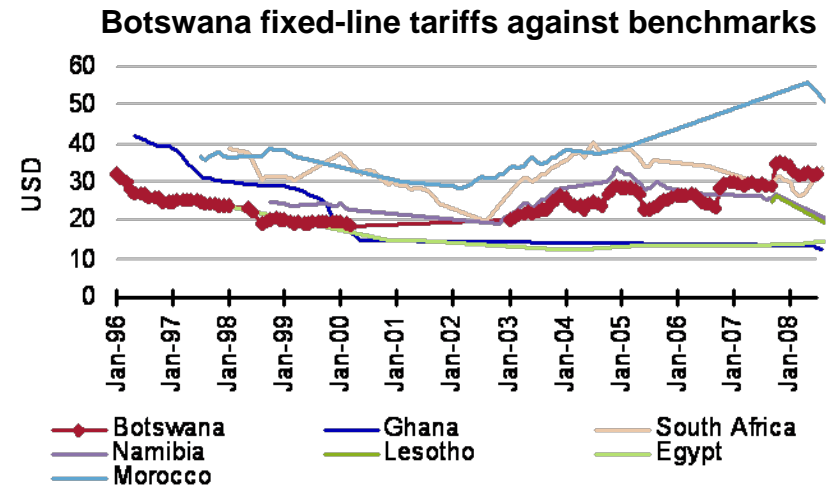
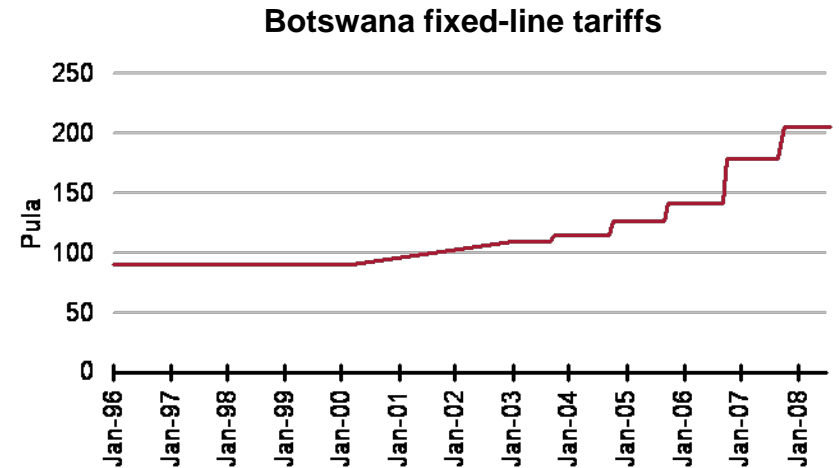
# Although in line with regional benchmarks, the fixed market has relatively low population penetration of 8%

- The fixed-line market in Botswana has stagnated since 2002, as mobile has become the preferred method of communication:
  - there is the same number of fixed lines today as in 2002 (143 000)
- Fixed lines are generally household or organisation products, not personal products:
  - a precise breakdown of fixed lines into residential and business is not available, but we estimate household penetration to be 21%
  - residential lines make up 57% of all fixed lines in Botswana
- Botswana lies in a similar range to regional benchmarks, but is significantly lower than more developed Eastern European benchmarks



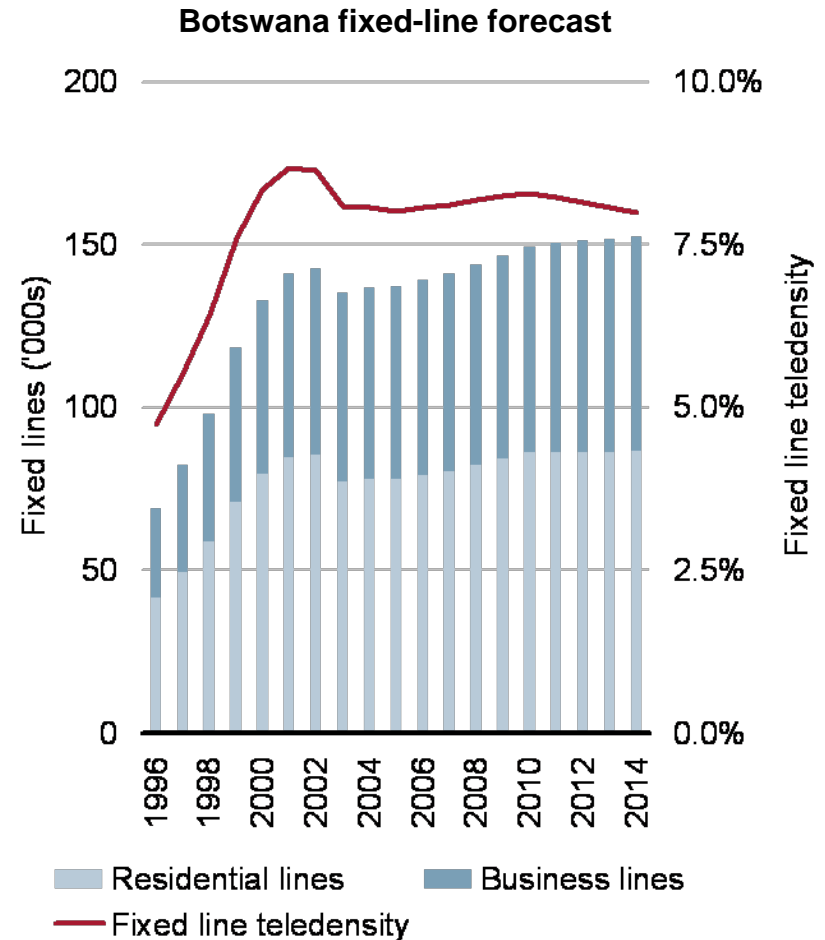
# Fixed-line tariffs are in line with benchmarks, although increasing as tariff re-balancing has occurred

- BTC has now completed a tariff re-balancing project, to bring tariffs in line with costs:
  - this was necessary to make BTC competitive in the newly liberalised market
    - local call rates and line rentals have increased dramatically (by 500% and 750% respectively)
    - international call rates have decreased to almost the same extent (a call to the US has decreased to 29% of its previous value)
  - however, despite these increases, fixed-line prices remain in line with benchmarks
- Fixed-line prices remain significantly cheaper than mobile prices (as should be the case)



# Fixed lines are forecast to remain at similar levels as mobile markets continue to attract most new subscribers

- At the end of December 2007, an estimated 20.8% of households had a fixed line
- We forecast this will increase to 21.5% in 2010, before decreasing slowly to 20.5% in 2014
  - the mobile market is strong in Botswana
  - ADSL growth will provide some impetus to fixed line growth, although this will be tempered by the rapid growth of wireless internet technologies
- Business expansion in Botswana will give a slow increase in non-residential fixed lines as their higher business call volumes will continue to benefit from cheaper per-minute rates
- Overall, this will translate to an increase from 140 951 fixed lines in 2007, to 152 314 in 2014



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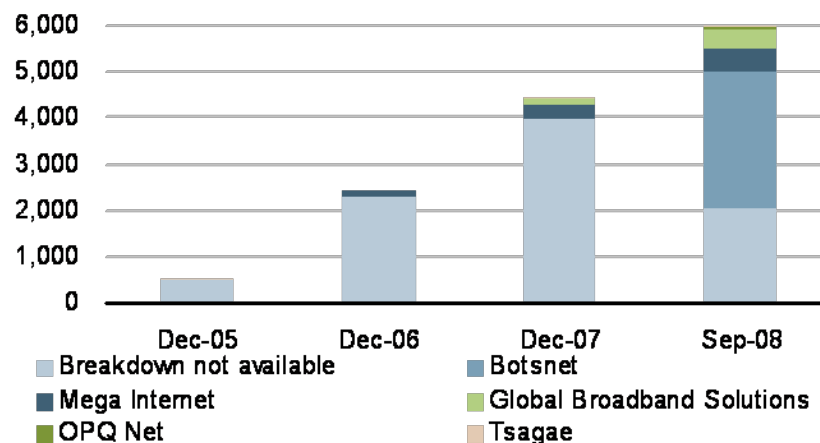
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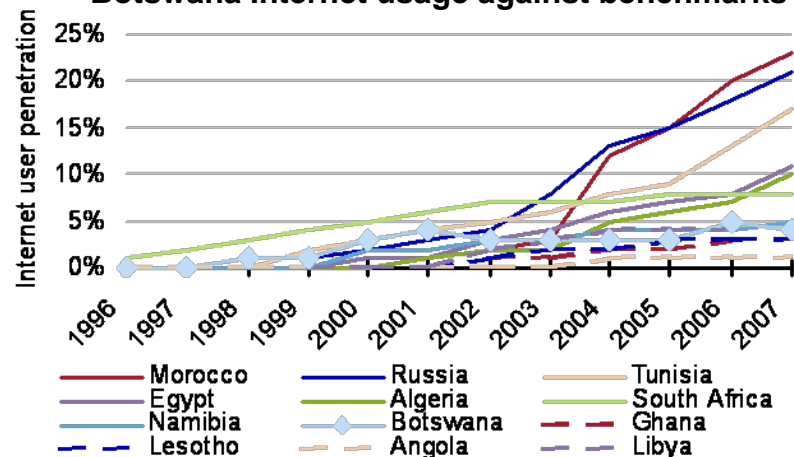
# Botswana has relatively few Internet subscribers, although government initiatives are helping

- The Botswana Internet market is still in its infancy, with low internet penetration and extremely low broadband penetration
- This is due to a number of reasons:
  - high computer prices
  - high cost of services
  - low IT literacy
  - lack of local Internet content
  - power supply problems (blackouts and availability issues in rural areas)
  - low perceived quality of service
- In September 2008, BTC estimated there were 6000 ADSL subscribers in Botswana
  - There are also a significant number of wireless broadband subscribers using ISPs operating on unlicensed spectrum bands
- The non-specific nature of the VANS licence and low-reporting requirements has meant that little data is available on internet subscriber numbers

Botswana ADSL subscribers



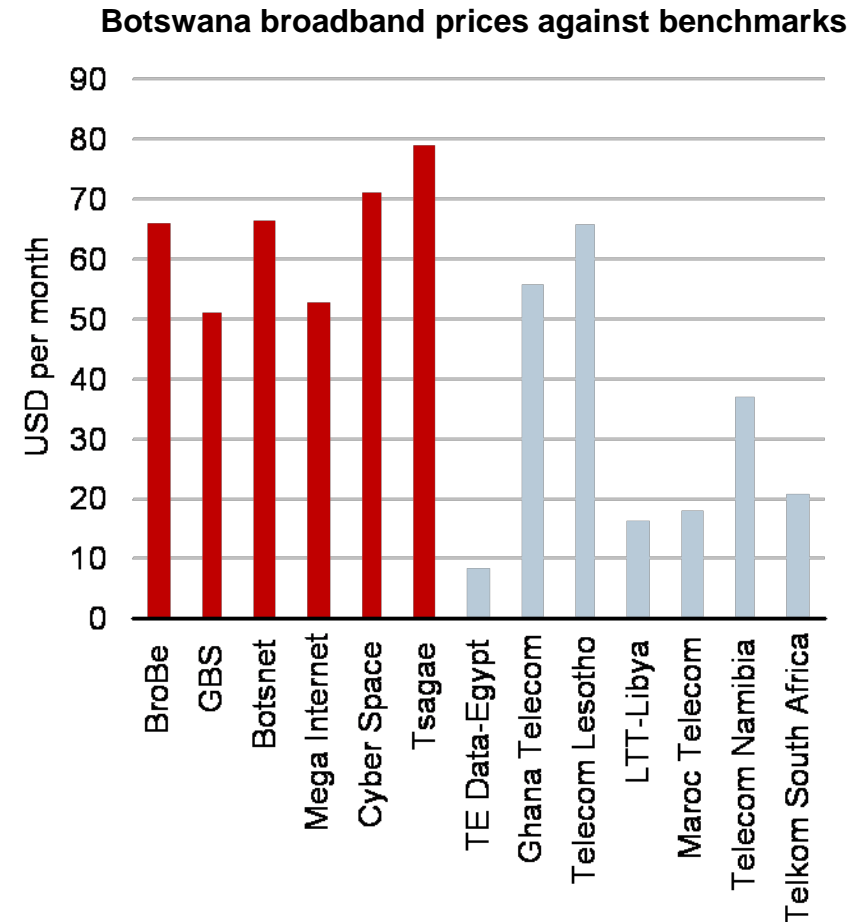
Botswana Internet usage against benchmarks





# Broadband prices are high in comparison to benchmarks, with the cheapest package costing over USD50

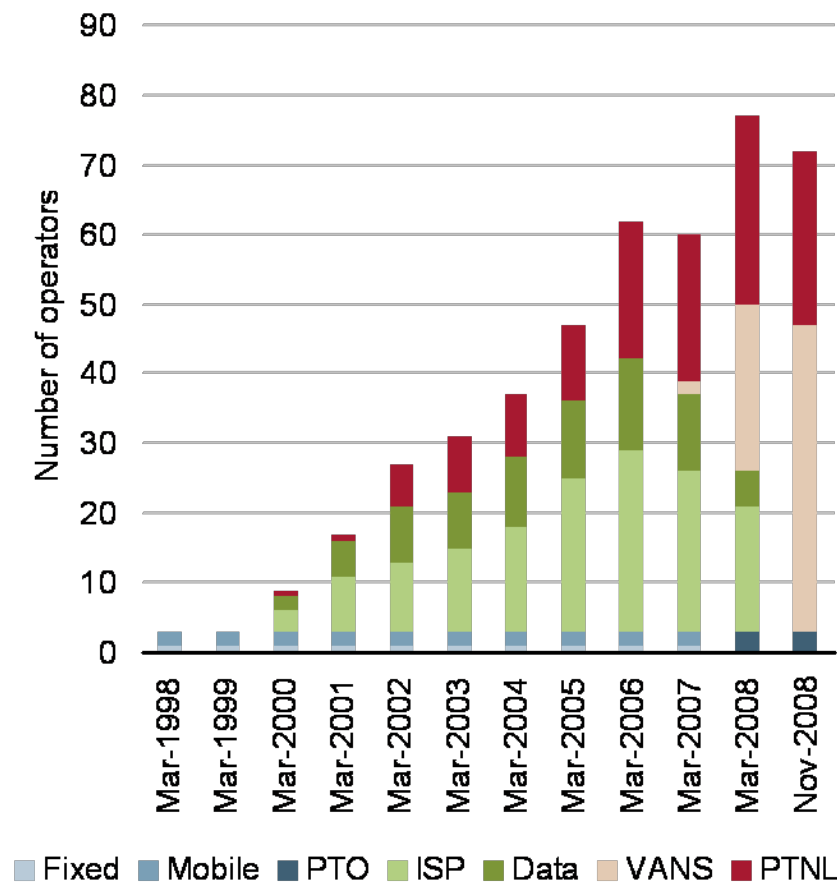
- We reviewed the leading broadband providers in Botswana
- We found the cheapest provider was still substantially more expensive than benchmarked countries, at BWP386, including access element
  - The BWP386 included a high 'broadband line rental' element of BWP187
  - This element alone was more than the total broadband cost in many benchmarked countries
- High pricing is therefore a key reason for the low take-up of broadband in Botswana
- Dial-up Internet is also expensive, with relatively high local call rates and monthly fee;
  - A standard usage basket of 10 hours of peak and 10 hours of off-peak, dial-up costs USD74.29
  - This is higher than all other benchmarked countries, with the exception of Lesotho



# There are approximately 44 VANS licensees, although only 17 of these are actively providing Internet services

- The light regulation of VANS licensees means that precise tracking of ISP operations has not been carried out:
  - This can be easily rectified by requiring all VANS licensees to complete (on a quarterly basis) the simple questionnaire designed by BTA and Analysys Mason
- Our primary research found the 44 VANS licensees broke down into:
  - 17 actively offering ISP services
  - 11 proposing to offer ISP services (or similar) in the future but not yet trading
  - 9 believed no longer trading
  - 6 operating in sectors unrelated to ISP services
  - 1 was unavailable to contact at time of study
- We conducted primary meetings with all 17 VANS licensees offering ISP services and a selection of the others:
  - the views of each is documented in the report

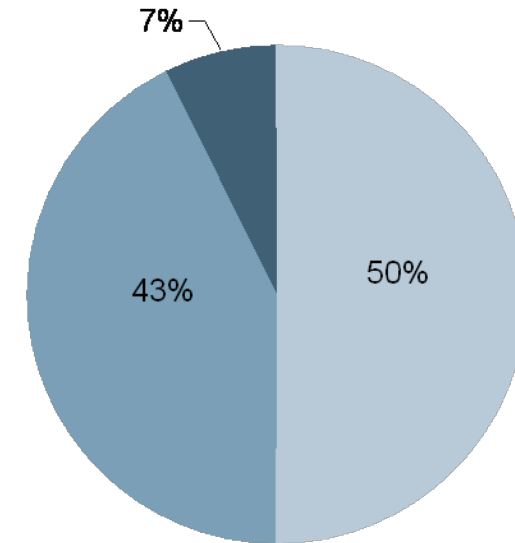
Botswana telecoms licensees by type



# There are significant concerns around BTC's provision of wholesale Internet services

- BTC has much market power in the ICT market in Botswana:
  - BTC owns the fixed line infrastructure and the international data gateway (Botsgate)
  - there is currently no local loop unbundling (LLU)
- BTC's broadband access charges are high in comparison to benchmarked countries:
  - BWP187 for 256kbit/s access
  - BWP385 for 768kbit/s access
- The costs of this element should not vary to this extent depending on the connection speed, suggesting prices may not be aligned with costs
- Similarly, national and Internet leased lines are also expensive:
  - Internet leased lines are nearly BWP10 000 per month more expensive than both Namibia and South Africa

Botswana international bandwidth provision



■ BTC only  
■ Combination of BTC and V-SAT  
■ V-SAT only

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# The Digital Opportunity Index evaluates the development of a country's whole telecoms/ICT sector

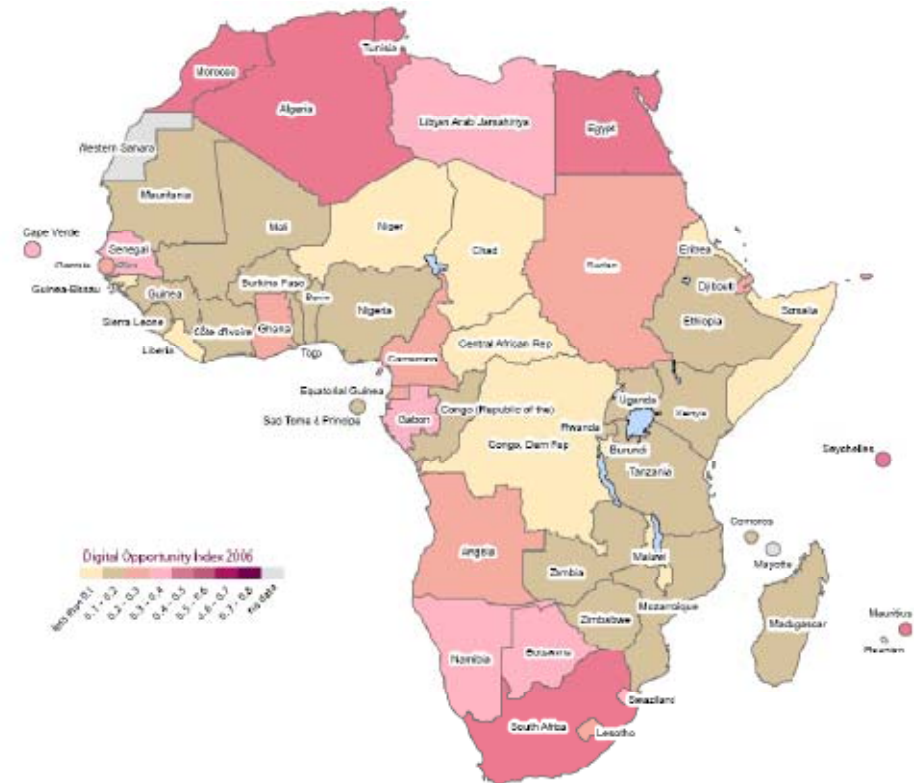
- The Digital Opportunity Index (DOI) was developed in 2005 by ITU
- The objective was to provide an appropriate metric to evaluate the overall development of a country's telecoms and ICT market
- It groups key indicators, taken from each of the market segments, into the following areas:
  - opportunity (the availability and opportunity of inhabitants to get a service)
  - infrastructure (the actual take-up of services)
  - utilisation (the extent to which Internet and broadband is used)
- These indicators are used to present a single numerical indicator for each group, as well as the overall DOI for each country
- We present on the right the values for each parameter for Botswana

<b>Opportunity</b>	
Percentage of population covered by mobile telephony	97%
Internet access tariffs as a percentage of per-capita income	10%
Mobile cellular tariffs as a percentage of per-capita income	1.4%
<b>Infrastructure</b>	
Proportion of households with a fixed-line telephone	21%
Proportion of households with a computer	20%
Proportion of households with Internet access at home	5%
Mobile cellular subscribers per 100 inhabitants	98%
Mobile Internet subscribers per 100 inhabitants	1%
<b>Utilisation</b>	
Proportion of individuals that have used the Internet	4%
Ratio of fixed broadband subscribers to total Internet subscribers	38%
Ratio of mobile broadband subscribers to total mobile subscribers	1%

# Bostwana’s telecoms and ICT market has improved considerably since ITU’s study in 2005/6

- The last comprehensive study on Botswana was conducted by ITU in 2005/6:
  - in this study, Botswana ranked 8<sup>th</sup> in Africa and 100<sup>th</sup> in the world in terms of DOI index
- Our study finds that the current DOI index of Botswana’s telecoms and ICT market is significantly higher than previously, largely because mobile coverage and ownership have increased significantly

DOI for African countries (ITU 2006)



	2004/5	2005/6	Nov 2008
Opportunity	0.92	0.93	0.95
Infrastructure	0.12	0.15	0.29
Utilisation	0.01	0.08	0.14

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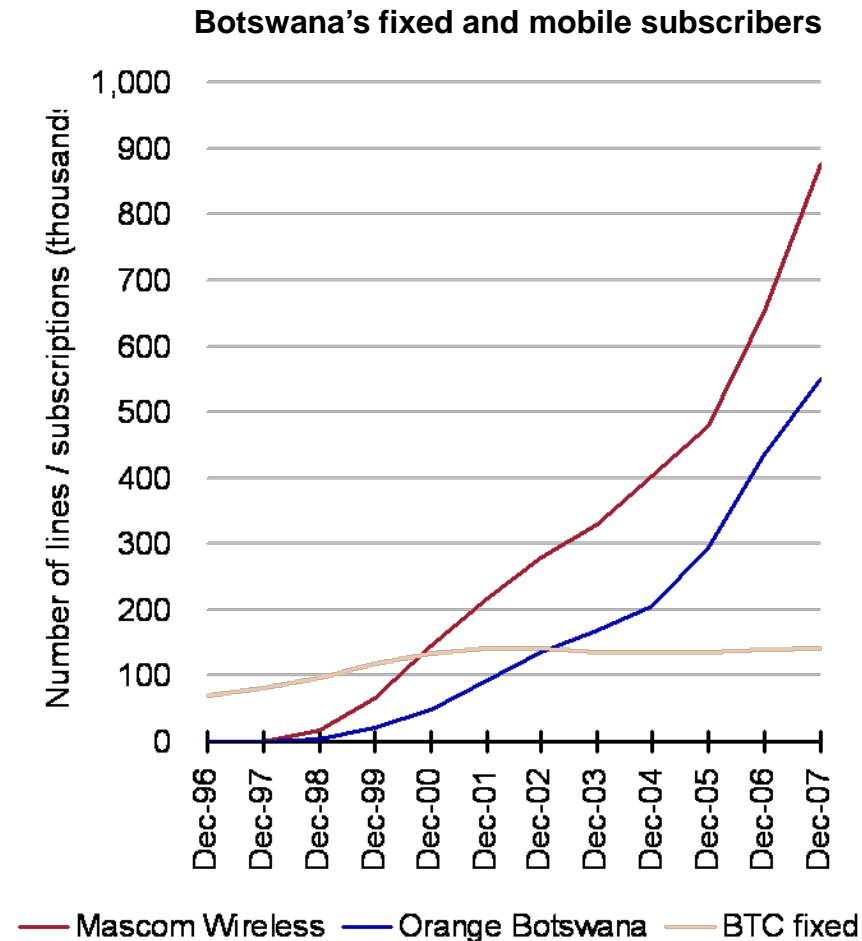
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# Mobile SIMs overtook fixed lines in 1999; BTC has responded with the launch of BTC Mobile

- As can be seen from the chart to the right, Mascom Wireless and Orange Botswana overtook BTC in 2000 and 2002 respectively
- Since then, there has been little response from BTC until the recent launch of BTC Mobile:
  - BTC Mobile has launched with no significantly new services to those already available
    - An ITU basket analysis in Oct 2008 showed Mascom wireless to be BWP54.95, Orange to be BWP52.29 and BTC Mobile to be BWP55.28
    - no mobile data services have been launched
    - BTC chose a '2G only' rollout, missing out on potential synergies by jumping straight to 3G or combined 2G/3G technologies

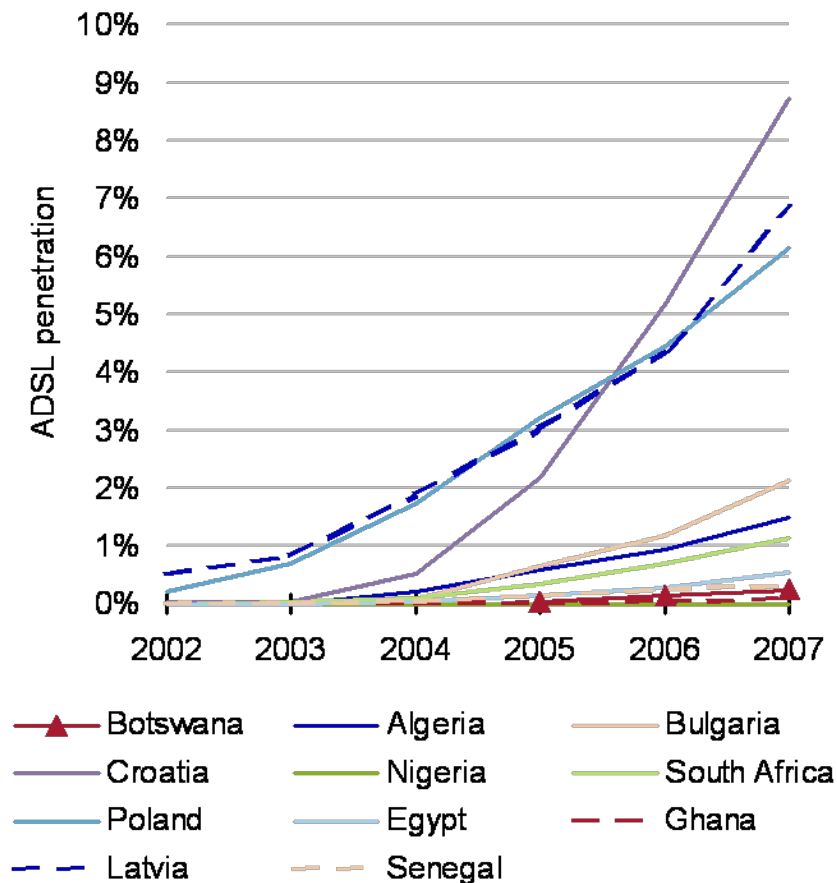




# There are competitive concerns over BTC's control of Internet access and bandwidth

- We found that the international data gateway market in Botswana is not yet competitive:
  - only BTC offers terrestrial gateway services
  - V-SAT services are considered as alternatives to terrestrial (in an effective market this is generally not the case)
  - there is little wholesale discount, giving a price squeeze to VANS licensees
  - both wholesale and retail prices are higher than in benchmarked countries
- We also found the Internet access market to be uncompetitive, despite 17 VANS licensees offering ISP services:
  - BTC can maintain a relationship with customers through ADSL line rental
  - BTC can squeeze VANS licensees through a narrowing gap between wholesale and BTC retail

Botswana's ADSL subscribers against benchmarks



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# We defined a robust market definition approach to ensure consistent assessment of competition and SMP

- **Market definition** is an essential element within the overall assessment of competition and market power
- There are two main risks when defining market boundaries:
  - ◆ defining an overly narrow market – competition might appear more limited
  - ◆ identifying overly broad market boundaries – leading to a conclusion of overly high levels of competition
- Markets can be assessed using demand- or supply-side analysis:
  - ◆ demand-side substitution analysis is the primary tool for market segmentation, while supply-side analysis is more relevant for the identification of market participants
- We have defined a detailed market definition framework which can be applied across all relevant markets
- **Significant market power (SMP)** is the label assigned to a firm which has a position of such market strength that can act (to a certain extent) independently of competitors:
  - ◆ SMP is a key concept used by regulators as the determination that an operator has SMP permits regulatory intervention to counteract this market power
- The European Commission is recognised as one of the most respected regulatory bodies in telecoms worldwide. In Article 14(2) of the Framework Directive it defines SMP as when a firm:
  - ◆ *“...enjoys a position equivalent to dominance, that is to say a position of economic strength affording it the power to behave to an appreciable extent independently”*
- We propose the BTA adopts a similar methodology

# We defined six competitive markets in the sector, and assessed competition and SMP

- Using the robust market segmentation framework developed earlier, we defined six distinct markets;
  - mobile
  - fixed local / national voice
  - leased lines
  - international voice
  - broadband Internet access
  - international data
- We found these to be distinct based on a number of factors including:
  - demand-side substitution analysis
  - geographical segmentation
  - customer segmentation
- A key point arising was the definition of the relevant voice markets:
  - there are some arguments that mobile voice could be considered to be in the same market as fixed voice
  - however, the 'hypothetical monopolist' test suggests that even after an increase of 5–10%, fixed-line calling rates would remain attractive in comparison with mobile

# We found BTC to have SMP in the national fixed voice market, while no PTO had SMP in the mobile voice market

## National fixed voice market

- With no competitors currently offering fixed telephony services, BTC has 100% market share:
  - we do not consider mobile and VoIP (at least at the present service offerings) services to be in the same market segment
- This market share creates a virtually insurmountable presumption of dominance

## Mobile voice market

- If there were significant market power in Botswana, it would be expressed in a number of ways, such as excessive pricing:
  - it is unusual to see market power in a growing market such as mobile telecoms as operators build up subscribers
- We found:
  - no evidence of excessive pricing (prices have been falling in nominal terms)
  - no overly significant hindrances to market entry and expansion (Mascom and Orange have expanded operations while BTC has recently been able to enter the market)
  - no evidence of barriers to switching (high churn rates are a positive indicator)
  - no indication of stifling of innovation (both UMTS2100 and WiMAX launched)
- In summary, we believe that, despite a relatively concentrated mobile market, there is no evidence that any PTOs have exercised market power

# We found BTC to have SMP in both the international voice market and the leased-line market

## Leased lines

- Similarly to the fixed voice market, despite liberalisation, there is currently no effective competition in the wholesale and retail market for leased lines
- In the wholesale market, the main entry barrier is the cost of deployment
- The lack of facilities-based competition and lack of wholesale pricing has also left the retail market uncompetitive:
  - rates are significantly above benchmark countries for longer distance lines
- In summary, we believe BTC has SMP in both the retail and wholesale markets

## International voice

- Following liberalisation, international voice markets tend towards being competitive quicker than other markets:
  - it is relatively easy to provide a service-based offering, using the existing access
  - in un-liberalised markets, international voice services typically have high margins
- In Botswana, the markets have been liberalised, but there is little competition in international calls:
  - this is in spite of Mascom's international voice gateway and two prepaid international calling services
- This could be due to BTC's successful rate re-balancing which eliminated the high margin ...
- ... as well as the fact that equal access has not yet been implemented in Botswana:
  - it is difficult for competitors to compete if consumers must dial an access code (as with OPQ Net's Tango service)
- In summary, we believe BTC has SMP in the market

# We found BTC to have SMP in both the broadband internet access market and international data market

## Broadband Internet access

- Although many competitors at the retail level, including fixed ISPs and mobile operators, there is no indication that the market is competitive
- This is due to two main wholesale access issues:
  - BTC controls wholesale ADSL access
  - BTC dominates international gateway services
- Our international experience suggests that the alternatives (wireless Internet access and V-SAT) are not typically competitive with fixed services
- BTC sells wholesale access directly to end users:
  - they can maintain a relationship with all ADSL customers
  - they can effectively squeeze the VANS licencees who are limited to a margin between BTC retail and wholesale charges

## International data

- At present, international data connectivity is provided from two sources:
  - Internet leased lines from BTC 'Botsgate' which uses fibre links and undersea cables to interconnect with the internet
  - V-SAT service linked to an ISP with international data connectivity (such as BBI with a connection to an ISP in Norway)
- The market is not competitive;
  - only BTC offers terrestrial gateway services
  - V-SAT services are still considered as alternatives to terrestrial services
  - although wholesale prices are available, there is almost no wholesale discount as there is in other countries

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# We examined the issue of potential additional PTOs ...

- Certain statements have been made regarding additional PTOs:
  - we note that under the licensing framework of March 2007, the BTA stated that *'only the existing mobile and fixed-line operators may apply for the PTO licences. This market segment will be considered for further liberalisation by the end of 2009'*
  - Section 39 of the Telecommunication Act states the BTA is allowed to limit the number of licences issued, but must *'publish its reasons for doing so'*
  - a press statement of the previous year, issued by the Minister of Communications, Science and Technology set the date for the tender of service-neutral licences for new entrants as December 2009
- However, we believe the time is not right at present for additional PTOs to be licensed:
  - as the competition section of our report examines in detail, competition in the mobile market appears to be healthy
  - the launch of BTC Mobile is too recent for the impact on the market to be fully assessed
  - reducing the market share of existing operators can diminish the incentive to invest in the development and improvement of networks
    - this investment is particularly important in Botswana where 3G rollout is still in its infancy
  - average population per operator (with three PTOs) is low in comparison to benchmarks
- A period of at least 24 months should be left from the launch of BTC Mobile to allow review and consolidation

## ... but we believe that the BTA's objectives can be better attained through other means

- We note a trend of other countries announcing additional mobile operators:
  - the Gambian government awarded a fourth mobile operator licence to QuantumNet in August 2008
    - the new entrant has made a firm commitment to 3G services; however, Gambia has an average population density nearly 50 times higher than Botswana
  - a South African MP announced in May 2008 that the South African government will licence a fourth mobile and third fixed-line operator in 2009
    - it is expected that this process will be delayed
- However, we believe the BTA's objectives can be better attained through other means:
  - the introduction of MVNOs is one means by which the MCST can move towards market liberalisation
    - traditionally, MVNOs target niche segments in under-served communities
    - competition from MVNO players would help to drive down prices
    - An MVNO has been successfully introduced in South Africa
    - we believe that under current legislation in Botswana, an MVNO entrant would be required to attain a PTO licence; thus, a change to licensing would be advisable
  - MNP is another way to advance competition
    - although MNP can be detrimental to existing operators by increasing churn, in many countries it has been introduced with significantly positive market impacts

# We have reviewed whether price regulation is appropriate ...

- Price regulation is a powerful tool, but history has repeatedly shown the disadvantages of a command versus a market system
- Price regulation generally requires the regulator to use its judgements to guide the market, instead of allowing market interactions to prevail
- ITU summarises this: *“No matter how capable and well intentioned regulators are, they will never be able to produce outcomes as efficient as a well-functioning market.”*
- Therefore, price regulation should only be implemented to the extent necessary to ensure the regulator’s goals
- We recommend that the BTA focus on wholesale price regulation:
  - in many markets, appropriate wholesale price regulation can itself stimulate retail price competition
- We found three markets potentially in need of price regulation, for reasons described earlier in this presentation:
  - ADSL access
  - leased lines
  - international data

## ... and found that it may be necessary in three markets

- ADSL access is charged by BTC directly to the consumer:
  - BTC has a total monopoly on this, and has SMP
  - the last-mile element of the connection should not vary in cost depending on speed (although the bitstream connection from the exchange to the ISP PoP should)
  - BTC's pricing varies significantly depending on speed (to a much greater extent than that attributable to the bitstream element)\* – this is suggestive of prices not aligned with costs
  - we therefore believe that BTC's ADSL access charge should be examined, with a view towards wholesale cost-based rates being provided to VANS licensees who can then bill customers directly
- Wholesale leased lines are the key building block for many retail services:
  - we found some evidence that pricing of wholesale leased lines was not in line with costs
  - we recommend that the rates and conditions for wholesale leased lines be examined, with a view towards cost-based rates that stimulate usage and lead to economies of scale
- Similar arguments apply to wholesale international data:
  - we found some indications that pricing of wholesale international data was not in line with costs
  - it was not possible to assess this, given the data and time available to us
  - we recommend that rates and conditions for wholesale international data be examined, to ensure reasonable and in line with costs

# We have reviewed other potential regulatory interventions

- We analysed a number of other potential regulatory improvements. We found three key areas that we believe BTA should examine:
  - **enforcement**
    - the existing legislative framework is strong, but there are concerns from some stakeholders that it is not enforced in a sufficiently robust way
    - detection of breaches in, and enforcement of, competition rules is vital to punish and deter anti-competitive actions
      - procedures, particularly including timeframes and processes, for dispute escalation need to be well defined
      - some stakeholders we spoke to believed they had grounds for dispute, but were not aware of the appropriate escalation procedure
  - **infrastructure sharing**
    - infrastructure sharing involves operators working together to share costs, whether initial capital expenses or operating expenses
    - it can be a good way to reduce operators' deployment costs and increase rollout to areas only marginally profitable
    - BTA could encourage infrastructure sharing; possibly even following the lead of TRAI in India in exploring the possibility of making it mandatory for new sites
  - **equal access in international voice market**
    - international voice is a market that lends itself well to service-based competition
    - however, the key to ensuring this is to make it easy for customers to dial a competitive service
    - this can be done call by call (a short code for the provider chosen must be dialled) or via carrier pre-selection (subscriber selects a carrier)

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# In order to permit BTA to accurately assess the market, it is important to collect regular, standardised, data

- To date, BTA has required the three PTOs to provide various data, including:
  - tariffs
  - subscriber numbers
  - annual financial accounts
- This information has been provided either on paper (hard-copy) or in electronic MS Word, on both a quarterly and annual basis
- Currently, operators provide data of varying comprehensiveness and consistency. We suggest focusing on the following:
  - ensure data for all quarters is provided and easily available
  - ensure consistent metrics between operators
  - split out key metrics (such as data cards)
  - provide the data in a format conducive to easy analysis (such as in MS Excel)
  - collect data from VANS licensees

## Submissions of metrics to BTA



**BOTSWANA TELECOMMUN**

Market Study for Period : 1 .

**MOBILE SERVICE PROVID**

**VISTA CELLULAR (PROPRIETARY) LIMITED**  
FINANCIAL STATEMENTS at 31 December 1998

**GENERAL INFORMATION**

Directors: A.S.E. Duda -Botswana  
J.B. Galeforobwe -Botswana  
P.C.J. Godiniaux -French  
A.M. Boullas -French  
S.M.F. Denaire -French  
F. Maillard -French  
(Alternate to P.C.J. Godiniaux)

Nature of Activities: Transmission of airtime for cellphones  
Sale of handsets and accessories

Secretary: PricewaterhouseCoopers (Pty) Limited

Auditors: Ernst & Young

Bankers: Barclays Bank of Botswana Limited

Company Number: 98/260

Registered Office: 1<sup>st</sup> Floor Debotswana House, The Mall, Gaborone

Country of Incorporation: Botswana

Currency: Botswana Pula


**C. QUESTIONNAIRE TOR 2 (Traffic & Subscriber Growth)**


**2a) Mobile Telecommunications Services**  
*If Unit of measurement is not calls and minutes, kindly indicate the correct Unit*

Service	Total Number of Calls ('000)	Total Call Duration ('000,000 minutes)	Total Number of Subscribers
Telephones	OUTGOING: 98,043	OUTGOING: 56,671	285,286
	INCOMING: 29,295	INCOMING: 29,295	
Toll-Free (Emergency & Information) Service			
Fax	Total Number of Calls ('000)		
	Total Call Duration ('000,000 minutes)		
Messaging (SMS)	Total Number of Subscribers	22,826	
	Total Number of Calls ('000)		
Roaming	Total Call Duration ('000,000 minutes)		
	Total Number of Subscribers		
Other - Voicemail	Total Number of Calls ('000)	33,678	
	Total Call Duration ('000 minutes)	4,470	
	Total Number of Subscribers		

**APPROVAL OF ANNUAL FINANCIAL STATEMENTS**

The financial statements set out on pages 3 to 11 were approved by the board of directors and are signed on their behalf by:

  
 DIRECTOR  
 DATE: 30 August 1999

  
 DIRECTOR

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# We have designed a new data collection and collation tool in MS Excel in line with international best practice

- TeleBase has been developed by Analysys Mason in direct response to the requirements set out by BTA
- It is primarily a quarterly database, although there is a supplementary annual database
- It has been designed to be as simple and consistent as possible:
  - PTOs and VANS licensees will be sent a template in MS Excel
  - they are kindly requested to complete the blank fields and return this by email at the end of every quarter
  - BTA staff will input this quickly and easily by copying and pasting into TeleBase
  - the database allows simple reporting automatically and more advanced analysis manually as required



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# We found the market to be generally functioning well, although the internet market is under-performing...

- In late 2008, Analysys Mason, in partnership with Project3, conducted a study into the evolution of the telecoms/ICT market in Botswana. The main results of our study are summarised below:
  - **the mobile market in Botswana was functioning well**
    - penetration and coverage was good in comparison with international benchmarks
    - no operator had SMP and we found no evidence of anti-competitive practices
  - **the fixed voice market was performing appropriately, in line with international benchmarks**
    - however, the wholesale leased-line market and international voice markets were of concern
    - there was little wholesale discount in the leased-line market, making competition in related sectors difficult, and potentially raising concerns of SMP
    - the absence of international voice call-by-call or carrier pre-select made competition in this area difficult
  - **the Internet market was of particular concern, with penetration significantly lower than benchmarks**
    - contributing factors included low fixed-line penetration, uncompetitive wholesale pricing by BTC, and a lack of local Botswana Internet content
    - we found BTC to have SMP in all three relevant markets (Internet ADSL access, international data provision and leased lines)

## ... and proposed some enhancements to encourage market development

- We made a number of recommendations:
  - **we examined the potential for additional PTOs**
    - we found that the latest operator (BTC Mobile) was too new to enable us to conduct appropriate analysis (e.g. it was unable to provide us with any data)
    - we recommend that a period of 24 months should be left from launch before an informed decision can be made with regard to additional PTOs
    - nevertheless, we analysed the potential for additional PTOs and found no strong evidence that additional operators would enhance the market
  - **we examined the potential for price regulation**
    - we found a number of indications that the wholesale ADSL Internet access, leased-line and international data markets were priced unfairly, with prices out of line with costs
    - this problem could worsen as BTC brings Botsnet closer to its centralised operations and makes further progress towards privatisation; we therefore recommend that BTA and BTC examine current pricing, with a view to potentially regulate these prices to bring them in line with costs
  - **we reviewed other areas for enhancement**
    - we suggest that BTA adopt a robust approach enforcement of existing legislation
    - we suggest that BTA implement equal access conditions in the international voice market; either call-by-call or via carrier pre-select

# Questions and discussion



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