Mobile taxation: Surtaxes on international incoming traffic

Contents

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Executive summary

Taxation as a proportion of the cost of mobile phone ownership and use in Africa is amongst the highest in the world and has increased over the last five years.[1] This may increase barriers to entry into the mobile telephony market for poorer local consumers, reduce the usage of mobile services for existing consumers and reduce the efficiency benefits for local businesses. Against this background, four African countries are imposing a new additional telecommunication specific tax, in the form of a Surtax on International Inbound Call Termination ("SIIT").

The SIIT takes the form of an imposed fixed price that operators must charge for international inbound termination, of which the government takes a set amount. The governments use a private party to measure the number of international inbound minutes terminated by each operator and bill the operators accordingly. The tax charges collected in this way are then shared with the private party that carries out the measuring function. SIIT prices are different from the competitive market prices for termination which applied before the tax was introduced.

Imposition of the SIIT sets compulsory prices for international termination and is akin to imposed price fixing. This policy therefore appears inconsistent with the recent move towards liberalisation of telecommunication in Africa.

The SIIT has had the following impact where it has been applied:

- In **Senegal,** prices rose by 50%. A Mobile Network Operator ("MNO") in Senegal noted that the number of international call minutes terminated on its network decreased each month while the tax was in place.

- In **Ghana,** prices rose by 58%. One MNO reported revenues from inbound traffic fell by 12% in the first six months after the SIIT was imposed. Another MNO reported a 35% decrease in international call minutes terminated on its network in the month after the imposition of SIIT compared to the month prior to its introduction. This operator also reported an 18% fall in call minutes in the six months after its introduction compared to the six months prior.

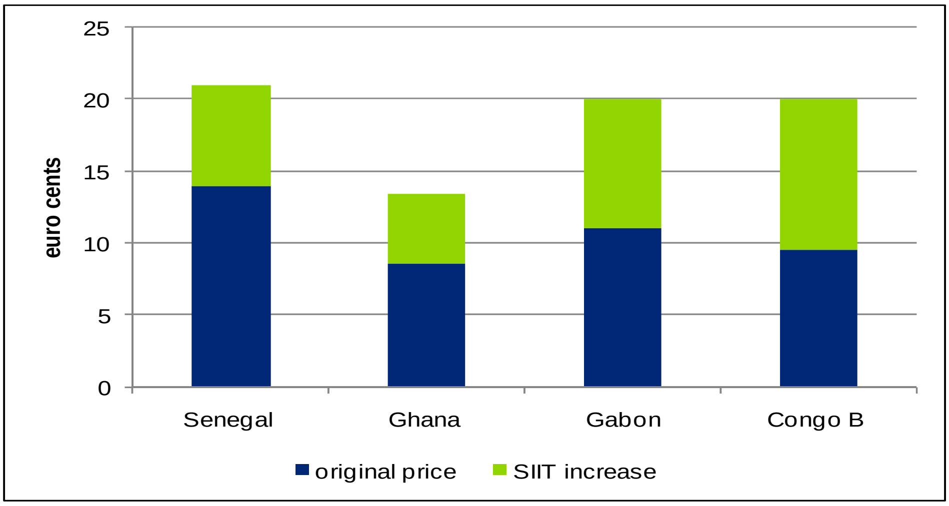
- In **Congo Brazzaville**, the price of inbound traffic has risen by 111%. Data from one MNO showed that inbound traffic fell by 36% between May 2009, when the tax was introduced, and May 2011.

- In **Gabon,** prices rose by 82% when the SIIT was imposed in August 2011.

[1] From results in the forthcoming Deloitte/GSMA Global Mobile Tax Review 2011

The main objective of this taxation is to raise revenues for governments, in this case by taxing users calling from abroad into the country. However, the government transfers approximately 50% of the revenue from the SIIT to the external call monitoring party. This leakage should be taken into account when assessing the effectiveness and net benefit of this tax.

Figure 1 Impact of SIIT on inbound international prices



Source: Deloitte analysis based on interviews with operators

Our analysis has shown that the SIIT may create a number of unintended negative consequences for local operators, local consumers and local business in the countries where it is applied as well as in surrounding African countries. In the long term, this policy might also have negative implications for governments through impacts on economic activity, tax revenues and local employment. Our analysis has identified the following key impacts and risks:

- **Higher prices have caused a reduction in incoming call volumes:** Operators have reported significant decreases in incoming international calls against their forecasts as well as absolute decreases in call volumes and revenues. Since prices for calls into African countries from other continents are likely to be fixed in the short term, operators are expecting further decreases in call volumes as operators abroad begin to react to the increased termination charges by increasing retail prices. This affects the ability of local consumers and businesses to communicate with contacts abroad.

- **Operators in African countries in the region are reciprocating the higher termination prices:** This is particularly concerning given that a very high proportion of outbound international calls from African countries are to other countries within Africa, estimated by operators to be 60% to 80% of the total. In Congo Brazzaville, an MNO reported that operators with which they have direct interconnection reacted to the SIIT by increasing the charges for termination for calls originating in Congo Brazzaville by approximately 30%. Similarly in Senegal, an MNO reported that nine operators in other African jurisdictions responded to the SIIT by increasing international termination rates from calls originating in Senegal by 23% to 80%. This may lead to higher prices for calls by local consumers to friends and family in the region and to local businesses with regional business activities, such as sales and suppliers.

- **The price differential increases incentives for illegal traffic:** The SIIT has caused a significant disconnect between the cost and price of international call termination which presents an opportunity for arbitrage in the affected countries[2], where illegal traffic is routed via illegal SIM boxes which channel national or international calls away from MNOs and deliver them as local calls. Operators have reported significant increases in illegal traffic since the introduction of the SIIT. This takes away revenue from operators and governments, and because illegal SIM boxes work in a way that congests a disproportionate amount of spectrum, also reduces the average quality of service for legal calls.

- **Impacts of the SIIT can have negative economic consequences:** Increased telecommunications prices increase costs for local businesses, particularly those that are service or communications specific, such as call centres. This policy also risks removing the benefits of being connected to the global information economy via undersea fibre optic cables that are now being delivered across Africa. An increased cost of doing business in Africa could also contribute to decreasing Africa's global competitiveness and disincentives foreign direct investment. In turn, this would have negative implications for local governments through reductions in tax receipts.

These key impacts and potential flow on effects of the introduction of the SIIT are summarised in the table below.

Key Impact	Implication for affected parties			
	Local consumers	Local business	Local MNOs	Local government
1. Prices fixed	• Higher call charges for family and friends abroad • Potentially receive less remittance if family members abroad spend a higher portion of income on call	• Increased cost of running a business, where international calls are involved • Risk of becoming less attractive to foreign direct investment, particularly for	• Distortion of investment incentives • Distortion of competition	• Reputational risk • Risk to perception of willingness to abide by international agreements • Risk to perception of enthusiasm for international

[2] Arbitrage refers to the situation where the same good or service (in this case call termination in the SIIT country) can be bought at one price in one market (in this case the local termination market) and sold at a higher price in another market (in this case the international incoming call termination market).

Key Impact	Implication for affected parties			
	Local consumers	**Local business**	**Local MNOs**	**Local government**
	charges • Potential loss of service offers such as 'one-net' packages which allow lower cost calls when roaming in the region	telecommunications related businesses		integration • Reduction of competition
2. Reduction in incoming calls	• Less connected - receive fewer calls from family and friends abroad	• Less integration in the region and internationally • Decreased economic activity	• Lower inbound call volumes • Lower revenue • Lower incentives for investment	• Less international integration • Reduction in economic activity, due to negative impact on business • Reduced taxation revenues
3. Reciprocation of termination rates in the region	• Higher call costs, further decrease in contact with family and friends in reciprocating African countries	• Further increased cost of doing business in the region • Reduced competitiveness • Reduction in demand for exports and locally sold goods • Potential reduction in investment incentives • Risk of becoming less attractive to foreign direct investment, particularly for telecommunications related businesses	• Lower outbound call volumes • Lower revenue • Lower incentives for investment	• Reduced taxation revenues • Less international integration • Reduction in economic activity, due to negative impact on business
4. Increased illegal traffic	• Lower average call quality, increased risk of dropped calls	• Lower average call quality, increased risk of dropped calls • Further exacerbating effects described from key impacts 1,2 and 3	• Reduced call volumes • Reduced revenues • Distortion of investment - might have to invest in network improvements earlier than otherwise would have	• Reduced taxation revenues • Less international integration • Reduction in economic activity

The SIIT potentially generates a number of negative effects for local consumers, local businesses, MNOs and governments. In particular, the SIIT may affect a significant proportion of intra-African traffic and risks a domino effect in African countries. This effect, combined with an increased flow of illegal traffic, may further reduce demand and service quality and lead to increasing prices and the cost of doing business in the affected countries. In the medium term, the flow on impacts could damage employment opportunities, social cohesion, investment (particularly in communication-based business), international competitiveness, terms of trade and government tax revenues.

To avoid these negative effects on local operators, local consumers and local businesses, the governments of the remaining SIIT countries could consider undertaking a comprehensive review of whether the benefits of this taxation exceed the potential negative impacts outlined above and returning to a process where prices for international termination services are allowed to be set through the interaction of operators in a competitive market.

1 Introduction

This paper was commissioned to Deloitte by the GSM Association ("the GSMA"). It also forms part of a wider study which Deloitte is undertaking for the GSMA on the taxation of mobile telecommunication services, the 'Global Mobile Tax Review'.

The purpose of the paper is to describe and review evidence of the unintended impacts on local consumers of a taxation trend that has recently been introduced in four African countries, namely the imposition of a Surtax on International Inbound Call Termination ("SIIT"). While this tax raises revenues for local governments, mobile operators affected by this policy are concerned that a comprehensive review of the impacts of this tax on local consumers and business does not exist and have requested that we describe such impacts. A full review of the monetary benefits of this taxation is outside the scope of this paper.

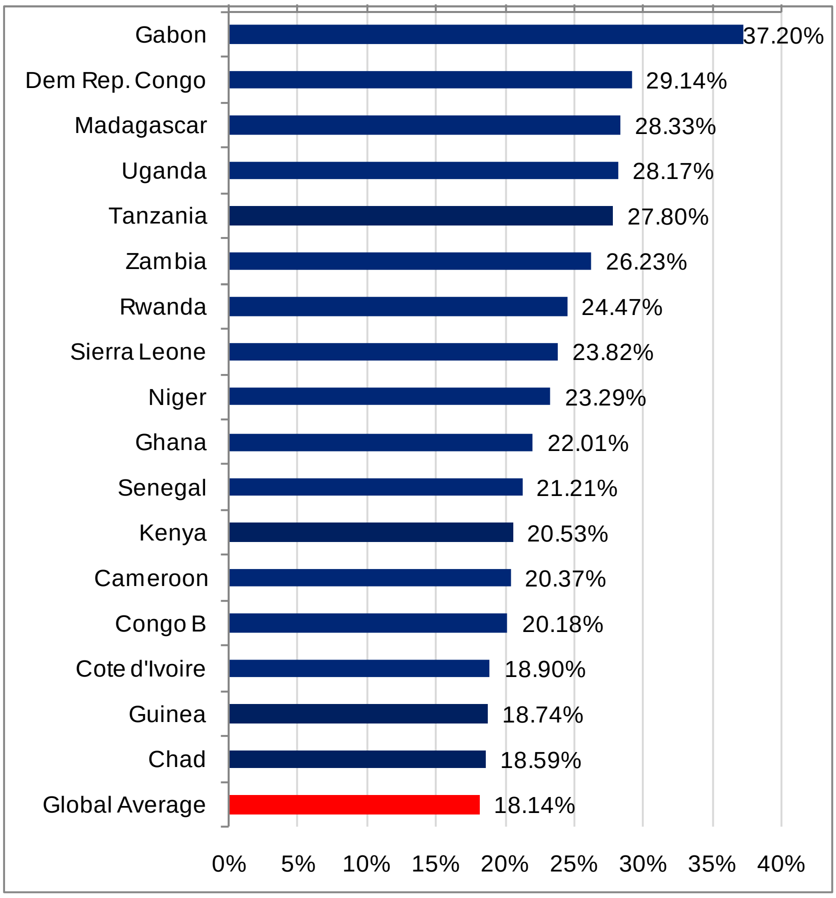
The paper is set out as follows: section 1 contains an introduction and background to the paper including a description of how the tax operates; section 2 outlines the impacts of the tax; and section 3 sets out our conclusions.

1.1 Taxation on mobile services in Africa

The contribution of mobile communications is fundamental to countries' economic and social development. The availability of affordable mobile services improves productivity, promotes trade, creates jobs and generates wealth and enhances social welfare. This is particularly important in African countries, where limited fixed telecommunications infrastructure exists.

Despite the positive impact and relative importance of mobile communications in Africa, many African countries tax mobile telecommunications at amongst the highest rates in the world, imposing a variety of sector specific taxation in addition to corporate tax and value added or sales tax. Figure 2 illustrates taxation, which is paid by consumers, as a proportion of the cost of mobile phone ownership. This proportion is higher than the global average in 17 African countries.

Figure 2 Mobile taxation is higher than the global average in 17 African countries



Source: Deloitte/GSMA Global Mobile Tax Review, 2011(forthcoming)

This high level of taxation on mobile telecommunications contributes to increase retail mobile telephony prices. This has numerous negative impacts for consumers, contributes to an increase in the cost of doing business within Africa and to reduce Africa's international competitiveness and attractiveness for foreign direct investment. As sector specific taxes on mobile usage impact upon poorer consumers more heavily, excise duties, fixed connection taxes and other taxes are restricting the affordability of mobile services for the most vulnerable of Africa's population.

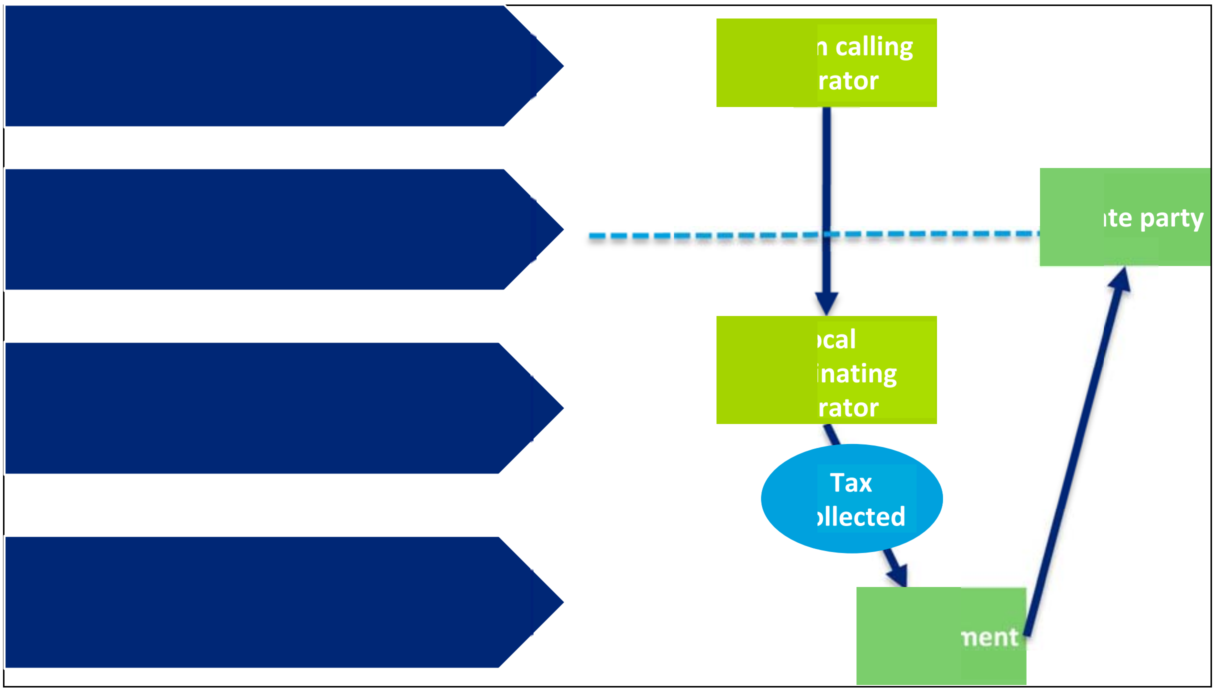
Against this background, four African countries (Congo Brazzaville, Senegal, Ghana and Gabon) have introduced the SIIT. The SIIT can be thought of as an additional telecom specific taxation. Operators have raised concerns that a comprehensive understanding of the potential negative impacts of this policy for local consumers and business does not exist.

1.2 Prices for international incoming calls

The SIIT takes the form of an imposed fixed price that operators must charge for international inbound termination, of which the government takes a set amount. This fixed price is set above the negotiated rates which were present prior to the policy implementation, and the difference (or a portion of the difference) is collected by the government. The governments use a private party to measure the number of international inbound minutes terminated by each operator and bill the operators according to the results. The tax charges collected in this way are then shared with the private party that carries out the measuring function. As illustrated in Figure 3 below, the SIIT is operated through the following steps:

- Telecommunications operators charge incoming international calls the centrally set termination charge.
- A third party intermediary uses probes on all international links to assess how many minutes of inbound international traffic surtax are charged to each operator and informs the Government.
- The Government charges operators accordingly.
- The Government pays the private intermediary an amount typically set at 50% of the revenue it raises with the surtax.

Figure 3 Structure of surtax on inbound international call termination



Source: Deloitte analysis based on interviews with operators

The price rise taken by government (this amount is shared with the external call monitoring body), the timing of implementation of the SIIT and the impact on charges for incoming international call termination in the affected countries are summarised in Table 1.

Table 1 Summary of tax

Country	Date introduced	Price before introduction	Price after imposition	% price increase	Government receives
Senegal	August 2010	mobile: CFAF 92 (€0.14) fixed: CFAF 65 (€0.10)	CFAF141 (€0.21)	50%	€0.07 (mobile) €0.12 (fixed)
Ghana	June 2010	$US0.12 (€0.085)	$US0.19 (€0.134)	58%	$US0.06 (€0.042)
Congo B.	June 2009	€0.095	€0.20	111%	€0.10
Gabon	August 2011	72FCFA (€0.11)	131 FCFA (€0.20)	82%	72FCFA (€0.11)

Source: Deloitte analysis based on interviews with local operators

Additional details of how the SIIT is implemented in these countries and the effect on charges for incoming international call termination are included in Table 2 below.

Table 2: The SIIT in Senegal, Ghana, Congo Brazzaville and Gabon.[3]

Senegal

In Senegal, the SIIT was implemented in August 2010, removed in November 2010 and then reintroduced in late August 2011. The policy takes the form of a compulsory set termination rate of 21 eurocents. The government claims all additional revenue as tax revenue (amounting to 7 euro cents per international call minute terminated on mobile in Senegal), but shared this revenue on a 50/50 basis with the third party intermediary Global Voice Group (GVG).[4] This surtax has been applied in addition to other general and mobile specific taxes and regulatory fees which apply to telecommunications services in Senegal, including; Telephone usage fee (RUTEL) of 5%; Value Added Tax (VAT) of 18%; Corporation Tax of 25% and a Contribution to Universal Service of 3% (applied to turnover).

Prior to implementation of the surtax, the average termination rate negotiated for international termination of calls to mobiles was 14 eurocents and for international termination of calls to fixed lines was 10 eurocents per minute. Therefore, this policy resulted in a price increase for incoming international call termination of 50% for mobile and 110% for fixed, no increase in marginal revenue for operators and increased tax revenue for Governments.

[3] We are aware that implementation of the SIIT is being considered in a number of additional countries, including Guinea, Niger, Mauritania, Madagascar and Liberia, this paper covers only those who had implemented the tax at the time of writing.

[4] Global Voice Group S.A. sells Telecom Governance Technologies to Regulatory Authorities, such as monitoring and management platforms for the control of national and international traffic. The company is headquartered in Cape Town, South Africa.

An operator in Senegal noted that the number of international call minutes terminated on their network decreased each month while the tax was in place initially. The operator has reported that the number of minutes terminated remains below pre-surtax levels, but as the surtax has only just been re-introduced we are unable to observe whether the re-introduction will cause further reductions.

Ghana

In Ghana, the SIIT has been imposed on operators since June 2010. The policy takes the form of a compulsory set termination rate of 19 US cents of which the government takes 6 US cents, leaving operators with 13 cents revenue.

Prior to implementation of the surtax, the average termination rate negotiated between operators was between 11-13 cents. Therefore, this policy has resulted in a price increase for incoming international call termination of between 46%-73%, and an increase in marginal revenue per minute for operators of between 0%-18% as well as the increased tax revenue for Governments.

This surtax has been applied in addition to other general and mobile specific taxes which apply to telecommunications services in Ghana, including: Value Added Tax (VAT) of 12.5%; National Health Insurance Levy of 2.5%; Corporation Tax of 25%; Standard Customs duty of 20% (which applies to imported handsets and other telecommunications devices) and a Communication service tax (CST) of 6%, which is applied to all communication services in Ghana. In addition, operators in Ghana pay four annual regulatory fees/levies of 1% of net revenue (4% altogether).

In Ghana, one operator experienced a 12% decrease in revenues from the termination of international traffic in Ghana in the 6 months after the imposition of the surtax in comparison to the 6 months prior to the introduction. Another experienced a 35% decrease in international call minutes terminated on its network in the month after the imposition of the tax compared to the month prior to its introduction and an 18% fall in call minutes in the 6 months after its introduction compared to the 6 months prior and a decrease of 14% in the 6 months following compared with the same 6 month period in the previous year.[5]

Congo Brazzaville (Republic of the Congo)

In Congo Brazzaville, the SIIT has been imposed on operators since June 2009. The policy takes the form of a compulsory set termination rate of 20 euro cents of which the government takes 10 eurocents, leaving operators with 10 eurocents revenue per minute.

Prior to implementation of the surtax, the average termination rate negotiated between operators was 9.5 eurocents per minute. Therefore, this policy has resulted in a price increase for incoming international call termination of 111%, and an increase in marginal revenue per minute for operators of 5% as well as the

[5] Our calculations do not take into account forecasts of traffic increases. However, it is expected that operators would have experienced an increase in call volumes during the time period, with mobile use in Africa growing dramatically and consistently in recent years. Therefore the decreases in call volumes and revenues described in this paper are likely to underestimate the true negative impact of the implementation of SIIT.

increased tax revenue for Governments.

This surtax has been applied in addition to other general and mobile specific taxes which apply to telecommunications services in Congo B., including; Value Added Tax (VAT) of 18.9% and Corporations Tax of 38%.

In Congo B., one operator we obtained data from experienced a fall in call minutes terminated almost every month since the SIIT was introduced such that in May 2010, call minutes were 29% lower than in May 2009 and by May 2011, they were 36% lower than in May 2009. Revenues from call termination have also fallen considerably, decreasing 42% in the month after implementation form the month before implementation and 16% in the six months after implementation compared to the six months before.

Gabon

In Gabon, the SIIT has been imposed on operators since 1 August 2011. The policy takes the form of a compulsory set termination rate of 131 Central African Francs (20 euro cents) of which the government takes 11 cents, leaving operators with 9 euro cents revenue per minute. This surtax has been applied in addition to other general and mobile specific taxes which apply to telecommunications services in Gabon, including: Value Added Tax (VAT) of 18%; Corporation Tax of 35%; and Standard Customs duty of 30%.

Prior to implementation of the surtax, the average termination rate negotiated between operators was 11 cents per minute. Therefore, this policy has resulted in a price increase for incoming international call termination of 82%, a decrease in marginal revenue per minute for operators as well as the increased tax revenue for Governments. As the tax has only recently been implemented, operators in Gabon were unable to give us any information about its effect.

Source: Deloitte analysis based on discussions with local operators

2 Unintended impacts on local consumers and local businesses

In this section we review briefly the benefits of SIIT and describe the key risks and potential effects associated with the introduction of the SIIT for local consumers, businesses, mobile network operators and government. In carrying out this analysis, it is recognised that taxation generally contributes to revenues for governments, which will then seek to invest tax revenue for a variety of economic and social purposes. In this section, we focus on the unintended consequences that the SIIT may generate for local business and consumers. This analysis may contribute to a comprehensive review of whether the benefits of this taxation exceed the potential negative impacts outlined below.

The section covers four key potential impacts; the price fixing impact, the effect on incoming call volumes, the risk of reciprocation from operators abroad and the impact on the quantity of illegally terminated calls. We conclude this section with a summary of the impacts including the wider economic repercussions.

2.1 Benefits of SIIT

While a review of the benefits of this taxation is outside the scope of this document, the main objective of this taxation is to raise revenues for governments, in this case by taxing users calling from abroad into the country, for example emigrants calling families in the origin country and companies calling local businesses. In addition, governments in SIIT-imposing countries have also stated that benefits of this taxation include the monitoring of international traffic and of fraud systems in the networks.

We understand from operators that governments have not published official figures on revenues received from this taxation. However, considering average monthly volumes of international terminated minutes and the share of price retained by governments as described in Table 1, high level estimations suggest that:

- In Senegal, monthly revenue from the SIIT may amount to €7.6m, of which the government keeps €3.8m[6].
- In Ghana, monthly revenue from the SIIT may amount to €6.9m, of which the government keeps €3.4m[7].

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[6] Information based on http://www.itu.int/ITU-D/finance/work-cost-tariffs/events/tariff-seminars/Geneva_Taxation/pdf/Seyni-senegal-fr.pdf, slide 17

[7] Information based on volume data provided by local operators

- In Congo B. monthly revenue from the SIIT may amount to €1m, of which the government keeps €0.5m[8].

- In Gabon, monthly revenue from the SIIT may amount to €1.1m, of which the government keeps €0.55m[9].

These figures could be used as a reference point should governments decide to carry out a comprehensive review of cost and benefits of this taxation. However, the government transfers approximately 50% of the revenue from the SIIT to the external call monitoring party. This leakage should be taken into account when accessing the effectiveness and net benefit of this tax.

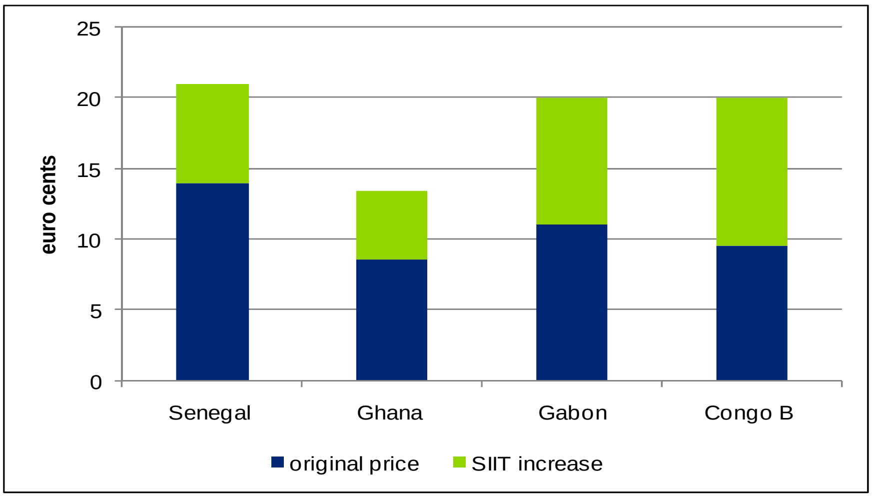
With regards to the other benefits identified by governments, we discuss implications on monitoring levels in more detail in paragraph 2.5 below.

2.2 SIIT fixes prices

Imposition of the SIIT sets compulsory prices for international termination and is thus akin to imposed price fixing. In addition, in all affected countries, the fixed prices are significantly above the market rates which were present prior to the policy implementation.

As described in Table 1, the resulting increase in international termination charges has been significant in all countries in which the surtax has been implemented, ranging from a 57% increase in Senegal to a 111% increase in Congo B. Figure 4 below summarises the impact on prices of the imposed surtax in the affected countries.

Figure 4 Impact of tax on prices



Source: Deloitte analysis based on interviews with operators

[8] Information based on volume data provided by local operators

[9] Information based on volume data provided by local operators.

2.2.1 This could have implications for competition

As discussed in a recent World Bank publication, "*the widespread liberalization of markets and the emergence of competition have greatly increased the performance of Africa's ICT sector*."[10] However, by imposing compulsory prices rather than allowing competitive market forces to determine prices for international termination, the implementation of SIIT legislation might be viewed internationally as move backwards for liberalisation of telecommunication in Africa.

Additionally, the removal of competition from one market (in this case international termination) could have flow on effects across mobile services by allowing inefficiency and/or cross-subsidisation of other services. In the long term, the price increases and distortions caused by fixing prices for some services may lead to sub-optimal results for consumers.

2.2.2 Consistency with internationally accepted taxation practices and international guidelines

Governments generally apply taxation consistently across industries, goods and services, but reflect variations in citizens' ability to pay through progressive income taxation systems. Taxation is structured in this way in order to minimise the economic distortions caused by government revenue raising.

However, for consumer goods which are considered to have significant social or economic impacts, governments occasionally vary from this strategy in order to influence consumer behaviour through price signals. Governments sometimes increase the consumption tax on goods for which they wish to discourage consumption. For example, due to the negative health and social effects, governments often place a higher excise duty on alcohol and cigarette purchases. Conversely, governments sometimes lower or remove the tax to increase affordability of goods and services of which they wish to encourage consumption due to positive health or social effects, such as fresh food or education. The increase in mobile penetration which resulted from the Kenyan Government's removal of VAT on mobile handsets in 2009 is one successful example of such a policy.

Therefore, implementation of the SIIT may signal to international observers that the governments concerned wish to discourage incoming calls to their country. This risks affecting the reputations of these governments as it is contrary to trends of globalisation as well as market liberalisation.

Operators have raised concerns that the introduction of SIIT policy may be contradictory to sentiment of various international and regional agreements. For example, the ITU 2009[11]

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[10] Pg 9, 'Africa's ICT Infrastructure: Building on the Mobile Revolution', Mark Williams, Rebecca Mayer and Michael Minges.

[11] http://www.itu.int/osg/csd/wtpf/wtpf2009/documents/ITU_ITRs_88.pdf

guidelines state that taxes shall normally be collected only on international services billed to consumers in that country.

Additionally, operators have noted that the World Trade Organisation's Annex on Telecommunication Services (1988) states that taxes should not be higher than local interconnection rates and recommendation D.140 of ITU (2002) requests that tariffs including termination rates should be cost-orientated.

Operators are also concerned that the SIIT could lead to double taxation of consumers as incoming callers could be paying a charge which includes:

- Taxation for the terminating countries' government (SIIT).
- VAT and/or service charges which are calculated on the total price (including the SIIT), which will go to their respective government.

2.3 Incoming call volumes

As described in section 1.2, the increased retail tariffs resulting from implementation of the surtax appears to have resulted in reductions in incoming international call volumes to the affected countries. It is likely that this disproportionately affects non-business consumers and poorer members of the community, whose family members have emigrated.

While international calls might be relatively price inelastic in the short term, particularly for business customers, price is still likely to be a significant factor for poorer consumers. This might mean that the measured decreases in overall call volumes, caused by the increased termination charges, mask a larger impact on those who are most vulnerable, such as family members who have moved for employment calling into SIIT countries or small businesses that source goods or services from these countries.

Many operators reported that, due to the nature of calling behaviour of family members and friends calling African countries, any increase in call charges may lead directly to a reduced number of call minutes being made to the affected countries. This is because callers from abroad calling family and friends are likely to buy a phone card of a specific value in a certain timeframe corresponding to their pay schedule e.g. per week or month, and may stop calling until the next payday once this card runs out. Therefore, as the card may buy fewer minutes due to the surtax, the ability of family and friends to stay in touch is negatively impacted by the SIIT. For any family members living abroad who choose to maintain the same level of contact after the price rise, an increase in the cost of calling home might lead to a decrease in any money available to send back to family in their home country.

Operators' analysis in Senegal showed that the five countries from which incoming traffic frequently originates are those countries from which emigration from Senegal is high. Therefore, a significant portion of the surcharge revenue in Senegal is likely to come from Senegalese living or working abroad.[12]

Additionally, since prices for calls into African countries from other continents are often based on regional averages and advertised in advance, these prices are likely to be sticky in the short term. Therefore, operators are expecting further decreases in call volumes as operators abroad begin to react to the increased termination charges. Operators have also advised that the impact of the SIIT might also put 'one-network offers', under which customers receive cost-free or reduced fee call reception when roaming in the region, under threat as the high termination charges could lead such offers to be loss-making.

2.4 Reciprocation of higher prices

Operators have reported that operators in other countries in the region have reciprocated by increasing their charges for termination of calls originating in SIIT countries. This means that calling other African countries from a country where the SIIT applies is now significantly more expensive. This is of particular concern to operators and their customers given that operators estimate that between 60-80% of calls terminated internationally are to other countries within Africa.

For example, an operator in Congo B. reported that a number of the operators with which they have direct interconnection reacted by increasing the charges for termination for calls originating in Congo B. by approximately 30%.

Likewise, an operator in Senegal reported that nine operators in the region responded to their higher termination rates by increasing the rates of international termination for calls originated in Senegal to 21.5 euro cents, representing an increase of between 23%-80% for mobile calls terminated by those operators. For this operator, the overall cost of interconnection with countries within Africa increased by 18% between August and December 2010.

In the short term, some operators have absorbed the effect of these reciprocal price rises. However this is not likely to be sustainable in the long term. Therefore, in conjunction with falling revenues, these increased costs might force operators to increase outbound call charges and/or decrease investment in expansion of networks and services.

[12] See Sonatel's presentation to the ITU conference in September 2011: http://www.itu.int/ITU-D/finance/work-cost-tariffs/events/tariff-seminars/Geneva_Taxation/pdf/SaliouToure-Sonatel-e.pdf

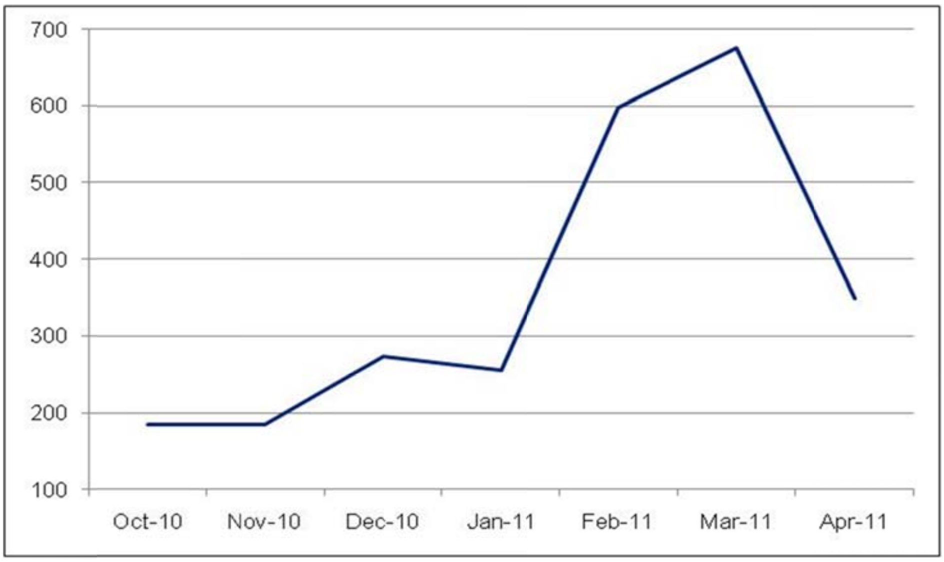
This may lead to relatively adverse effects on consumers in the region compared with consumers outside of Africa. Such effects may ultimately contribute to keeping mobile telephony out of the reach of millions of Africans and thus increasing the digital divide.

2.5 Incentives for grey traffic

The implementation of the SIIT has caused a significant disconnect between the cost and price of international call termination. This presents an opportunity for arbitrage in the affected countries. Arbitrage refers to the situation where the same good (in this case call termination in the SIIT country) can be bought at one price in one market (in this case the local termination market) and sold at a higher price in another market (in this case the international incoming call termination market). This has led to a significant increase in the amount of illegally terminated traffic in SIIT countries. Illegal traffic is routed via illegal SIM boxes which channel national or international calls away from mobile network operators and deliver them as local calls.

An operator in Senegal reported that the number of SIM boxes detected had been growing considerably since the implementation of the surtax. They explained that the significant increase in SIM boxes continued even while the surtax was suspended due to the fact that retail prices in originating countries remained high. This is illustrated in Figure 5 below.

Figure 5 Number of Illegal SIM boxes detected in Senegal post SIIT



Source: Operator data

A concerning side effect of illegal SIM boxes is that they operate continuously, congesting a disproportional amount of spectrum. If this trend is not stopped, it may eventually lead to quality issues which may require increased levels of investment to overcome.

Additionally, the increased price of calling the affected countries might force some consumers to switch to lower quality services such as other voice over IP ("VOIP") services. For example, one operator in Senegal, estimated that the number of incoming international calls being terminated via VOIP increased from 5% to 20% of the total from July 2010 to December 2010. The combination of illegal calls and switching to lower quality services may reduce the average quality of the service and further reduce revenue for mobile operators, thus impacting tax revenue for governments.

Operators have also reported that monitoring call data to track illegal SIM boxes is unlikely to be sufficient to remove this problem in countries with significant disconnect between termination costs and prices. They noted that new technology is being developed to get around monitoring systems. For example, operators in Senegal have discovered the use of a new type of call system named the 'Magic Jack'; this technology provides users with a US number and allows callers to be charged local rates when calling Senegal from the US and vice-versa.

Without the artificial difference in prices, there would be reduced incentives for developing illegal technology.

2.5.1 Levels of monitoring

Finally, the operational implementation of the SIIT policy is also a source of concern for operators, as the third party intermediaries used to measure call volumes add an unnecessary layer of monitoring. In relation to the operator's own calls, operators reported that adequate assurance and audit measures for international traffic accounts exist within national regulation or law and are upheld by operators using their own traffic recording systems. They have reported that their monitoring systems are within an error variance level of 1%, which is within the tolerance threshold indicated by ITU recommendations (D-171).[13] They are therefore concerned that it is an inefficient and unnecessary use of resources to divert tax revenue to pay a third party to calculate call volumes.

Additionally, operators have reported that they are faster and more effective at recognising grey SIM boxes than the monitoring systems posed/employed by the third part intermediaries and have a stronger commercial incentive to do so. For example, operators in Ghana reported that they themselves have identified many SIM boxes not identified by the intermediary GVG as well as all those identified by GVG. The inefficiency of this situation is of particular concern given that these intermediaries receive a significant portion (generally 50%) of the additional tax revenue raised through the SIIT.

[13] http://www.catr.cn/radar/itut/201007/P020100707500055412034.pdf

2.6 Unintended consequences for local business and FDI

Taxation imposed on mobile telecommunications in African countries, of which the SIIT is just one, contribute to increased telecommunications costs for local businesses. The resulting higher cost of doing business also carries a risk of decreasing the international competitiveness of the region. Flow on impacts could lead to a worsening of the terms of trade for local exporters and reduce local and Foreign Direct Investment ("FDI"), particularly in telecommunications related business.

2.6.1 Investment in local networks and services and impact on local business

Where high taxation on mobile services leads to higher prices, this is likely to reduce demand for services, and therefore could lower the expected return of investments. In turn, this might result in lower investment incentives for the purchase of new licences and network roll outs, and ultimately more limited choices for consumers than would be available in the presence of less onerous taxation on mobile services.

High telecommunications costs negatively impact local business in addition to consumers. Higher running costs, including telecommunications costs, reduce profits for local business and might result in higher prices. This in turn can cause reduced demand for local goods and services, particularly those which are exported, or compete with goods which are imported from countries with lower business and telecommunications costs.

Additionally, if higher prices for calling family and friends within the region caused by the SIIT lead local consumers to spend more of their income on telecommunications, a reduction in demand for other local goods and services might result.

2.6.2 Investment in telecommunications related businesses

The increased prices of calling into and out of SIIT countries could dis-incentivise the development of 'regional telecommunications hubs' in these countries by making the cost of routing through them prohibitive. Therefore, countries or regions in which the SIIT has been imposed might be overlooked for investment in the infrastructure to create a 'regional hub' in favour of countries or regions with similar labour costs but without the SIIT.

Likewise, a multinational business is less likely to establish additional call centres or customer service centres in countries where international call termination is significantly more costly than the rest of the world, as these termination charges represent a non-trivial component of the cost of running such businesses. Where branches or outsourced functions involve a significant amount of international incoming calls, the SIIT might even lead some companies to close branches, and re-open in non-SIIT countries in the long term.

This policy also risks removing the benefits of being connected to the global information economy via undersea fibre optic cables that are now being delivered across Africa.

The loss of such investment could ultimately lower economic growth and employment opportunities for African people. In turn, this would also have negative implications for local governments through reductions in tax receipts.

2.6.3 Cost of doing business and international competitiveness

Telecommunications is an important factor in the operation of business both locally and across borders. The Global Competitiveness Report noted that "*a solid and extensive telecommunications network allows for a rapid and free flow of information, which increases overall economic efficiency by helping to ensure that businesses can communicate and decisions are made by economic actors taking into account all available relevant information*."[14]

Therefore, high taxes on mobile services and/or reductions in investment in telecommunications infrastructure could increase the cost of doing business or decrease business efficiency with and within the affected countries.

As can be seen in Table 3 below, three of the four countries in which the SIIT has been imposed are currently within the top 20 percentile in the World Banks' 'Cost of doing business' index. The 'cost of doing business index', which ranks economies, from 1 – 183 based on the relative ease of doing business, is an indicator widely considered by companies when determining their FDI flows.[15]

This measure is important as telecommunications represents a significant component of the cost of running a business and as an economy becomes relatively more expensive to do business, it will increasingly struggle to attract foreign direct investment.

Table 3 SIIT countries' rankings in the World Bank are 'Cost of doing business' index

Country	Ranking in the World Bank's 'Cost of doing business' index
Senegal	highest 17% (number 152/183)
Congo B.	highest 4% (number 175/183)
Ghana	highest 63% (number 67/183)

[14] The World Economic Forum, The Global Competitiveness Report 2010 - 2011

[15] A high ranking on the ease of doing business index means the regulatory environment is more conducive to the starting and operation of a local firm. This index averages the country's percentile rankings on 9 topics, made up of a variety of indicators, giving equal weight to each topic. The rankings for all economies are benchmarked to June 2010.

Gabon	highest 15% (number 156/183)

Source: World Bank (http://www.doingbusiness.org/rankings)

The reliability and quality of telecommunications as well as the availability of other ITC services such as broadband will also impact the ability of African countries to attract investment, grow business and improve their economic position to the benefit of citizens. As stated by the Global Information Technology Report 2010-2011, '*ICT has also proven to be a key precondition for enhanced competitiveness and economic and societal modernization, as well as an important instrument for bridging economic and social divides and reducing poverty'.* [16] Therefore, any additional tax that has the potential to effect service quality or ITC investments decisions could have long-term harmful effects on the local economy.

[16] Pg 5, http://www3.weforum.org/docs/WEF_GITR_Report_2011.pdf Global Information Technology Report 2010-2011

3 Price determination in a competitive market

Our analysis found that the introduction of the SIIT has numerous unintended negative impacts on local consumers, local business, local MNOs and local governments. It affects intra-African traffic and risks a domino effect in African countries. This, combined with an increased flow of illegal traffic, risks continued decreases in demand, reduced service quality as well as increasing prices and the cost of doing business in affected countries. While it is outside the scope of this paper to review the benefits of the SIIT, the SIIT does contribute revenues for the government, albeit half of the proceeds from the price increase are not retained locally but passed on to the call monitoring party.

The potential flow-on unintended impacts of SIIT risk reducing employment opportunities, social cohesion international competitiveness, terms of trade and government tax revenues. These potential implications are summarised in Table 4 below.

Table 4 Summary of the implications and risks of SIIT introduction

Key Impact	Implication for affected parties			
	Local consumers	Local business	Local MNOs	Local government
1. Prices fixed	• Higher call charges for family and friends abroad • Potentially receive less remittance if family members abroad spend a higher portion of income on call charges • Potential loss of service offers such as 'one-net' packages which allow lower cost calls when roaming in the region	• Increased cost of running a business, where international calls are involved • Risk of becoming less attractive to foreign direct investment, particularly for telecommunications related businesses	• Distortion of investment incentives • Distortion of competition	• Reputational risk • Risk to perception of willingness to abide by international agreements • Risk to perception of enthusiasm for international integration • Reduction of competition
2. Reduction in incoming calls	• Less connected - receive fewer calls from family and friends abroad	• Less integration in the region and internationally • Decreased economic activity	• Lower inbound call volumes • Lower revenue • Lower incentives for investment	• Less international integration • Reduction in economic activity, due to negative impact on business • Reduced taxation revenues

Key Impact	Implication for affected parties			
	Local consumers	Local business	Local MNOs	Local government
3. Reciprocation of termination rates in the region	• Higher call costs, further decrease in contact with family and friends in reciprocating African countries	• Further increased cost of doing business in the region • Reduced competitiveness • Reduction in demand for exports and locally sold goods • Potential reduction in investment incentives • Risk of becoming less attractive to foreign direct investment, particularly for telecommunications related businesses	• Lower outbound call volumes • Lower revenue • Lower incentives for investment	• Reduced taxation revenues • Less international integration • Reduction in economic activity, due to negative impact on business
4. Increased illegal traffic	• Lower average call quality, increased risk of dropped calls	• Lower average call quality, increased risk of dropped calls • Further exacerbating effects described from key impacts 1,2 and 3	• Reduced call volumes • Reduced revenues • Distortion of investment - might have to invest in network improvements earlier than otherwise would have	• Reduced taxation revenues • Less international integration • Reduction in economic activity

In order to avoid the negative effects on local operators, local consumers and local businesses, the Governments of SIIT countries could consider undertaking a comprehensive review of whether the benefits of this taxation exceed the potential negative impacts outlined above and returning to a process where prices for international termination services are allowed to be set through the interaction of operators in a competitive market.

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