



**internet solutions**

A DIVISION OF DIMENSION DATA

# LOCAL LOOP UNBUNDLING

DISCUSSION DOCUMENT

PRESENTED TO: ICASA

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## GENERAL

### 1.1 Is LLU worth doing?

Internet Solutions believes that LLU is a process that must be undertaken, on the assumption that the end goal is to increase the nature and types of services available in the market, to ensure equitable and reasonable access to all operators and to ultimately reduce prices and/or increase the types of services on offer to customers (be they SMEs, corporates and/or home users).

### 1.2 Why?

Internet Solutions believes Local Loop Unbundling allows telecoms operators to have access to the link between telephone exchanges and the businesses and homes of telecoms users in a more equitable fashion. IS believes that LLU is a critical component of an overarching strategy to liberalise the telecommunications sector in South Africa. The current copper infrastructure has been partly subsidised (either directly or in some substantial part) by state investment, and it is therefore imperative for other operators to have equitable access to this essentially public infrastructure. Moreover, new entrants will be enabled to offer a variety of new services over existing infrastructure, at more competitive rates or with higher service levels than currently experienced.

Liberalisation of the sector generates healthy competition, which ultimately benefits operators, consumers and promotes greater access to information throughout South Africa and results in a greater good to the state.

Monopolistic telecoms operators are inherently incentivised to drive and achieve profit maximization, resulting in exorbitant rates and/or lower penetration of service (both of which are seen in South Africa). Telkom is, in this context, a monopolistic operator and argues that they would economically and technically suffer as a result of the implementation of LLU. A component of Telkom's argument against LLU is that they would be forced to lay off staff due to loss of income.

IS does not believe this to be the case for two reasons:

1. Telkom is not adequately making use of existing infrastructure. According to market research, Telkom have 8 million physical lines deployed. Of these 8 million lines, only 4 million are ADSL-ready, and less than half of these ADSL lines (i.e. 2 million) are being utilised for broadband. In the event of LLU being implemented, IS believes that the lowering of prices resulting from increased competition would dramatically increase the uptake of those lines. IS believes Telkom's market will increase proportionally and they would gain from the dramatic uptake of users on the underlying, already-deployed infrastructure that is currently not being billed for<sup>1</sup>.

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<sup>1</sup> MyBroadband (22 June 2011): "if Telkom can double their ADSL subscriber base through other operators boosting subscriber numbers, they stand to gain well over R1 billion per year in revenue. Considering that the infrastructure mostly exists to make this happen it will be a great financial boost for the company."

2. If Telkom was forced to lay off staff, IS believes that other service providers and ICTs would need those skills in order to implement their own services.

### 1.3 What alternatives are there?

Currently, Internet Solutions sees three possible alternatives;

1. **Do nothing** – *continue using existing infrastructure.*

The problem with this approach is that there would be little or no progress in driving the ministers stated objectives to “...increase innovation, increase the quantity and quality of services, reduce the prices paid by customers and increase the number of available business opportunities...”. The reason LLU is being considered is that the status quo is resulting in poor penetration and service levels.

2. **Wireless** – *the use of wireless technologies as a last mile replacement.*

In order to deliver a service of adequate value, a minimum standard level of quality would need to be guaranteed. To offer an alternative consumer last mile replacement, IS would require allocation or use of regulated spectrum. IS has indicated a willingness to participate in any consumer-appropriate spectrum allocation process, but thus far no process has been forthcoming or concluded. Additionally, IS has made representations to various providers (both parastatal and private) to make use of their spectrum resources; these discussions have inevitably not resulted in a commercially viable service being delivered. The alternative to a regulated spectrum-based service is a best effort service on unregulated spectrum. IS, based on its existing history of operating a network in unregulated spectrum, does not see this as a viable alternative due to the cost, reliability, logistical and technical issues associated with this type of solution on a large or distributed scale.

3. **Alternative wired loops** – *investing in providing our own-wired infrastructure in either copper or fiber.*

IS, as are many independent operators, is not in a position to justify a commercially viable business case for re-creating a second consumer-class loop network infrastructure. High-level obstacles include:

- *Time required to build and deploy a second copper or fiber network*
- *The capital investment required*
- *The inherent risks associated in maintaining two sets of copper infrastructure*

As such, IS does not see building another loop as an alternative and viable replacement to the existing loop.



The EC Act states that an essential facility “cannot feasibly be substituted.” This core principle is the basis on which we believe that Telkom’s argument that LLU is not an essential facility is nonsensical; for the reasons mentioned above, there is no viable alternative to the implementation of LLU.

## Prior Discussion document questions

### 2.1 Is ICASA's proposed approach to unbundling the local loop through the implementation of the facilities leasing regulations reasonable, feasible and acceptable?

The facilities leasing principles and processes set out in Chapter 8 of the Electronic Communications Act of 2005 (ECA) as well as the Facilities Leasing Regulations promulgated in 2010 are of application to all forms of electronic communications facilities, including all electronic communications facilities which form elements of access networks. In this regard section 43 (7) sets out that the lease of electronic communication facilities by electronic communications service licensee must unless otherwise requested by the leasing party, be non-discriminatory as among comparable types of electronic communications facilities being leased and not be of lower technical standard and quality than the technical standard and quality provided by such electronic communications network service licensee to itself or affiliate.

Furthermore according to section 47 of the ECA the Authority may prescribe regulations establishing a framework for the establishment and implementation of wholesale rates applicable to specified types of electronic communication facilities and associated services taking into account the provisions of Chapter 10. It is therefore our submission that section 43 of the ECA creates an enabling environment which enjoins ICASA to prescribe regulations that seek to unbundle the local loop as an electronic facility for purposes of creating non-discriminatory access to both the copper and wireless last mile. Read together with section 47 of the ECA ICASA is therefore empowered to create a wholesale framework applicable to specified types of electronic communication facilities in this case the last mile being such a facility.

Such a process does not have to be preceded by a market review as contemplated under Chapter 10 as the basis for regulatory intervention is primarily imbedded under Chapter 8 which is designed to facilitate effective and wholesale access to the local loop rather than to impose price controls.

### 2.2 What form of local loop unbundling do stakeholders realistically favor in the South African market?

ICASA has identified four unbundling methods:

- *Bitstream access*
- *Shared loop unbundling*
- *Full-loop unbundling*
- *Sub-loop unbundling*

IS believes that the fastest and most practical form of Local Loop Unbundling with regard to data services is a Bitstream implementation, with a delivery model that is similar to that of (British Telecoms) BT - Openreach in the UK.

It is important to note that Bitstream severely limits the impact and opportunities of voice substitution as well as video services.

Pre-supposing that regulations around pricing for voice-specific carrier select and/or carrier preselect are not promulgated, the industry would be prejudiced in delivering optimal voice or broadcast/video services. It is therefore suggested that Bitstream is implemented as a default, and in a consultative process full Local Loop Unbundling be implemented either at a regional or at a “primary node” level. IS believes this implementation must be done in parallel to meet realistic time frames with minimal disruption.

### 2.3 What other cost items should be included in each form of local loop unbundling?

Internet Solutions believes it is impractical to define the exact costing of each form of Local Loop Unbundling until such time that a decision is made by the authority on the approach that will be taken and the technology that is decided upon.

Broad considerations in this regard should include the following:

- A once-off cost for line implementations
- Charges for the access of telecommunication facilities such as:
  - Monthly line rental charges;
  - Line repair and maintenance.
- Collocation costs including:
  - The cost of renting space;
  - Site preparation;
  - Exchange site surveys;
  - Utility usage and security.

The critical principle of cost orientation on pricing for access to the local loop implies that telecommunication services have to be priced on an individual basis such that prices are aligned with costs. The tendency for the incumbent operator is to overstate costs and charges. It is important that the costing and pricing rules for local loops and related facilities be fair. Setting such an environment requires a firm regulatory framework and an earnest participation by all operators.

Pricing rules that are set by the regulator should ideally ensure that the local loop provider could cover its appropriate costs in this regard, with a reasonable return on investment. These pricing rules for local loops should foster fair and sustainable competition where strategies such as investing in technology and services are a cornerstone for success. It is the IS recommendation that international loop operators be consulted in order to critically evaluate and set pricing for loop access in a manner that is equitable to all parties concerned.

The regulator must ensure there is no unfair discrepancy between prices of wholesale and retail services of the incumbent. The offer should be adequately unbundled that the customer does not have to pay for network elements or amenities that are not necessary for the supply of its services (e.g. “naked” ADSL).

The sale provisions must include a description of the details on the offerings as well as terms and conditions. Experience shows that regulatory intervention is an effective mechanism for reaching agreement on technical and pricing issues for local loop access.

### Impact on prices

The topic of unbundling carries the requirement for a balanced subscriber price, especially the fixed subscriber line charges, to ensure that they reflect costs incurred. In terms of costs, it is considered that;

- Re-balanced prices are central for new entrants desiring to exploit unbundling. The regulator has to investigate how the re-balancing of prices process is structured and conducted and how it should not result in unfairly increasing prices in subscriber’s monthly accounts.
- LLU costs might vary depending on the region and as such there should be a geographical harmonisation of subscribers’ line charges. These categories are known to affect the costs of communication services and therefore may be used as categories to average the subscriber line charges:
  - Business areas / Residential areas
  - Urban areas / Rural areas
  - Under serviced areas

The prices are dissimilar for different implementation models. In the case of line-shared unbundling, the incumbent remains the provider of voice; thus new entrants do not have to pay for fully unbundled lines. The rental charges may vary according to the number of connections that are offered to a new entrant by the incumbent.

With different categories such as rural areas and urban areas, a geographic de-averaging of prices should in principle be supported and encouraged in order not to expose the incumbent from having to supply unprofitable loops in rural areas whilst new entrants self-benefit in low cost areas.

### Interconnection charges

Interconnection charges are viewed in most of the researched literature as the most vital issue in regulation of the telecommunication sector. They are significant for fostering competition and securing return on investment in the incumbents’ facilities in an optimised manner. The terms and conditions on which a new entrant is interconnected are crucial for its ability to successfully and compete fairly with the incumbent.

In this respect, price setting is a vital parameter to ensure a fair and competitive playing field. To achieve healthy returns on investment for the incumbents' telecommunication facilities, the temptation is to charge high interconnection fees. These interconnection charges must be regulated to encourage competition.

In addition, new entrants must be given access to existing network facilities under conditions that facilitate competition on a fair basis. It is essential that interconnection rates be competitive so that they do not dampen investment in new network facilities and hold-up facilities competition. In order to maintain the equilibrium between regulation and investment in facilities, concepts like Long Run Average Incremental Cost and Total Element Long Run Incremental Cost must be established and implemented to analyse the impact of interconnection charges. Central issues that should be put into consideration are matters such as how competition will be affected by the level of interconnection charges in the short and long run as well as its effect on investment subscription.

## 2.4 Should a standardised ordering and specifications system be developed?

It is inevitable that an Operational Support Systems (OSS) be developed in order to facilitate the provisioning of LLU services.

Specific aspects requiring attention include:

- Customer Records - The introduction of LLU, whether to provide collocation, fully unbundled or shared access services will require customer records to reflect the new definitions of these wholesale services. This is essential in order to provide accurate data for billing. The incumbent will need to confirm that the system has sufficient functionality to accommodate the requirements of LLU.
- Line Plant Management - In the event that line plant records are paper based, conventional line plant management systems that are normally configured to recognise a logical series of discrete analogue connections, need to be tailored to record copper access network sharing. Due to the requirement to record shared service lines, systems will need the capability to record the dual utilisation of a single customer circuit and may enable the recording of shared access services. Not all conventional line plant management systems are able to record fully unbundled loops and sub-loops or remotely-located multiplexer equipment hence it is important to confirm that existing systems will offer the necessary levels of functionality.
- Remote Line Test - Where installed, the functionality of an incumbent operator's remote automatic line test will be affected by the introduction of fully unbundled LLU services. A solution would be to deploy test access modules at strategic main distribution frame sites that will enable the remote line test equipment to access fully unbundled loops. Where a fully unbundled LLU

service is provided on a sub loop, the remote line test will have no physical access to the loop or sub-loop and all testing activities will have to be manual and carried out on site.

- Billing - The incumbent's billing system data will have to include the new LLU and collocation products as well as the associated charges, whilst the system must be configured to be able to bill LLU Operators for bespoke network re-arrangement and civil engineering activities.

The cost of any new hardware or software should be directly attributable to the requirement to introduce LLU.

It should be noted that many European incumbents developed their existing OSS to cope with the demand forecasts and functionality specifications put forward by LLUO's.

## **2.5 In the event that an access line deficit is identified, would you be willing to contribute to an access line deficit recovery scheme?**

Internet Solutions is prepared to contribute to an access line deficit recovery scheme to the extent that the access deficit costs are calculated based on the access line deficit for an efficient operator (EO) or even a Reasonably Efficient Operator (REO) and not the access line deficit that Telkom currently claims<sup>2</sup>.

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<sup>2</sup> All definitions of EO, and REO can be based on an ITU document - "EFFICIENT OPERATOR: METHODOLOGIES, MODELLING AND APPLICATION FOR TARIFF REGULATION, Telecommunication Development Bureau, ITU, November 2008")

## Implementation Questions

### 3.1.1 Do we currently have ADSL customers? If yes, how many?

IS currently has more than 120 000 fixed line ADSL customers.

### 3.1.2 Do we currently make use of alternative broadband last mile connectivity? What and how many?

Currently, IS resells mobile broadband products supplied via mobile operators (notably; Cell-C, Vodacom and MTN). We also service fiber clients and operate a commercial wireless network as alternatives to last mile connectivity, but these are not applicable from a cost and product definition as broadband services.

### 3.1.3 Do we currently make use of IP connect? If yes, how many connections do we have and at what speed?

IS currently has 8 IP connect circuits at 7.2 Gbps in Rosebank.

### 3.1.4 Do we currently make use of wholesale ADSL line rental? If yes, how many lines and at what speeds?

IS currently deploys through wholesale ADSL approximately 2433 lines, differentiated in the following line speeds:

- 902 lines at 384 Kbps
- 546 lines at 1Mbps
- 985 lines at 4Mbps

## 3.2 Should we have included naked ADSL in the discussion document?

Telkom argues that they are subsidising the telephone connection and that there would be little or no pricing advantage to providing a “Naked DSL” or “a data only service”. Internet Solutions believes an audit on the cost breakdown be undertaken to determine whether or not there exists an advantage to users in this regard. IS believes that an efficient operator would clearly have a pricing advantage to a data only service. On this basis, naked ADSL should be included in the discussion document.



### **3.3 Are we currently making use of Telkom's UniWeb, BSAS or WORM systems? Comments?**

Internet Solutions currently makes use of Telkom's UniWeb, BSAS and WORM systems for reporting, tracking and monitoring of information. The operational inefficiencies this creates due to the disparate nature of these systems has been communicated to Telkom. Telkom is currently still developing a more efficient system to address these issues.

### **3.4 Are you familiar with Telkom's IP stream and Data Stream products? Have you used or tested either?**

Internet Solutions has heard rumours of the IP Stream and Data Stream products; however, we have not been formally offered these services. It is our understanding that the products are still undergoing internal testing by Telkom.

### **3.5 Are you familiar with CHIPAC? Comments?**

Internet Solutions is familiar with the CHIPAC service, although it is hard to see the advantage of this service from a pricing perspective. It is also clear that this service is not intended as a consumer and/or broadband service, but as a commercial service. Other issues surrounding the service include;

- Migration to the service involves the need to sign new contract terms, making this a commercially difficult alternative;
- There are difficulties in obtaining space at the exchange and implementation is limited to Telkom MPLS-enabled exchanges;
- The service still forces operators to use Telkom equipment until the hand over facility.

## Additional Questions

### 4.1 Fibre vs. Wireless – Intention regarding last mile provisioning?

IS has traditionally been technology agnostic with regard to the last mile connection, as long as quality and technical parameters are comparable and meet customer requirements. We invest in last mile technology in cases where existing options are uneconomically high in cost or where there is no significant infrastructure available.

### 4.2 What are your views on FTTH?

Currently, the commercial case for implementing this type of technology is poor due to the significant infrastructure and installation costs, customer equipment (CPE) costs, environmental and municipal permitting required to achieve this at scale. IS is participating in technology trials in KZN, and will be able to provide empirical data once these trials have concluded.

### 4.3 How long do you believe copper will remain a useful medium for the provision of last mile access?

We see primarily state-paid for copper infrastructure remaining a useful medium for the provision of last mile access until other forms of last mile technology become financially and universally viable alternatives. As long as the copper is available for use, we see it remaining a primary means in which to provide last mile access. This is not withstanding the issues surrounding copper as a last mile technology, such as degradation and theft.

### 4.4 What are your investment plans over the next five years with respect to network infrastructure?

Internet Solutions has a history of investing in its own infrastructure from the point it was allowed to self-provision. In this regard, IS has invested in international undersea cable capacity along the west and east coast of Africa, national long haul capacity, satellite, wireless and fixed last mile capabilities, data centers and facilities peering points in several cities in South Africa and Africa. IS will invest in network infrastructure on the basis that it is a commercially and financially viable opportunity, where alternatives are discouraged and to maintain price parity against other forms of technology or mediums that provide access.

#### 4.5 What is your current customer base in providing:

- Voice – Internet Solutions currently services approximately 800 client organisations using our VoIS service over an ADSL link
- Internet Access
  - Wireless - Internet Solutions currently services 500 client organisations excluding our mobile broadband customers
  - Fixed - Internet solutions currently services 120 000 ADSL customers.

#### 4.6 How many people do you currently employ?

Internet Solutions currently employs approximately 1200 staff in South Africa and 200 throughout the rest of Africa.

#### 4.7 Do you have the technical capacity to make full loop unbundling work or are you reliant on Telkom's technical monitoring/expertise?

Internet Solutions currently does have some of the technical expertise, but does rely on Telkom's monitoring and technical expertise. Should LLU become a reality, IS would invest in both the manpower and the monitoring systems applicable depending on which type of LLU is implemented.

#### 4.8 If you were in our position, what would you do?

IS has several recommendations to ICASA. These are:

1. *Deploy Bitstream-type LLU immediately*
  - a. Internet Solutions believes that the Bitstream approach is the most practical approach in the short to medium term
2. *Establishment of an Independent LLU management organisation*
  - a. According to our research, one of the essential lessons to be learned to aid the success of LLU is the formation of an independent management model similar to the approach taken in the UK. BT spun off its local loop into a separate, independent company called Openreach, which manages, maintains, upgrades and leases the local loop to competing operators, including BT itself, and does so in a way that is transparent to all market players.
  - b. Ensure operational separation from the rest of Telkom
  - c. Remove the possibility of Telkom using its vertical integration to competitively further its position in the market, as this new company should treat all service providers the same.
3. *Extend local loop unbundling to mobile and wireless loops*

- a. In order to do unbundling properly and foster real competition in telecommunications, it is important that local-loop unbundling does not apply only to the fixed access lines owned by Telkom. It must also be extended to the mobile operators.
4. *Investigate deployment of shared-loop for full loop unbundling*
- a. While data and broadband access is the primary driver for LLU, ICASA should not lose sight of the fact that a Bitstream-only LLU deployment limits service provisioning to data only. Voice and video services would still be severely limited and no substantial service offering or price differentiation would be possible in these markets.

ICASA is in the unenviable position of enforcing regulations and overseeing all the participants in the telecommunication sector in an equitable and fair manner. It is firmly IS' belief that LLU is a process that will result in more competition amongst operators, more choice for consumers, lowering of prices and ultimately a step change in internet and network adoption in South Africa, resulting in a more competitive position economically.