

Around the world in 590ms*

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Introduction

About Nishal: speaking from the perspective of an ex network engineer, at Internet Solutions (AS3741) in South Africa.

In the Beginning...

- Started in 1993 by 3 graduate students at a local university
- Single 64kb/s link to the US @\$8000/mo

The Early Years

- The WWW becomes a reality
- Spin-offs created
 - Trusted Network Solutions (Security Company)
 - IS Commercial (Web/E-commerce Development)
 - ICON (Dialup)

1997 - A year of firsts!

- Onsite Hosting of Client Servers
- IS PoP in NYC
- 45mb/s IP Transit to US
- Client 'CLR' services

**Building an
international PoP is not
cheap!**

But it gives you lots of benefits!

- Consolidated bandwidth meant more efficient use of our IPLCs.
- Connecting directly to international peering exchanges became a reality
- Enhanced service delivery (CIR)
- Marketing, Marketing, Marketing :-)

Bucking the trend...

You should already see a trend towards not necessarily going with the norm...

Cost drives a build

Bandwidth was (and still is) the largest operational expense...

The .za market

- (at the time) very restrictive telco environs
- 60% state owned telco monopoly
- covering telephony, fixed-data, satellite,...

Building a .za ISP?

- (back then) No options for picking and choosing telco providers
- Bandwidth is our life-blood, squeeze too hard, and things go numb...

**Telco owned ISPs can
always sell services
cheaper :-)**

**But, we survived...(and
then some...)**

How did we succeed?

- *Confession:* in no small part it is because the local community are largely sick of the incumbent; people favour the underdog !
- *Vanity and practical factor;* clients want to be connected to larger networks and IS built that primarily to deal with expensive international bandwidth and to be able to resell a QoS model as earlier as 1997.

How did we succeed?

- Community support; active supporter of ISPA and ZA peering.
- Key customer accounts; banks, government institutions, news-houses, all helped to build a broad client base
- ISP in good standing means that we were able to maintain long-term good standing relationships with international content distributors.

How did we succeed?

- Selling unorthodox and unique services
 - overseas hosting
 - overseas PoPs to cater for client specific needs fed us new areas of business (eg. a large Korean electronics manufacturer based in ZA needed faster access back to Seoul, so we expanded into HKG to accommodate them.

How did we succeed?

More unorthodox services: operated physically separate networks run by the same set of trusted individuals to offer true multihoming solutions to clients without having them go to a competitor for the same multihoming service

How did we succeed?

- Largest footprint before 1996 (SAIX), so practically, we had a lot (the most?) to lose. it's a necessary evil; we fight, because we must, and we were large enough to maintain our litigious relationship with the incumbent. Other ISPs may not have been that lucky...
- No framework for the incumbent to say 'no' to us; as this Internet thing was not really well defined at the time.

How did we succeed?

human inventiveness; we'd be hard pressed to admit it, but the Telco **forced** us to be inventive, and rethink solutions. Whereas a normal solution might be to throw more bandwidth at a problem to try to resolve it, we couldn't have that luxury, so we had to rethink solutions...

How did we succeed?

“..its unique relationship to certain clients and the willingness to be very flexible in how you dealt with clients with abnormal needs”

Insurance House IT Director

“...I could call you at 4am - and frequently did!”

Bank Manager

“..., the other area that I.S succeeded in, was hiring good people, fact, I.S's net-ops team was/is still the best net-ops team in the country.”

Large Education Network Manager

Where did we not succeed?

- Market aggressive within ZA; not so aggressive inside markets that were not “home-turf”

Lessons learnt

- It helps to have a Telco Big Brother :-)
- Clients do actually appreciate service; cheaper is not always better, and they know this!
- Value-adds sell! It doesn't help to be a box-dropper. Annuity and recurring revenue services were the ones worth dealing in.

Lessons learnt...

- Unmanaged complexity is the enemy of scalability. (but customers with unique requirements drive innovation!)
- Innovation and the KISS principle are not mutually exclusive.

Challenge authority

- Decisions should be constantly re-evaluated to see if they are still relevant.
- VOIP (and many other services) was illegal in ZA for many years. Only through petitioning and constant lobbying did we get this passed.

* for the network geeks, 590ms is a traffic engineered path from:
JNB->LDN->NY->HKG->JNB

(other, more direct paths, are shorter)

thank you!

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