

## The Truth behind Streaming Internet Radio in South Africa

There is a growing hype being spread of streaming radio's massive and escalating success as an alternative to terrestrial radio in South Africa. The reports available suggest listeners are taking to the medium like fish to water. 2Oceansvibe Radio has a new second studio in Melrose Arch<sup>1</sup>. Ballz Radio is leveraging a network of sports personalities to grow content and listenership.<sup>2</sup>

2Oceansvibe Radio now states they have up to 60 000 listeners an hour<sup>3</sup>. Ballz Radio, after two months online, claims in the region of 51 000 listeners<sup>4</sup> between 12 and 6pm<sup>5</sup>.

Even smaller community stations such as KingfisherFM were up to 20 000 monthly listeners in March<sup>6</sup>.

Sponsors and advertisers clearly need to jump on board this segment that is now beating down terrestrial radio<sup>7</sup>.

So what is the reason behind this amazing growth in the sector?

The falling cost in broadband? Increase in mobile access to Internet? A general dissatisfaction with terrestrial radio?

In my professional (and personal) opinion, I state that there is only one explanation for these proclaimed levels of listenership – they are **complete fabrications. Utter nonsense. Lies, even.**

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<sup>1</sup> <http://www.mediaupdate.co.za/?IDStory=46415>

<sup>2</sup> <http://m.bizcommunity.com/Article/196/59/73300.html> (Terrestrial DJs go virtual)

<sup>3</sup> <http://www.netprophet.org.za/2012/05/richard-hardiman-internet-radio-in-south-africa-and-why-it-shouldnt-work-2/> (Richard Hardiman mentions 60 000 in his Netprophet talk)

<http://allafrica.com/stories/201112130695.html> (2Oceansvibe Radio Announces Highest Monthly Listenership)

<sup>4</sup> <http://www.mediaupdate.co.za/?idstory=47517> (Early results look good for Ballz :: Media Update)

<sup>5</sup> <http://allafrica.com/stories/201206111512.html> (Darren Scott Happy with stats for New Online Station)

<sup>6</sup> <http://sevencitys.wordpress.com/tag/niche-casting/> (Very impressive listenership for KingfisherFM)

<sup>7</sup> <http://www.2oceansvibe.com/2011/12/01/2oceansvibe-radio-bucks-tide-of-declining-listenership-record-numbers-as-high-lsms-move-away-from-fm/> (2Oceansvibe Radio Bucks Tide Of Declining Listenership – Record Numbers As High LSMs Move Away From FM | 2oceansvibe.com)

How do I justify this allegation?

**The social media numbers don't add up.**

2Oceansvibe Radio claims 40 000 to 60 000 listeners at any one time yet they only have 3990 followers on the @2OVfm twitter account. The main @2Oceansvibe twitter account only has 18 941 followers. According to Facebook itself, the 2oceansvibe Facebook Radio app has "10 monthly users" and the 2Oceansvibe Radio Facebook Page has only 1999 "likes".

Ballz Visual Radio claims up to 51 000 listeners per hour. They only have 8560 Twitter followers and 14 487 Facebook "likes".

Surely the claimed "upper-LSM" listeners of an online radio station would be much more invested. You would expect them to engage the station over social media platforms far more vigorously and at a larger volume.

It's easier and cheaper to tweet than to listen to online radio. The radio station should gain a Twitter follower or Facebook "like" exponentially quicker than they would acquire a regular listener.

**There are no parallels between Twitter followers, Facebook "likes" and the reported listener count.** This makes no sense.

**There are not enough Internet users in SA to justify 150 000 frequent listeners.**

There are only approximately 800 000 ADSL Lines in South Africa.<sup>8</sup> The majority (50%) of SA internet users get their connectivity through ADSL. The published audience figures between 2OV, Ballz and Kingfisher are at least 60 + 50 + 20 = 130 000 listeners on only 3 stations. That suggests that 130 thousand of those 800 thousand users (more than one eighth) are streaming radio for more than an hour every day?

You could argue that smart phones are actually a large portion of that market. With the average cell phone data bundle being 150MB per month, bundled generally on higher-end contracts, what mass of users can truly afford to use 28 megabytes of a 150MB monthly bundle to listen for a single hour. Out-of-bundle rates average from R1 – R2, so that will prove even more expensive. One would expect Blackberry should prove to be a valuable and large market in the streaming segment, as internet radio streams can be made to work on the BIS service without cost, allowing for cheaper streaming, but surprisingly Richard Hardiman from 2Oceansvibe claims they do not have a large Blackberry market at all.<sup>9</sup>

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<sup>8</sup> <http://mybroadband.co.za/news/broadband/28886-internet-access-in-sa-most-used-connections-revealed.html>

<sup>9</sup> <http://www.netprophet.org.za/2012/05/richard-hardiman-internet-radio-in-south-africa-and-why-it-shouldnt-work-2/> (Richard Hardiman mentions 60 000 in his Netprophet talk)

There are however a ton of holes in a percentage-of-ADSL-stats or percentage-of-mobile-users argument. Along with smart phones, there are corporate leased lines, iBurst and Neotel users and 3G modem users that are not mentioned in the sources referenced.

Nobody really knows how many medium-to-high-end internet users there are in South Africa, so we cannot comfortably project what percentage of those users would regularly listen to streaming radio. World Wide Worx claim 8.5-million SA internet users, but for at least 6 of those 8 million, streaming would probably be too expensive for the listener to tune in regularly. So let's forget this argument, even though it adds some validity to my allegation. You would be better off asking five random people who you work or live with if they ever listen to streaming radio over the internet.

### **Mysterious and sudden growth**

KingfisherFM from the niche Port Elizabeth area, apparently had 1000 listeners in December 2011 that grew in to 20 000 by March. This "growth" occurred at the same time they changed streaming hosting provider to NetDynamix.

But that's all speculation. Here's the kicker:

### **NetDynamix publishes all their streaming radio clients' listenership figures.**

All the stations mentioned thus far use a single company NetDynamix for their stream hosting and the same company provides their statistics. NetDynamix uses a piece of software called "Shoutcast" to relay and distribute their streams to the listeners.

The majority of Shoutcast streaming radio stations are listed on **Shoutcast.com**. Every public Shoutcast server publishes their listenership to this directory. The largest have **12 000 listeners maximum** at any time. If the biggest stations in the world only have 12 000 listeners, how can two start-ups (2OceansvibeRadio and Ballz) in bandwidth-starved Africa have tens of thousands more listeners than that?

As proof, check the following page published by Shoutcast.com showing listener stats:  
<http://www.shoutcast.com/Internet-Radio/Ballz>

### Stations matching 'ballz visual radio'



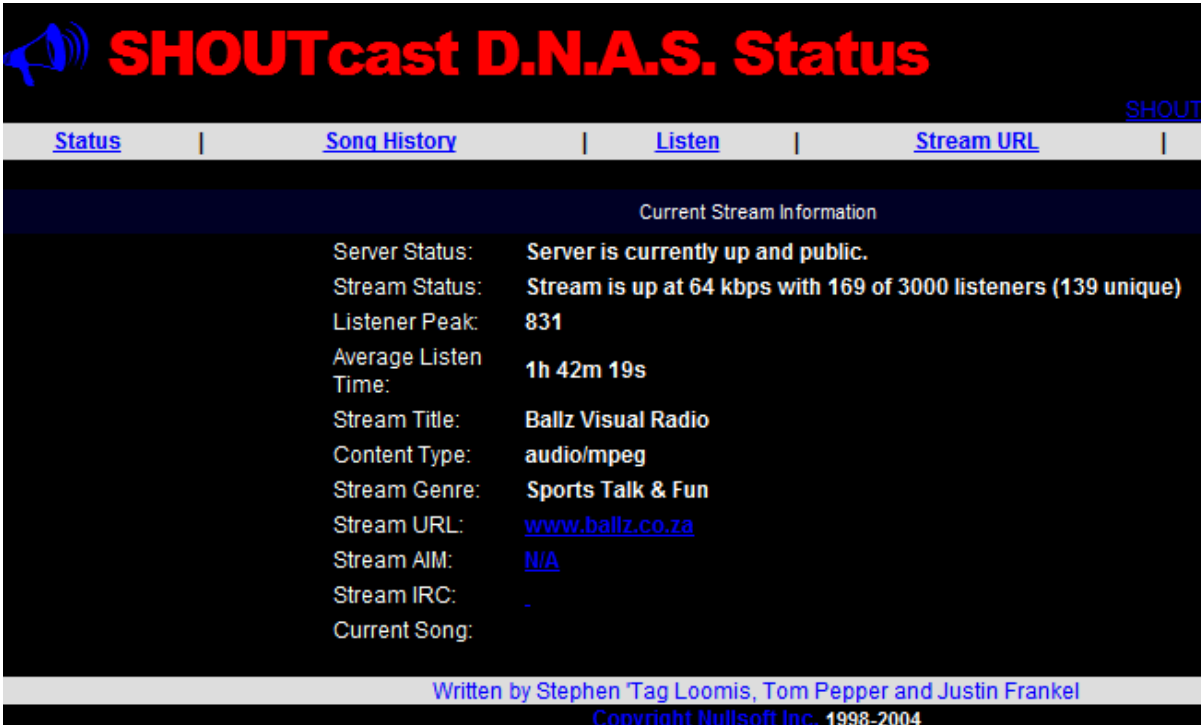
STATION	GENRE	LISTENERS	BITRATE	TYPE
 <b>Ballz Visual Radio</b> Recently played:	Talk	105	64	MP3
 <b>RTS.FM - Internet Radio Station: rts.fm</b> Now Playing: Spyral / <b>visuals</b> by Aman - RTS.FM.31...	Electronic	11	192	MP3

Figure 1 Shoutcast.com search for 'ballz visual radio'

<http://www.shoutcast.com/Internet-Radio/KingfisherFM>  
<http://www.shoutcast.com/Internet-Radio/2Ovradio>

If one visits the IP addresses and port number provided in any of NetDynamix’s listen links, one sees the Shoutcast server webpage where it shows the current statistics of that radio stream:

<http://85.25.164.33:80/>



**SHOUTcast D.N.A.S. Status**

SHOUT

[Status](#) | [Song History](#) | [Listen](#) | [Stream URL](#)

Current Stream Information

Server Status: **Server is currently up and public.**

Stream Status: **Stream is up at 64 kbps with 169 of 3000 listeners (139 unique)**

Listener Peak: **831**

Average Listen Time: **1h 42m 19s**

Stream Title: **Ballz Visual Radio**

Content Type: **audio/mpeg**

Stream Genre: **Sports Talk & Fun**

Stream URL: [www.ballz.co.za](http://www.ballz.co.za)

Stream AIM: [N/A](#)

Stream IRC: -

Current Song:

Written by Stephen Tag Loomis, Tom Pepper and Justin Frankel  
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Figure 2 Week Midday Screenshot of Ballz Visual Radio Shoutcast Server Status Page

*"Stream is up with 169 listeners."*

<http://85.25.164.41:80/>

**SHOUTcast D.N.A.S. Status** SHOUT

[Status](#) | [Song History](#) | [Listen](#) | [Stream URL](#) |

Current Stream Information

Server Status:	Server is currently up and public.
Stream Status:	Stream is up at 56 kbps with 24 of 150 listeners (23 unique)
Listener Peak:	122
Average Listen Time:	1h 14m 44s
Stream Title:	2OVRadio
Content Type:	audio/mpeg
Stream Genre:	Awesome
Stream URL:	<a href="http://www.2oceansviberadio.com">http://www.2oceansviberadio.com</a>
Stream ICQ:	-
Stream AIM:	-
Stream IRC:	-
Current Song:	

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Figure 3 Week Midday Screenshot of 2OceansvibeRadio Shoutcast Server Status Page

*“Stream is up with 24 listeners”*

According to their own servers:

**Ballz Visual Radio** has a **listener peak** of **831** since the server was last restarted.

**2Oceansviberadio** has a **listener peak** of **122** since the server was last restarted.

## **The bandwidth stats don't add up, there is no "CDN"**

If 2Oceansvibe fields the claimed 60 000 listeners in an hour, they are pumping out 60 000 x 24MBp/h = 1440 000 MB = 1.4 Terabytes an hour. This means they transmit between 10 and 20 Terabytes of data a day just to cover a 2.5 hour average listening time. That's a very expensive proposition, and is of course economically not viable in South Africa so they "broadcast" from Germany. Even in Germany this volume of data, anywhere around 450 Terabytes month, would prove very costly. To handle the massive volumes NetDynamix explains this<sup>10</sup> saying '*they transcode audio and send it out to multiple points on their "Content Distribution Network"*'. And '*they dream at night they think in terms of Petabytes, Exabytes, zettabytes and Yottabytes.*'

For a great explanation of what a Content Delivery Network actually is, see "How Content Delivery Networks (CDNs) work." <http://www.nczonline.net/blog/2011/11/29/how-content-delivery-networks-cdns-work/>

I decided to search for and examine NetDynamix's Content Delivery Network. (CDN)

The basic premise of a Content Delivery Network is the use of intelligent DNS to resolve an URL to an IP address that is located geographically closer to the end user.

In NetDynamix's case, the majority of their published streaming links are not URLs but are the actual IP addresses. This eliminates the use of DNS, which is a critical part of a CDN. It is impossible to have two of the same IP addresses route correctly at the same time on the Internet, so we can safely assume this single IP address points to one device in one location. Also, only one station can stream from a particular port on a particular IP address at any point in time.

Here is a list of the IP addresses (servers) that NetDynamix has in its infrastructure:

In Johannesburg:

41.86.108.37 Server hosted on MWEB via Netactive.

This server holds all the "Player Selector" pages for all NetDynamix streaming clients. This is where the IP addresses of the radio streams are listed. It also hosts the Netdynamix.co.za site. See attached NetDynamix\_Sites\_Hosted\_41.86.108.37.txt for a list of sites hosted here.

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<sup>10</sup> <https://www.2oceansviberadio.com/how-radio-streaming-and-online-listenership-data-works/>

In Germany:

85.25.164.32 Port 80: UNISA Radio Port 443: Kosmos Stereo  
85.25.164.33 Port 80: Ballz Radio  
85.25.164.34 Port 80: Republic Radio  
85.25.164.35 Port 80: Bush Radio Port 443: Whalecoast FM  
85.25.164.36 Port 80: Panorama FM  
85.25.164.37 None  
85.25.164.38 Port 80: Taxi Radio Port 443: BizRadio  
85.25.164.39 Port 443: WorldTunes.net  
85.25.164.40 Port 80: Motheo FM  
85.25.164.41 Port 80: 2Oceansvibe Radio  
85.25.164.42 Port 80: Valley FM  
85.25.164.43 Port 80: East Rand Stereo Port 443: EuroTrashMusic  
85.25.164.44 None  
85.25.164.45 Port 80: Radio Overberg  
85.25.164.46 Port 80: KingfisherFM Port 443: Phalaborwa FM  
85.25.164.60 None  
85.25.164.61 None  
85.25.164.62 Port 80: MK Radio Port 443: Lukhanji FM  
85.25.164.63 Port 80: Radio Rippel Port 443: Assembly Radio  
188.138.56.4 ChaiFM, Voice Of The Cape, UCT Radio, Zone Radio and more...  
85.25.120.153 Port 80: Ratanga Radio  
188.138.58.4 Port 80: Radio Islam  
188.138.58.5 Down  
188.138.58.6 Sounds of Victory Radio

24 Servers. All in Germany. They are on a German subnet with a German routing allocation from a German hosting provider.

US Based Servers: (Hosted with Crucial paradigm)

67.208.112.81 Seems to no longer be in use

I have tested from South Africa, Germany and the USA. The serving IP addresses never change. There are no regional end-points for delivering content.

There is no "Content Delivery Network".

**The Shoutcast servers aren't configured for tens of thousands of listeners.**

As can be seen from the screenshots previously shown, each instance of Shoutcast has a configured maximum listener configuration that once reached causes new listeners to be rejected.

Ballz Visual Radio: Maximum listeners currently set to 3000.

2OceansvibeRadio: Maximum listeners currently set to 150.

KingfisherFM: Maximum 500 listeners.

This is a far cry from the apparent tens of thousands of listeners.

I have been graphing listenership data for NetDynamix stations for quite some time. Here are some sample plots for the past week:

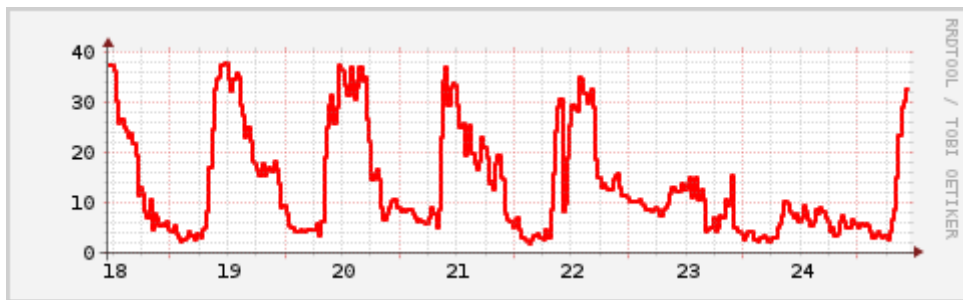


Figure 4 Shoutcast Daily Statistics for 2OceansvibeRadio (June)

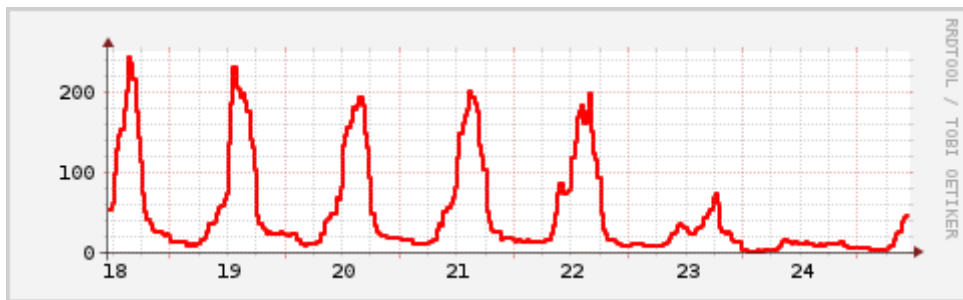


Figure 5 Shoutcast Daily Statistics for Ballz Visual Radio (June)

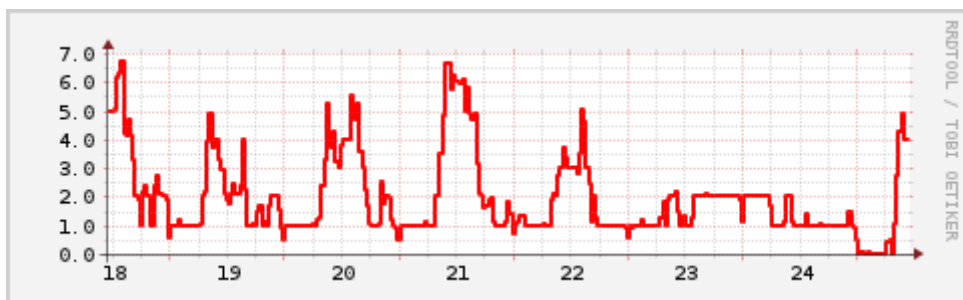


Figure 6 Shoutcast Daily Statistics for KingfisherFM (June)



What I have illustrated here is that certain entities are manipulating figures (drastically) to presumably favour their financial prospects and make streaming radio in South Africa seem like it is growing far bigger and faster than it really is. I am equally disappointed that this is perpetrated by a hosting provider and that these figures are simply accepted by the stations without question. This is untenable and will only serve to damage the market in the long term. (Assuming the damage hasn't already been done)

The value of Internet Radio lies not necessarily in having the greatest listener count, but about niche targeting, specialized content and knowing exactly who hears what on your station, where they are located and when they hear it. Streaming radio is a far better tool than terrestrial radio for establishing bidirectional communication between broadcaster and listener. Because everything can be accurately measured, streaming radio reporting is a science. The scientific method can be applied to give advertisers far more accurate and specific information, which in turn is worth far more than terrestrial radio's listener-diary based guesswork.

Does this mean internet streaming radio in this country is now dead before it left the gate? No, there is a massive value proposition and some amazing content generated in this area. I wouldn't be involved in streaming radio if I didn't think there was potential. But there is no room for dishonesty.

In conclusion:

I first became aware that it seemed as though 2Oceansvibe were fabricating listener numbers. I verified that these numbers were false using technical knowledge of the solutions in use. When Ballz Radio launched and they too started publishing incredibly inflated listener numbers it became apparent that NetDynamix is supplying false listener statistics. Their client radio stations are in turn feeding the media and advertisers with absolute nonsense and completely diluting the value proposition of Internet Radio in South Africa. A single entity is pumping a dangerous bubble for Internet Radio in this country and directly impacting people's livelihoods while ripping off advertisers. I cannot reasonably stand by and watch an industry I have a vested interest in be manipulated by hoodlums sporting a techno-babble swindle to technologically ignorant gullible radio start-ups.

This research report is rather explosive and is bound to attract a lot of negative sentiment; however it is composed entirely on facts and evidence gathered. I trust that responses to my research and allegations will remain fact and evidence based.

### **About the author**

Shaun Dewberry is a 32 year old IT Specialist with 12 years professional experience in enterprise environments to compliment 30 years of computing. He has worked at Sun Microsystems, Nokia Corporation, Denel, UTi Worldwide, Telkom and Transnet in areas ranging from programmer through UNIX System Engineer and IT Security Analyst. You can't teach him much about the Internet these days - he had his first online experiences using Beltel. He can also spot a trend: Shaun was (probably) the first South African on Twitter. He believes the best thing to keep in "The Cloud" is rain. If Ghostbusters were in IT, Shaun would hope to be Bill Murray's character. He also listens to bands that don't exist yet.

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