Overview of Digital Migration in Namibia

Aldred Dreyer
nbc
About Namibia

- **Population:** 2.2 million, 1.26 million - 16 years & older
- **Households:** ± 500,000
- **HHs with a TV set:** ± 260,000
- **Surface area:** 824,268 km²
- **Population Density:** 2.7
- **TV Channels:** NBC, One Africa, TBN, MNET, GOTV in Windhoek, DSTV on satellite.
- **National TV Coverage:** 66%
- **Number of TV TX sites:** 58
About the NBC

• Mandate into the Broadcasting Act – to educate, inform and entertain the Nation

• Public Service Broadcaster currently offering:
  – One 24 hour analogue TV Channel (Programs, News and Current Affairs) run from Windhoek with approx 66% coverage
  – 10 unique local language Radio Stations (majority 24 hours) run from Windhoek and facilitated by 7 Regional Offices/Contribution Centres with 98% coverage
  – A country-wide transmitter network, used not only by NBC, but also relied on by the rest of the telecoms and broadcasting industry in Namibia for infrastructure sharing.
Current Status

• Digital Terrestrial Television launched in October 2013.
• The Minister of ICT had launch party on 27 Nov 2013.
• **Decoders** are now available for sale to the public at selected retail outlets.
• **5 transmitters on air.**
• Channels on air = NBC 1, NBC 2, NBC 3, One Africa TV, TBN.
• 50,000 decoders in stock.
• **Call centre established** – (061) 23 66 24
• **Consumer campaign activated.**
The Digital Migration Roadmap

Test Phase
Technical Switch On
Windhoek Only, Dec 12 – Sept 13

Phase 1.1
Public Launch
Windhoek Only, Oct 13

Phase 1.2
69.4% Coverage
Dec 13 – Dec 14

Phase 2
76.2% Coverage
Q2 ‘14 – Q1 ‘15

Phase 3 - 4
80.2% Coverage
Apr 15 – Mar 16

We are here now!
Proposal for hard switchover to accelerate the switchover process to meet the June 2015 deadline.

NBC, TBN, NBC Radio

NBC, NBC 2, NBC 3, One Africa TV, TBN, + more channels, NBC Radio

Introduce more channels

Introduce more channels
The Legal Stuff

- DTT policy guidelines are in place;
  - DVB-T2 and MPEG-4
  - There will be a multiplex license category.
  - 1 x public multiplex and 1 x commercial multiplex.
  - NBC is deemed to be the national carrier and will operate the public multiplex.
  - Multichoice Namibia to be grandfathered to continue operating their current DTT multiplex - GO TV (not the commercial multiplex).
  - Duration of multiplex license shall be 10 years.
  - Provision is made for self provisioning of signal distribution.
More Legal Stuff

• CRAN has drafted license conditions for broadcasters (incl. NBC) ready for issuing.
• Spectrum licenses have been issued.
• Interference studies have been completed.
• CRAN published minimum decoder specification.
• Decoder type approval: CRAN is looking at outsourcing this function.
• NBC not regulated by CRAN – Poses a problem as CRAN cannot issue NBC with a signal distribution licence; however; NBC can self provide and has received its spectrum use licences. Carraige of TBN and One Africa is in question! NBC currently carrying TBN and OATV.
The Technical Stuff

• The DTT spectrum plan allows for 4 national multiplexes.
• Transmitter Network Architecture: MFN
• NBC multiplex parameters: 64QAM, 2/3FEC, PP4, GI 1/16, FFT 32K, C/N 15.3 dB = 27.7Mb/s
• Standards: DVB-T2 and MPEG-4
• The Decoder: DVB-T2, MPEG4, HD, SD, USB Port (pause live TV), Ethernet port, HbbTV middleware, CA - Novel SuperTV.
• NBC multiplex caters for 13 SD TV channels and 10 radio stations.
### More Technical Stuff

**DTT Bit Budget**

<table>
<thead>
<tr>
<th></th>
<th>NBC (PBS)</th>
<th>NBC 2 (News)</th>
<th>NBC 3 (Entertainment)</th>
<th>TBN</th>
<th>ONE AFRICA</th>
<th>NBC RADIO (10 x 0.2)</th>
<th>New Ch 1</th>
<th>New Ch 2</th>
<th>New Ch 3</th>
<th>New Ch 4</th>
<th>New Ch 5</th>
<th>New Ch 6</th>
<th>New Ch 7</th>
<th>New Ch 8</th>
<th>Eng. Data</th>
<th>APPS</th>
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<tbody>
<tr>
<td>Video</td>
<td>1.50</td>
<td>1.50</td>
<td>1.50</td>
<td>1.50</td>
<td>2.00</td>
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<td>1.50</td>
<td>1.50</td>
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<td>1.50</td>
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<td>1.50</td>
<td>1.50</td>
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<td></td>
</tr>
<tr>
<td>Audio (L/R)</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
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<td>0.20</td>
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<td></td>
</tr>
<tr>
<td>Subtitles</td>
<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
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<td>0.05</td>
<td></td>
<td>0.05</td>
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<td>0.05</td>
<td>0.05</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Eng Data</td>
<td>1.00</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications</td>
<td>1.75</td>
<td>1.75</td>
<td>1.75</td>
<td>1.75</td>
<td>2.00</td>
<td></td>
<td>1.75</td>
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<td>1.75</td>
<td>1.75</td>
<td>1.75</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**Notes:** Measured in Mb/s.  
Multiplex can accommodate 13 TV channels.  
All NBC 10 radio stations carried.

Currently running at higher bit rates due to additional bit rate being available for use!
What is required to receive DTT?

- NBC DTT decoder
- Antenna
- TV set

Type of antenna will depend on the frequency (i.e. the area) and the signal strength.

You don’t need a new flat screen TV to receive DTT. Your normal 15 year old TV will work fine.

NO monthly subscription!
Link with TV Licences

• In order to increase TV licence revenue the sale of the decoder has been linked to the requirement of a paid 2013/14 TV licence.

• Play clip of Suta!
Benefits of the Project

• Increased coverage of television by 14%.
• Increased radio coverage by additional 2% -> Radio is being expanded simultaneously where DTT is being rolled out.
• Release of the digital dividend by June 2015.
• More free channels to viewers
• Listen to radio on DTT
• Interactive service possible
• The decoder (which can access the internet) will aid in increasing Namibia’s overall ICT world ranking.
Challenges

• Deadline is looming with very little time left.
  – *Considering a proposal to do a hard switchover at 18 small sites which have lower population numbers.*
  – *To be discussed and agreed with regulator and ministry.*

• Viewer education— it needs to be simpler and messaging should be more frequent.
  – *Call centre number is NOT written on the STB packaging or in user manual!*

• Direct translation of marketing messages was misunderstood in the African languages – translators would use direct translation instead of explaining what a “decoder” is in Silozi for example! (this is now fixed).
Challenges

• The link to TV licences was not easy and made the decoder sales process (which is outsourced) more challenging.
  – The subscriber management system was not designed to deal with TV licence verifications.
  – The business processes to link TV licence with the decoder sales process is currently a mix of manual and automation.
  – Each sale has a decoder sales form that is completed and signed by viewer and the data on the form is captured in the TV licence system and the subscriber management system.
  – Decoder is pre-activated for 90 days to allow for this process to be completed.
Challenges

• Decoder sales are slow due to limited sales points. Being resolved with third party provider.
  – The consequence is that we cannot fully promote the decoder as this may cause floods of viewers queuing for long at the limited sale points.
Next Steps

• Continue the rollout to reach 60% by June 2014.
• Agree on the hard switch over approach with the Ministry and the Regulator.
• Plan to switch off Windhoek analogue by Dec 2014.
• Plan to accelerate the switch off of border sites before June 2015 – some are included in the hard switchover list.
Aldred Dreyer
Chief Technology Officer
adreyer@nbc.na
The Decoder

• Price
  – N$ 199 -> *20% launch discount on first 20,000 decoders!*
  – N$ 99.50 for pensioners, war veterans and disabled persons

• Requirements to buy a decoder:
  – Current TV licence (2013/2014)
  – ID document
  – Proof of special status to qualify for half-price
The Decoder Specification

<table>
<thead>
<tr>
<th>The NBC Decoder contains the following;</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MPEG-4</td>
<td>Video decoding</td>
</tr>
<tr>
<td>SD and HD</td>
<td>Both standard and high definition</td>
</tr>
<tr>
<td>DVB-T2 and DVB-T</td>
<td>As per SADC decision</td>
</tr>
<tr>
<td>Conditional Access</td>
<td>Novel SuperTV</td>
</tr>
<tr>
<td>DVB SSU for OTA</td>
<td>Over the air download capability</td>
</tr>
<tr>
<td>EPG</td>
<td>Electronic programme guide for now and next and next 7 days.</td>
</tr>
<tr>
<td>RCA video and audio output + HDMI</td>
<td>Allows for analogue and digital video and audio out.</td>
</tr>
<tr>
<td>HbbTV</td>
<td>Middleware to enable interactive services.</td>
</tr>
<tr>
<td>HE-AAC, MPEG-1 LII &amp; E-AC 3</td>
<td>Audio for both HD and SD.</td>
</tr>
<tr>
<td>USB Port</td>
<td>To enable content viewing through STB on TV via USB port, pause and rewind feature.</td>
</tr>
</tbody>
</table>
Decoder Sales

Summary of decoders sold
(see next slide for list of sales outlets)

Decoders sold as on 31 January 2014:

<table>
<thead>
<tr>
<th>Area</th>
<th>2013 Sep</th>
<th>2013 Oct</th>
<th>2013 Nov</th>
<th>2013 Dec</th>
<th>2014 Jan</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windhoek</td>
<td>550</td>
<td>382</td>
<td>465</td>
<td>357</td>
<td>1754</td>
<td></td>
</tr>
<tr>
<td>Oshakati</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swakopmund</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decoders sold</td>
<td>550</td>
<td>382</td>
<td>771</td>
<td>961</td>
<td>2664</td>
<td></td>
</tr>
<tr>
<td>Decoders issued</td>
<td>900</td>
<td>1440</td>
<td>1760</td>
<td>800</td>
<td>4900</td>
<td></td>
</tr>
</tbody>
</table>

Decoders sold / month

- Swakopmund
- Oshakati
- Windhoek
Common Viewer Queries

• No reception due to lack of suitable antenna
• Did not know that an antenna is required
• Not aware that launch only applies to Windhoek
• Unable to tune TV set to decoder (step-by-step instructions have been written to address this problem – being distributed via call-centre and media)
nbc DIGITAL TV

DIGITAL DECODERS INSIDE

Call Centre
(061) 23 66 24

Analogue
FUZZY: Signal changes in strength, causing ghosting, snow, blurred images.

Digital
SHARP: Signal consistent. Crisper images, clearer sound, no ghosting.

Call Centre
(061) 23 66 24

Nambian Broadcasting Corporation
nbc DIGITAL TV

MORE CHANNELS
LISTEN TO nbc RADIO STATIONS
PAUSE, REWIND & RECORD

EASY TO INSTALL
CLEARER SOUND
CRISPER IMAGES

Call Centre
(061) 23 66 24
Present Coverage
## Towns Covered!

<table>
<thead>
<tr>
<th>Status</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Coverage</td>
<td><strong>Windhoek:</strong> Grossherzog and Klein Windhoek</td>
</tr>
<tr>
<td>(49.1%)</td>
<td><strong>Oshakati</strong> (since 28 November 2013) → see note below</td>
</tr>
<tr>
<td></td>
<td><strong>Kamanjab</strong> (since 28 November 2013)</td>
</tr>
<tr>
<td></td>
<td><strong>Rössing</strong> (since 6 December 2013) → see note below</td>
</tr>
<tr>
<td></td>
<td><strong>Eenhana</strong> (since 24 December 2013) → temporary - see note below</td>
</tr>
</tbody>
</table>

**Oshakati coverage:** (towns and villages within a radius of about 70-80km from Oshakati)

- Oshakati, Ongwediva, Ondangwa, Oniipa, Onyaanya
- All towns/villages along the Ondangwa - Oshikango road
- All towns/villages directly north of Oshakati
- Oshikuku, Elim, Okahao

Note that Outapi/Ombalantu are on the edge of the coverage area and reception is unpredictable (this area will be served by the future transmitter at Onesi)

**Rössing coverage:**

- Walvis Bay, Swakopmund, Henties Bay, Arandis

**Eenhana coverage:**

The temporary low-power transmitter ensures that the immediate area around Eenhana town is covered while the permanent high-power transmitter is being constructed. Decoder sales part of Oshakati exercise.
80.2% Population coverage
"I am excited about the application that NBC will offer to us the general public". At the Ongwediva trade fair the Minister of Trade and Industry Hon. Calle Schlettwein – Talking about DMS _ NBC pages
# Rollout Schedule

<table>
<thead>
<tr>
<th>Site</th>
<th>On-Air Date</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paresis (Otjiwarongo, Outjo, Kalkfeld)</td>
<td>23/04/2014</td>
<td>Consider: (a) hard switch-over, (b) change analogue frequency, (c) delay + (b)</td>
</tr>
<tr>
<td>Klein Waterberg (Otjiwarongo, Okakarara)</td>
<td>23/04/2014</td>
<td>ASO: 30/04/2015</td>
</tr>
<tr>
<td>Katima Mulilo</td>
<td>17/05/2014</td>
<td>ASO: 31/05/2015</td>
</tr>
<tr>
<td>Arendsnes (Rundu)</td>
<td>24/05/2014</td>
<td>ASO: 31/05/2015</td>
</tr>
<tr>
<td>Opuwo</td>
<td>25/05/2014</td>
<td>ASO: 31/05/2015</td>
</tr>
<tr>
<td>Mariental</td>
<td>30/05/2014</td>
<td>ASO: 31/05/2015</td>
</tr>
<tr>
<td>Keetmanshoop</td>
<td>02/06/2014</td>
<td>ASO: 30/06/2015 (far from border)</td>
</tr>
<tr>
<td>Erongo (Karibib, Usakos, Omaruru)</td>
<td>03/06/2014</td>
<td>ASO: 30/06/2015 (far from border)</td>
</tr>
<tr>
<td>Impalila</td>
<td>23/06/2014</td>
<td>New site</td>
</tr>
<tr>
<td>Signalberg (Tsumeb, Grootfontein, Otavi)</td>
<td>02/07/2014</td>
<td>ASO: 31/07/2015 (far from border)</td>
</tr>
<tr>
<td>Site</td>
<td>On-Air Date</td>
<td>Comment</td>
</tr>
<tr>
<td>----------------------</td>
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<td>--------------------------------</td>
</tr>
<tr>
<td>Gobabis</td>
<td>24/09/2014</td>
<td>ASO: 30/09/2015</td>
</tr>
<tr>
<td>Epukiro</td>
<td>27/09/2014</td>
<td>Consider hard switch-over</td>
</tr>
<tr>
<td>Gam</td>
<td>04/10/2014</td>
<td>Consider hard switch-over</td>
</tr>
<tr>
<td>Aminuis</td>
<td>07/10/2014</td>
<td>Consider hard switch-over</td>
</tr>
<tr>
<td>Aranos</td>
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<tr>
<td>Stampriet</td>
<td>11/10/2014</td>
<td>Consider hard switch-over</td>
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<td>Okongo</td>
<td>13/10/2014</td>
<td>ASO: 17/06/2015 (to comply with GE-06)</td>
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<td>Maltahöhe</td>
<td>17/10/2014</td>
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<td>Aus</td>
<td>21/10/2014</td>
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<tr>
<td>Bethanien</td>
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<td>Bukkaros</td>
<td>22/11/2014</td>
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<tr>
<td>Ur</td>
<td>27/11/2014</td>
<td>ASO: 17/06/2015 (to comply with GE-06)</td>
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<tr>
<td>Khorixas/Renosterkop</td>
<td>22/12/2014</td>
<td>ASO: 31/12/2015 (far from border)</td>
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