# Case Study: Zenzeleni Networks
# South Africa

Session 2.1

Currently, 93% unemployment, 90% have not completed basic education
Minimal/none infrastructure or services (roads, transport, water, electricity, waste, health, education, local economy/production)
Most people live o the 1USD p/d threshold. Pre-CN people spent up to 25% of their disposable monthly income on telecoms.

UWC & Mankosi Community form an alliance of local knowledge and technical expertise

Zenzeleni Networks Mankosi registered as a Cooperative ICASA license exemption granted Present in Parliament, IGF, African CN Summit

Deploy own backbone infrastructure to Mthatha POP (WSU). Register Zenzeleni Networks NPC (PBO) Department of Telecoms (DTPS) announces in parliament intention to support

Development of a sustainable two-tier commercial model community network Register Zithulele Networks Cooperative, granted ICASA license exemption. Ministerial visit to Mankosi (DSI & DCDT). Support from TIA and FCDO.

Consolidation of the Zenzeleni Model, getting if ready for scale (new cost structure at the micro level and the meso level, licenses, organizational structure at the micreo and meso level, etc)

**2012 -2013**
Academic Action Research.

**2014-2016**
Piloting valuable technological, financial, social and legal solutions

**2017-2018**
Initiate the community ISP, connection to 'commercial' broadband

**2019-2021**
Two-tiered Sustainable operations & Catalysing the rural digital ecosystem

**2022**
Model consolidation and scale

Training and (intranet) network deployment begins. First business trials of phone charging through solar powered stations

Upgrade infrastructure First breakout calls 12 Student aided to access University Support local schools Create material to share know-how

Host African Summit on CNs Mozilla Equal Rating Award (2nd place), Innovation Bridge Best Innovation with Social Impact (winner)

Connect local business, NGOs, Schools, District Hospital, Deploy Solar Powered Computer lab. Develop SA Mentorship of CNs, Featured in BBC Africa, eTV. SAB Innovation Challenge (Winner),
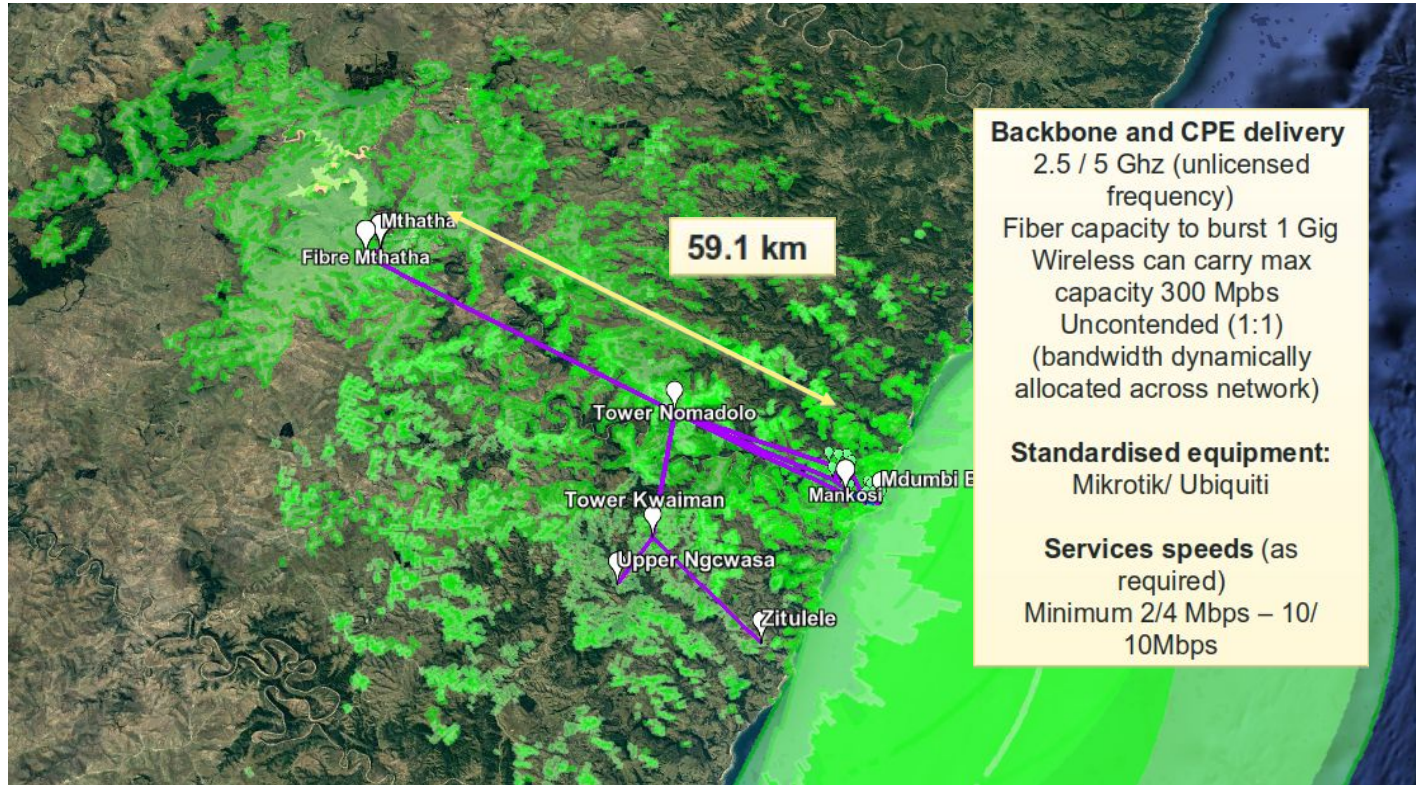
1st School of Community Networks 2nd Solar Lab Deepening the catalyzation of the digital ecosystem

# Elements of the model

1. **Technical**

2. **Organizational & operative structure**

3. **Legal and Regulatory**

4. **Financial**

5. **Sustainability**

# 1. Technical

# Telecommunication Infrastructure

# Analysis Assets

|  | Number of hotspots | Number of fixed wireless clients | Number of network equipment |
|---|---|---|---|
| Zithulele | 40 | 13 | 94 |
| Mankosi | 34 | 5 | 76 |
| Backhaul |  |  | 35 |
| Total | 74 | 18 | 205 |

|  | Expenditure on Assets |
|---|---|
| Zithulele | ~950,00 KES |
| Mankosi | ~825,000 KES |
| Backhaul | ~1,620,000 KES |
| Stock | ~780,000 KES |
| Total | ~4,675,000 KES |

# Other Services

# Other Services

# 2. Organizational and operative structure

# Two-tier model

**Micro Level**
**Local Ownership** Community Based ISP
*Zenzeleni Mankosi & Zithulele*
*Co-operatives*

**Meso**
**Zenzeleni Not For Profit Company**
Spin out from UWC with multi-stakeholder organisational representative on board

Obtains funding to :
i.   seed and establish the micro level ISP business
ii.  Train and develop capacity to ensure sustainability
iii. Continuous support on legal, regulatory, technical, advisory, backhaul, etc
iv.  Develop and maintain the backhaul infrastructure

# Two-tier model

**Micro Level Local Ownership**
Community Based ISP
*Mankosi*
*Co-operative*

**Micro Level Local Ownership**
Community Based ISP
*Zithulele*
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**Micro Level Local Ownership**
Community Based ISP
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**Meso**
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# Maturity Level 1

**Micro Entrepreneur**
**Voucher Resellers**
Access: Directly

### Meso Level

i.   Deploy and operate backhaul and fixed wireless clients
ii.  Issue vouchers
iii. Recruit, train and manage local technicians

# Maturity Level 2

**Micro Entrepreneur**
**Value Added Services**
Access: Directly or graduating from level 1

**Meso Level**

i.    Deploy and operate backhaul and fixed wireless clients
ii.   Issue vouchers
iii.  Recruit, train and manage local technicians

# Maturity Level 3

**Micro Entrepreneur**
**Hotspots / Value Added Services / Fixed Wireless**
Access: Directly or graduating from level 1 or 2

**Meso Level**

Depends on stage within maturity level :
i. Rre-sale of bulk bandwidth and equipment to the micro enterprise
ii. Technical advice
iii. Operation of the backhaul

# 3. Legal and Regulatory

# Legal Compliance

- Non-for profit Company with members

- Public Benefit Organization (tax exempt)

- VAT registered

- Annual Financial Statements since 2019 financial year

- Labour law adhering practice

# Regulatory compliance

| | ECNS | ECS |
|---|---|---|
| Meso organization - Zenzeleni Networks | Class licenses | Reseller / Non-profit exemption |
| Micro entrepreneurs - Maturity Level 1 | SECN | Reseller exemption |
| Micro entrepreneurs - Maturity Level 2 | N/A | N/A |
| Micro entrepreneurs - Maturity Level 3 | Class license | Reseller |

Developed by Ellipsis Regulatory Solutions
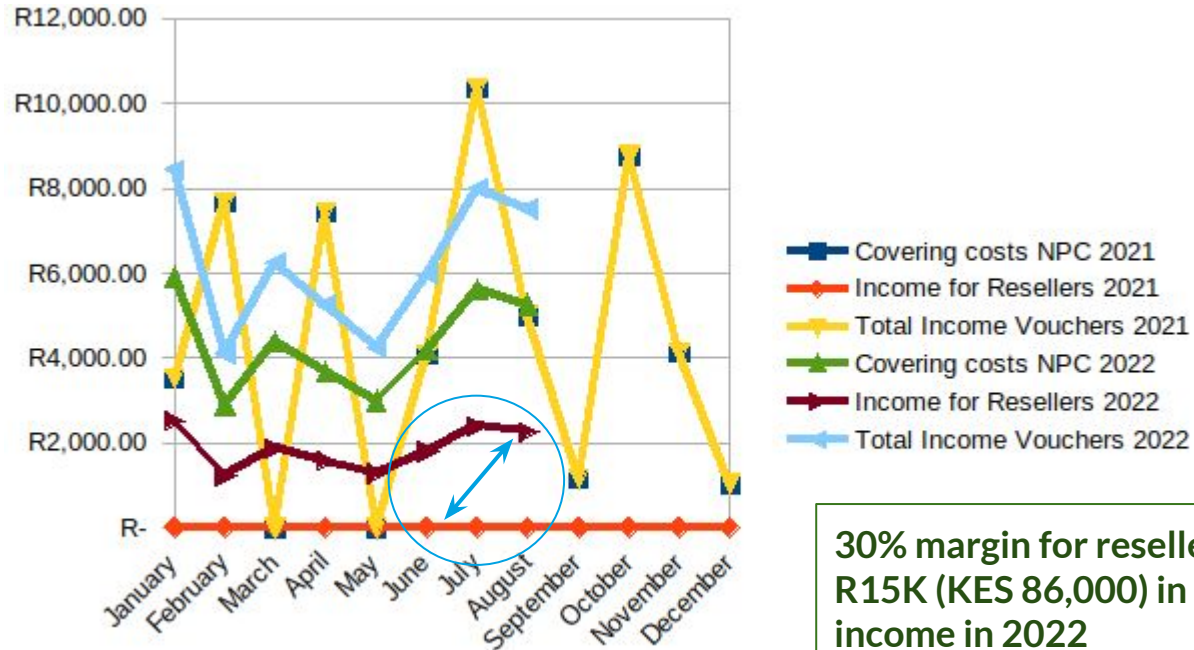
# 4. Financial

# Analysis voucher sales
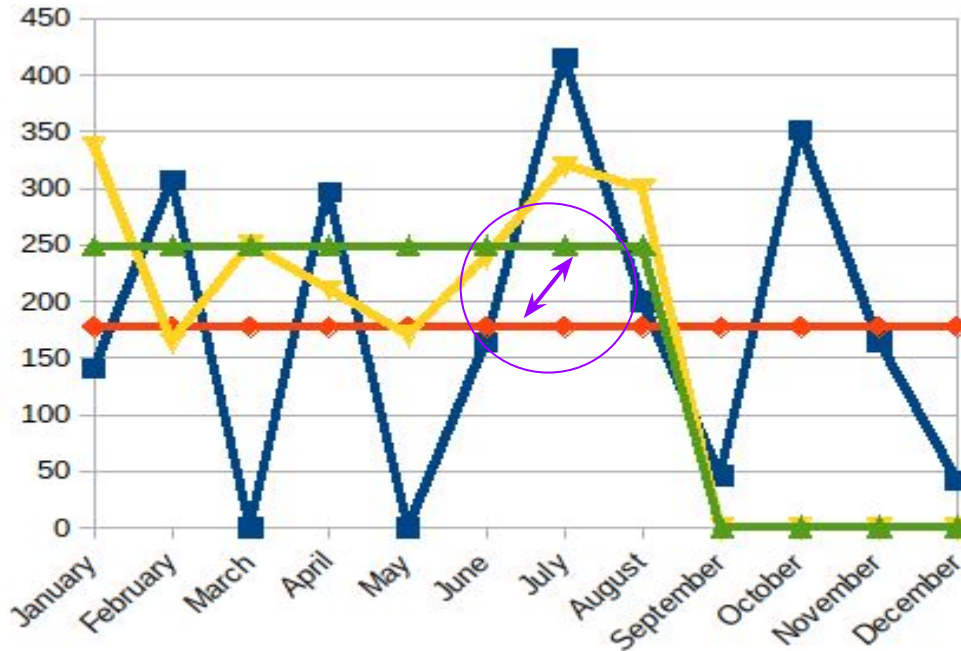


Monthly voucher sales increased 41% on average between 2021 and 2022
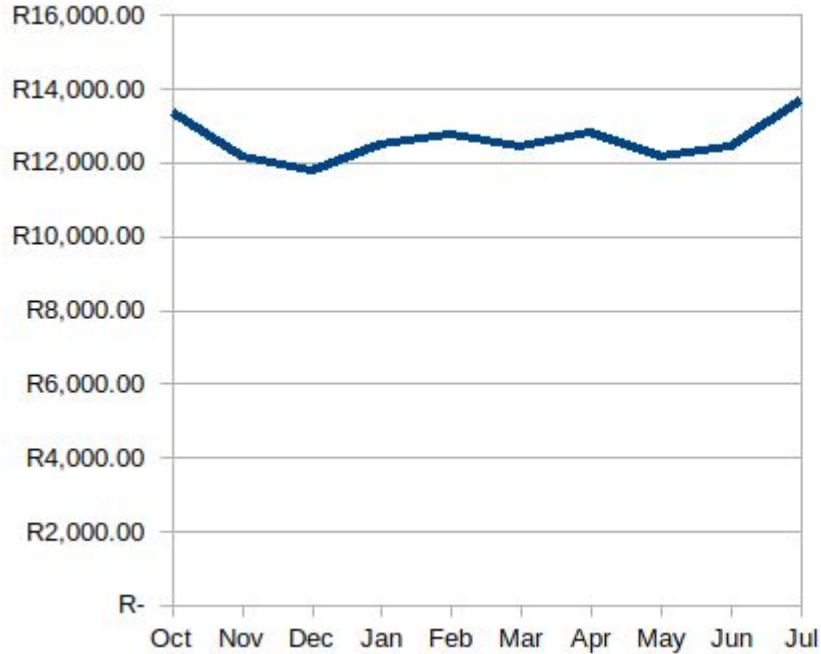
R25/month (KES 165) <3% poverty line

# Analysis voucher sales



30% margin for resellers R15K (KES 86,000) in income in 2022

# Analysis anchor tenants
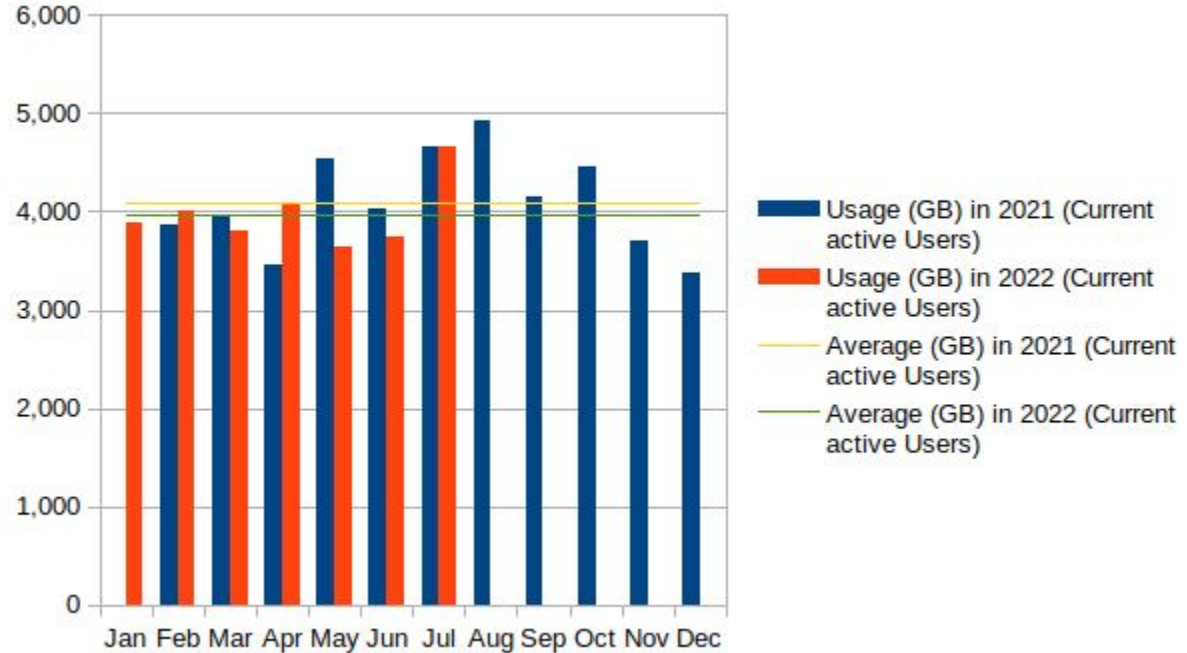


**Pretty stable sales but no growth:**

**Currently 18 anchor tenants:**
- **3 less than in Jan 2021 (4 new, 7 lost)**
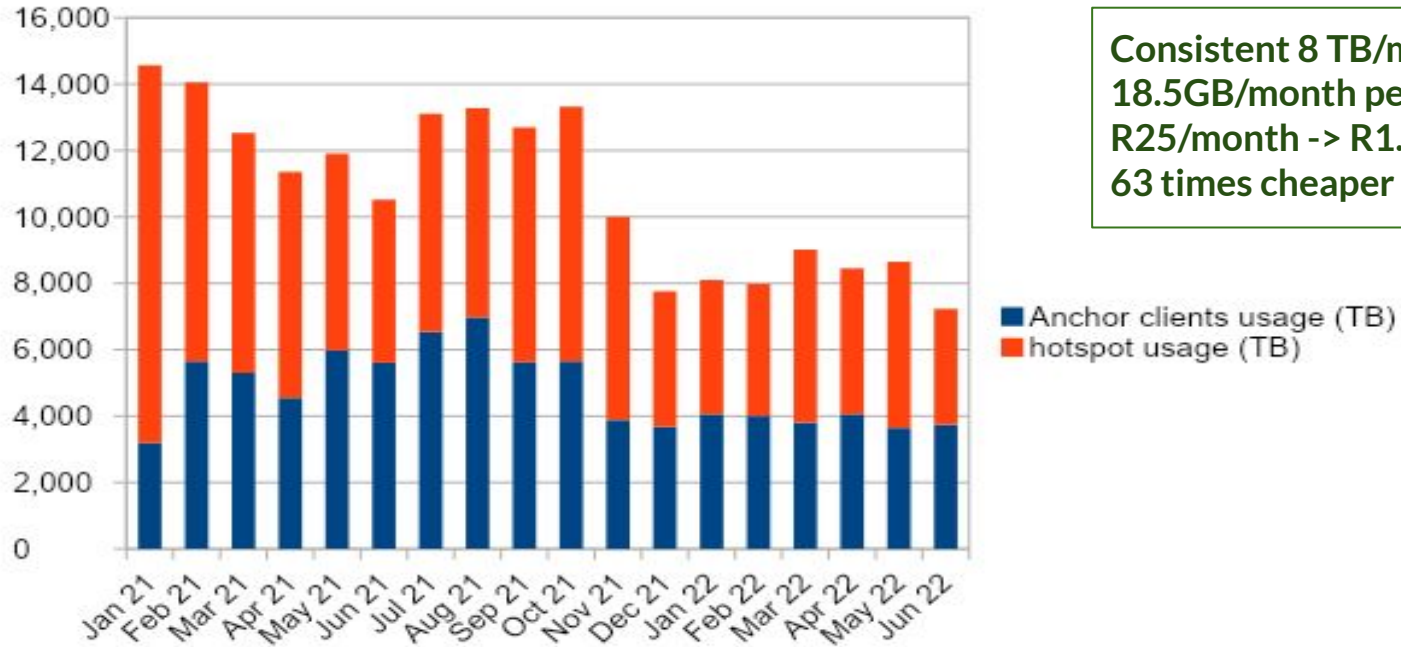- **1 more (2 new, 1 lost) since Jan 2022.**

Anchor tenant income

# Analysis anchor tenants

Pretty consistent usage from current active users (although slight decline probably due to post covid openness)



Legend:
- Usage (GB) in 2021 (Current active Users)
- Usage (GB) in 2022 (Current active Users)
- Average (GB) in 2021 (Current active Users)
- Average (GB) in 2022 (Current active Users)

# Combined analysis



Consistent 8 TB/month
18.5GB/month per hotspot user
R25/month -> R1.35/GB
63 times cheaper than Vodacom

■ Anchor clients usage (TB)
■ hotspot usage (TB)

# 5. Sustainability

# Meaningful school connectivity:
# An assessment of sustainable business models

**Community-based archetype** | Zenzeleni Community Networks built a successful community-based model in rural South Africa

Zenzeleni (which means "Do it yourself" in Xhosa) is a South African community network through which rural communities have ownership of their telecommunication businesses, allowing them to maximize value and benefits.

In Zenzeleni, community members set up and maintain solar powered mesh network stations at a fraction of the cost offered by traditional operators, creating job opportunities and providing new opportunities for connectivity for individuals, schools and businesses.

**History**

Zenzeleni Community Networks was created by the University of the Western Cape in partnership with the Mankosi community, in one of the most disadvantaged areas of the Eastern Cape, South Africa. Following the success of Zenzeleni Makosi, the community network has expanded both geographically, e.g., to the village of Zithulele, and in scope, mentoring other communities.

**Funding model**

Zenzeleni generates revenues by two means:
- Community hotspots: Community can access internet by purchasing a Zenzeleni data voucher which grants access to public internet hotspots.
- Dedicated access points: Dedicated access points for specific locations (e.g., home, business or organization), which is billed at a flat access monthly cost.

**Operating model**

Zenzeleni is comprised of two key actors:
- Zenzeleni Cooperatives are the internet service providers. Cooperative members are chosen by the community and their role is to own, govern, operate and maintain the network within their respective communities.
- Zenzeleni non-profit company supports communities in seeding new cooperatives – guiding and training them to design and register their business. It also supports existing cooperatives by administering the common network, mentoring their operations and offering expert support.

Source: Zenzeleni website, Zenzeleni materials, expert interview with C-suite executive of Zenzeleni, press search, BCG analysis
www.gigaconnect.org | info@gigaconnect.org

50  giga

Giga in collaboration with Boston Consulting Group (BCG): https://giga.global/bcg-report/

# Business model canvas for Social Enterpises



Understanding the interactions between the Commercial and Impact imperatives
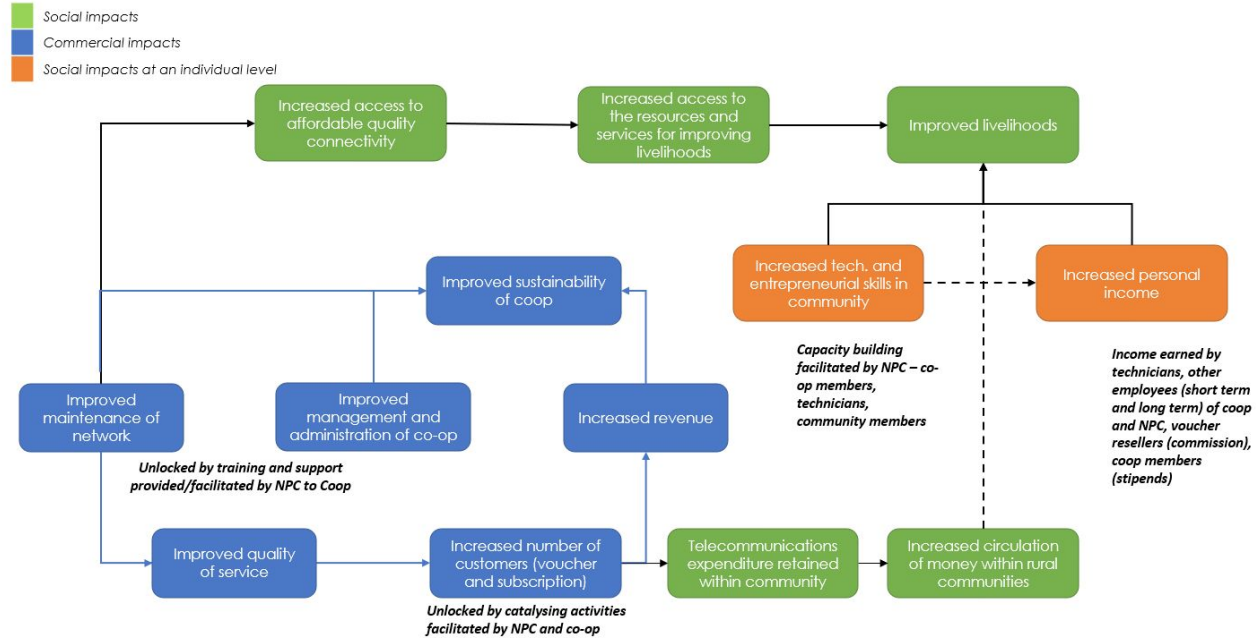
Developed by Forethought Africa

# Analysis historical finances

~KES 20M/year for ops
(including CAPEX)
~-KES 410,000/month

| Type of income | Amounts | Percentage |
|---|---|---|
| Income from service provision | ~6,830,000 | 9.07% |
| VAT returns | ~278,000 | 0.37% |
| Donations | ~600,000 | 0.80% |
| Consultancies | ~801,000 | 1.06% |
| Grants | ~66,795,000 | 88.70% |
| Total | ~75,305,000 | |

USAASA grants KES ~460M in KSD and Nyandeni
local municipalities only for CAPEX

Money spent and nothing connected

# Income/Expense Analysis



At least ~KES 4.9M covered by projects in 10 months
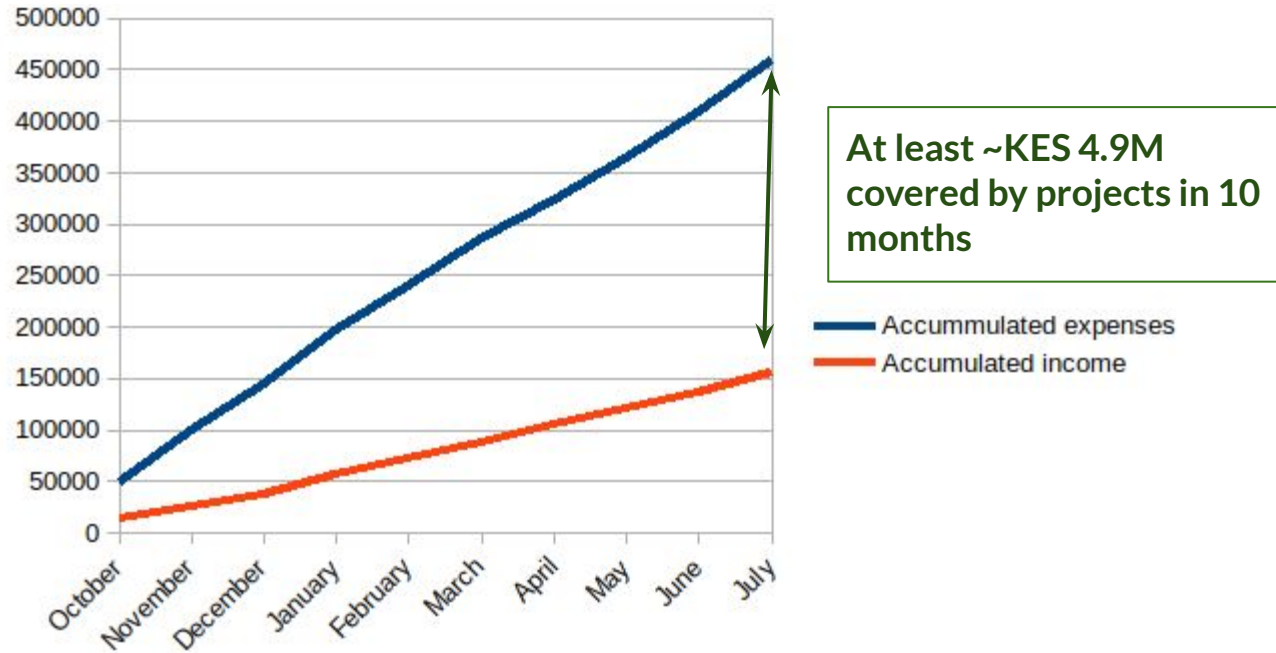
# Income projections and targets

| Rate Card | Data Cap (Gigs) | Rates | Frequency | Price per Gig | Out of Bundle P/Gig |
|---|---|---|---|---|---|
| Rental fee (includes intallation) | | R 221.38 | Monthly | | |
| Starter – 4Mbps/2Mbps | 100 | R 212.75 | Monthly | R2.13 | R1.00 |
| Basic – 4Mbps/2Mbps | 350 | R 339.25 | Monthly | R0.97 | R0.68 |
| Silver – 8Mbps/3Mbps | 500 | R 442.75 | Monthly | R0.89 | R0.65 |
| Gold – 10Mbps/5Mbps | 750 | R 573.85 | Monthly | R0.77 | R0.55 |
| Premium – 10Mbps/10Mbps | 1,024 | R 803.85 | Monthly | R0.79 | R0.50 |

**Projected 136 new subscribers over 24 months**

| Rollout Assumptions | Aug | Sep | Oct | Nov | Dec | Jan | Feb | March |
|---|---|---|---|---|---|---|---|---|
| **Monthly Subscriber Sales** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| Starter - 4Mbt/2Mbt | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Basic - 4Mbt/2Mbt | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| Silver - 8Mbt/3Mbt | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| Gold - 10Mbt/5Mbt | 5 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| Premium - 10Mbt/10Mbt | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| **Total Monthly Subscriber Sales** | **16** | **4** | **4** | **4** | **8** | **4** | **4** | **4** |
| **Cum Subscribers** | **16** | **20** | **24** | **28** | **36** | **40** | **44** | **48** |

# Income projections and targets

| Voucher Assumptions | |
|---|---|
| **Vouchers** | **Rates** |
| 32 Days | 25.00 |
| 10 Days | 12.00 |
| 5 Days | 7.00 |
| 3 Days | 5.00 |
| *Note: All services are un-capped/un-shaped data access* | |

**Projected sales of 580 vouchers over next 24 months**

| Rollout Assumptions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar |
| **No of Voucher Sales per Month** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** |
| 32 Days | 235 | 240 | 259 | 264 | 269 | 275 | 280 | 286 |
| 10 Days | 0 | 80 | 86 | 88 | 90 | 92 | 94 | 95 |
| 5 Days | 0 | 30 | 32 | 33 | 34 | 34 | 35 | 36 |
| 3 Days | 0 | 5 | 5 | 6 | 6 | 6 | 6 | 6 |
| **Total No Voucher Sales** | **235** | **355** | **383** | **391** | **399** | **407** | **415** | **423** |
| | | 120 | 28 | 8 | 8 | 8 | 8 | 8 |

# Sustainability - Self Generated Income



**35% of costs covered with income**

**73.4% of costs covered with income**

Total income
Total expenditure

# Case Study

Zenzeleni Networks