



**ZESCO LTD**

**ZESCO OPTIC FIBRE NETWORK**

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# OVERVIEW

1. INTRODUCTION
2. BACKGROUND OF POWER SYSTEM COMMUNICATIONS
3. THE ZESCO STRATEGY
4. WHAT OTHER UTILITIES IN THE REGION HAVE DONE
5. OPTICAL FIBRE PROJECT
6. OPTICAL FIBRE TECHNOLOGY
7. PROJECT HIGHLIGHTS
8. SERVICES OFFERED
9. MARKET ENVIRONMENT
10. INTERNATIONAL CONNECTIONS
11. PRICING STRUCTURE
12. BENEFITS
13. CONCLUDING REMARKS

# 1. INTRODUCTION

- **THE TELECOMMUNICATIONS INDUSTRY IN ZAMBIA HAS BEEN LIBERALIZED.**
- **THREE CELLULAR OPERATORS: CELL Z, MTN AND CELTEL.**
- **A NUMBER OF INTERNET SERVICE PROVIDERS (ISP) ARE ON THE MARKET e.g. ZAMNET, ZAMTEL, COPPERNET, AFRICONNECT, ETC.**
- **ZAMTEL IS THE ONLY ONE WITH A PUBLIC SWITCHED TELEPHONE NETWORK (PSTN) AND AN INTERNATIONAL GATEWAY FOR TELEPHONY.**
- **ZESCO NOW HAS A LICENCE TO OPERATE A CARRIER NETWORK (CARRIER OF CARRIERS).**

## 2. BACKGROUND OF POWER SYSTEM COMMUNICATIONS

### ➤ FIRST GENERATION

- COMMUNICATIONS SYSTEMS IN POWER NETWORKS ARE VITAL FOR DATA ACQUISITION, CONTROL AND PROTECTION
- HISTORICALLY SMALL POWER SYSTEMS
- PERSONNEL STATIONED AT EACH STATION
- TRAVELING LONG DISTANCES TO RESOLVE PROBLEMS
- BIGGER POWER SYSTEMS
- TRANSMISSION SYSTEMS:
  - PILOT CABLES (TRENCHING, UNRELIABLE, COSTLY)
  - POWER LINE CARRIER (PLC) – Low Capacity
- SERVICES: VOICE, SCADA, TELEPROTECTION (DISTANCE) AND LOW SPEED DATA.
- BUSINESS OPPORTUNITIES: NIL.

# **BACKGROUND CONT'D**

## **➤ SECOND GENERATION**

- TRANSMISSION SYSTEMS: LOW TO MEDIUM CAPACITY MICROWAVE RADIOS (2 TO 34 Mbps).**
- SERVICES: VOICE AND FAX, SCADA, TELEPROTECTION (DISTANCE AND DIFFERENTIAL), HIGH SPEED DATA, LAN INTERCONNECTION.**
- BUSINESS OPPORTUNITIES: LOW TO MEDIUM**

# BACKGROUND CONT'D

## ➤ **THIRD GENERATION**

### – **TRANSMISSION SYSTEMS**

- **OPTICAL FIBRE BASED (OPGW, ADSS, etc)**
- **SYNCHRONOUS DIGITAL HIERARCHY (SDH) TECHNOLOGY**
- **WAVELENGTH DIVISION MULTIPLEXING (WDM).**

### – **HIGH CAPACITIES**

### – **SERVICES: FULL MULTIMEDIA (AUDIO, DATA, VIDEO)**

### – **BUSINESS OPPORTNITIES: ENORMOUS.**

# 3. THE ZESCO STRATEGY

- **POWER SYSTEMS ARE MORE COMPLICATED**
  - **HIGHLY INTERCONNECTED**
  - **HIGHER FAULT LEVELS**
  - **INCREASED DEMANDS FOR QUALITY AND RELIABILITY FROM CUSTOMERS**
- **ONLY COMPUTER BASED CONTROL SYSTEMS CAN HANDLE THE INCREASED COMPLEXITY**
- **THERE IS A NEED FOR RELIABLE TELECOMS CONNECTIVITY**
- **CAN BE PROVIDED VIA OPTIC FIBRE**

## **4. WHAT HAVE OTHER UTILITIES IN THE REGION DONE ?**

### **➤ ZESA – ZIMBABWE**

- ESTABLISHED A SUBSIDIARY CALLED POWERTEL.**
- NETWORK CONSISTS OF OPTICAL FIBRE AND RADIOS.**
- PROVIDES SERVICE FOR ZESA OPERATIONS**
- ALSO PROVIDES LEASED AND CONNECTIVITY SERVICES FOR VOICE, DATA AND INTERNET TO CORPORATE CUSTOMERS AND OTHER TELECOMMS OPERATORS.**

# WHAT HAVE OTHER UTILITIES IN THE REGION DONE? CONT'D

## ➤ **ESKOM – SOUTH AFRICA**

- **ESKOM HAS A LARGE NETWORK COMPRISING OPTICAL FIBRE AND MICROWAVE RADIOS.**
- **ESKOM IS PART OF THE SECOND NETWORK OPERATOR IN RSA CALLED NEOTEL**
- **NEOTEL IS A FULL SERVICE NETWORK OPERATOR OFFERING:**
  - **VOICE, DATA, INTERNET**
  - **NATIONAL AND INTERNATIONAL CARRIER SERVICES**
- **ESKOM ENTERPRISES IS ALSO INVOLVED IN TELECOMMUNICATIONS VENTURES IN OTHER AFRICAN COUNTRIES.**

# WHAT HAVE OTHER UTILITIES IN THE REGION DONE? CONT'D

- **NAMPOWER**
  - ESTABLISHED A SUBSIDIARY TELECOMM COMPANY CALLED POWERCOM
  - POWERCOM WILL BE THE SECOND MOBILE OPERATOR IN NAMIBIA
- **COPPERBELT ENERGY (CEC)**
  - SUPPLIES POWER TO THE MINES AND BASED ON THE COPPERBELT
  - OPERATES COMMERCIAL TELECOMM BUSINESS WITH A CARRIER OF CARRIERS LICENCE