

# **Mapping the NREN Business Model using the Business Model Canvas: the case of TENET**

By: Tiwonge Msulira Banda  
UbuntuNet Alliance

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# Outline

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- ▶ Introduction
- ▶ South Africa NREN Ecosystem
- ▶ Purpose of Study
- ▶ Methodology
- ▶ Results/Findings
- ▶ Conclusions

# 1. Introduction

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- ▶ **National Research and Education Network (NREN)**
  - ▶ Serve the data communication needs of the research and education communities within a country (TERENA 2010)
  - ▶ Build and operate dedicated backbone networks interconnecting R&E institutions, connect them to other research and education networks and to the general commodity Internet
  - ▶ Provide other value added services to their constituents
  - ▶ Not-for-profit business entity
  - ▶ Important vehicles in reaching four of the ten WSIS goals (ITU 2010, 60)
- ▶ **15 countries in Eastern and Southern Africa have NRENs at different stages of development**
- ▶ **Advanced ones in Europe, America and Far East**

# NRENs in Eastern and Southern Africa

15 NRENs are at various stages of development, taking different legal forms

<b>Country</b>	<b>NREN</b>	<b>Year Established</b>	<b>Ownership/Legal Status</b>	<b>Staff</b>	<b>Network</b>
1. Burundi	BERNET	2014		Part Time	Operational
2. DRC	Eb@le	2008	Trust	None	None
3. Ethiopia	EthERNet	2008	Government owned	Full time	Operational
4. Kenya	KENET	1999	Trust	Full time	Operational/Con
5. Madagascar	iRENALA	2012	Government owned	Full time	Operational
6. Malawi	MAREN	2006	Private company	None	None
7. Mozambique	MoRENet	2006	Government owned	Full time	Operational/Con
8. Namibia	Xnet		Trust	Full time	Operational
9. Rwanda	RwEdNet	2006	Government owned	Part time	None
10. Somalia	SomaliREN	2009		None	None
11. South Africa	TENET	2000	Private company	Full time	Operational/Con
12. Sudan	SudREN	2004	Trust	Full time	Operational
13. Tanzania	TERNET	2008	Trust	Part time	Operational/Con
14. Uganda	RENU	2007	Private Company	Full time	Operational/Con
15. Zambia	ZAMREN	2008	Trust	Full time	Operational/Con

# Issues with emerging NRENs in ESA

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- ▶ **Progress towards operationalising NRENs has been slow.**
  - ▶ Very slow progress
  - ▶ Run by part-time project teams either led by their governments or by university staff
  - ▶ No clearly articulated logic of how they intend to function as not-for-profit service 'business' entities in a very competitive environment
  - ▶ Some have conducted feasibility studies and others have developed detailed business and strategic plans,
- ▶ **A few good examples**
  - ▶ South Africa (TENET) and Kenya (KENET)
  - ▶ Recently: Uganda (RENU), Zambia (ZAMREN), Madagascar (iRENALA), Sudan (SudREN), Ethiopia (EthERNet)

# Business models

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- ▶ **During meetings of heads of NRENs in ESA**
  - ▶ Lack of business model innovation has been suggested to be one of the reasons hampering the growth of emerging NRENs of Eastern and Southern Africa.
- ▶ **Studies and Corporate Executives indicate that business models play a significant role in the success of a business – e.g. Amway, eBay, Dell, and Wal\*Mart,**
- ▶ **A number of authors have studied and written about the subject (Timmers, 2008; Magreta, 2002; Lai, Weill and Malone, 2006; Teece 2010; Osterwalder 2004).**

# So what is a Business Model?

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- ▶ Concept gained prominence during the dot.com boom and burst of 1998 to 2001.
  - ▶ Need for startups to explain how they would earn money
- ▶ While the phrase 'business model' has been part of the business jargon for some time now, a number of authors including Markides (2008) agree that there is no widely accepted definition of the expression.

# Some Definitions

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- ▶ Timmers (1998): a business model is an architecture for the product, service and information flows, including a description of the various business actors and their roles; and a description of the potential benefits for the various business actors; and a description of the sources of revenues.
- ▶ Osterwalder and Pigneur (2010): one that describes the rationale of how an organization creates, delivers, and captures value.
- ▶ Casadesus-Masanell and Ricart (2009): the logic of the firm, the way it operates and how it creates value for its stakeholders.

## Some Definitions (cont'd)

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- ▶ Magretta (2002): “stories that explain how enterprises work.” She used the work of Peter Drucker and defined “a good business model” as the one that provides answers to the following two questions: Who is the customer and what does the customer value? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost? Magretta’s implicit idea was that business model refers to the logic by which the organization earns money.

## 2. The SA NREN Ecosystem

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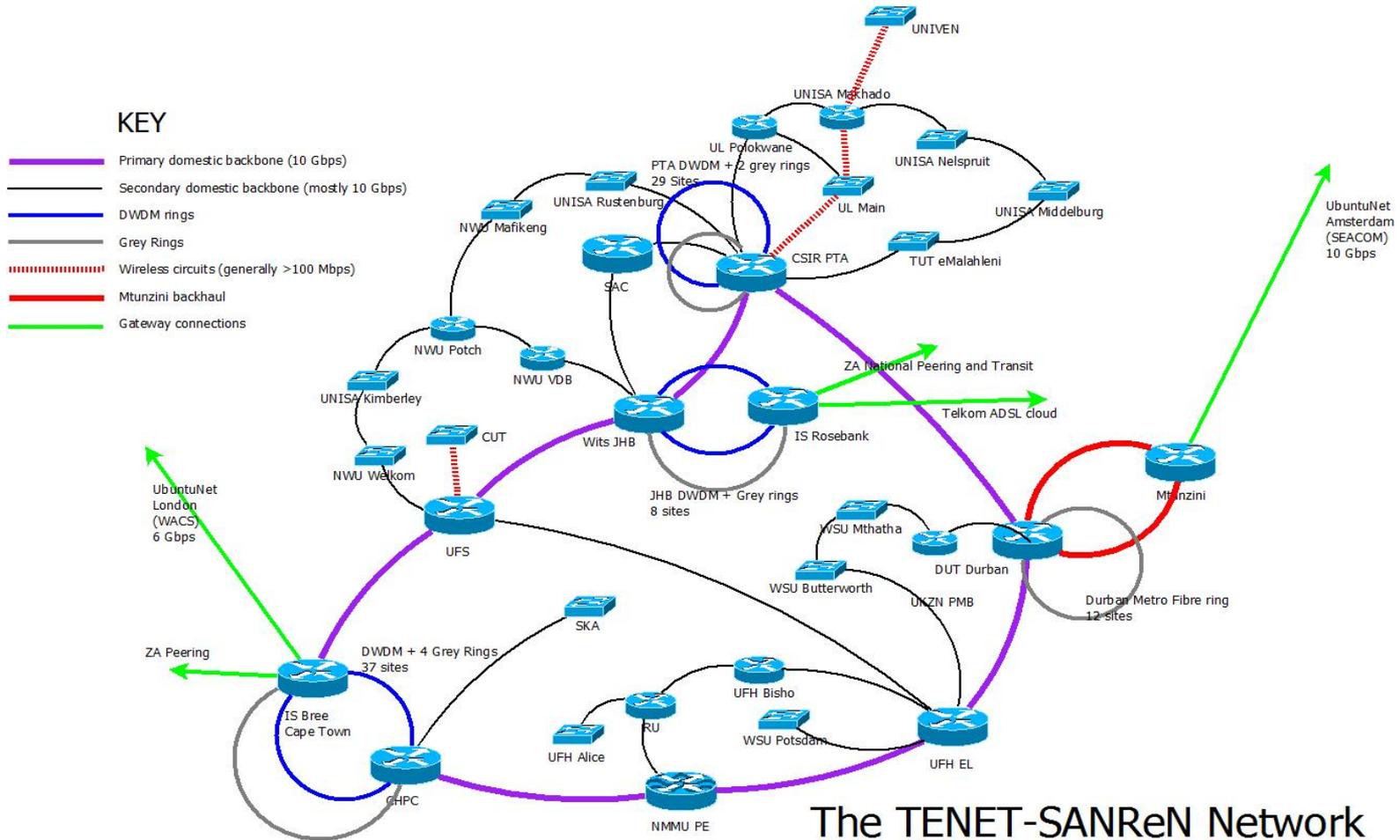
- ▶ **Unique one: 2 Organisations:**
  - ▶ TENET + SANReN = SA NREN
- ▶ **Collaboration agreement with the Centre for Scientific and Industrial Research (CSIR):**
  - ▶ TENET to operate SANReN, a multi-gigabit national backbone interconnecting major nodes in the country, including several metropolitan rings.

# TENET

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- ▶ A non profit company established by public universities of South Africa in August 2000 as the organisational home of and vehicle for collaborative internetworking by universities, science councils and associated support institutions.
- ▶ Registered as a Section 21 organisation under the then Companies Act.
- ▶ Recognised by the South African Revenue Service (SARS) as a public benefit organisation and so is exempted from paying income tax.
- ▶ Governed by the Board of Directors, which is headed by the Chairperson. Day to day operations are run by the Chief Executive Officer, who is supported by the 11 other employees, the majority of whom are network engineers.
- ▶ ZAR250 Million in Assets in 2012;

# The TENET-SANReN Network



### 3. Purpose of Study

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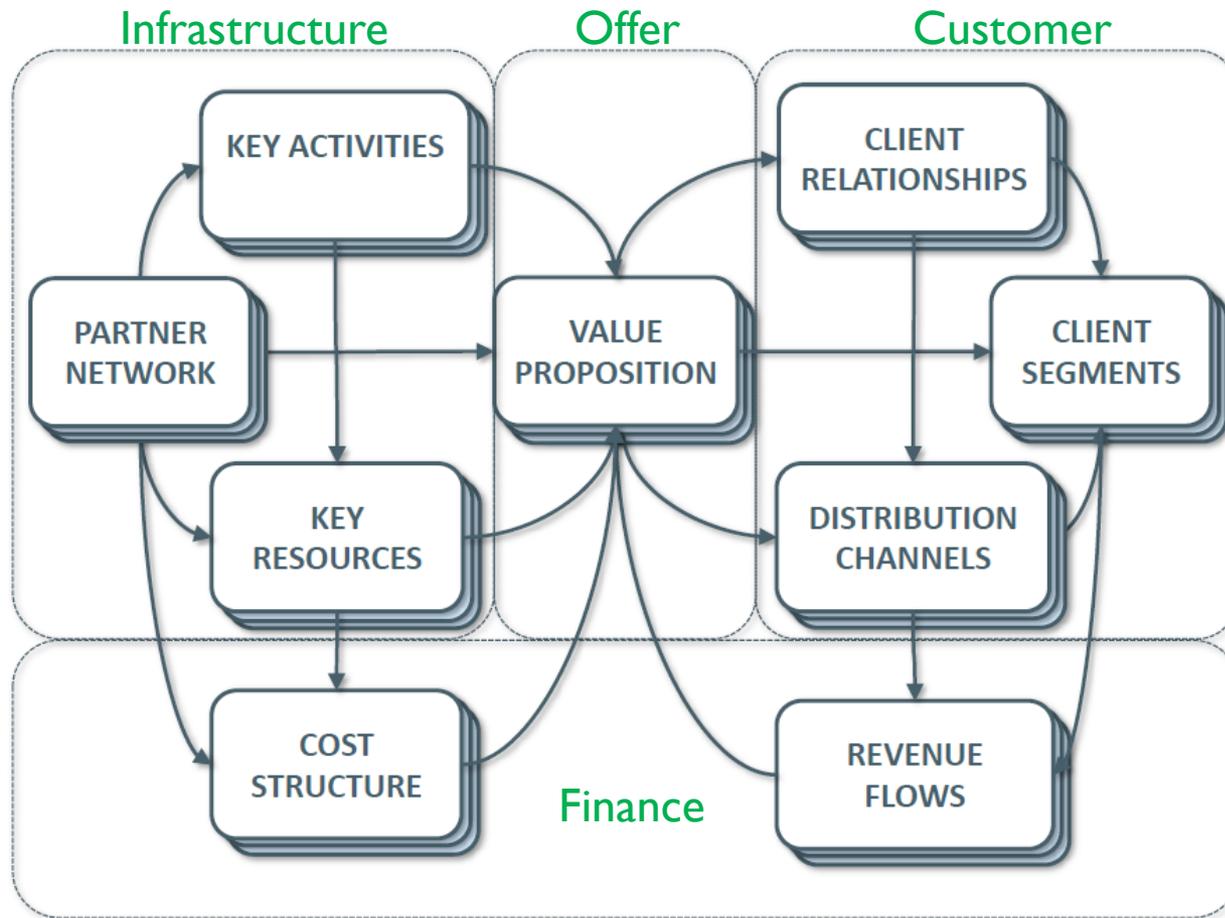
- ▶ To define/describe the business model of TENET

## 4. Methodology

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- ▶ Study adopted the Business Model Canvas developed Alexander Osterwalder and Yves Pigneur
- ▶ BMC:
  - ▶ A strategic tool for developing new or documenting existing business models of an organisation.
  - ▶ It is a visual chart with elements describing a firm's customers, offer, infrastructure, and financial viability.
  - ▶ From these four pillars come nine elements of a business model: Customer Segments, Value Proposition, Distribution Channels, Customer Relationships, Revenue Streams, Key Resources, Key Activities, Key Partnerships, and Cost Structure.

# Business Model Canvas



# Business Model Canvas



# Research design

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## Sources of data

- ▶ Primary data – A checklist – semi-structured interviews
  - ▶ Business Model elements checklist
  - ▶ Environmental scan checklist

## Secondary data

- ▶ Desk study - review of documents; Internet sources, etc

## Sampling

- ▶ None, case study – top management

## Data Analysis

- ▶ Qualitative data
  - ▶ Grouped

# 7. Results / Findings

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## The TENET Business Model

### ▶ Existing BM:

- ▶ *TENET is a not-for-profit business entity providing research networking services to research and education institutions in South Africa on cost recovery basis*

### ▶ Business Model Canvas

1. Customer Segments
2. Value Propositions
3. Channels
4. Customer Relationships
5. Revenue Streams
6. Key Activities
7. Key Resources
8. Key Partners
9. Cost Structures

# Mapping TENET's Business Model

<p><b>(8)</b> <b>Key Partners</b> <i>What else does TENET need?</i></p> <ul style="list-style-type: none"> <li>• SEACOM, WIOCC, Other suppliers</li> <li>• UbuntuNet Alliance</li> <li>• SANReN Competency Area</li> <li>• Department of Science and Technology</li> <li>• Department of Higher Education</li> </ul>	<p><b>(6)</b> <b>Key Activities</b> <i>What does TENET do?</i></p> <ul style="list-style-type: none"> <li>• Procuring and managing circuits (transit, peering, dark fibre)</li> <li>• Network management and equipment configuration</li> <li>• 24/7/365 Network Operating Centre (NOC) operations</li> <li>• Developing and management of VAS</li> </ul>	<p><b>(2)</b> <b>Value Propositions</b> <i>What problem does TENET solve?</i></p> <ul style="list-style-type: none"> <li>• High speed connectivity at low cost</li> <li>• Value Added Services: Video conferencing; eduroam, Federated Identity services</li> </ul>	<p><b>(4)</b> <b>Customer Relationships</b> <i>What type of relationship does TENET have with customers?</i></p> <ul style="list-style-type: none"> <li>• Membership (governance layer)</li> <li>• Many customers not entitled to membership (not universities or research councils)</li> </ul>	<p><b>(1)</b> <b>Customer Segments</b> <i>Who does TENET Serve?</i></p> <ul style="list-style-type: none"> <li>• Higher Education Institutions (Universities, Technicons (TVETs))</li> <li>• Research Councils</li> <li>• Schools (through e-Schools Network)</li> <li>• Not for profit private research/education entities</li> </ul>
	<p><b>(7)</b> <b>Key Resources</b> <i>What resources does TENET need?</i></p> <ul style="list-style-type: none"> <li>• Network monitoring system</li> <li>• Ordering system</li> <li>• Ticketing system</li> <li>• Networking equipment</li> <li>• Circuits/links</li> <li>• Highly skilled engineers, and Admin Staff</li> <li>• Service support</li> </ul>		<p><b>(3)</b> <b>Channels</b> <i>How are TENET's customers reached?</i></p> <ul style="list-style-type: none"> <li>• Association of South African Universities IT Directors (ASAUDIT)</li> <li>• REN-News (for updates)</li> <li>• Annual General Meetings</li> <li>• SLA Reference Group</li> </ul>	
<p><b>(9)</b> <b>Cost Structures</b> <i>What main costs does TENET incur?</i></p> <ul style="list-style-type: none"> <li>• Peering and Transit for both international and national capacity</li> <li>• O&amp;M on IRUs, and dark fibre</li> <li>• Equipment costs</li> <li>• Staff costs</li> <li>• Overheads (as much as possible keep them low, around 7%)</li> </ul>		<p><b>(5)</b> <b>Revenue Streams</b> <i>How does TENET get paid?</i></p> <ul style="list-style-type: none"> <li>• Charges for services (on cost recovery basis): Costs + 7% Agency fees transparently</li> </ul>		

# Business Model Environmental Scan

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## ▶ **Market Forces**

- ▶ International collaboration, requiring more bandwidth
- ▶ SANReN backbone
- ▶ Mobile devices

## ▶ **Industry Forces**

- ▶ Competition (>167 ISPs)
- ▶ Strategic alliances

## ▶ **Driving Trends**

- ▶ 100G+ networks
- ▶ SKA project
- ▶ International Collaboration

## ▶ **Macroeconomic Forces**

- ▶ Population of 52,98 million (mid 2013)
- ▶ GDP (\$578.6 billion PPP) growth 3.3% q/q
- ▶ Unemployment at 25,6%

## ▶ **Critical Success Factors**

- ▶ Customers are the owners of the NREN
- ▶ TENET's value proposition of offering services on cost recovery basis makes it difficult for others to imitate??

# 8. Conclusions

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- ▶ TENET is a not-for-profit business offering research networking services to HEI and RI in South Africa on cost recovery basis
- ▶ The strength of TENET's business model lies in its value proposition.
  - ▶ Offers research networking services on cost recovery basis at a reduced price to customers/owners/members
- ▶ TENET's business relies on a network of partnerships with suppliers and network providers
  - ▶ minimum threat on the business model (common for NRENs)
- ▶ Critical to the success of TENET's business model
  - ▶ customers are the owners of the NREN (many members)
  - ▶ value proposition

Merci | Zikomo | Thank you

Tiwonge.Banda@UbuntuNet.net