### Blockchain and transformation of the digital economy: Stakes and Challenges for Central Africa

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# As Africa adopted Internet

Foundation	Beginning	Formation	Growth
86-90	91-95	96-00	2000-2005+
Preconditions	First Connections	Structures & communities	Formal Institutions

#### Where is Blockchain in Africa?

#### 9/91 Internet Society, country connectivity

#### 2018 Bitnodes





## Blockchain

- Ordered permanent records
- Records may be: Transactions (atomic), data or programs (stateful)
- Employs computer science techniques: networks, cryptography, consensus, data structures and contracts
- Infinite potential Applications

# Blockchain as Network layer

Transaction : public key hash : broadcasts	Trust economic
Web : Domain names	social
Internet : IP addresses	logical
Transmission : interfaces	physical

## Blockchain as Data Structure

- immutable, Txid
- organized, columns
- files, filenames

Blockchain

**Databases** 

**Directory Files** 

Figure 4: Linkage Between Blocks



# Consensus on State

- Proof of work: show hash (nonce, previous hash, txs) < target (bitcoin)</li>
- Proof of stake: large owners of coin selected to decide (ethereum proposal)
- Proof of presence (stamp.africa proposal)
- Other proposals e.g hash graphs (gossip) etc or commit () in private blockchain
- Also, a basis of reward

## Blockchain - tamper evident



#### Bitcoin Transactions- first application

#### Each input spends previous output



Each output waits as unspent Tx output (**UTXO**) until an input spends it

#### Rules for transactions must be enforced

### **Blockchain Advantages**

Secure as difficult to hack blocks, high reliability, prevent cheating, increased transparency, removes intermediaries, increases efficiency of trades, access to diverse populations, allow more to trade, customizable, can be public or private, faster transactions

### Potential benefits of blockchain in AFRICA Stakes

- Facilitating cross-border transactions
- Reduced the high cost of remittance payment
- Enabling access to financial services
- Access to the credit
- Ensuring privacy
- Job creation
- Improve good governance
- Access to the market
- Improved business environment
- The unbanked

### Many use cases in Finance and Banking

International currency transfer, payments in digital currency, record keeping, enhance transparency, money laundering, assets securities, identity management, fund subscriptions, liability management, negotiation platform, electronic shareholder voting, certificates and many more back office functions.....

### **Blockchain in Finance sectors**

- Payment
- Remittance
- Automate payments
- Crowdfunding: enhancement of transparency
- Crowd lending
- Micro-payments
- Tips and donation

## **AFRICA** challenges to Blockchain

- Technology
- Infrastructure
- Energy
- Regulation and governance
- Skills development
- Crimes
  - Containing pseudo anonymity lure of Crypto currency and inhibit crimes

## Thank you