Costs of Biometric Voter Registration

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Outline

1. Basics of Biometrics

2. Why Biometrics?

3. Costs of Biometric Voter Registration

4. Key Cost Drivers

5. Lowering BVR costs

6. Wrap Up

1. Basics of Biometrics

- Based on unique personal attributes;
  - Physical characteristics
    - Fingerprints, face, hand geometry, retina, iris
  - Behavioural characteristics
    - Voice Recognition
    - Signature Dynamics
- Enables Direct Data Capture of a subject's data.

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…Basics of Biometrics

- Compares a subject's attribute(s) to a registered or enrolled template;
  - AFIS – Automated Fingerprint Identification
  - ABIS – Automated Biometric Identification (Multimodal)

- Provides high recognition (3-factor authentication);

- Most BVR systems use AFIS technology
  - Cheaper, Faster, More Acceptable.

…Basics of Biometrics

- BUT:
  - Costly to purchase, maintain and/or operate
  - Susceptible to authentication errors:
    - False Rejection (Type I), and
    - False Acceptance (Type II)
  - Objective is to <u>minimize rather than eliminate</u> both errors.
    - Example: Database size:20M voters;
    - FRR/FAR= 0.01 (i.e. TAR/TRR 99.99% accuracy);
    - Number of False Rejects / Accepts: 200,000!

2. Why Biometrics?

- Increased recognition to unequivocally link an individual to a transaction or event

- Provides "unbreakable" security

- Eliminates problems of lost tokens / cards

- Provides greater user convenience

- Basis for integrated electronic voting

- Preparatory costs – study tours, pre-analysis

- Hardware and software($$$)

- Infrastructure - networks and data centres

- Back office server systems

- Security & insurance – branding, locking

- Logistics – distribution, warehousing, maintenance and retrieval of equipment.

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… Costs of BVR

- Integration, technical assistance and training costs

- Renting or rehabilitation of matching centres

- …and more!

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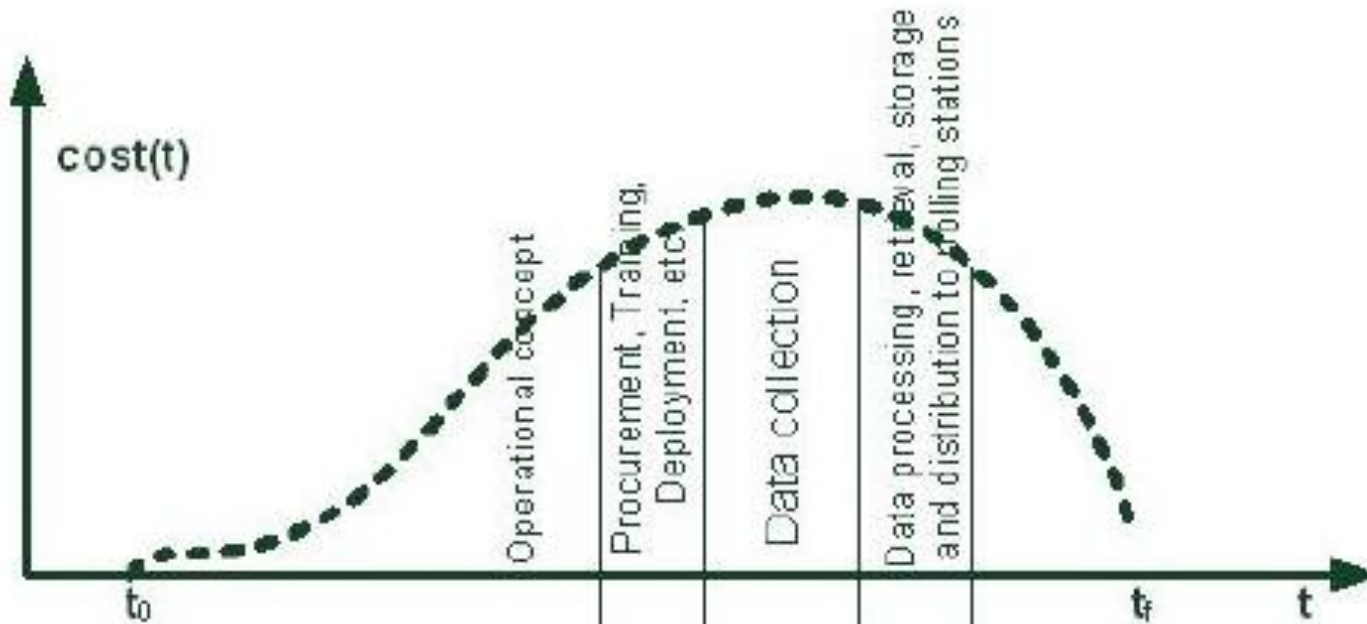
…Costs of BVR

Diagram : Shape of costing function

- cost (t) is the costing function over time t
- t_0 represents the start date of the voter registration project
- t_f represents the end date of the voter registration project

SOURCE: UNDP " STUDY ON THE USE OF INFORMATION COMMUNICATION TECHNOLOGY IN THE ELECTORAL PROCESS" BY DUNIA RAMAZANI Ph.D.

4. Factors affecting costs

- Use of proprietary software / hardware – "vendor locking"
- Desired level of accuracy(Type I / II errors)
- Costly and intensive maintenance and support;
- Fragile / short life components
- Complex and demanding integration
- Project timelines

5. Towards lower costs

- Use a transparent and competitive procurement process
- Take a gradual approach, scale if needed.
- Use open, non-proprietary platforms, based on recognised standards
- Evaluate vendor support and experience
- Establish internal centres of competence – "knowledge transfer".

…Towards lower costs

- Consider alternatives;
  - Sourcing methods
    - Leasing / borrowing –vs- buying as a service
    - Long Term Agreements
  - Pool resources
    - Co-sourcing arrangements;
    - Strategic partnerships / coop agreements;

- Advanced technology alone cannot guarantee the integrity of elections without corresponding legal and administrative protective mechanisms.

- BVR costs should be weighed against the contribution to the perceived credibility of the electoral (registration) process. Therefore, cost may not be the PRIMARY factor.

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Asante sana!

Au revoir!