THE ROLE OF TECHNOLOGY IN RAISING STANDARDS: TECHNOLOGY IN CONTEXT, "CASE STUDY OF TECHNOLOGY IN VOTER REGISTRATION IN KENYA"

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1.0 INTRODUCTION

The Interim Independent Electoral Commission of Kenya (IIEC) was established by the Government of Kenya under section 41 and 41A of the immediate former Constitution as part of the wider reforms to be undertaken under Agenda 4 of the Kenya National Accord and Reconciliation Act. IIEC was set up to replace the disbanded Electoral Commission of Kenya (ECK). The disbandment of the ECK was occasioned by the disputed presidential elections results in the 2007 general elections and the post-election violence that followed.

IIEC was set up with the Chairman and 8 Commissioners with the aim to reform the electoral process and restore people's confidence in the country's electoral system. The new body, which was gazetted on May 8th, 2009, was tasked with the following mandate -

- Reform of the electoral process and the management of elections in order to institutionalize free and fair elections;
- Establishment of an efficient and effective secretariat;
- Promotion of free and fair elections;
- Fresh registration of voters and the creation of a new voters' register;
- ***Development of a modern system for collection, collation, transmission, and tallying of electoral data;***
- Conducting of the referendum for the new constitution;
- Facilitation of the observation, monitoring and evaluation of elections and referenda;
- Promotion of voter education and culture of democracy, and
- Settlement of minor electoral disputes during an election as may be provided by law.

In exercising its mandate, the Commission held a constitutional referendum on the new Constitution on 4th August 2010[1]. The new Constitution provides for the establishment of the Independent Electoral and Boundaries Commission (IEBC) as the successor of the IIEC, setting out its mandate under Article 88. Continuous registration of voters remains a key mandate for the Commission.

2.0 VOTER REGISTRATION

Voter registration is the basic foundation of a citizen's democratic right to vote, regardless of the electoral system of a country. It forms a key administrative function of the electoral cycle, without which no elections can occur. The registration exercise requires meticulous planning with regard to "who", "how", "where" and "when" to register potential voters in order to ensure access by all the targeted and eligible groups to this critical service. Voter registration may be a separate exercise conducted by an electoral management body (EMB), as is the case for Kenya, or it may be part of a broader integrated civil registration system of a country.

Recommendations by the IREC Report disqualified the previous Voters Register developed by the defunct Electoral Commission of Kenya (ECK). This Register was developed since 1992 during multi-party elections and was subsequently updated in 1997, 2002, 2005 and 2007. As at December 2007, the Register had 13.4 million Kenyans registered as voters. This Register was discredited over high numbers of dead voters or multiple registrations and therefore the need for a new Voters Register.

[1] The new Constitution was ratified by almost 65% of Kenyans out of the 72% registered voters who turned out to vote. The new Constitution was promulgated by President Mwai Kibaki on 27th August 2010.

2.1 Voter Registration System and Process

Voter registration in Kenya has always been a key mandate of the EMB. This exercise is separate but dependent on other civil registration systems such as registration for births and for National Identity (ID) cards, issued upon a Kenyan's attainment of majority age. In fact, the law requires that for one to register as a voter, they must have a valid Kenyan ID or Kenyan Passport. There are currently discussions between relevant government agencies towards integrating the civil registration system into a one-stop shop. In the meantime therefore, voter registration is an independent mandate of the EMB and forms one of the most time-consuming and expensive tasks of the electoral cycle.

Voter registration in Kenya is a continuous process aimed at developing a credible Voters Register. The preparation of a comprehensive and inclusive Register of voters is a prerequisite for free, fair and transparent elections. The Register provides a credible mechanism for verifying the eligibility of voters, which in turn confers legitimacy on the electoral process.

Voter registration has been a manual process until the piloting of Electronic Vote Registration (EVR) by the IIEC. Fresh voter registration commenced in March and ran for 45 days; both manual and electronic. The manual voter registration exercise – Optical Mark Recognition (OMR), the traditional system that uses scanning technology, kicked off on 22nd Mach 2010 and ended on 9th May 2010, while the EVR piloted in 18 constituencies commenced on 12th April 2010 and ended on 21st May 2010.

The manual process begins by recording voter's details in a black book register. This information is then transferred into an OMR form, a form with a magnetic reader. The form is then scanned to produce the Voters Register. Even though Multiple registrations could be identified under the OMR system, it was limited to

using the particular document of identification. If one registered in two registration centres, in one using the National Identity Card and the Passport in the other, the OMR system will not pick this one as a double registration. The OMR therefore is more prone to abuse.

2.2 The Role of Technology in Voter Registration

Once the Commission realized the need to embrace ICT to reform the electoral process and based on the recommendations of the IREC Report, the Commission was determined to have a fully automated electoral process, from e-registration, e-voting and finally e-transmission of results.

The mandate to develop a modern system for collection, collation, transmission, and tallying of electoral data remains one of the key recommendations of the IREC[2] Report and a running thread under the new constitutional dispensation.

2.3 Electronic Voter Registration (EVR)

The Commission conducted several studies on the different modes of voter registration and specifically EVR. India and Namibia's systems were seen as good case studies to adopt. The case studies gave the Commission an insight into thinking through the best model to adopt for Kenyan situations. The decision to pilot the system was reached and an international tender for provision of EVR solution was advertised and several companies responded. All shortlisted companies were invited to conduct a demonstration with University of Nairobi students and a Canadian firm was finally awarded the tender.

The EVR kit comprises a laptop computer, a finger print reader, a digital camera and a printer. It also comes with batteries and a solar panel for back-up power. In

[2] Independent Review Commission, popularly known as the "Kriegler Report", which was chaired by Hon. Judge Johann C. Kriegler.

EVR, the voter's details are keyed in directly into the computer database, including the voter's biometrics, where the fingerprint and photo are also taken. The details can be verified on the spot before the voter's card containing voter's photo is printed.

It is worthy to note that the system could accept up to 10 fingerprints, but this was limited to time constraints. It is these biometric features that allow the system to immediately pick out any instances of multiple registrations on the same kit (if registered at the same polling station). Multiple registrations that were entered from different polling stations could be picked out during collation of the data from all polling stations. Because of the unique biometric features, the accuracy of the verification of the voter's details is therefore guaranteed when using EVR.

The system software has an intuitive graphical user interface (GUI) that guides users through the registration process. The fingerprint and the photo are captured and reproduced on the Voter ID card. These two inputs are the biometrics used to detect duplicates in the master database of voters.

When the kits are being used to register voters, the entire database on each PC is backed up every 30 minutes. The backup is performed automatically by the software. One USB-stick must always be connected to the proper USB port in order for the backup to be recorded. This automatic backup limits the potential for data loss in the event of a computer crash to only those records collected since the last backup. A second back up on another USB-stick would be done as a routine at the end of each day.

The system allowed for entry of additional notes during registration for a voter to record unique or exceptional feature about the voter, e.g. physical disability, visual or hearing impairment.

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EVR process is speedy and more efficient. It however requires adequate resources as the kits are expensive and requires intensive training of officers to use it. In the fresh registration of voters therefore, EVR was piloted in 18 constituencies out of the 210 on 12th April 2010. This represented all the 8 provinces in Kenya and cutting across both urban and rural settings. We managed to register 1,356,368 voters using the EVR out of 12.6 Million total registered voters. We utilized 1600 EVR kits for this exercise that cost the Commission approximately Kshs. 450 million[3].

2.4 Pros and Cons of EVR

No system is full proof. EVR has its uses and challenges.

Pros

- The greatest score for EVR is that it enhanced credibility of the Voters Register. With biometrics of the voter captured, cases of multiple registration were easily picked;
- Identification of voters was also enhanced through the Electronic Poll Book, which made it easier to search through names rather than using the manual register. The voter could also be easily identified using their captured photo or fingerprint. It is notable that even under OMR, a voter could present their photo, which can be scanned and included in the Register, but this is a tedious process and would place additional demand in the exercise;
- On-the-spot verification was a major factor that enhanced the accuracy of the Register. Because of the manual nature of OMR system, it was prone to human errors, which could only be picked when the Provisional Register Was published for public inspection. For example, an error as minor as

[3] This is over USD. 5.625 million

entering a wrong digit under the Constituency Code would transfer the voter to a different constituency;

- It is speedy, as it takes a shorter time to register as well as to vote, due to easy identification process. After the court[4] ruling that prison inmates be registered as voters, IIEC employed EVR to register inmates in 90 prisons within one week. The OMR system involves very tedious processes before the Voters Register is finally published, such as the scanning of the OMR forms, the printing of the Provincial Register, the inspection and subsequent publication of the final Register;
- The OMR system places a challenge in managing the heavy amount of paper resulting from the filled in OMR. This is not a problem in the EVR, which is paperless;
- It makes it easier for the Commission to manage the Voters Register in case of transfer of voters or when new voters are registered;
- EVR system has laid a good foundation for full automation of the electoral processes in future. The system has greatly enhanced public confidence in the EVR system and therefore credibility of the Commission.

Cons

- The technology is not home-grown and the Commission is likely to become a hostage of the vendor/supplier of the service;
- The solution is very expensive and therefore limited us to 18 out of 210 constituencies;
- The system was still being tested for Kenyan circumstances – provider was also learning its workability;
- Unforeseen challenges such as new requirements in the middle of the Implementation – a specific server to do the matching of the biometrics;

[4] The Interim Independent Constitutional Dispute Resolution Court

- It requires heavy security of the equipment – especially laptops are prone to loss and theft;
- Bulky accessories such as the battery and solar panels are cumbersome to carry around;
- Challenges in getting well trained human resource to use the system;
- No transfer of technology and know-how to the Commission - Constant reliance on the supplier for technical support throughout the process and during system failures of the webcam (digital camera), finger print taker and the photo card printer;
- Time constraints – adequate time is required to train officers and adopt it to local conditions. It is vital that quality training is imparted on exactly how to capture high-quality biometrics, as this has a direct impact on the matching process and eventually on the outcome of the Register. For example, while a degree of skill and judgement are needed to capture the photo effectively, the simple truth is that not all thumbprints are equal. Fingertips may be injured, burned or scarred, and these will always result in lower quality scores than those with clear uninterrupted lines. An elderly person or someone who performs certain types of manual labor will have fingerprints that are considerably more worn our than a younger person or someone who doesn't work with their hands;
- The huge investment of the equipment is very relevant during fresh registration of voters but not for subsequent revision and updating. The material will remain mostly idle between elections;
- The system is most appropriate for countries with integrated personal/civil registration systems where one registration suffices for all other requirements. For Kenya, this is duplication, as a similar process is used in The registration of National Identity Cards;

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- The long-term viability and obsolescence of the system poses a great challenge to the Commission, which is costly to fathom.

3.0 CONCLUSION

IIEC conducted EVR in 18 constituencies amid all these challenges. The system proved to be very popular with the people.

The Commission is currently undertaking an audit of the system with a view to improving it and planning a nationwide roll out. The challenge with the national roll out is finance, but the Commission is hopeful that donors who promised to support electoral reforms will assist the government in funding the EVR.

With its limited success in the EVR, the Commission continues to receive inquiries from other EMBs on its use and impact. We have so far received inquiries from Bahamas, Zambia, Sierra Leone, Malawi and others within the region.

Even though the focus of the paper is on Electronic Voter Registration, I would like to throw in our brief experience on another "first" for the electoral management body and for the country, the Electronic Vote Transmission (EVT). EVT is another mechanism adopted by IIEC in the electoral reforms. The major contention in Kenyan elections, during voting process, has been revolving around vote counting, tallying and declaration of results. EVT is a process of transmission of results from the polling stations simultaneously to the constituency tallying centers and to the national tallying centre.

EVT is a home-grown solution developed by NEXT Technologies, who are continuously improving it based on the circumstances. The system requires

Internet connectivity for data to be transmitted through a mobile phone or a

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computer. The Commission conducted various studies on its workability and it was established that GSM/GPRS network was the most flexible and cost effective for the system. The Commission partnered with the major mobile networks in Kenya with vast coverage for connectivity. GSM/GPRS Modems were programmed for the number of computer servers deployed in all the 210 Constituency Tallying Centers. A VPN (virtual private network) with authentication features was then established for IIEC exclusive use.

The IIEC staff have been extensively trained on the system and are now competent to use it without the developer's support.

The system enhances transparency and also eliminates any suspicion of fraud or misconduct by those managing the process. The results transmitted electronically are provisional results as the current Kenyan law only recognizes the official submission of Forms 16A and 17 to the constituency tallying centre and national tallying centre, respectively. EVT has tremendously addressed challenges of delays occasioned by transporting these forms and also security of such forms when en route.

EVT has so far been used in eight by-elections and in the national constitutional referendum. This has made it possible for the Commission to continue improving on the system. It has also enabled us to identify the areas where partners, such as mobile phone providers, can best give their support, e.g. where to boost network coverage. The Commission has also been able to map out the areas that require satellite phone technology where the GSM/GPRS network is poor. Satellite phones became very handy in the latest by-election.

Because of simultaneous transmission from the polling centers to the constituency and the national tallying centers, the system has eliminated any suspicions on

tampering with the results streaming into the national tallying centers. EVT has greatly enhanced transparency in the tallying and declaration of election results and has therefore been embraced by Kenyans as a transparent and efficient tool to election management. This has in turn considerably enhanced credibility of the Commission in the eyes of the public.

Other strategies that the Commission is currently working on include the incorporation of digital maps in the EVT and the use of Geographical Information Systems (GISs)/GPRS for electoral planning and navigation based on electoral boundaries rather than on administrative boundaries, as is currently the case. We are also in the process of fully automating the database of political parties and their membership. Comprehensive details of such members are captured in the database to enable easy verification of their status and to enhance transparency in the management of political parties. The Commission is also reviewing the possibility of adopting Electronic Voting; its pros and cons in the Kenyan context.

There is no doubt therefore that the use of technology in voter registration exercise contributes in raising the standards of elections management and in the overall enhancement of the credibility of and confidence in the electoral process.

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