# THE ROLE OF TECHNOLOGY IN ELECTION MANAGEMENT IN KENYA

## BY

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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. The disbanding of the ECK which had managed elections since 1992 involved the drastic action of sending home the entire 23 member Commission and it's over 600 members of staff of the secretariat.

IIEC was set up as an interim Commission with a 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 with a mandate of 24 months, 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.

Despite challenges as a new body operating within the context of time and resource constraints, IIEC has largely fulfilled is mandate within a period of 18 months. The Commission established the secretariat, created a new Voters Register within 45 days and registered over 12.4 million voters. It also conducted several parliamentary and civic by elections. The Commission also held a successful constitutional referendum, which ushered in a 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 IIEC, setting out its mandate under Article 88. IEBC has been tasked with an additional mandate to delimit boundaries of constituencies and wards.

Article 28 of the Sixth Schedule provides that the tenure of office of IIEC will continue for its unexpired term or on the establishment of IEBC, whichever is later.

## 2.0 OVERVIEW OF ELECTIONS AND TECHNOLOGY

### 2.1 DEFINITION OF TECHNOLOGY

The Oxford Dictionary defines "technology" to mean the application of scientific knowledge for practical purposes, especially in industry. In elections, the "industry" is the set of election operations and processes. The electoral cycle is a process encompassing a string of inter-dependent and inter-related activities. Technology forms one of the core tools that effectively facilitate these processes.

Technology is not limited to modern interventions or computer/electronic related softwares. It is therefore the application of science and engineering in developing more efficient, adaptable or practical products and processes. The same technology may be deemed as new "invention" in one place and old in another.

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[1] The new Constitution was ratified by almost 65% of registered voters. There was 72% voter turn out. President Mwai Kibaki then promulgated the new Constitution on 27th August 2010.

Technology is used in everyday activities related to electoral processes, ranging from printing presses, computer databases, digital mapping to gadgets for communication such as Internet and mobile phone technology.

## 2.2     PRINCIPLES GUIDING TECHNOLOGY IN ELECTIONS

Election is a delicate political process. Therefore before an EMB (Electoral Management Body) adopts a new technology, be it a product or a process, several factors must be taken into consideration.

Election is first and foremost a legal process, and all its processes must be grounded within the confines of the law. The legal framework must therefore provide for the use of such technology. This is not only in the interest of upholding the Rule of Law but also to give legitimacy to the process. The legal framework also acts as a tool to ensure effective participation and to get a buy-in from all key stakeholders in elections during its discourse, prior to its enactment or commencement or during its implementation.

Secondly, adaptability of the technology to local circumstances is imperative before it is applied. The EMB must take into account any infrastructural challenges such as intermittent power supply or poor GPRS/GSM network if Internet connectivity or mobile telephony is required. Satellite phones may be a better option in such areas. Mapping is therefore a key ingredient in deciding the use of technology in order to ensure operational appropriateness to the needs of the time or place.

Thirdly, the technology must be accurate and verifiable, especially if it regards one of the core election processes such as voter registration, voting or vote counting. One of the objectives of any technology is to enhance, efficiency, transparency and integrity of an existing process and thus accuracy must be guaranteed and the steps must be traceable to allow for easy verification of the particular technology.

Equally important is the sustainability of the technology and its flexibility for regular evaluation, adjustment or its upgrade to determine its usefulness and appropriateness. Sustainability of the technology will also avoid vendor locking. The hardware and software of the system must be open for inter-operability and support. This calls for consideration on whether upgrade of existing technology is required or introduction of a whole new one. The implication is both technical in terms of its adaptability and financial because of the cost factor arising out of additional expertise and ongoing maintenance.

Security of the technology is also vital, both physical security and system security. Unlike for other common uses of technology, systems or softwares used in election management must be secure and accurate ab initio. There must therefore be intensive testing and piloting of the technology before its actual application. If an EMB decides to adopt Electronic Voting, it must ensure that the voter's choice at the point of entry remains unchanged at the time of voting and vote counting and to avoid any manipulation in the process. Physical security of the equipment during storage, shipment and even usage must also be guaranteed.

Affordability of the technology and general understanding by all stakeholders is another key consideration. Before any new technology is adopted, an EMB must weigh between competing interests such as the cost of adopting the new technology vis-à-vis the status quo, or acceptability and understanding of the technology by the public.

Lastly, the most basic consideration is the impact of the adopted technology in the management of elections and on the general public perception. For instance, will the technology ease voter registration process? Will it fasten declaration of results? Will it enhance communication with stakeholders? etc. The technology must therefore be transparent and add to the integrity of the electoral process. It must also be implemented in a timely manner.

**2.3    SPECIFIC ROLES OF ELECTIONS IN TECHNOLOGY**

Until recently, election was viewed as an event and all activities leading to the actual poll were mostly independent and non-related. Electoral cycle is a process encompassing a string of inter-dependent and inter-related activities. Regardless of the electoral system of a country, electoral process is normally categorized into 3 distinct phases; pre-election activities, such as boundaries delimitation, voter registration and voter education, the actual polling and post-election activities, such as dispute resolution and cleaning up of the Register.

### *2.3.1   BOUNDARY ADMINISTRATION & DELIMITATION*

Delimitation of boundaries and boundaries administration is the pre-requisite for any election. It is after electoral boundaries have been delimited, polling stations identified and gazetted, that voter registration is carried out and eventually actual polling takes place. The new Constitution mandates the Commission to undertake periodic review of boundaries of constituencies and wards every eight to twelve years.

Technology can be a very effective tool for conducting electoral boundary delimitation, or redistributions of electoral boundaries. Powerful mapping technologies such as Geographical Information Systems (GISs), as well as database software, can be used by EMBs to assist with the boundary delimitation process.

To enable an EMB effectively carry out boundary delimitation, various technologies will have to be employed, particularly in the following areas -

- obtaining relevant data, such as demographic, electoral and geographic data;
- defining and manipulating census tracts, or defined geographical areas used for census purposes;
- producing digitized maps;
- publishing results of boundary delimitation and results of elections

following boundary changes;

- Using GIS to draw boundaries of constituencies and wards.

The Commission is currently mapping the polling centres with a view of establishing network availability for results transmission.

The GIS will be implemented to improve operations in the following ways-

- It will allow mapped information to be structured and stored in digital databases and digital maps which are linked together for easier storage, retrieval and analysis;
- Users will be able to quickly access information by performing searches;
- Information will be kept up-to-date by ensuring that new polling centers and constituencies are entered into the system regularly and that accurate data references are maintained;
- It will allow production of digital topographic maps and databases for the polling centres and constituencies;
- It will be able to derive registered voters density maps relating to hot spots and also showing polling centres attribute in relation to number of registered voters, percentages of voters, voting pattern etc in chart tabulation maps;
- It will also allow creation of base maps containing administrative boundaries, rivers/water bodies, roads, towns, land use etc and overlay polling centre (schools, social halls, worship places) as well as calculate distances from one polling centre to the other/from one constituency to the other, or to the regional store, to roads etc.

### 2.3.2 *VOTER REGISTRATION & VOTER IDENTIFICATION SYSTEMS*

Voter registration is the first step towards exercising one's democratic right to vote. The registration process may be part of an integrated system or a separate exercise undertaken by an EMB.

The voter registration method provided by the legal framework determines the kind of technology that needs to be adopted and the extent of such technology. If it is an active method, such as the current Kenyan system, where a person is actively required to apply, the technology involved is different from when it is a passive method (where a person is automatically registered through participation in another process). There are currently discussions between relevant government agencies in Kenya towards integrating the civil registration system with the voter registration into a one-stop shop, where the technology to be applied will be that for passive registration.

If the Integrated Civil Registration System is adopted, it will eliminate the use of Voter's Cards in identifying voters during polling and instead biometric features such as the fingerprint, the photo or the eye scan may be used. If the system is passive, it will further reduce cost – no requirement to purchase equipment or recruit staff for the registration exercise.

The new Constitution provides that voter registration will be a continuous exercise. This will allow for periodic upgrading of the technology used to register voters, including registration of voters in the Diaspora. The Commission has established a Management Information System for the Voters Register, which acts as a Reporting Server. This eases the updating and generation of the new Register. This is equivalent to the VREC (Voter Registration EPIC[2] Centres) used in India.

The resulting outcome of the registration exercise is the Voters Register and the Voter's Identity Card. Depending on the technology used; the Voter's Card may be manually or electronically produced, with or without a bar code sensor for purposes of identification. The manual cards are laminated into a PVC laminator, which may be thermal (with heat-activated adhesive) or cold pouches (which is pressure-sensitive).

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[2] Elector's Photo Identity Cards

**Voter Registration Systems**

There are different types of voter registration systems. There are those that utilize scanning techniques such as OMR, OCR or ICR, and those that use bio-identification features. Both these provide different levels of sophistication to suit different data-capture requirements.

### OMR (Optical Mark Recognition (the process) or Optical Mark Reader (the scanner))

OMR technology detects the absence or presence of a mark, but not the shape of the mark. Forms are scanned through an OMR scanner. The forms contain small ovals, referred to as "bubbles" that are filled in by the respondent. OMR cannot recognize hand-printed or machine-printed characters. An OMR scanner follows instructions, which tell it where to find marks on a paper form and then how to process them.

### OCR (Optical Character Recognition)

OCR technology gives scanning and imaging systems the ability to turn images of machine-printed characters into machine-readable characters. Images of machine-printed characters are extracted from a bitmap of the scanned image.

### ICR (Intelligent Character Recognition)

ICR technology gives scanning and imaging systems the ability to turn images of hand-printed characters (not cursive) into machine-readable characters. Images of hand-printed characters are extracted from a bitmap of the scanned image. Forms can be scanned through an imaging scanner, faxed, or computer generated to produce the bitmap.

Over the years, voter registration in Kenya has been conducted manually using the scanning technology. This is a traditional system, which works well, if properly

managed. The manual process begins by recording voter's details in a 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. For instance, if one had registered in two registration centres, in one using a National Identity Card and a Passport in the other, the OMR system will not pick this one as a double registration.

The OMR system is a tedious process for large volumes of data, especially if entered under pressure. If the shading on the OMR forms is not done well, the details are not properly captured. The scanning technology is also highly dependent on the quality of the forms. The scanning technology therefore is more prone to errors.

### EVR (Electronic Voter Registration) System

To deal with this problem and to minimize the degree of errors during registration process, IIEC piloted Electronic Voter Registration (EVR) system in 18 out of 210 constituencies[3]. This is a form of biometric identification system.

The EVR kit comprises of 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 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 his photo is printed out.

This technology uses the 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

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[3] The new Constitution provides for 290 constituencies

stations. Because of the unique biometric features, the accuracy of the verification of the voter's details was greatly enhanced.

The system also allowed for entry of additional notes during registration for recording unique or exceptional features about the voter, e.g. physical disability, visual or hearing impairment. This information would be helpful in getting relevant statistics that can be factored into logistical planning during elections.

The EVR system is efficient in terms of accuracy and voter identification. Other benefits include the following –

- It can be easily integrated with other databases;
- The system interface is easily understood and user friendly once it is internalized;
- It is easy to modify and can accommodate the required changes;
- The system allows immediate verification of the records by the voter during the registration process;
- The EVR solution can be used interchangeably as an electronic poll book to identify voters during voting.

An audit of any technology must include ease of use, retrieval mechanisms and portability. The biggest challenge of EVR is high cost and the portability of the kit; the battery and back-up power are too bulky to carry around.

The Commission is currently looking into ways of improving this technology for countrywide application in preparation for the first general election under the new Constitution, in 2012. Some of the areas of focus include 100% elimination of duplicates, getting an alternative to the bulky and fragile battery and power kit and the challenge of reusing the batteries and the solar panels.

**Voter Inspection & Public Inquiry System**

On Voter Inspection, the Commission developed and utilized the SMS[4] feedback system for checking registration status and verifying voter's details. This complimented a web-based feature for querying the registration status by a voter who simply enters the ID/Passport number or their name on a log in a window, and the registration details are provided. The voter would then be notified of their details and referred to where they registered to correct any erroneously captured information. These two systems are in addition to the physical inspection exercise required by law, where voters would visit the registration centres to physically inspect their details.

### 2.3.3  VOTER EDUCATION

Voter education is a key pillar of elections without which the voter cannot effectively exercise his/her democratic right. Every EMB must develop a comprehensive voter education programme and a user-friendly curriculum. The dissemination of this curriculum must be target-specific and thus ought to employ various methodologies that suit each target. Use of media platforms such as the television, print media, radio and the Internet was also widely used by the Commission during voter registration exercise and the referendum.

**Website**

The Commission's website[5], which is regularly updated, has been very effective in providing information to the public. The website has been a host of information for all stakeholders in elections, including domestic and international observers. It acts as a resource centre for relevant information such as accreditation requirements, application process and guidelines, relevant electoral laws, relevant publications and snapshots of Commission's activities/events.

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[4] Short Message Service
[5] www.iiec.or.ke

The website has gone beyond the usual "news and events" by introducing interactive modules. There is the "lost and found" feature for Voters' Cards. If someone finds a lost Voter's Card, the person can key in the details on the website including where the Card can be collected by the owner. On the other hand, the owner could query the database of cards found and 'reported' on the website. This feature is under development to include cards that are ready for collection at the Constituency offices.

The website also provided online job applications and tenders for procurement of election materials.

**Social Network Platforms**

The Commission opened a Facebook page during the voter registration exercise to sensitize and mobilize Kenyans to come out and register, especially the youth. This tool proved very useful as it initiated debate on the importance of voting and how to effectively exercise this right for purposes of enhancing democratic governance in the country.

The voter information platforms are key in informing the general public on the importance of voting, how, when or where to vote. They also highlight the common electoral offences that the general public, candidates and their agents ought to avoid or to look out for.

**Factual Films, Puppetry and Comics**

As new strategies, the Commission intends to utilize new innovative technologies in the dissemination of voter education. Information on elections based on the new Constitution and the new systems to be employed by the Commission will be tailored for different targets in a user-friendly manner. Factual films, puppetry and comics are some of the strategies in the pipeline.

**The Electronic Media**

Of all the methodologies employed by IIEC in voter education, media campaigns such as skits, infomercials and public announcements proved to be the most effective, especially the radio programs.

As a key partner in democracy, the media has been instrumental in keeping the public informed on all Commission's activities through both print and electronic media, at times at their own cost. This partnership was made possible through regular interaction and updates from the Commission.

**FM Stations Audio Clip Service**

As indicated, the use of electronic media had a great impact on the quality and intensity of voter education. The dissemination of information was further enhanced by the use of FM Stations Audio Clip Service. There were 300 active FM radio stations in Kenya in 2009. In collecting and disseminating news, these FM stations require audio clips of actual recordings at news events. However it is not practically possible for all of them to send in a reporter to record at every press conference or meeting that IIEC invites them to. The Commission used to email them news items only as text, but now Audio Clips are used instead.

The Commission also records audio clips in broadcast quality using a digital recorder (Marantz P660) and edits on the computer using audio editing software (Adobe Audition, formally Cool Edit). Thereafter an MP3 file is sent by email to all radio stations along with the story in text. FM stations download the actual clips and use them to give credence to their news items. This is interesting and captures the attention of the listeners when the newsmaker comes on live! Such audio clips can also be posted on the website.

**Photo Editing**

When photographs are taken at events, they are edited and transmitted to the print

media in the same way audio is presented to the electronic media. This requires a photo editing software (Photoshop) and a professional camera. High quality photographs could be emailed to media houses as JPEG files (Joint Photographic Experts Group), a global standard for compressing picture without much loss on quality. Currently most photographs captured by the Commission are only for website consumption.

**Press Audio Feed**

The Commission is in the process of acquiring an Audio Feed for press meetings. This is a gadget that connects the microphones to a Central Audio Feed, preferably on a wireless platform. The main microphone will be the Commission's. With this the numerous media houses will no longer need to clutter conference rooms with long cables running between the podium and their machines. They will receive quality digital audio for both radio and TV from the audio feed at their designated venues.

### 2.3.4 REGULATION OF POLITICAL PARTIES AND CANDIDATES

Political parties form part and parcel of key partners of the EMB in any election. As partners, their conduct in election must be regulated and monitored, especially in registration, nominations, campaign financing and during campaigns. Regulation may be directly or indirectly. Different levels of technology can be used to track political party financing and their expenditure.

On campaigns, Kenyan laws provide a clear guideline on how and when to campaign. The Commission and various government agencies are normally on the lookout for any breaches of such laws. After the 2007 post-election violence and its aftermath, the Kenya National Commission on Human Rights developed a media monitoring tool to monitor hate speech or any form of incitement. This simple technology was also applied in subsequent by-elections and during the national constitutional referendum.

The UWIANO Platform, a forum that brings together representations from the civil society, development partners and other bodies, is another initiative that also employed technology in monitoring hate speech during the national referendum.

Private research firms, would on request, monitor media coverage of political parties during the campaign period, especially the state-owned media station to ensure balanced reporting and coverage of their campaigns. They would also, on request, trade these clips as evidence of incitement or hate speech to interested parties.

Such coordinated approaches tremendously reduced incidences of negative campaigns and ultimately regulated the conduct of candidates and groups during by-elections and the national referendum.

Political parties the world over have made surprisingly little and unsophisticated use of the Internet, and Kenya is no exception. The reluctance of modern politicians to engage in spontaneous interaction with the electorate perhaps explains this. Political parties must make deliberate efforts to change this trend by embracing technology to the benefit of their constituencies. A good example is the use of Internet Social Network by the US President Barrack Obama and the Nigerian President Goodluck Jonathan to reach the youth.

In order to enhance transparency in the management of political parties, the Commission is in the process of fully automating the database of political parties and their membership. This will be a link on the Commission's website to the Political Parties Registers. Comprehensive details of such members will be captured in the database to enable easy verification of their status and to enhance transparency in the management of political parties. This system will be useful to the Commission and the general public in the following manner -

1. Ensures unique membership to a political party, where no member belongs to more than one party;
2. Promotes controls in the management of political party finances, as required by law;
3. Generates various reports including annual returns for the parties, sources of funds, and sources of assets income and expenditure reports. It also generates the list of members' report and various statistics of their members;
4. Manages the member per county/province as required by law;
5. Management of members' records; adding, updating, and members' search.

### 2.3.5   TECHNOLOGY FOR VOTING OPERATIONS

Technology is very dynamic and new voting possibilities are developed every so often. With the evolution of electoral systems and the increase of the number of voters, most democracies are experiencing pressure to use appropriate technologies as they become available. This is not only to make sure that all voters, regardless of possible disabilities, can exercise their right to vote but also to ensure that election results are known quickly.

All of these efforts are aimed to facilitate voting, increase voter participation in elections, enhance credibility of the democratic process and the reliability of elections results.

### 2.3.5.1   Designing Ballot Paper & Other Statutory Forms

A ballot paper is the basic tool used by voters to make their choice. It contains basic information such as the choices that the voter ought to pick from and instructions on how to exercise that choice. The design of the ballot paper is dependent on the voting system. It may be a physical paper, manual paper that is machine-readable for purposes of counting or electronic ballot paper for use in E-Voting. Security features on the ballot papers and other statutory forms used in elections, e.g. a water mark, serialization, or ultra-violet light enabled features are

based on some form of technology or another. These enhanced security features greatly minimize or in some cases, totally eliminate fraud cases.

### 2.3.5.2    E-Voting

E-Voting is increasingly becoming common. E-Voting may be done at the polling place (Australia, Belgium, Brazil, India[6]) or using remote technology through the Internet (Canada, Estonia, Germany, Australia). E-Voting could be developed for voting only or may be integrated with voter registration and transmission of results.

Studies have shown that it has taken quite some time for those countries that use E-Voting for the technology to be implemented. It also requires a legal framework to regulate the use of this technology.

Before E-voting is adopted, an EMB must take into account the guiding principles mentioned above, especially the infrastructural capacity of the area and its ability to accommodate such a technology, and security features to be incorporated in the system.

The Commission is currently reviewing the possibility of adopting E-Voting for future elections in the country. One other key consideration that the Commission must look into is whether the E-voting will be done at the polling place or will be remote E-voting. All this is dependent on the existing technologies and infrastructural peculiarities existing in the country. As part of research and development of this technology, the Commission intends to pilot E-voting in 5 constituencies during the next general election in 2012.

Many Constitutions guarantee their citizens with the right to vote. In reality however, voters in the Diaspora and those out of the country during elections are often disenfranchised because of lack of procedures enabling them to exercise that

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[6] Through EVMs (Electronic Voting Machines)

right when outside the country. The new Constitution equally provides this right for all Kenyans. The Commission will also consider the possibility of E-Voting as an option for voting by Kenyans in the Diaspora.

### 2.3.5.3    *Information Call Centres*

As part of its practice, the Commission would set up Information Call Centres at the national and regional offices when there is an impending election. The Call Centres, which use both Internet and mobile telephones or satellite phones where GSM/GPRS is poor, act as an inter-phase between the Headquarters and the officers in the election areas. This facilitates surveillance on the happenings on the ground and assures quick response time to any incidences that may arise.

With enhanced coordination and structured engagements between EMBs and security agencies, mobile phones and radiophones again come in handy where cases of disorder or breaches of the law are quickly reported to the authorities and prompt action taken.

### 2.3.5.4    *Vote Counting, Declaration & Electronic Transmission of Results*

Vote Counting is another key area of voting operations. This is determined by the country's legal framework. The law in Kenya provides that counting be done at the polling station, and tallying at the Constituency Tallying Centre. After counting, the results are declared at the polling centre after which are entered in Form 16A, where the Presiding Officer and agents of the candidates confirm by signing. These results from all the polling stations in a constituency are then physically forwarded to the Constituency Tallying Centre for tallying and declaration. These results are then entered into Form 17. Similarly, the Returning Officer and the agents must confirm the results by signing. These forms (Forms 16A and 17) are again physically forwarded to the National Tallying Centre for national tallying.

In terms of transmission of results, as a good electoral practice, results of an election ought to be declared as soon as possible. Any delays may lead to unnecessary suspicion and tensions. Up to 2007, one of the major contentions in Kenyan elections revolved around vote counting, tallying and declaration of results. To cure this problem, the Commission adopted the technology of electronically transmitting provisional results electronically simultaneously from the polling station to the Constituency and to the National Tallying Centres in real time. These results would also be linked to the website as they streamed in.

The system is a homegrown solution that has been specifically developed for that purpose. It uses a low-cost mobile device that connects over a GSM/GPRS network to a computer or a mobile phone at the Tallying Centre. The phones were configured in such a way that only authorized numbers and devices could communicate through the dedicated Access Point.

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 the Commission's exclusive use.

Of the 18 EVR centres where voters were registered electronically, in addition to the printed Voters Register an Electronic Poll Book was also available to identify voters during elections.

The implementation of election technology is informed by the need to enhance transparency and to bridge the time and space, between when counting is finished and when people get to know the outcome. In Kenyan 2007 general election, delays in getting results created anxiety and affected the credibility of the

outcome. The system has tremendously addressed challenges of delays occasioned by transporting these forms and also security of such forms when en route.

This system has been used in Kenya in nine by-elections and in the national constitutional referendum and further developments are being made to improve it. It has also enabled the Commission 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 a recent by-election in one of the remotest areas of Northern Kenya where GSM/GPRS is poor or non-existent. Their use triggered quick response from the Headquarters, where a helicopter was dispatched to transport election staff and materials that would otherwise have been inaccessible by road due to heavy rains.

Though results transmitted through this system are provisional, the general public has since accepted their accuracy. In most cases, within hours the winner of any election can be known based on these provisional results. In almost all the by-elections and the referendum held by the Commission, the losing partners conceded defeat well in advance of the official results being announced based on this system.

The Commission is now considering the incorporation of digital maps in the system based on electoral boundaries rather than on administrative boundaries, as is currently the case. The outcome of this will be key for electoral planning and navigation.

### 2.3.6   *GENERAL OFFICE AUTOMATION*

The mandate of any EMB is to conduct and manage elections. In doing so, several support services are required to achieve this goal. Various technologies will be utilized to provide such services. Below is a snapshot of some of these facilities.

### 2.3.6.1 Public Finance Management

As it operationalizes its mandate, the Commission is in the process of establishing systems and processes that will effectively achieve its goal. One of the ways to achieve this is through public finance management system. The system is aimed at enhancing transparency, accountability and responsiveness to public expenditure policy priorities.

For purposes of managing public funds, the Commission has since established and successfully implemented the Integrated Financial Management Information System (IFMIS), which keeps track of expenses against budgetary allocations.

The Commission established a comprehensive Payroll system for its permanent staff and a G-Pay application was also used in disbursement of funds for the payment of thousands of temporary voter registration clerks and the election officials during the referendum.

The payroll system greatly reduces the workload of the human resource department by automating the payroll process, allowing it to ensure that payroll functions are completed on time and without errors.

### 2.3.6.2 Integrated Warehousing System

The Commission is also considering the establishment of a Stocktaking and Warehousing System. The system monitors movement and usage of materials, especially election materials that is purchased and used in bulk. The Commission has over 60 stores countrywide and this system will link up all the stores and will be used to inter-phase between the national and the various regional officers and the Headquarters. It also allows the relevant departments to plan on their procurement needs for election materials.

### *2.3.6.3 Human Resource Systems*

The Commission has recently adopted its 7-year Strategic Plan and is now in the process of unpackaging its implementation. As part of this implementation, the Commission has as one of its strategies, the establishment of a more comprehensive Human Resource Management System, which covers all facets of staff welfare and development. The system will computerize all staff records, which will allow not just online job application but also processing of such applications, staff leave processing and management, and staff performance. This system will have a direct link to the payroll system.

The system will allow the Commission to automate many aspects of human resource management, with the dual benefits of reducing the workload of the department as well as increasing its efficiency by standardizing all human resource processes.

### *2.3.6.4 Fleet Management System*

Due to the nature of its work, the Commission has under its control a fleet of vehicles. Some of these are assigned to members of the Commission and staff, while others are in the pool for day-to-day use for Commission's operations. For proper management and coordination of the fleet, regarding their usage, maintenance and fuel consumption, the Commission is in the process of establishing a Fleet Management System.

The system is guaranteed to enhance transparency and efficiency in the management of Commission's fleet, as it will utilize GIS to monitor vehicle financing, vehicle maintenance, vehicle telematics (tracking and diagnostics), driver management, speed management, fuel management and health and safety of the users.

### *2.3.6.5 General Communication & Office Operations*

Other than the use of Microsoft Office and audio-visual applications for its day-to-day operations, the Commission has set up an Internal Mail System for

communication. This has been useful in sharing election and work related information. There are efforts to further automate all documents and files and install a file sharing system for easy access by the staff.

### 2.3.6.6 *Documentation, Preservation & Archiving of Records*

All documents, reports and correspondences of the Commission must be properly recorded and archived. The Commission is putting in place several mechanisms to ensure proper documentation and security of these materials. There are currently efforts to record and automate all processes undertaken and documentation arising out of all operations. This is intended to enhance access and archiving of such material for their safety and documenting best practices for others to learn from.

Some of the mechanisms to be put in place include automating all relevant documents and processes and election information, centralize file sharing, identify an offsite back-up server containing official emails and files, and archive statutory materials such as Voters Register and election results with Kenyan National Archives.

Different technologies will be utilized in documenting and archiving different functional areas, e.g. automating documents and files, audio and video clips, etc. The Commission is yet to invest in Archiving Software. This software creates and manages a computer-based, digital repository of documents and other content. It uses several indexing methods to organize the data, and requires very little office space in the process.

### 2.3.6.7 *Connectivity between Headquarter and the Regional officers*

In order to enhance communication and coordination between the Headquarter and the Regional offices, the Commission configured mobile telephones for all Regional officers and Headquarter officers with a system that allows them to share

emails and use SMS service to the group, all at once. This facility has greatly enhanced coordination and efficiency in managing elections.

The Commission also utilized the SMS Broadcast Service for bulk SMSs. This facility is efficient and effective for both internal and external communication. The system broadcasts SMS to groups of people who have been categorized according to their functions. For internal communication, such categories include Commissioners, Directors, Managers, Regional Elections Coordinators (RECs), Constituency Elections Coordinators (CECs), drivers and departments. External communication would comprise journalists, political parties, development partners and other stakeholders in elections.

The system is web-based and can be accessed by the user anywhere as long as they have an Internet connection. The airtime is provided by any of the Premium Rate Service Providers (PRSP). The Commission is able to send and receive SMSs across all networks on the same platform because of using the PRSP rather than going directly through a mobile phone service provider.

SMS broadcast is fast and a great facility for reminding people about meetings, conveying last minute changes in plans or drawing the attention or alerting users of some event. It was used successfully, for example, during the recruitment of RECs and CECs. With only a single click on a single message, more than 800 shortlisted candidates were informed to check their interview dates on newspapers. Many of them, especially those from remote constituencies, admitted later that without the alerts, they probably would not have made it for the interviews, considering that the announcement came a few days to the interview dates.

SMS technology has many other potential uses in research and other election management operations, or even in disseminating voter education information or peace messages. It is also an invaluable way to brand an organization since the message signs off with the name of the organization.

## 3.0    CONCLUSION

Technology is a very dynamic concept. It is here and useful today, it is obsolete tomorrow. There is therefore a need for any EMB to constantly keep abreast of the new developments and improve relevant technologies accordingly. It is also important to always have a contingency plan in case the technology fails, as there are no guarantees in life. There is no doubt therefore that technology in elections greatly enhances the credibility of and confidence in the electoral process. The use of modern technology therefore should form a critical component for any EMB.

Technology alone however cannot guarantee or confer legitimacy and public confidence in the electoral process. It will only be useful and add value in the electoral process if there is faith and confidence in the integrity of the people who manage the elections and in the integrity of the process that they can employ to conduct and manage those elections. The interplay between technology, people and process cannot therefore be ignored and must be nurtured to ensure synergy between the three.

## BRIEF BIOGRAPHY OF THE AUTHOR: AHMED ISSACK HASSAN

I am a lawyer by training and profession. I am an Advocate of the High Court of Kenya and a Certified Public Secretary (CPS). I have been in private legal practice law since my admission to the Bar in February 1995. I have over 15 years experience in legal practice, mostly in commercial, civil and constitutional law. Until my appointment to the Interim Electoral Commission in May 2009, I was the Managing Partner of the law firm of Messrs Ibrahim, Issack & Co. Advocates based in Nairobi. I graduated from the University of Nairobi in 1992 with a Bachelors degree in law (LLB) before proceeding to the Kenya School of Law for my post-graduate diploma in legal practice.

I served as a Commissioner with the Constitution of Kenya Review Commission between the years 2000 and 2005 when the draft Constitution was defeated in a referendum in November 2005. Thereafter, I served as a legal consultant to the United Nations Political Office for Somalia in the training of Somalia parliamentarians in May 2006. Between June 2007 and May 2009, I served as a legal consultant for UNDP-Somalia for the Somalia Constitution Making Project. I also served as a general legal counsel for the President and the Transitional Federal Government of Somalia.

I have experienced elections management at all levels, from firstly as a Deputy Presiding Officer in the 1992, and as a Deputy Returning Officer in the 1997 Kenya's general elections. Then in 2009, I was appointed the Chairperson of the Interim Independent Electoral Commission (IIEC). This interim Commission was established following the disbanding of the previous electoral body following the disputed presidential elections in 2007 and the resultant post-election violence that followed.

I came to office as the Chairperson of an interim electoral body composed of myself and 8 Commissioners. Since the entire previous electoral body was disbanded (including the 23 Commissioners and 650 members of staff), we were

faced with the daunting task of having to rebuild the institution and establish the Secretariat, while at the same time, execute and perform other functions expected of any elections management body.

The mandate of the Commission was to establish the Secretariat, create a new Voters Roll, conduct by-elections and referendum on a new constitution and generally, reforming the electoral systems and processes to restore the peoples' faith and confidence in the electoral process. Within a short period of 18 months, I presided over the Commission in implementing this heavy mandate culminating in our holding of a successful referendum for the new Constitution for Kenya on 4th August 2010.

I have experienced first-hand the challenges of setting up the institution and managing the electoral process in Kenya. With the support of development partners, the interim electoral body managed to introduce reforms in elections management such as the introduction of electronic voter registration and the electronic transmission of results, which has greatly enhanced the credibility of the Commission. In recognition of my services to the nation as Chairperson of IIEC, I was greatly honoured when the President of the Republic of Kenya awarded me the Order of the **Elder of the Burning Spear** (EBS), First Class, on 12th December 2010.

I have participated in several international, regional and national seminars and symposia on elections, either as a presenter or as a participant. I have also participated in election observations in other countries including Namibia, Ethiopia, Sweden, USA and India.

**END**