

# Conducting a National ICT Survey Towards Measuring the Information Economy: The Kenyan Experience.

Authored by Cleophas Kiio and Rogers Mumo (KNBS)

## 1.0 Introduction

The Government of Kenya (GoK) recognizes the importance of ICT in economic development and has initiated major steps to promote its use. It is a known fact that the ICT sector will contribute significantly to the economic pillar in the Kenya Vision 2030 development blue print. One of the major initiatives is to improve ICT infrastructure so as to bridge the digital divide and lower the cost of communication. The government is also leveling the ground through formulation and implementation of policies and regulations aimed at attracting investments in the sector.

In an effort to assess the usage and access gaps of ICTs in the country, the Kenya National Bureau of Statistics (KNBS) partnered with Communications Commission of Kenya (CCK) which is the national regulatory agency to undertake a comprehensive National ICT Survey. This is the first national ICT survey to be undertaken in Kenya whose findings will inform the formulation of progressive ICT programmes, projects and strategies.

To achieve that goal, the ICT survey was systematically planned and executed from 30<sup>th</sup> May to 20<sup>th</sup> June 2010 after a successful training of field staff.

## 2.0 Justification

Despite the accepted and acclaimed important role of the ICT sector in propelling the country's social economic agenda, there currently exists no coherent, reliable and current ICT access database in the country. Current data and information on access and usage of ICT is limited and largely based on estimates and projections modeled on the overall growth of the sector. It is acknowledged that lack of accurate ICT access data significantly blurs the ICT access challenges and investment opportunities that exist in meeting these challenges. This stifles the true potential of the sector to catalyze economic growth and development of the country by providing a platform for knowledge based economic planning. There is therefore a need to develop and continually update a database on accessibility to ICT services in the country, identify the barriers to access to ICT services and develop strategies to mitigate against these barriers.

### **3.0 Role of ICT in Economic Development**

The Vision 2030, which is country's economic blue print, has identified ICT as a key enabler to the attainment of its goals and aspirations. The thrust of the Vision in the ICT Sector is therefore to transform Kenya into a truly knowledge and information economy by enabling access to quality, affordable and reliable ICT services in the country. An integral step in achieving this objective is to establish the ICT access levels in the country, determine ICT access gaps that need to be served and evaluate barriers to ICT access such as costs, literacy levels and technological barriers. In furtherance of this objective, KNBS and CCK, have committed in their 2008-2013 Strategic Plans to jointly undertake a comprehensive household survey to accurately establish the ICTs penetration levels in the country. The outcome of this study would inform the development strategies to accelerate access to ICT services in the country. This will lay the foundation for harnessing the true potential of the ICT sector in Kenya. In particular, the study will identify the ICT access gaps in the country and flag-out the latent investment potential that exists in meeting those needs and contribute to the development of targeted policy interventions to accelerate ICT access in the country.

Furthermore, the effective roll-out of ICT services in the country is predicated upon reliable and accurate ICT data and information including ICT access demographics, and establishment of access costs. This study therefore provides a platform upon which the process of making Kenya an information and knowledge based economy can formally be launched.

### **4.0 Government policy**

The GOK has embarked on a series of initiatives to revitalize and transform the economy into a modern market-oriented one. The aim is to improve the economic well being of Kenyans by establishing Kenya, in the medium term, as the centre of industrial and financial activities in the region. The sector policies aim to define the framework within which telecommunications and postal services will be provided.

The overall Government objective for the sector is to optimize its contribution to the development of the Kenyan economy as a whole by ensuring the availability of efficient, reliable and affordable communication services throughout the country.

### **5.0 Industry structure**

One of the immediate goals of the telecommunications sector reform was to increase telecommunication supply. The immediate result of the reform has been witnessed in high growth in all areas that were open for competition. Low growth was noted in the areas without competition notably in the provision of fixed line services. Liberalization of the sector witnessed release of enormous resources from the private sector to serve the demand that could not be served under a monopoly environment.

## **6.0 Objectives of the ICT Survey**

The main objective of the study was to collect, collate and analyse data relating to ICT access and usage by various categorizations in Kenya.. The survey captured data and information on critical ICT indicators as defined by the International Telecommunications Union (ITU).

1. Obtain social-economic information with a view of understanding usage patterns of ICT services;
2. Collect, collate and analyze ICT statistics in line with WSIS indicators;
3. Determine the ICT access gaps and identify barriers to ICT access in Kenya.
4. Provide a knowledge base for designing, evaluating and reformulating ICT Policies, programmes and strategies.
5. To monitor and assess the digital divide in the household based society.
6. To provide data for international and regional Benchmarking and for tracking progress towards achieving the MDGs and the WSIS targets by 2015.
7. Develop a database on access and usage of ICT in Kenya.

## **7.0 SURVEY METHODOLOGY**

### **7.1 The Sample Frame**

The fourth National Sample Survey and Evaluation Program (NASSEP IV) from the Kenya National Bureau of Statistics built the sample frame of this household survey. NASSEP IV is a master sampling frame that provides a basis for the implementation of household surveys in Kenya. It stratifies the population into divisions, locations, sub-locations, clusters and households. The master sampling frame is developed after every census and updated after every 5 years to factor in the most recent characteristics of the Kenyan population. NASSEP IV frame has 1,800 clusters spread all over the country, covers all socio-economic classes and hence able to get a suitable and representative sample of the population.

### **7.2 Survey domains**

The survey was distributed into 4 domains, namely:

1. National,
2. Major Urban areas,
3. Other Urban areas, and
4. Rural areas.

### **7.3 Allocation of the sample to domains**

The distribution of the number of households in the survey to the clusters was determined by the sampling fraction within the clusters. The mean size of the clusters in NASSEP IV is 100 households. A 10% sample of the households in each cluster would suffice. However, cluster sizes are not uniformly of size 100 households. Some clusters have sizes falling below 100 while others exceed the mean size of 100

households. To avoid the complications that would arise by strictly adhering to 10% of the cluster, a uniform number of 15 households from each cluster was selected.

Due to the large differences in household composition in the domains, a proportional allocation would have resulted into small un-reliable sample in 'other urban' domain. An alternative power allocation method was used to allocate the sample of 8,295 into the three strata. Further, a square root allocation was used to allocate the sample of 6,075 of rural domain into their respective sub-domains (provinces). The allocation of the sample of 'major urban' and 'other urban' domains were done proportionately to their total number of households.

## 8.0 SURVEY PLANNING

The Survey was comprehensive and involved many agencies and stakeholders. The Bureau served as the implementing agency on behalf of Communication Commission of Kenya (CCK) and as such had a primary role in the planning for the survey and in the analysis and dissemination of the survey results. As the implementing agency, the Bureau took the responsibility for operational matters including planning and conducting fieldwork and processing of collected data. The Bureau also organized for the writing and distribution of reports. Staff from the Bureau oversaw the day-to-day technical operations including recruitment and training of field and data processing staff and the supervision of the office and field operations.

### 8.1 SURVEY QUESTIONNAIRES

Two questionnaires were used in the ICT Survey, a Household questionnaire and an Institutional questionnaire. The **Household questionnaire** was used to collect information on demographic and other indicators, Access and usage of ICT, frequency of usage of ICT, ICT in Education, ownership of ICT equipment and Access and usage of ICT in Business. The **Institutional Questionnaire** collected information pertaining to education institutions found within the clusters providing ICT related programmes. This information will be analyzed to identify gaps and other issues of concern, which need to be addressed in the promotion of ICT provision in the country.

These instruments are based on the model questionnaires developed by International Telecommunication Union (ITU), as well as other resources from our previous surveys and the current information needs for Kenya. During the development of the Instruments, input was sought from a variety of stakeholders and organizations that were expected to use the resulting data.

## **9.0 TRAINING OF FIELD PERSONNEL**

To undertake the Survey, different categories of personnel were recruited and trained. A total of seven trainers facilitated the training. These included 1 Lead Coordinator, 5 Regional Coordinators, 17 Supervisors and 68 Research Assistants (RAs). Discussions were conducted in smaller groups and tests were administered to RAs to assess the understanding of the data collection instruments.

All survey personnel received training in the standard survey methodology and data collection procedures at the workshop. Different teaching methodologies were applied during the training. These included lectures, mock interviews, demonstrations and mock interviews.

The RAs were taken through the various survey techniques which included among others; how to interview and record different types of responses, applying skip patterns, canceling wrong answers, conducting interviews and survey concepts. Reviews were done every morning to recap the previous day's proceedings. At the end of the training period all RAs gathered sufficient knowledge and skills to undertake the ICT Survey.

## **10.0 PILOT SURVEY**

After the training a one day pilot test was conducted on 4 clusters to test the survey instruments. As such the instruments were piloted on 4 clusters (2 Rural and 2 Urban). The RAs were divided into 4 groups respectively in which each interviewer (RA) was assigned a household. The selection of the pilot clusters was based on whether the clusters were urban or rural to test field logistics.

The four groups presented their findings from the field and issues that posed challenges to be addressed. Some of the challenges that the RAs faced in the pilot were:-

- Non availability of respondents in the households visited.
- Language barrier
- Rough terrain

At least each RA managed to administer a household in the selected clusters. The average time that the RAs reported to have completed a questionnaire was 50 minutes against the estimated 30 minutes during the planning period.

## **11.0 FIELDWORK ORGANISATION**

Seventeen (17) field teams were constituted based on the various regions of the country. A team comprised of 4 research assistants, a driver and headed by one Supervisor. The allocation of teams to regions was based on their ability to understand local languages and accessibility. The supervisors were answerable to the Lead Coordinator through the Regional Coordinators.

## **12.0 DATA COLLECTION**

Data collection took place between 30<sup>th</sup> May and 21<sup>st</sup> June 2010. Research Assistants visited sampled households using the questionnaires.

To aid in identification and access to the household letters of introduction and identification badges were provided to the RAs. Approximately the enumerators took between 40-50 minutes to administer the questionnaire depending on the size of the household. The RAs edited their filled questionnaires at the end of each day's work before handing over to the supervisor. In order to ascertain the quality of the data collected supervisors checked the questionnaires and validated the data at the end of each day by randomly sampling 20% of the filled questionnaires. Upon completion of the survey the regional coordinators conducted a quality control check of all questionnaires in readiness for data entry.

Most of the teams managed to collect the data within the stipulated timeframe except teams from Upper Eastern, Nairobi and Nyanza Provinces where data collection was completed a week later owing to various challenges that were encountered. All in all; on average the data collection exercise was successful.

## **13.0 DATA EDITING AND PROCESSING**

Initial manual editing was done in the field by the RAs and the supervisors before the questionnaires were packed and brought to KNBS for data capture. At Herufi House, an office editing team was assembled to do office editing.

Data will be captured using a CsPro based Data Capture system developed by KNBS programmers. All questionnaires will be double entered to ensure data quality. Erroneous entries and potential outliers will be verified and corrected appropriately.

## **14.0 CHALLENGES**

In general work has gone on smoothly albeit with a few challenges.

- Long distances between the clusters and rough terrain.
- Some areas were inaccessible due to rains.
- Some respondents were not available hence several call backs.
- Language barriers in some communities.
- Vehicle breakdowns were reported in some areas.

## **15.0 WAY FORWARD**

The way forward is to process the data, publish reports and disseminate the outcome. Having done the household based survey; the focus will be conduct the Business and Institutional based ICT surveys with which it will be possible to measure the information economy. Measures to continuously monitor developments in the ICT sectors will need to be instituted. To undertake these can be challenging without

adequate funding thus planning for these surveys will have to be coupled with reliable fundraising strategies.