KITUI COUNTY GOVERNMENT

ICT ROADMAP
(2015-2020)

November 2015
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<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>EAC</td>
<td>East Africa Community</td>
</tr>
<tr>
<td>EPZ</td>
<td>Export Processing Zones</td>
</tr>
<tr>
<td>ERP</td>
<td>Enterprise Resource Planning</td>
</tr>
<tr>
<td>HQs</td>
<td>Headquarters</td>
</tr>
<tr>
<td>ICANN</td>
<td>Integrated Corporation for Assigned Names and Numbers</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communications Technology</td>
</tr>
<tr>
<td>IFMIS</td>
<td>Integrated Finance Management Information System</td>
</tr>
<tr>
<td>IPC</td>
<td>Investment Promotion Centre</td>
</tr>
<tr>
<td>IPPD</td>
<td>Integrated Personnel and Payroll Database</td>
</tr>
<tr>
<td>ITU</td>
<td>International Telecommunications Union</td>
</tr>
<tr>
<td>JTL</td>
<td>Jamii Telkom Limited</td>
</tr>
<tr>
<td>KIXP</td>
<td>Kenya Internet Exchange Point</td>
</tr>
<tr>
<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
</tr>
<tr>
<td>LAIFOMS</td>
<td>Local Authority Integrated Financial Operations Management System</td>
</tr>
<tr>
<td>LAN</td>
<td>Local Area Network</td>
</tr>
<tr>
<td>NOFBI</td>
<td>National Optical Fibre Backbone Infrastructure</td>
</tr>
<tr>
<td>PABX</td>
<td>Private Automated Branch Exchange</td>
</tr>
<tr>
<td>SLA</td>
<td>Service Level Agreement</td>
</tr>
<tr>
<td>SWOT</td>
<td>Strength Weakness Opportunity Threat</td>
</tr>
<tr>
<td>VSAT</td>
<td>Very Small Aperture Terminal</td>
</tr>
<tr>
<td>WAN</td>
<td>Wide Area Network</td>
</tr>
</tbody>
</table>
ACKNOWLEDGEMENT

While submitting the ICT Road Map, IPA Consultants take this opportunity to thank all stakeholders for the cooperation extended, timely inputs provided and hospitality extended, during the various stages of our assignment. We would specifically like to thank the ICT Director, the Chief Officers and Directors of various Executive Committees, the staff of the ICT department and all stakeholders in Kitui County for making this a reality. We would like to acknowledge that the successful completion of our assignment is largely as a result of the stakeholder’s level of commitment and involvement in understanding the purpose and importance of the assignment.

We are confident that the future of Policy formulation in Kitui County is in the hands of stakeholders who possess a sound understanding of the way forward. Most important is the clarity and unanimity that exists between the stakeholders, in recognizing the common objectives from a central viewpoint, that constitutes the prerequisite for success in achieving ICT Road Map objectives. We look forward to the opportunity of future interaction and guidance, if any is required from us by the stakeholders, as they move forward to undertake initiatives or realign projects already in progress, with the objectives of an integrated environment as per the National ICT master plan.

We are confident that Kitui County is moving ahead with a clear vision and towards attaining objectives that will not only strengthen the functioning and efficiency of each stakeholder but will further enable the stakeholders to interplay effectively to position in attaining a unique and contributing position in the competitive regional environment, wider perspectives in facilitation and important long term programmes.

IPA
Mr. John Liboyi
MESSAGE FROM THE GOVERNOR

Information and Communication Technology (ICT) is a key enabler in allowing Governments improve service delivery, reduce the cost of service delivery and increase the reach of Government services.

The ICT Roadmap for the Kitui County has been jointly developed by the people of Kitui in consultation with Information Professional Africa (IPA) and Information and Communication Technology Authority (ICTA) of the Kenya Government, through a consultative process. The project is funded by the World Bank.

The principles for this Roadmap is to provide a framework on how ICT services will be designed, sourced, delivered, and how digital services can support ways of working where the customer experiences real benefits – convenience of access to government services such as online and mobile access to government portals, improved experiences in customer care such as elimination of queues in government offices and extension of government services to underserved communities and rural areas.

This Roadmap is based on the findings by IPA of the Current State of ICT in Kitui County. IPA collected data using interviews and questionnaires and applied the Control Objectives for Information and Related Technology (COBIT) framework standard to determine how Kitui County currently acquires and uses ICT. As it will be demonstrated later, the County scores below 1 in Strategy and Governance, Applications and Security on COBIT elements ranked from levels 0 through 5. To move to level 1 on a given COBIT element, this Roadmap proposes that the County should address the above 3 COBIT elements.

This Roadmap asserts that the growth of ICT in Kitui county will be hinged on ICT infrastructure development, development of ICT policy and ICT specific legislation, staff training, COBIT implementation and implementation of flagship ICT projects as described and prioritized in this document.

To successfully implement the projects and systems proposed in this Roadmap, the county should ensure that there is appropriate policy and legislation, ICT governance and well trained County manpower.

To fund the proposed projects, the county should adopt one or more of the following funding strategies:

1. Use Municipal Bonds Facilities. This will require legislation from the central Government. Counties should lobby for this facility through the Council of Governors.

2. Shared Services. There is need to fundraise regionally and pool resources for purposes of implementation of shared services. Two or more counties can get together implement systems that are cross cutting and of value to all the regions concerned.

1) COBIT, Control Objectives for Information & Related Technologies, by www.isaca.org
3. Paradigm Shift. There is need for a paradigm shift from owning infrastructure and capital intensive equipment to leasing out arrangements or a move to cloud services. Cloud infrastructure and use of open source software can help the County access infrastructure, services and skills at low costs using models such as pay as you go.

The Projects adopted in this Roadmap are expected to be implemented in the five year period staring in January 2016 (or more appropriately June 2016 at the start of the County financial year) to 2020. The Roadmap provides budget estimates for the projects that will give the county a basic guideline for the purpose of budgeting. However, it should be clear that these are estimates which may be different from what vendors provide. Variation in costs may be as a result of:

1. Licenses. The more the number of users, the higher the license fees
2. Service Level Agreements and support
3. Vendor selection and procurement process (vested interest). This is a major problem. The procurement committee and the ICT Governance committee must address this through such mechanisms as policy, change of culture and even intimidation to ensure that procured systems offer value for money to the county.
4. Technology- adopting bespoke technology may be expensive say compared to off the shelf. Cloud solutions may also be cheaper. Open source, if well harnessed, is by far cheaper compared to proprietary technology.

It is my hope that this ICT Roadmap will deliver value to the County Government of Kitui

H.E. Dr. Julius Malombe

Governor, Kitui County
1: INTRODUCTION AND BACKGROUND INFORMATION

This section provides a brief background about Kitui County. The section covers the County strategic direction, county social economic data and county SWOT Analysis.

1.1 County Strategic Direction

1.1.1 Vision and Mission

- Vision: To be a prosperous county with vibrant rural and urban economies whose people enjoy a high quality of life
- Mission: To provide effective county services and an enabling environment for inclusive and sustainable socio-economic development and improved livelihoods for all

To achieve its mission and vision, the county planning process is set out by the CIDP, Vision 2030, Millennium Development Goals (MDGs). The CIDP identifies a number of challenges facing the county such as food insecurity, water scarcity, healthcare and low education standards.

The CIDP cites Information and Communication Technologies (ICT) as an enabler of Government services and a tool that can spur growth and innovation. Other areas of concern for the County include electricity and power connectivity, unexploited mineral wealth, untapped tourism potential, inadequate frameworks for nurturing talents, skills and innovation, and poorly planned and lit urban centers.

1.1.2 County Objectives

The County's objective is to focus resources to eradicate extreme poverty and hunger among the citizens. Some of the objectives of the county are to:

- Achieve Universal Primary Education
- Promote Gender Equity and Empower Women
- Reduce Child Mortality
- Improve Maternal Health
- Combat HIV/AIDS, Malaria and Other Diseases
- Ensure Environmental Sustainability
- Improve infrastructure and marketing of agricultural produce

To address the above challenges and offer meaningful development to its citizens, the County Government believes that using ICT can improve service delivery, empower farmers to access markets, create jobs for the youth and mainstream the disabled. Other areas where investments in ICT can add value include Governance and promotion of public participation.

1.2 County Profile

1.2.1 Governance Structure
The County Government of Kitui, like all other 46 Counties in Kenya is headed by an executive Governor and a Deputy Governor. Entities of the County Government include the County Executive, County Public Service Board and the County Assembly.

The County Government is headed by the Governor (and deputy Governor), the County Executive Committee and the County Secretary. This comprises the cabinet. The Governor guides the management team through setting of, and overseeing, the strategic direction of the County.

The County has ten Departments each headed by County Executive Committee Member (CECM). Below CECMs are Chief Officers, Deputy Directors and Assistant Directors. These Departments headed by a CECM reflect the County’s focal areas.

1.2.2 Strategic Focus Areas and Plans

Kitui County has a number of focal areas and most of the County ministries and departments have been designed along these focal areas. The departments are:

- Finance and Economic Planning
- Agriculture, Water and Irrigation
- Basic Education, Training and Skills Development
- Lands, Infrastructure and Urban Development
- Health and Sanitation
- Trade, Industry, IT and Cooperatives
- Culture, Youth, Sports and Social Services
- Environment, Energy and Minerals Investments Development
- Natural Resources and Tourism
- Administration and Coordination of County Affairs

Each of these departments has its specific mandate and objectives and is required to develop their strategic plans based on the County CIDP. Most of the departments are in the process of developing their strategic plans.

1.2.3 County Socio-Economic Data

Kitui County is one of the 47 counties in Kenya. It is located about 160km east of Nairobi City. The county is the sixth largest county in the country and covers an approximate area of 30,496.4 km² including 6,369 km² occupied by Tsavo East National park.

The County shares its borders with seven other counties: Machakos and Makueni Counties to the West, Tana River County to the East and South-East, Taita Taveta County to the South, Embu to the North-West, and Tharaka-Nithi and Meru counties to the North. It is located between latitudes 0°10' and 3°0' South and longitudes 37°50' and 39°0' East.

The altitude of Kitui county ranges between 400m and 1800m above sea level. The central part of the county is characterized by hilly ridges separated by wide low lying areas and has slightly lower elevation of between 600m and 900m above sea level to the eastern side of the County. To the western side of the County, the main relief feature is the Yatta Plateau, which stretches from the south of the County and lies between Rivers Athi and Tiva. The plateau is characterized by plain-wide shallow spaced valleys.
The County of Kitui is endowed with various natural resources such as forests, permanent and seasonal rivers, rocks, wildlife among others. Coal in Mui Basin is yet to be exploited.

The County’s population was 1,012,709 according to the population and household census report of 2009. The population growth rate of the County at 2.1% is slightly lower than the national average of 2.6%. The County average population density is 44 persons per km² with literacy Level 63.2% while school enrollment stands at 72.3%. Population density is 44 persons per km² with literacy Level at 63.2% while school enrollment stands at 72.3%.

1.3 County SWOT Analysis

Implementing the projects and plans identified by both the CIDP, sector specific plans and this ICT Roadmap requires a clear understanding of the County strengths, weaknesses, opportunities and threats. A study undertaken by an organization to identify its internal strengths and weaknesses, as well as its external opportunities and threats is called SWOT Analysis.

Table 1: County SWOT Analysis

1.4 County Monitoring and Evaluation Systems

The County Government runs over 500 different projects and programmes every year in diverse areas such as Water Management, Irrigation, infrastructure, Information Technology, staff training, voter education and more. All these projects require effective monitoring and evaluation so as to help the County understand if it is meeting its objectives or getting value for money.

The Government is aware that Sound Monitoring and Evaluation systems are critical in helping it understand to what extent...
extent they are have achieved what they intended to achieve.

So far, the monitoring and evaluation department is doing its best to monitor and report on project progress. However, the department lacks adequate systems and resources to monitor all programs, leaving the M&E processes to parent departments.

Ideally the County needs an independent monitoring and evaluation department well equipped with infrastructure, automated tools and skilled staff that can:

1. Monitor and report on all projects initiated by the County.
2. Develop simple stories and visualizations about the impact of development projects
3. Report on interventions and actions when projects are not achieving their goals

1.5 County Stakeholders Analysis

To successfully implement projects identified by the CIDP and the ICT Roadmap, a clear understanding of County stakeholders and their expectations is essential. The purpose of Stake-holder analysis is to assess which individuals or groups are likely to support, resist, or remain neutral during the project implementation. The process looks at why the stakeholders respond the way they do and how they may be influenced to ensure a response most favourable to achieving project goals.

To rate stakeholders, commitment can be rated by how favourable do they currently view the project and to what extent they might support, resist or remain neutral to the project a scale of 1-5 is assigned to each stakeholder.

- 1= negatively, actively or subversively working against
- 2= moderately negative, passive resistance
- 3= Neutral
- 4= moderately positive, passive support
- 5= Active support, “All in”

Table 2 below shows stakeholder matrix for Kitui County from an ICT project management perspective. This table is by no means complete. It is provided here as a guidance for project stakeholder analysis.

---

## Table 2: County Stakeholder Analysis

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>Strategic Importance</th>
<th>Current Commitment</th>
<th>Involvement</th>
<th>Goals/Needs</th>
</tr>
</thead>
</table>
| ICT governance committee         | Defines and prioritizes use of resources to drive transformation                                                                                                                                                    | Not in place.      | Decision making  | Define key performance measures  
|                                  |                                                                                                                                                                                                                         |                     |                  | Guide deployment of efforts  
|                                  |                                                                                                                                                                                                                         |                     |                  | Implement strategy  
|                                  |                                                                                                                                                                                                                         |                     |                  | Report on successes                                                   |
| Leadership                       | Provides resource support and endorsement for transformational leadership                                                                                                                                              | 5 – The department of ICT has appointed a Governance Committee. The ICT group including the minister has high commitment to ICT. The County Governor is passionate about ICT. | Support/ Endorsement | Overview of key activities/service issues  
|                                  |                                                                                                                                                                                                                         |                     |                  | Overview of performance measures                                         |
| Staff                            | Streamline process and increase capacity; improve service delivery                                                                                                                                                   | 4: Lower staff numbers | Feedback       | Demonstrate expected behaviours  
|                                  |                                                                                                                                                                                                                         |                     |                  | Provide feedback on leading practices and experiences                      |
| Assembly                         | Provides checks and balances on excesses of the executive and legislate on projects issues                                                                                                                                 | 5 – ICT Committee in place. | Oversight      | Overview of project implementation in regard to policies and legislation    |
| Citizens                         | Provide feedback on service delivery systems and citizen satisfaction                                                                                                                                                 | 2– Challenges in ICT literacy hinder capacity | Public participation | Understanding of the project and its needs/effects of implementation          |
2. CURRENT STATE

This section describes the current state of ICT in Kitui County. It describes the ICT structure, ICT strategic direction, SWOT analysis and the current technical state. The section concludes by introducing an ICT maturity measuring tool called COBIT.

Overall, the County’s investments in ICT is growing, albeit slowly. Infrastructure, monitoring and evaluation and staff capability are the main ICT challenges facing the County.

2.1 Current state of ICT in the County

2.1.1 County ICT Structure

The County ICT Department is under the Department of Trade, Industry, IT and Cooperatives. There is a County Minister in charge of ICT, a chief officer in charge of ICT, a Deputy Director in charge of ICT, Assistant Directors and ICT Officers. The head of ICT is a Chief Officer (Non ICT Professional). Technically there are three ICT Assistant Directors in charge of Networks & Infrastructure, Systems & Applications, ICT Development & investment respectively.

2.1.2 Current ICT Direction

The ICT Department's vision is to provide the County customers (Government Departments, Citizens and stakeholders) with a service that:

- Enables the customers to operate efficiently, effectively and innovatively
- Responds to the needs of a diverse range of users (both Technical and non-technical)
- Exploits technology to its full potential
- Benchmarks best practice for business process review, promotes and uses Lean and efficient processes to improve effectiveness and drive down cost
- Is cost effective and provides value for money

2.1.3 County ICT SWOT Analysis

As noted earlier, SWOT analysis helps in understanding strengths, weaknesses, threats and opportunities. Table 3 below provides the Kitui County ICT SWOT analysis.

<table>
<thead>
<tr>
<th>County ICT Strengths</th>
<th>County ICT Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership and management that supports ICT initiatives</td>
<td>County offices are located in various buildings and locations in Kitui making the development of connectivity infrastructure costly.</td>
</tr>
<tr>
<td>Dedicated ICT staff</td>
<td>The level of ICT knowledge of County staff is low making it difficult for the county to optimally benefit from ICT investment</td>
</tr>
<tr>
<td>A fair County Topology for laying of ICT infrastructure in a generally low lying landscape.</td>
<td>Existing resources have not been properly used and shared</td>
</tr>
<tr>
<td></td>
<td>No strategic plan. So the ICT investment and its benefits in the long term are not known or appreciated.</td>
</tr>
</tbody>
</table>

Table 3: County ICT SWOT Analysis
2.1.4 Current County Integration to National ICT Master Plan

The Kenya National ICT master plan is a document that defines an enabling policy, legal and regulatory framework that aims at enabling e-government services that are simple to use and convenient for citizens and businesses and that increase the productivity, efficiency and effectiveness of critical economic sectors. It hopes to stimulate the setup and growth of ICT-related businesses to enhance employment creation, enable and scale up ICT innovation and develop a dynamic and robust ICT sector that will enhance socio-economic growth in Kenya.

One of the flagship projects is the National Optic Fiber Backbone Infrastructure (NOFBI) that is connecting all towns in Kenya to enable seamless connectivity. Already the cable is Kitui Town but is it yet to be connected to County Government offices.

The County Government is aware of the potential of the Fiber optic cable to offer staff and citizens access to high speed internet. As part of the County ICT infrastructure and connectivity project, the County plans to connect all offices to a fiber optic network.

Another National Master plan project is the connection of all National and County Government to IFMIS, an Integrated Financial Management Information System that promotes openness and accountability in the use of public money. Currently, the county uses IFMIS mainly for payment and IPPD for payroll.

2.1.5 Current State of ICT in the County

The state of ICT in Kitui County remains minimal. However, in the last 2 years, the County government has invested in ICT projects mostly in ICT infrastructure. Some of the projects that the County has initiated include:

- The county data center has been completed and is waiting commissioning. Services like Internet, website, LAIFOMS, Active directory, county mail systems, Bulky SMS have been earmarked for migration to the data center. More services such as Document management Systems, Asset management, fleet management, Revenue Collection, SMS are planned.
- The County has an operational website and a bulky SMS Service
- County HQ LAN Covering nine key blocks has been completed. The County needs to network the whole count to connect sub count offices. More importantly, since the Fiber cable infrastructure is in Kitui Town, investments in last mile connections are needed so that staff can access high speed internet to power communication and staff collaboration
- A fair percentage of staff has access to Internet and basic infrastructure such as a desktop or a laptop.
- Fourteen (14) ICT Centres have been Constructed and Six (6) ICT Centres have been Equipped. The objective of this project is to increase ICT literacy our Citizens with a view of creating employment opportunities and increase the Competitive ness of the county citizens in the labour market
- The county has acquired 171 laptops, 54 desktops, 54 UPS, 7 heavy duty copiers for various departments
- The county has hired ICT staff at various levels
- The County needs a computer for each staff at the operational level and above.
2.1.6 Current Technical State of ICT in the County

ICT infrastructure, systems and even skills in the County is minimal. Only a few departments have access to a Local Area Network. The ratio of computers to staff is as low as 1 to 7, although the County is able to buy computers annually.

Software in use in the County is LAIFOMs, IFMIS, IPPD and MS Office for secretarial work. Some staff has access to email but this is yet to become ubiquitous since some staff use personal emails. We need to develop policies that define the benefits and punishment for not using official government email accounts for official communication.

The ICT department offers support to all departments from a central place. Structures for ICT support in sub counties are being established.
Table 4 below provides a summary of the County Technical state.

### Table 4: County Technical State

<table>
<thead>
<tr>
<th>Feature</th>
<th>The Executive</th>
<th>Public Service Board</th>
<th>County Assembly</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT Governance</td>
<td>ICT Governance structure in place</td>
<td>Shared ICT Officers with Executive</td>
<td>ICT Unit Established Three ICT Officers</td>
</tr>
<tr>
<td>Standards &amp; Operating Procedures</td>
<td>ICT Strategic Plan in progress</td>
<td>Will Share the county ICT Strategic Plan in progress</td>
<td>Strategic plan for the assembly</td>
</tr>
<tr>
<td></td>
<td>Draft ICT Policy in place</td>
<td>Shares ICT Policy with executive</td>
<td>Will Share the county ICT Strategic Plan in progress</td>
</tr>
<tr>
<td>Connectivity</td>
<td>LAN Exists at Headquarters and at a number of ministries No LAN in Sub Counties</td>
<td>LAN is in place</td>
<td>LAN is in place</td>
</tr>
<tr>
<td></td>
<td>WAN None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Internet Access</td>
<td>Email Official county email in place Use of personal emails by some staff</td>
<td>Use official emails</td>
<td>No official email system Use of personal mails</td>
</tr>
<tr>
<td></td>
<td>Website Available at <a href="http://www.kitui.go.ke">www.kitui.go.ke</a> Hosts email and a few online services</td>
<td>Share website with the executive</td>
<td>Has a website at <a href="http://www.kituicountyassembly.org">www.kituicountyassembly.org</a></td>
</tr>
<tr>
<td></td>
<td>Network equipment Available as part of the Local Area Network and Data Center</td>
<td>Basic Local Area Network equipment</td>
<td>Available as part of the Local Area Network</td>
</tr>
<tr>
<td>ICT Literacy</td>
<td>Fair ICT knowledge despite high ICT awareness among staff</td>
<td>Fair ICT knowledge</td>
<td>Fair ICT knowledge</td>
</tr>
<tr>
<td>Enterprise Applications</td>
<td>County integrated MIS to be implemented in phases Revenue system underway</td>
<td>TO share MIS with executive</td>
<td>No corporate database management System (DBMS)</td>
</tr>
<tr>
<td>Hardware Equipment</td>
<td>Desktops</td>
<td>Desktops</td>
<td>Desktops</td>
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<tr>
<td></td>
<td>Laptops</td>
<td>Laptops</td>
<td>Laptops</td>
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<tr>
<td></td>
<td>Printers</td>
<td>Printers</td>
<td>Printers</td>
</tr>
<tr>
<td></td>
<td>Among others</td>
<td>Among others</td>
<td>Among others</td>
</tr>
<tr>
<td>ICT Capacity</td>
<td>adequate ICT technical staff</td>
<td>adequate ICT technical staff</td>
<td>adequate ICT technical staff</td>
</tr>
<tr>
<td>Data Centre facility</td>
<td>Completed awaiting commissioning</td>
<td>Shares data centre with executive</td>
<td>A server room is in place</td>
</tr>
<tr>
<td>Application Portfolio</td>
<td>IFMIS, No M&amp;E Automation IPPD</td>
<td>Share same applications with Executive</td>
<td>Share same applications with Executive</td>
</tr>
</tbody>
</table>
2.2 Current state of county maturity – COBIT

ICTs can be used as a tool to facilitate efficient delivery of services, improve accountability and transparency while increasing public participation in the political processes. However, successful implementation of ICTs in county governments faces many challenges and requires legislative, budgetary, and technical coordination as well as political support without which the ICT opportunities will remain unrealized.

As a way of guiding the County through the above ICT challenges, Control Objectives for Information and Related Technology (COBIT) has been proposed as a standard for modelling processes of ICT maturity in the County.

2.2.1 The ICT Governance & Management Framework

COBIT is a set of best practices for Information Technology management developed by Information Systems Audit & Control Association (ISACA) and IT Governance Institute in 1996. ISACA develops and maintains the internationally recognized COBIT framework, helping IT professionals and enterprise leaders fulfil their IT Governance responsibilities while delivering value to the business. The latest ISACA’s globally accepted framework COBIT 5 is aimed to provide an end-to-end business view of the governance of enterprise IT that reflects the central role of IT in creating value for enterprises.

Although majority of COBIT adopters are private Enterprises, a number of Governments, including the Government of Dubai, U.S. Department of Veterans Affairs, European Parliament, Ontario Pension Board in Canada and Bahrain Civil Service Bureau have also adopted COBIT. In Africa, COBIT is used in Nigeria and South Africa.

The COBIT Framework consists of linkages between organizational and ICT objectives while providing a mechanism for continuous measurement and maturity of ICT processes. These processes were customised by the Consultant to seven elements as listed below:

1. Strategy & Governance (7 Processes)
2. Financial Management (3 Processes)
3. Personnel & Resource Management (3 Processes)
4. Service Planning & Architecture (6 Processes)
5. Infrastructure & Operations (6 Processes)
6. Security (6 Processes)
7. Applications (3 Processes)

Table 5 below shows the gap analysis for the seven elements of the ICT Governance & Management Framework with respect to the desired state from the COBIT modelling.

Table 5: Gap Analysis
As stated before, the process matures from current state to desired state with one level step function. Within each level, the maturity progression can be described as Not Achieved, Partially Achieved, Largely Achieved and Fully Achieved. In our case we need all the processes to be fully achieved for the desired state.

2.3 Financial Policy and Strategy for ICT

In Kitui County the ICT Budget was 78.4 KES million representing 1.62% of the total budget. Of this KES 55 (70%) was spent on administration, KES 20.4 (26%) on hardware and infrastructure, KES 3 (4%) on software. The county targets should target to increase their spending on ICT to 5% of the total budget in line with the national broadband strategy. This funding will be targeted at infrastructure, software, consultancy and training needed to implement the Roadmap.
3. DESIRED END STATE

3.1 Desired End State Description

The ICT Department’s vision is to provide customers (Government Departments, Citizens and stakeholders) with a service that:

- Enables the customers to operate efficiently, effectively and innovatively;
- Responds to the needs of a diverse range of users (both Technical and non-technical);
- Exploits technology to its full potential;
- Benchmarks best practice for business process reviews, promotes and uses lean and efficient processes for effectiveness and drive down cost;
- Is cost effective and provides value for money.

The ICT Department’s core values in delivering this vision are encompassed in the word “Open” which in itself means that the County aims to “… manage ICT as an asset that can unlock value, innovativeness and best practices. The open value describes a future in which both the County Government’s belief in the people, and the way in which the government interacts with – citizens is value based and open by default”.

The County desired ICT states have been categorized based on functions performed by the County. Broadly, the functions are grouped into four (4) themes, i.e. Connected county government, Citizen satisfaction, Connected citizens and Connected legislator. A fifth theme is COBIT implementation.

Connected County theme looks at ICT as an enabler of County internal efficiencies to enable decision making process more effective, improve communication, increase staff capability to deliver systems and improve on project management and governance process effective.

The Connected Citizens theme considers delivery of E-government Services and use of ICT as a driver of business and citizen engagement with government. The objective for Kitui County is to develop policies and strategies that promote innovation to enable County Citizens start online business, create employment and enable the county government to earn revenue.

The Citizen Satisfaction theme considers delivery of E-government Services and use of ICT as a driver of County ministries and departments, public service board, up to sub-County and ward level. At department level, the theme looks at staff capability and systems that can enhance service delivery.

Extending services using self-care and customer service portals can greatly enhance the reach and breadth of government services, releasing staff from routine day to day task so that efforts can be concentrated on innovation.

The Connected legislator looks at ICT as an enabler of democracy and public participation in governance.

Based on the above five themes, this Roadmap proposes projects that enable the County Government to meet its mandate of efficient service delivery.

3.2 Gaps Analysis and Closure Strategy

Table 6 below provides a summary of gaps identified in Kitui County, a brief description of the gap and a proposed closure strategy. These gaps are derived from COBIT.
<table>
<thead>
<tr>
<th>FEATURE / Areas</th>
<th>CURRENT STATE</th>
<th>DESIRED STATE</th>
<th>Closure Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Status</td>
<td>Ramifications</td>
<td></td>
</tr>
<tr>
<td>ICT Governance : Connected County Government</td>
<td>ICT Governance structure could be improvement</td>
<td>Fairly coordinated decisions</td>
<td>A well-established ICT Governance Model in place</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Delivery: Citizen Satisfaction</td>
<td>Manual paper based systems used for service delivery</td>
<td>High Cost Slow services</td>
<td>Digital services available on multiple devices Low cost service</td>
</tr>
<tr>
<td>Staff Capability: Connected County Government, Citizen Satisfaction</td>
<td>Low ICT skills among County Staff Low staff to ICT assets ratios</td>
<td>Lower project delivery capability Poor public services</td>
<td>An empowered, equipped, motivated and trained county workforce</td>
</tr>
<tr>
<td>Democracy and Public Participation: Connected County Government, Connected legislator</td>
<td>Use of manual public participation tools</td>
<td>Public participation is not very effective given that same groups of people keep contributing. Not easy to identify people / experts who add real value</td>
<td>Effective e-Participation</td>
</tr>
<tr>
<td>Standards &amp; Operating Procedures</td>
<td>ICT Strategic Plan development in progress</td>
<td>Difficulties in planning for ICT investments ICT projects cannot be aligned to County development Goals &amp; Objectives</td>
<td>A well-developed ICT Strategic plan in place</td>
</tr>
<tr>
<td>Connectivity</td>
<td>Draft ICT Policy in place</td>
<td>Fairly coordinated procedures/operations</td>
<td>Well-developed ICT policy and procedures in place</td>
</tr>
<tr>
<td>LAN</td>
<td>Partly Exists at the county Headquarters No LANS in Sub Counties</td>
<td>No effective &amp; efficient sharing of ICT Services</td>
<td>LAN in all county government Offices and Sub Counties</td>
</tr>
<tr>
<td>WAN</td>
<td>None</td>
<td>No intranet No efficient sharing of ICT Services between HQs, sub-counties and wards</td>
<td>WAN based connectivity</td>
</tr>
</tbody>
</table>

Table 6: County Gap Analysis
<table>
<thead>
<tr>
<th>FEATURE / Areas</th>
<th>CURRENT STATE</th>
<th>RAMIFICATIONS</th>
<th>DESIRED STATE</th>
<th>Closure Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Internet Access</strong></td>
<td>Use of official mails though personal emails also in use Low Internet Connection Speeds</td>
<td>Non compromised and Compromised communication security of official information Access to information is slow</td>
<td>Official email in use Used Fiber Cable to access high speed Internet</td>
<td>Develop a communication policy</td>
</tr>
<tr>
<td><strong>Website</strong></td>
<td>Informational Available but not extensively used for online Government services</td>
<td>No effective public Service delivery</td>
<td>Interactive, Transactional, seamless website operational Taking all government services online</td>
<td></td>
</tr>
<tr>
<td><strong>Network equipment</strong></td>
<td>LAN (Cabinets, Routers, switches etc) in place in critical Departments only WIFI exists VPN used for accessing IFMIS, IPPD No WAN</td>
<td>Fairly shared ICT Services</td>
<td>Routers, switches, firewall, etc. WAN Wi-Fi VPNs</td>
<td>Network infrastructure development Funding</td>
</tr>
<tr>
<td><strong>ICT Literacy</strong></td>
<td>Low ICT literacy levels</td>
<td>Low productivity among staff Resistance to change Reduced effectiveness and efficiency in production of reports</td>
<td>ICT trained and enabled technical and general staff Continuous ICT skills acquisition</td>
<td>E-Learning Staff training Use the projects identified in the National ICT masterplan</td>
</tr>
<tr>
<td><strong>Hardware Equipment</strong></td>
<td>Inadequate</td>
<td>Ineffective productivity and communication in offices/departments</td>
<td>Optimal number of hardware</td>
<td></td>
</tr>
<tr>
<td><strong>ICT Security</strong></td>
<td>Fair Security measures in place ICT security covered in ICT policy</td>
<td>Secure government data</td>
<td>A comprehensive ICT Security Policy</td>
<td>Develop an information security policy Legislate on ICT including digital signatures to provide confidence to citizens</td>
</tr>
</tbody>
</table>
### ICT GAP ANALYSIS

<table>
<thead>
<tr>
<th>FEATURE / AREA</th>
<th>CURRENT STATE</th>
<th>DESIRED STATE</th>
<th>Closure Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Status</td>
<td>Ramifications</td>
<td></td>
</tr>
<tr>
<td>Data Centre facility</td>
<td>Awaiting commissioning</td>
<td>use of shared services enabled centralized storage and efficiently distributed information</td>
<td>Well-equipped Data center All networks integrated into the data centre</td>
</tr>
<tr>
<td>Application Portfolio</td>
<td>IFMIS IPPD LAIFOMs in use Implementation of revenue collection system underway</td>
<td>Not integrated IPPD does not support all HR functions</td>
<td>Integrated revenue collection system in place</td>
</tr>
</tbody>
</table>

### 3.3 Financial Policy and Strategy for ICT

Primarily, the County Government can fund the foundational pillars through a re-focused expenditure planning model, as adopted from the Kenya National ICT Master Plan of 2014. This can be facilitated through the County budget and allocations on ICT increasing to 5% of County Government budgets; as per the international benchmark.

Secondly, the County can also leverage on funding their priorities by approaching development partners who have ICT at the top of their support lists to meet the costs of ICT related expenditure. Creation of strategic mutually-beneficial partnerships with e-readiness in sectors such as education, tourism and entrepreneurship, the County can effectively leverage on these partnerships for ICT funding³.

Thirdly, the County ICT Roadmap can be financed through Public Private Partnerships (PPPs). ICT projects have a high risk associated with their implementation. These can be overcome by working with a partner that has demonstrated ability to deliver. One trend is to use a shared services approach to the provision of public services. The County should explore partnerships with universities and youth polytechnics to offer training and ICT literacy programmes to staff and citizens.

The introduction of user fees and special taxes to populations engaging in County-owned ICT equipment is also a type of funding for the ICT road map. Special taxes will include licenses and rates for the various entities interacting with the

ICT segment. The user fees will include membership and access to public computers, internet connectivity, County ICT databases and libraries among others. This category of funding will fundamentally aid in maintenance of the equipment, and ensure accountability in the uses of the various hardware and software.

There is need to enact policies that are suitable, promote sharing of costs and liabilities while promoting sustainable work methods such as service level agreements ensuring that the County gets value in ICT investments. Open Data and Open Source Legislation will enable the County optimize existing Data (for Innovation) while open Source will lower the cost of implementing Systems.

There is need to fundraise regionally and pool resources for purposes of implementation of shared services, thus two or more counties can get together implement systems that are cross cutting and of value to all the regions concerned. A case in point is Revenue Collection Systems and Health Information Systems.

Finally, the Roadmap can also be funded through direct investment ventures. The creation of investor friendly environment at the national and County levels is a potent channel through which the County can realize growth in their ICT environment. The vision articulated in this Roadmap should provide a viable profile through which investors can develop solid inputs into the County.
4. ICT VISION ROADMAP AND ICT MATURITY

This ICT Roadmap presents projects adopted by the County. When implemented, these projects will enable the County to achieve its ICT vision for efficient and low cost public service delivery. The Roadmap suggests that the County should implement the proposed projects in phases so as maximize on both time and scarce financial and human resources.

The first phase of the Roadmap should focus on implementing projects that improve on existing systems or develop foundations for other projects. Priority should be given to projects that improve decision making, make the government more transparent and increase the Government's capability to deliver services to citizens. All plans must set out clear time frames, milestones, budgets and deliverables.

For the year 2016/2017, priority of project implementations should be given to the following:

1. Existing Projects: If a project is already in progress, focus on both technical and financial should be directed there. It is important to identify these existing projects to ensure that the County does not expend cash and effort in duplicated projects.

2. Governance and institutional frameworks: Appropriate governance and project management practices are important foundations that will assure success of all other ICT projects. A Governance Committee, a Project Management unit, Monitoring and Evaluation framework as well as regulatory and legislative frameworks should be put in place.

3. Organizational Capability: Staff and Citizen Literacy programs should be implemented to increase the County's ability to deliver systems. Training citizens will make them better stakeholders.

4. ICT infrastructure: Over 60% of the projects proposed in this Roadmap depend on an integrated ICT infrastructure. For example, collaboration, shared document creation, online application workflows, e-learning and eHealth all depend on availability of integrated infrastructure. To be successful, ICT infrastructure must be in place.

5. Quick Wins: Some projects are easily implemented either because they consume fewer resources (such as policy, regulation and legislation) or take 6 months to one year. Such systems should be given priority because they have the ability to galvanize the county into attempting big projects.

For the year 2018/2021, it is important to carry out a mid-term evaluation to determine the effectiveness of the first phase and identify foundation projects which have not been successful. This is necessary to ensure that phase 2 projects will succeed. If an ICT strategy will have been developed as part of a quick win in phase one, this is the right time to review it.

This section provides a summary of projects proposed under the first four themes. In each project, the overall objective, project outcomes and proposed budget is provided.
4.1 Connected County Government

The overall objective of the projects proposed under the Connected county government theme is to improve internal communication, integration and lower the cost of operation.

Table 7: Connected County Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Objectives</th>
<th>Outcomes</th>
<th>Budget (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified ICT Infrastructure – NOFBI last mile connections, LANs, WANs, VPNs</td>
<td>To develop a unified ICT Infrastructure at County Headquarters and Sub County</td>
<td>Improved communication, information and Resource Sharing using LANs  &lt;br&gt; Access to high Speed Internet  &lt;br&gt; Improved Data Management and Disasters Recovery Mechanisms</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>To improve the sharing and re-use of ICT services and solutions</td>
<td>Shared ICT Assets will lower the cost delivery of ICT services</td>
<td></td>
</tr>
<tr>
<td>ICT Policy Development</td>
<td>To implement policies, standards and legislation that aligns ICT systems to organizational goals and help improve organizational processes.</td>
<td>Constituted Governance Committee  &lt;br&gt; Improved ICT and Project Management Governance  &lt;br&gt; Improved delivery of ICT projects</td>
<td>6</td>
</tr>
<tr>
<td>Document Digitization – Document Management System, Collaboration Applications, Digital Approval workflows</td>
<td>To digitize government records so as to make it possible to move services online  &lt;br&gt; To develop online Document Approval Workflows  &lt;br&gt; To legislate on the use of digital signatures for document and process approvals  &lt;br&gt; To reduce the cost of paper, printing</td>
<td>Improved capability for taking Government services online  &lt;br&gt; Paperless office  &lt;br&gt; Online and digital citizen services</td>
<td>30</td>
</tr>
<tr>
<td>Unified Communication System – SMS, Social Media, Email, Electronic Newsletters</td>
<td>To improve internal and external communication using low cost but efficient ICT tools  &lt;br&gt; To develop and embed ICT tools into digital services such as healthcare, e-extension services and e-learning</td>
<td>Improved internal and external communication  &lt;br&gt; Low cost remote meeting and discussion using teleconference facilities</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>To regularly use social media as a mainstream channel to engage with citizens and business</td>
<td>Effective Citizen and business engagement</td>
<td></td>
</tr>
</tbody>
</table>

4.2 Connected Citizen

The objective of the connected citizens theme is to increase citizen awareness and access to government services. Table 8 below presents a summary of projects proposed under this theme.
Table 8: - Connected Citizen Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Objectives</th>
<th>Outcome</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Data</td>
<td>To improve public services by making citizens more informed consumers</td>
<td>Innovation through use of public data</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Digital economy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To increase transparency and accountability of Government Officers.</td>
<td>Increased openness and transparency in Governance and use of public Resources</td>
<td></td>
</tr>
<tr>
<td>E-Services Portal</td>
<td>To extend government services to citizens</td>
<td>Improved access to government services using digital channels</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>To improve information security and personal privacy</td>
<td>Improved confidence while accessing online government services</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved protection of personal privacy</td>
<td></td>
</tr>
<tr>
<td>ICT Literacy Programs</td>
<td>To increase staff capability to use and deliver digital ICT services</td>
<td>Increased staff and citizen capability to deliver or absorb ICT enabled Services</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Promote digital innovations</td>
<td>ICT Savvy youth and school going children</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increase in ICT innovations and jobs</td>
<td></td>
</tr>
<tr>
<td>Public ICT Infrastructure (Wi-Fi Hotspots)</td>
<td>To Offer FREE Wi-Fi Internet to Citizens and Business</td>
<td>Extended infrastructure to enable citizens access digital services within a digital economy</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>To provide citizens 24/7 access to government services</td>
<td>Improved access to government services and e-commerce</td>
<td></td>
</tr>
</tbody>
</table>

4.3 Citizen Satisfaction

The objective of this theme is to provide low cost efficient public services. Table 9 below provides a summary of projects proposed and adopted by Kitui County.

Table 9: - Citizen Satisfaction Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Objective</th>
<th>Outcome</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue Collection</td>
<td>To improve revenue collection by 50%</td>
<td>Improved Revenue Collection</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development tax administration manual</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tax policy</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tax review (number and types of tax)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To provide online and Mobile payment gateways for payment of rates and taxes</td>
<td>24/7 access to the revenue payment system making it easy and convenient for citizens to pay taxes and rates</td>
<td></td>
</tr>
<tr>
<td>E-Learning</td>
<td>To provide Business intelligence interfaces to support revenue collection and management decision making</td>
<td>Improved revenue collection</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved decision making</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To improved staff capability to deliver ICT enabled services</td>
<td>Improved education outcomes for out of school youth</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved and effective staff and citizen training services</td>
<td></td>
</tr>
<tr>
<td></td>
<td>To support Public ICT literacy initiatives</td>
<td>Empowered citizens who can use digital ICT services</td>
<td>50</td>
</tr>
<tr>
<td>e-Extension Services</td>
<td>To use ICT to leverage the provision of Agricultural information to farmers</td>
<td>Improved agricultural output for enhanced food security</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Provide e-Marketing information to farmers</td>
<td>Improved productivity and agricultural jobs due to better market information</td>
<td></td>
</tr>
<tr>
<td>Land Planning and Management System</td>
<td>To improve access to land information</td>
<td>Improved access to land information</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Improved Revenue Collection through online payment of rates</td>
<td></td>
</tr>
</tbody>
</table>

4.4 Connected Legislator
Table 10: Connected Legislator Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Objective</th>
<th>Outcome</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Citizen Participation</td>
<td>To Increase frequency, width, breadth and quality of public participation in governance, project and legislative process</td>
<td>Improve public participation outcomes for effective participatory decision making</td>
<td>50</td>
</tr>
<tr>
<td>ICT Legislation</td>
<td>Increase confidence, legal and regulatory mechanisms in ICT investments</td>
<td>Secure online transactions and protection or privacy</td>
<td>50</td>
</tr>
<tr>
<td>Live Radio and TV Broadcasts</td>
<td>To improve public involvement in legislative process</td>
<td>Better public legislation and accountability</td>
<td>300</td>
</tr>
<tr>
<td>e-Voting)</td>
<td>Increase accountability and transparency by providing easily usable data to the public</td>
<td>Better public legislation and accountability</td>
<td>50</td>
</tr>
</tbody>
</table>
5. CRITICAL SUCCESS FACTORS

Soh Bong Yu⁴, a leading Korean e-Government specialist identifies the following five major areas for ensuring successful implementation of e-Government initiatives as articulated below.

Figure 1: Critical Success Factors

Source: Soh Bong Yu, “e-Government of Korea: How we have been working with it”

5.1 Vision, Objectives and Strategy

A long-term plan with a clearly articulated vision and strategy is vital to the implementation of e-government. A quick fix or piecemeal approach will not work. The more effective approach is to think big and have a big picture (top-down design), but to start small and prioritize tasks (bottom-up) during the implementation process. The County Vision must therefore be available, with the ICT County Vision clearly aligned accordingly. In sum, successful e-government initiatives require:

1. A clear vision by the leaders
2. Strong support from citizens
3. Sustainable ICT Agenda setting

5.2 Laws and Regulations

Soh Bong Yu says that it is important to plan for sufficient time and effort for legislative changes that may be required

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⁴ Source: Soh Bong Yu, “e-Government of Korea: How we have been working with it” (KADO presentation), 25, https://www.kado.or.kr/koil/bbs/board_view.asp?config_code=362&offset=0&board_code=3246
to support the implementation of new processes. The following laws need to be in place for e-government initiatives to succeed:

1. Laws on privacy and related issues such as the Data Protection Act.
2. Laws related to changes in business processes and information systems such as the e-Transaction Act.
3. Laws & Regulations regarding the government information technology Architecture and Data Centers

5.3 Organizational structures

The effort required in change management should not be underestimated. Soh Bong Yu emphasizes that the organizational restructuring required to correspond to e-Government initiatives will typically take up between 30 and 50 per cent of total change management effort. Change in organization structures must therefore be well planned and implemented in a systematic manner. The following are important in successfully effecting organizational change:

1. Strong leadership with commitment
2. Planning – IT management and change management
3. Budget preparation and budget execution
4. Coordination and collaboration
5. Monitoring and performance measurements

5.4 Business Process

The existing way of doing county business may not necessarily be the most appropriate or effective. One of the tools to do business process innovation is Business Process Reengineering (BPR). BPR involves redesigning the work flow within or between department levels to increase process efficiency (i.e. to eliminate inefficiency in the work process). Counties should have a major review of existing processes with a view to re-defining them in order to leverage on ICTs.

5.5 Information Technology

Information technology changes rapidly. Soh Bong Yu identifies the following factors to consider when choosing technology and vendors are:

1. Level of application technologies required
2. Network infrastructure
3. Interoperability
4. Standardization
5. Technical and human resource capabilities

More specifically, the following factors will drive the implementation and achievement of success the identified ICT transformation projects:

1. Good working relationship between the Executive, The County Assembly and Public Service Board
2. Top leadership and management support. Political goodwill and top management buy in is the key to success of the ICT Masterplan since financial investments and the right competencies can only be achieved from the top. Top leadership and management are critical both at the planning and implementation phases of the road map
development.

3. Establishment of a Project Management Office / Team. This office or team will be responsible for all aspects of the ICT Projects.

4. A Change Management and Capacity Building: Continuous Communication, Capacity building and team development plan is critical to the successful implementation of the ICT roadmap. A change management and capacity building plan must be developed and focus on staff skills and capacity and managing culture and group dynamics. An external and internal communication strategy must be developed and change agents and champions identified and incorporated in the plan.

5. User trainings and continuous testing to ensure users are capable of using the technologies. These trainings must focus on both internal users as well as external users of the new ICT technologies and services.

6. System Integration and projects sequencing: it is critical that projects are rightly sequenced and systems are implemented in an integrated manner to allow for seamless operations. An appropriate project implementation plan must be put in place and followed to ensure projects are prioritized on the basis of sequencing first followed by impact and costs.

7. Periodic performance monitoring, evaluation, reporting and reviews and taking appropriate corrective actions. An appropriate project management application and monitoring and evaluation staff are a must.

8. Managing people’s expectations, maintaining clarity and focus of the projects and ensuring deliverables are realistic.

9. The right organizational structure to support the ICT Strategy and ensuring right leadership and governance of the project.

10. Adequate Financing of the projects. An appropriate investment and financing strategy must be put in place and implemented to ensure the County can obtain finances from diversified sources and partners.
6. PRIORITY PROJECTS FOR QUICK WINS (6 months to Year 1)

The five projects shown in Table 11 below have been adopted as quick wins because:

1. Some are in progress and it is only reasonable that resources should be provided to complete them. These include the completion of the Data Center, Last mile Connections, creation of LANS in all departments.

2. Some projects, like infrastructure, are the foundation (are on the critical path) for all other projects.

3. Some projects require minimum resources such as some components of document digitalization, SMS, Website and policy.

Table 11: Quick Win Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Objectives</th>
<th>Outcomes</th>
<th>Duration</th>
<th>Budget (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified ICT Infrastructure – NOFBI last mile connections, LANs, WANs, VPNs</td>
<td>To develop a unified ICT Infrastructure at County Headquarters and Sub County</td>
<td>Improved communication, information and Resource Sharing using LANS Access to high Speed Internet Improved Data Management and Disasters Recovery Mechanisms</td>
<td>5 years</td>
<td>300</td>
</tr>
<tr>
<td></td>
<td>To improve the sharing and re-use of ICT services and solutions</td>
<td>Shared ICT Assets will lower the cost delivery of ICT services</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT Policy Development</td>
<td>To implement policies, standards and legislation that aligns ICT systems to organizational goals and help improve organizational processes.</td>
<td>Constituted Governance Committee Improved ICT and Project Management Governance Improved delivery of ICT projects</td>
<td>3 months</td>
<td>6</td>
</tr>
<tr>
<td>Document Digitization – Document Management System, Collaboration Applications, Digital Approval workflows</td>
<td>To digitize government records so as to make it possible to move services online To develop online Document Approval Workflows To legislate on the use of digital signatures for document and process approvals To reduce the cost of paper, printing</td>
<td>Improved capability for taking Government services online Paperless office Online and digital citizen services</td>
<td>3 years</td>
<td>30</td>
</tr>
<tr>
<td>Unified Communication System – SMS, Social Media, Email, Electronic Newsletters</td>
<td>To improve internal and external communication using low cost but efficient ICT tools To develop and embed ICT tools into digital services such as healthcare, e-extension services and e-learning To regularly use social media as a mainstream channel to engage with citizens and business</td>
<td>Improved internal and external communication Low cost remote meeting and discussion using teleconference facilities Effective Citizen and business engagement</td>
<td>5 years</td>
<td>50</td>
</tr>
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<td></td>
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<tr>
<td>ICT Legislation</td>
<td>Create a legal and regulatory framework for ICT adoption</td>
<td>Increased information security and confidence</td>
<td>2 years</td>
<td>50</td>
</tr>
</tbody>
</table>

6.1 COBIT Implementation
Cost Implications

One-Off Approximate Costs (KSH)

1. Search, Evaluate & Procure COBIT Consultant (2months, 100,000/=)
2. Contract & Sign up a COBIT Consultant (1 Day, contract amount of between 400,000/- to 500,000/-)
3. COBIT Awareness & Appreciation Training for Top Leadership (Governor, County Exec, Speaker, and Chief Officers). (1Day Training for approx. 30 Pax, Cost of Hotel, Teas, Lunches, Cost of Trainer @ 50,000 per day)
4. COBIT Technical Training for Mid-level Management (Directors, Managers across Ministries)(2Day Training for approx. 30 Pax, Cost of Hotel, Teas, Lunches, Cost of Trainer @ 50,000 per day x2 Trainers)
5. COBIT Implementation Training for Technical Management (ICT Directors, ICT Technical Support, Auditors) (3Day Training for 10 Pax, Cost of Hotel, Teas, Lunches, @ 50,000 per day x2 Trainers)

Annual Costs (KSH)

1. Continuous Improvement Costs – Improving processes from Level 0 through 1, 2, 3, 4 & 5. Various processes such as writing Strategic Plans, Documenting Operational Tasks, etc has to be done. The trained employees are supposed to drive these processes so the cost would approximate to the monthly salaries.
2. External Annual Audits (3-5days). COBIT Audits cost between 400,000 to 500,000 depending on the size and scope of the activities.

Implementing the above ICT vision projects is not easy. Given the paradox of expected improvement in ICT capability at reducing budgetary allocation, ICT managers must find a balance between available budgets and projects that can be realistically be implemented given the current staff capability, available budgets and expected improvements. This calls for project selection, justification and prioritization.

The County Government’s investment in information and technology must be integrated, leveraging common capabilities to deliver effective and efficient public services. A starting point in project prioritization is needs assessment and justification. Justification for project prioritization and initiation should be based on traditional capital budgeting and cost accounting models such as Return on investments (ROI), business case and benchmarking. The requirement here is that the county must consider a business case and ROI for every project under consideration using a standard ROI calculator using Net Present Value (NPV) and Internal Rate of Return (IRR).