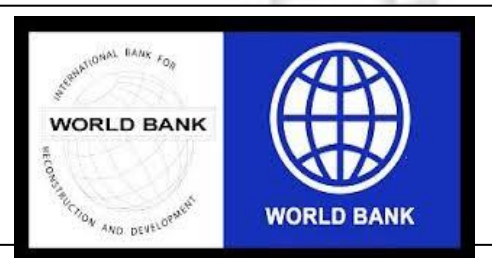# COUNTY GOVERNMENT OF LAIKIPIA

ICT ROADMAP
(2015-2020)

September 2015

Statement on Confidentiality and Distribution of this Document

This report has been prepared for and only for the County Government of Laikipia and the ICT Authority in accordance with the terms of our engagement letter dated 4th February 2015 and inception report dated 13th March 2015 and for no other purpose.

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COUNTY ICT ROADMAP ACCEPTANCE SIGNOFF

Joshua Irungu
Governor,
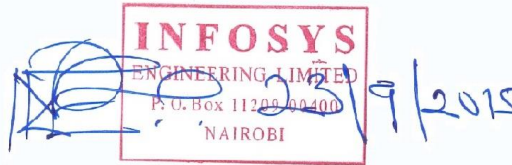Laikipia County

Signature   30/12/2015
Date

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Chief Executive Officer
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Signature   Date

ACKNOWLEDGEMENT

The Laikipia County ICT Roadmap (2015-2020) preparation is possible through immense sacrifice from many stakeholders. Special commendation goes to the World Bank through the ICTA for financing this process. Special appreciation goes to HE Mr. Joshua W. Irungu, the Laikipia County Government Governor and H.E Mr. Gitonga Kabugi, County Deputy Governor through the CEC and Chief Officer for Education, ICT and Social Development. Special thanks go to the Honourable Speaker and Clerk to the County Assembly of Laikipia for their valuable contribution into the preparation of this strategy. Special thanks also go to the County Secretary Mr. John Mwaniki for his support in the process of drafting the ICT road map and submission to County cabinet. Special commendation goes to the ICT Directors of the County Government and County Assembly for coordinating the Technical Committee and stakeholders' validation workshops and the participation and effort by the different departments and stakeholders in the County Government of Laikipia into this report.

We acknowledge the support of the above persons in the different stages of the assignment and we are confident that with the implementation of this Roadmap the future of Laikipia County in the use of ICT in offering services to the citizens will be a great success. The commitment and participation of all stakeholders in this process will ensure that the County Government delivers the services to the people.

With the already set up planning committee, committed stakeholders and the good will of the Governor towards enhancing community development, we are confident that Laikipia County will be able to compete effectively in both the National, regional and global environment.

Thank you so much.

H.E Joshua Irungu
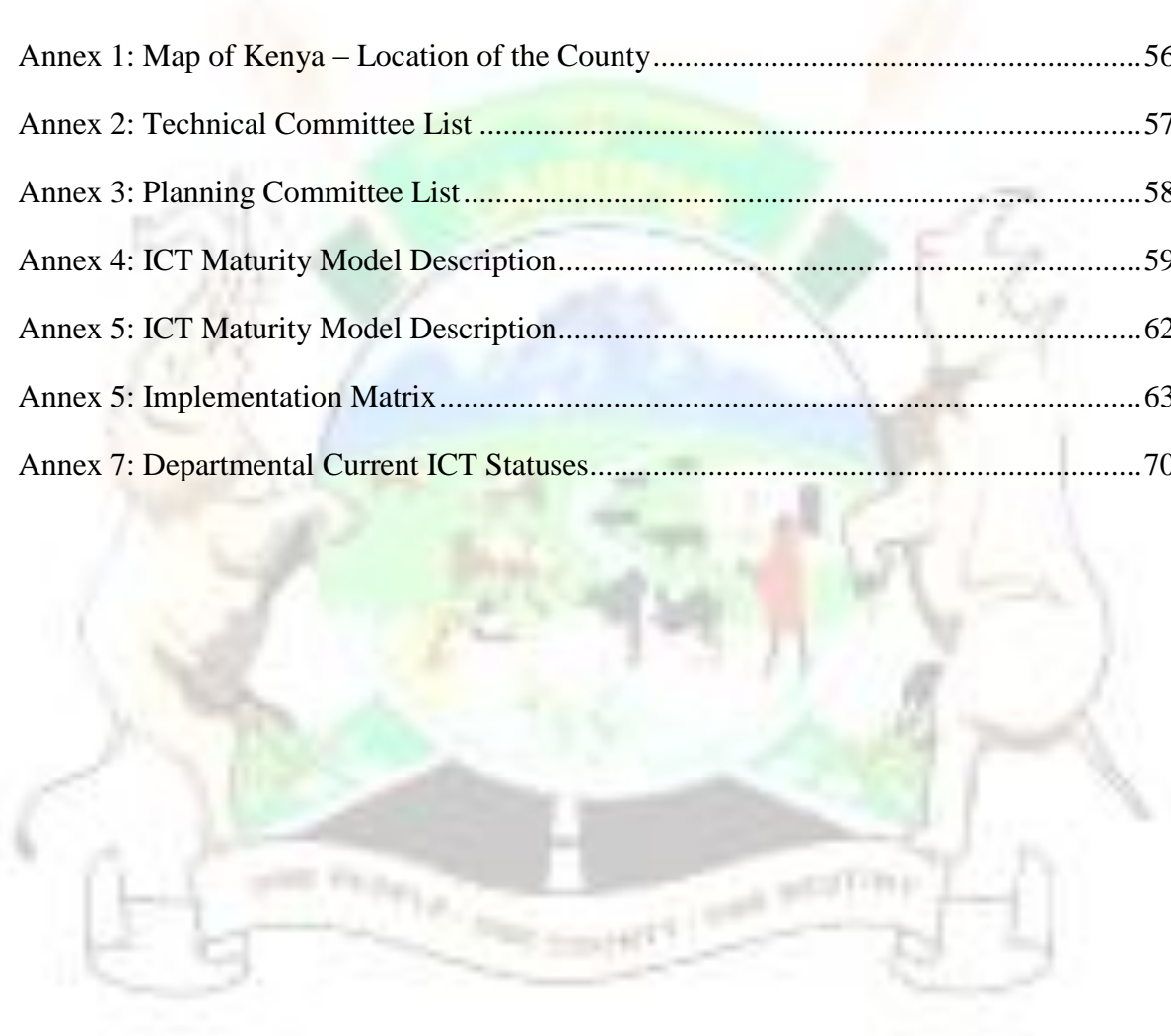**The Governor, County Government of Laikipia**

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LIST OF ABBREVIATIONS AND ACRONYMS

BPO	Business Process Outsourcing
CCK	Communication Commision of Kenya
CRA	Commission on Revenue allocation
DCO	District Cooperative Officer
EAC	East Africa Community
ECD	Early Childhood Development
ERP	Enterprise Resource Planning
GCCN	Government Common Core network
GDC	Government Data Centre
GDPs.	Gross Domestic Products
GII	Global Innovation Index
GIS	Geographical Information System
ICANN	Corporation for Assigned Names and Numbers
ICT	Information and communication Technology
IFMIS	Integrated Finance Management Information System
ITes	IT enabled services
ITU	International Telecommunications Union
KENET	Kenya Education Network
KICC	Kenyatta International Conference Centre
LAIFOMS	Local Authorities Integrated Financial and Operations Management System
MCA	Member of County Assembly
MTP	Medium Term Plan
NOFBI	National Optic Fibre Backbone Infrastructure
PABX	Private Automated Branch Exchange
SACCO	Saving and Credit Coperative
SLAs	Service level Agreements
SWOT	Strength Weakness Opportunity Threat
VSAT	Very Small Aperture Terminal

EXECUTIVE SUMMARY

Information and communication technology (ICT) has become, in the last two decades a pillar of the basic building blocks of modern society. Technology affects every aspect of society and each individual's life in the fast-growing global information society. The society accepts technology as a driver to the economic and social development. The County Government of Laikipia took office in March 2013. The County Government desires to provide superior services to the County residents; services that the residents shall consider being efficient. ICT provides this opportunity to realise the dream. The roadmap provides a coherent and coordinated approach to realising this dream. This roadmap is developed through the effort of the ICT Authority with financial support from the World Bank Group. It is an output of intense internal effort by technical support from Infosys Engineering Ltd.

The methodology adopted to arrive at the ICT roadmap for includes the following: Discussions with the relevant stakeholders, planning meetings held with County chief officers, technical meetings held with heads of department, relevant information gathered from documents provided at the county level and focus group discussions and stakeholder forums interest groups in the County.

Current ICT Status

1) *Infrastructure and Connectivity:* The County Government requires a robust ICT infrastructure. Currently, Laikipia County has developed a sub-optimal infrastructure that can support deploying ICT enabled service delivery. The infrastructure includes connection to NOFBI at Nanyuki and Nyahururu towns. In addition, the infrastructure for mobile communication like masts, VSAT do exist. Internet connection is reliable in urban areas in the County. Monitoring of network availability and capacity is carried out. All the major ISP Players are in the County. They include liquid Telcom, Jamii, Access Kenya, Safaricom, Airtel, Orange. Laikipia County has a server room.

2) *Public Service Delivery Systems:* The purpose of developing the ICT infrastructure is to facilitate deploying ICT enabled service delivery. In general, service delivery is largely manual while internal coordination mechanisms are manual resulting in loss of time. Currently, Laikipia County implements several ICT enabled systems in finance and administration. They include LAIFOMS (for revenue collection), IFMIS (for procurement, budgeting, back office accounting) and IPPD (Salaries processing). However, IFMIS and LAIFOMS are not interoperable. Laikipia County has a domain name and the officials' mails are hosted on the same. Laikipia County has a website. This website is externally hosted. The county assembly has its own website: Assembly.laikipiacounty.go.ke. Social media usage in official communication within Laikipia County is high. Automation of workflows and processes is limited.

3) *Human Capital and Workforce Development:* Deploying ICT requires a skilled human capital and workforce development that is alive to that reality. The current workforce cannot fully support deploying ICT. Specifically, the

ICT staff in the County is currently 7 in number. The ICT staff support the technical implementation of the existing systems in Finance and administration.

4)   *Policy Environment and Legal Framework:* Deploying ICT requires a robust and sound legal and policy framework. Currently, Laikipia County has an ICT and communication policy. In addition, the ICT department has developed an ICT commitment service charter. The County has neither a strategic plan nor an investment framework.

5)   *Shared Services:* There are two shared services plans in place.

6)   *Change Management*: the techno infrastructure is not flexible enough to accommodate not scalable and not interoperable; the current organizational structure of ICT is flexible enough to support change and no programmes currently in place to train in change manage

7)   *Citizen Involvement and Participation*: Citizen Participation in County Government processes such as budgeting is limited and mostly conducted through public non-ICT based channels like public *barazas.* In addition, a citizen participation portal is not in place

Gap Analysis

1.   The Overall county maturity is 0.85. The Overall County's maturity index reflects an ad hoc maturity, the second level in a five level maturity continuum indicating Laikipia County has a lot to do to realise the transformative power of ICT. The maturity levels brings to fore existing gaps in deploying ICT in Laikipia County.

2.   Infrastructure and Connectivity: Laikipia County's infrastructure is still underdeveloped; NOFBI terminates at Nyahururu, Rumuruti and Nanyuki town. Internet connectivity in rural areas is erratic and almost none in Laikipia North. The county has an acute shortage of ICT equipment. The business continuity plans are weak since the County lacks a data centre. Mobile telephony network is also weak in some parts of the County. Electricity connectivity is uneven across the County with Laikipia North totally devoid of this connectivity.

3.   Public Service Delivery Systems: Although the County is progressively automating public delivery systems, several gaps are still evident. They include Main service delivery systems are not interoperable (IFMIS, IPPD, LAIFOMS); Sub optimal utilisation of ICT facilities due to a departmentalized architecture. Lack of ICT management systems like the ERP, to manage countywide resources and, a GIS to produce electronic geo-spatial records. Inadequate service centres modelled on the central government Huduma concept. Incomplete process and workflow automation

4. Human Capital and Workforce Development: Some of the gaps in human resource include: Shortage of ICT staff in the County offices, Lack of end user training for ICT users in the County Lack of a County government ICT training unit and No training needs assessment done

5. Policy Environment and Legal Framework: The County is yet to develop fully a robust framework. The County lacks a strategic document to guide the investments in ICT. ICT investments rely on the fiscal strategy paper that draws largely from the departmental needs that are non-strategic in nature. The ICT allocations are low.

6. Shared Services: The County lacks a shared services framework and plan. This is likely to shoot up the ICT investment costs and also result in duplication and general sub-optimality

7. Change Management: Technical- lack of a flexible techno infrastructure to accommodate scalability and interoperability and People - lack of programmes to train people to embrace ICT

8. Citizen Involvement and Participation: The County Government has an ICT enabled citizen participation platform that need to be enhanced

Road maps

The County Government shall implement the following roadmaps.

Road Map 1: Infrastructure and Connectivity: Network infrastructure and information access to enhance with the latest technology. This ICT strategy road map premises on a radical shift in the technology used to deliver ICT services. The County shall seek to improve the communication and ICT infrastructure across the County.

Road Map 2: Public Service Delivery Systems: ICT will act as a hub for knowledge and best practice of the latest solutions available to the public sector in the County of Laikipia. The County shall seek to achieve the following objective that touch on public service delivery systems. The County shall seek to develop and implement automated public service delivery systems

Road Map 3: Human Capital and Workforce Development: The successful implementation of ICT projects is heavily dependent of the availability of human resource with the relevant ICT skills. Skill sets demanded in the Information and Communication Technology (ICT) cluster are particularly dynamic and require continuous learning. The County shall seek to improve the HR ICT capacities in the County.

Road Map 4: Policy Environment and Legal Framework: Legislation frequently lags behind technology, but the County Government cannot afford to disregard the issues.

The County Government shall ensure the enactment of ICT laws that are in tandem with the national ICT laws. The County shall seek to develop and implement a comprehensive ICT legal and policy framework

Shared services Plan: Sharing entails utilizing resources available to ensure optimal performance and reduce duplication. The County shall seek to identify ICT based services to be shared and develop a comprehensive policy for sharing ICT based services

Change Management Plan: A fundamental element of ICT road map is change. People are crucial in change management, without people this strategy will not be achieved. The County shall seek to achieve the following objectives:

1) *Structure: re –engineer the organizational structure to support ICT change*
2) *People: training to facilitate a paradigm shift with respect to ICT based change annually*
3) *Technology: Procure and install scalable interoperable and integrated ICT systems throughout the road map period*

Citizen Involvement and Participation: Transforming ICT based citizen involvement and participation is key to their access to services and contribution to County affairs. The County shall seek to achieve the following objectives:

1) *Develop web based collaborative platforms*
2) *Open official social media accounts to facilitate interaction with the citizens*
3) *Promote the use local radio stations and television to enhance citizen participation*
4) *Source ICT technologies to address people with special needs (PWDs) to effectively participate in county affairs*

The roadmap shall require a mixed financing approach through internal equity and external funding to a tune of Kenya shillings 2,491,000,000.00.

1   INTRODUCTION AND BACKGROUND

Kenya Vision 2030 aim is to transform Kenya to a knowledge-based economy that utilizes ICT for national growth and development. The National government has made considerable efforts in policy and strategy development and more so in ICT. Notable achievements are the development of the National ICT Master Plan, Broadband policy and Infrastructure sharing strategy paper. To achieve success in ICT utilisation in the Counties, infrastructure and services are now prerequisites to development. Kenya must focus on the role of ICT not only at the National level, but also at the County level as well in response to this reality.

Laikipia County affirms and is committed to this strategy by adopting successful ICT models, integrating the strategy in service delivery and using it as a benchmark to measuring success in service delivery. This 5- Year ICT roadmap provides this coordinated approach. The Roadmap shall focus on improving the existing infrastructure to allow for an ICT enabled public service delivery systems. The roadmap shall also include support pillars that ensure that optimisation is real through a continuous capacity-building programme, a robust change management plan while embracing a superior shared services plan.

The five-year plan seeks to address key investments in line with four thematic areas namely

1)   ICT infrastructure, connectivity and interoperability
2)   Public service delivery systems
3)   Human Capital and Workforce development
4)   Policy environment and legal framework

1.1   Background of the County

This section presents the location and position of Laikipia County, its administrative and political units as well as the arms of the County Government. It also highlights the ICT establishment in the County.

1.1.1   County General Information

The Constitution 2010 created a devolved system of government through the establishment of counties. The county governments are responsible for spearheading development in their respective areas of jurisdiction.

Laikipia County is one of the 14 counties within the Rift Valley region. It borders Samburu County to the North, Isiolo County to the North East, Meru County to the East, Nyeri County to the South East, Nyandarua County and Nakuru County to the South West and Baringo County to the West. It lies between latitudes 0o 18" and 0 o 51 North and between longitude 36o 11" and 37o 24' East. It covers an area of 9,462 km2 and the15th largest County in the country by land size.

The County has three sub county units namely Laikipia East Constituency, Laikipia West Constituency and Laikipia North constituency. The county has 15 electoral wards, 5 in Laikipia East, 6 in Laikipia West and 4 in Laikipia North constituencies. Laikipia County comprises three administrative sub-counties (the Constituencies) namely: Laikipia East, Laikipia North and Laikipia West. The Laikipia East Sub-County lies to the east, Laikipia north to the North and Laikipia West to the west of the County. The sub-County headquarters are at Nanyuki, Dol Dol and Rumuruti respectively. The County is further sub divided into 15 divisions, 51 locations and 96 sub-locations.

Table 1-1 County Electoral Wards by Constituency

Name of Constituency	Name of Wards	Number of Wards
Laikipia North	Mukogodo East, Mukogodo West, Segera, Sosian	4
Laikipia East	Ngobit, Tigithi, Thingithu, Nanyuki, Umande	5
Laikipia West	Olmoran, Rumuruti Township, Githiga, Marmanet, Igwamiti, Salama	6
Total		15

Source: County Government Of Laikipia Strategic Plan: 2014/15-2018/19 June 23, 2014

The County consists of 15 divisions, 51 locations and 96 sub-locations respectively. The Laikipia East sub county lies to the east, Laikipia North to the North, Laikipia Central to the southeast, Nyahururu to the southwest and Laikipia West to the west of the county.

Figure 1-1 Political and Administrative Units
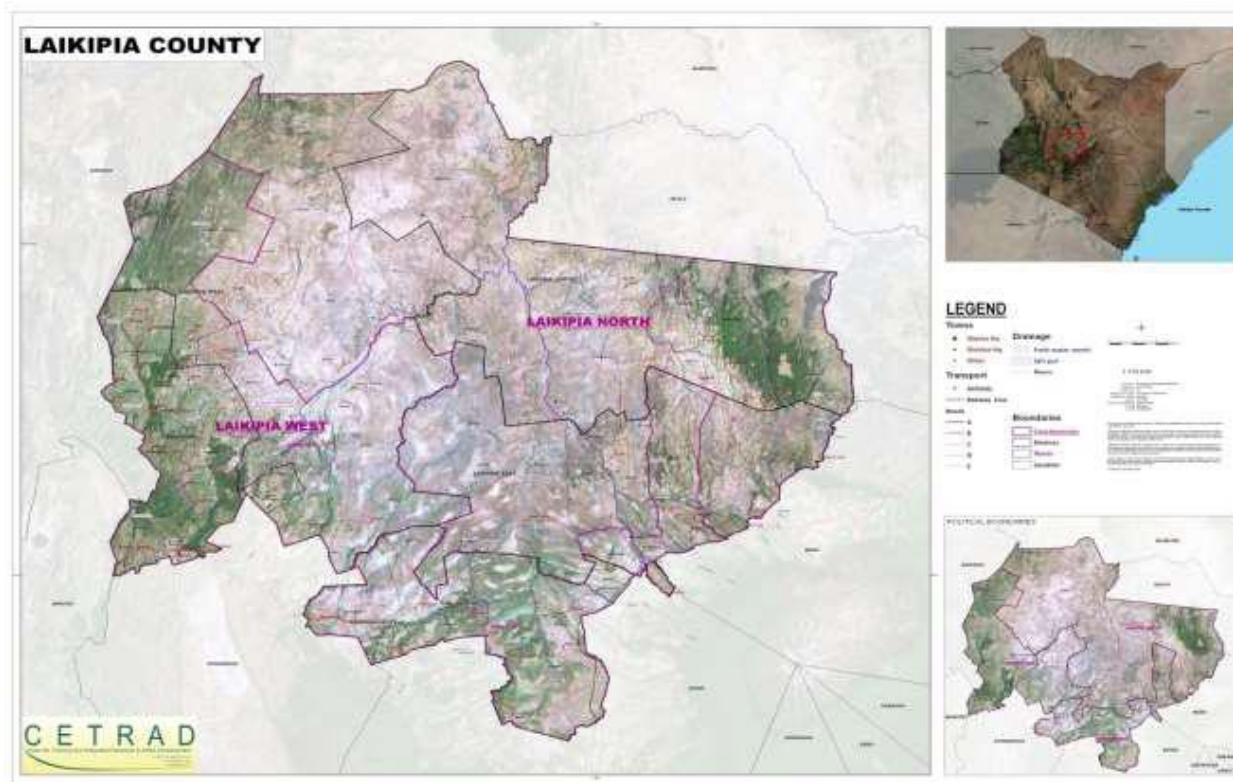
Source: CETRAD 2013

1.1.2   Demographics

According to the 2009 KNBS Housing and Population Census, the total population for the county stood at 399,227. There were 198,625 males and 200,602 females. This population was projected to be 427, 173 people by 2012. This is expected to rise to 457,514 and 479,072 in 2015 and 2017 respectively as shown in Table 3. The ratio of men to women stands at almost one to one. The proportion of women is higher than that of men in all the age cohorts except for those in the range of five to 19 years. It therefore means that the county will require looking into the special needs of women as they form the bigger proportion of the population.

Laikipia is a cosmopolitan county and largely rural in settlement. The settlement patterns in the County are uneven as influenced by the differences in land potential, livelihood zones, infrastructure development, land use system and availability of social amenities. Laikipia Central Sub-County has pockets of both high and low densities dictated by the differences in land potential. Laikipia North constituency is arid and semi-arid in nature and therefore the least populated arising from the limited economic activities such as livestock rearing and sand harvesting. The pockets of high population density include Nanyuki and Nyahururu towns, which are the commercial, administrative, and transportation hubs of the County.

Table 1.2 summarises the projected population density by constituency to the year 2017.

Table 1-2 County Population Density by Constituency

Constituency	2009			2012 Projections		2015 Projections		2017 Projections	
	Area (km^2)	Population	Density (persons/ Km^2)	Population	Density (persons/ Km^2)	Population	Density (Persons/ Km^2)	Population	Density (Persons /Km^2)
Laikipia East	1,448.2	118,222	82	126,498	87	135,424	94	141,805	98
Laikipia West	2,579.5	208,725	81	223,335	87	239,280	93	250,555	97
Laikipia North	5,434.3	72,280	13	77,340	14	82,810	15	86,712	16
Total	**9,462**	**399,227**	**42**	**427,173**	**45**	**457,514**	**48**	**479,072**	**51**

Source: County Statistics Office, Nanyuki, 2012

1.1.3   The County Executive

The County Executive Committee is composed of the county governor and the deputy county governor; executive committee members appointed by the County Governor, with the approval of the assembly, from among persons who are not members of the assembly. Like other County Governments, the Governor assisted in the daily operations of the County by a Deputy Governor; heads Laikipia County. The County functions are clustered into eight departments that are further divided into directorates and sections. The eight County Executive Committee members head the Departments with the assistance from the Chief Officers.

Table 1-3 Laikipia County Government Departmental functions

Department	Broad function	Specific functions
Governance, Security, Cohesion And Public Administration	Leadership and policy direction	1) security and justice 2) governance institutions
Finance and Planning	Financial services	1) development planning 2) collection, collation, storage, updating and dissemination of data and information. 3) Monitoring and evaluation of county development programmes and projects 4) population management policies 5) Gender and youth mainstreaming, 6) Resource mobilization and Capacity building 7) management of county financial

Department	Broad function	Specific functions
		resources 8) county government's revenues and expenditures 9) Procurement and disposal of goods, services and assets. 10) financial records, reports and information 11) debts, grants, term loans and other borrowings
Agriculture, Livestock and Fisheries Development	Agricultural development	1) Create an enabling environment for agricultural development 2) Increase productivity and outputs 3) Promote market access and product development 4) Promote sustainable land use and environmental conservation 5) Enhance efficiency and effectiveness in implementation and service delivery 6) Accessible and affordable credit and inputs.
Gender, Culture, Youth, Sports, Children and Social Development		1) Research 2) Cultural tourism 3) Cultural home craft industries.
Education, Science and Technology	Education and training	Promote and coordinate quality education, training, 1) Integration of science, technology and innovation
Health and Sanitation	Access and quality of health services	1) Efficient and cost effective heath and sanitation services 2) Morbidity & mortality 3) Sanitation 4) Immunization 5) Mental and psychological health 6) Child and maternal health 7) Waste management. 8) Community health services. 9) Collaboration with health related sectors.
Spatial and Urban Areas Planning	Planning and human settlement (housing)	1) Planning of human settlements 2) Appropriate spatial framework 3) Preparation of relevant physical plans and policy guidelines.

Department	Broad function	Specific functions
Infrastructure	Roads and government buildings	1) Provision of cost effective Government buildings and other public works. 2) Maintenance of Government building 3) Technical and quality audit for buildings and other public works 4) Rehabilitation of all major roads 5) Construction of quality roads 6) Develop rural access roads
Tourism, Wildlife Development and Forest	Tourism and conservation	1) tourist destination 2) tourism the key source of revenue 3) wildlife conservation based tourism
Trade, Industrialization and Cooperatives	Commerce and industry	1) Industrial Master Plan 2) Create and maintain a database of county-wide, jobs-creating land 3) employment land preservation policy 4) Access to capital and marketing efforts to capital sources 5) Commercialization of local research and products 6) provision of services to entrepreneurs 7) Promotion and coordination of the development of micro, small and medium enterprises engaged in trade. 8) Wholesale and retail trade. 9) Collection and dissemination business information 10) Market infrastructure. 11) Registration of new cooperative
Water	water availability and access	1) Water availability and access 2) Reduce incidences of waterborne 3) Access to safe/ improved sanitation 4) Water supply for household/domestic consumption 5) Water contamination and pollution

1.1.4 The County Assembly

Laikipia County Assembly consists of 23 members; 15 are elected and 8 nominated. The speaker heads the Assembly while the Clerk is the chief operating officer. The Assembly has constituted eight broad sectoral committees. Table 1.4 summarises the functions of the eight sectoral committees.

Table 1-4 Laikipia County Assembly sectoral committees

No.	Committee	Functions
1.	Trade, Tourism and Cooperative	1) Trade development and regulation including the markets, 2) Trade licenses (excluding regulation of professions), 3) Fair trading practices, 4) Local tourism and cooperative societies.
2.	Health Service Committee	1) County health services 2) County health facilities and pharmacies, 3) Ambulance services, 4) Primary health care, 5) Licensing and control of undertakings that sell food to the public, 6) Veterinary services (excluding regulation of the profession), cemeteries, funeral parlours and crematoria and 7) Refuse removal, refuse dumps and solid waste disposal.
3.	Transport and Public Works	1) County roads, 2) Street lighting, 3) Traffic and parking, 4) Public transport, 5) County public works and services 6) Storm water management systems
4.	Finance and County Planning	1) County finance and planning, 2) Statistics, 3) Land survey and mapping, 4) Boundaries and fencing, 5) Housing a 6) Electricity and gas reticulation 7) Energy regulation.
5.	County Cohesion, Justice And Legal Matters	1) Governance at the local level. 2) Administrative capacity at location level 3) Administration of law and justice 4) Security
6.	Agriculture, Environment And Natural Resources	1) Crop and animal husbandry, 2) Livestock sale yards, 3) County abattoirs, 4) Plant and animal disease control and fisheries; 5) Implementation of specific national government

No.	Committee	Functions
		policies
7.	Labour, Social Welfare And Community Services	1) Labour, trade union relations, manpower or human resource planning, gender, culture and social welfare. 2) Cultural activities, 3) Public entertainment and public amenities, 4) Liquor licensing, cinemas, video shows and hiring, libraries, museums, sports and cultural activities 5) Firefighting services and disaster management, 6) Control of drugs and pornography;
8.	Education and Vocational Training	1) Pre-primary education, village polytechnics, 2) Home craft centres and childcare, 3) Youth and children welfare.

1.1.5 The County Public Service Board

The County Public Service Board is a creation of the County Government Act (2012). The board has a limited function on the human resource replicating the public service commission. It has a composition of 5 members with a Secretariat that manages the day to day affairs of the Board. The Law mandates the Board to establish and abolish offices, appoint staff, disciplinary control, promotion of values and principles, advise on human resources planning and management and capacity building as well as performance management.

1.1.6 ICT in Laikipia County

The County Government commits itself to provide superior services that are ICT enabled. The County Government has a department of ICT that is a shared function with education and Science. The department promotes the development of ICT in the County and supports the Finance and Administration departments to deploy national ICT requirements such as deploying IPPD and IFMIS that are core in the implementation of the County programmes. ICT is not well positioned within the county structure and it's not well deployed in the County considering the inadequate resources, vastness of the County topography and some areas in Laikipia North.

1.2 Purpose and Scope of the ICT Roadmap

This section outlines the objectives of this ICT roadmap, the rationale as well as the scope as outlines through the parameters of the roadmap. This roadmap takes cognisance of the parallel strategic planning process. It builds on this vigour and attempts to optimise ICT

deployment. This roadmap is very specific to the ICT needs and develops a robust financing mechanism beyond the County's internal equity.

1.2.1   Objectives of ICT Roadmap

The 5 Year roadmap aims at achieving the following four (4) broad objectives:

1) To develop a coordinated and coherent approach for ICT road map development and guidelines which will enable each County to provide high-quality and cost-effective ICT-enabled services that meet the needs of County residents;
2) Foster innovation, best practice, and value for money in the use of ICT in management of County resources, learning and Citizen outreach;
3) To define the conditions under which it will be possible to provide a shared and optimized ICT infrastructure with appropriate user support and standards for the National Government and the Laikipia County Government;
4) To among other things identify:
    1) Short term quick wins;
    2) The priorities for investment;
    3) The plans for development;
    4) Employment and support of ICT services and infrastructure which support the County's Citizen outreach, learning, and administrative activities;
    5) A change management plan,
    6) Detailed strategies for refinement and evaluation of performance, culture, communications, data reporting and any other strategic management identified issues necessary for successful implementation of the roadmap in relation to ICT services for the Laikipia County Government.

1.2.2   Scope of the Roadmap

The scope of this ICT Roadmap covers all Laikipia County ICT Programmes and Services. These programmes and services are critical to enable the people of Laikipia deliver their required outputs in support of service, directorate and County objectives. In the approach and design of this roadmap, attention is paid to 5 elements that are conceptually defined as brought out in Table 1.5.

Table 1-5 Conceptual Definition and Scope

No	Interpreted Issue	Details
1	Capacity Building	1) Strategic investment in ICT will ensure the efficient use of resources, encourage capacity building and ensure the ongoing management of ICT assets. 2) Programs and capacity-building initiatives are to be put into place so that the ICT services within the County are operated in a sustainable manner.

No	Interpreted Issue	Details
		3) It must provide relevant and useful services, content and products that County residents would be willing, and able, to pay for.
2	Infrastructure	1) ICT enables operational and business areas to deliver efficiencies across the enterprise, leading to continuous improvement and more effective Departmental outputs. 2) ICT will be provided efficiently and 'run and maintain' costs will be driven down year on year. 3) ICT procurement will take sustainability, security, information management and compatibility and co-existence requirements fully into account.
3	Interoperability	1) The primary goal of the ICT Roadmap is to facilitate technical interoperability within and across County departments through improved strategic planning and implementation processes. 2) The Roadmap will consolidate and coordinate the County Information technology resources in order to achieve cost savings, increase delivery capabilities and enhance interoperability. 3) To allow for greater interoperability, openness and reuse of ICT solutions, the County Government should consider establishing a suite of agreed and mandatory open technical standards.
4	Change Management	1) The ICT Roadmap is a significant change management document for the County that is underpinned by County's ICT Guiding Principles and objectives. 2) It has been developed to enable the County to improve and transform its productivity and service delivery for people, communities and business in the Laikipia County Government territory using ICT in a way that is forward-looking, adaptable and reliable.
5	Policy Environment	1) ICT Programmes need to be delivered within a defined legal policy environment. 2) This should include systematic examination of the technical aspects of ICT deliverables, such as information security policy and access control, taking into account threats, vulnerabilities and impacts at all stages of service/product development, implementation or use.

1.3   ICT Achievements, Challenges and Lessons learnt

The County Government has made tremendous progress in deploying ICT over the last 2 years of existence. The achievements include connection to NOFBI, registered web presence, parallel implementation of LAIFOMS platform in revenue collection and a new cloud system for revenue collection, IFMIS in expenditure and IPPD in payroll processing, setting up an ICT directorate and drafted some ICT policies.

However, these achievements come with evident challenges that include poor infrastructure, shortages in ICT equipment, limited capacities and resistance to changes. In addition, the systems are sub-optimal in functionality. The draft policies cannot facilitate full deployment of ICT.

Laikipia County has consolidated lessons that facilitate deploying ICT. Among the lessons include increasing and expanding the ICT infrastructure using a resource sharing framework, developing and implementing relevant delivery systems, continuously building ICT capacities, implementing a change management plan as well as continuously involving citizens in County decision making process.

2 THE COUNTY ICT CONTEXT AND SITUATIONAL ANALYSIS

The world's advances in ICT over the last 20 years have been phenomenal. A world without mobile phones and computers is unimaginable. Remarkable transitions are evident through Worldwide –Web, high-speed broadband internet and universal increase in the use of mobile devices to communicate and collect information. ICT is the critical enabler that will allow governments to take advantage of the opportunities in today's 'hyper-connected' and information-rich world to create responsive State Services.

2.1 Overview of the Global, Regional and National ICT Trends

The rapid advancements in the field of Information Technology (IT) and the resultant explosive growth of the information services sector have radically changed the world's economic and social landscapes. These changes have given rise to a new society based on information and knowledge. This has further resulted in new avenues of development, employment, productivity, efficiency, and enhanced economic growth.[1]

2.1.1 Global ICT Trends

ICT is key infrastructure in a modern organisation and is essential for the efficient and reliable delivery of services expected by the community. ICT is an enabler of change, assisting the streamlining of business processes to support continuous improvement and the resultant productivity and service benefits.

The world's advances in ICT over the last 20 years have been phenomenal. The uses of ICT have been so pervasive that we cannot imagine a world without mobile phones and computers. ICTs have gained increased importance especially with the advent of globalization and increased information –intensive economic activities (World Bank 2006). As a result, both the private and public sector acknowledge ICT's pivotal role in national development because the use of ICTs enhances public sector effectiveness, efficiency and transparency. It also creates substantial profits for the firms. The world has noted the rapid advances in ICTs but the degree of advancement is not evenly distributed.

There exists a digital divide, as the penetration of high-end technology is often restricted to more advanced countries. In this regard, the global community, through the World Summit on the Information Society (WSIS) strives to address the key issue of decreasing the digital divide while increasing communication and exploring the potential of ICTs in advancing the goals of the United Nations Millennium Declaration

There have been continuous and rapid changes in the technology landscape that have seen the growth in the use of consumer technology in business, mobile services, readily accessible

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[1] Republic Of Kenya : National Information & Communications Technology (ICT) Policy; Ministry Of Information & Communications, January 2006:9

broadband, and internet based data storage and applications (cloud computing). These changes are influencing all levels of Governments' decisions on how services are delivered and which ICT investments to make.

2.1.2   Regional ICT Trends

Notably, Kenya is among the leaders in the region, in respect to the development of ICT. Further, with the devolved system, ICT infrastructure and services are prerequisites to development in each County Government and therefore Kenya stands a better chance to use ICT to improve service delivery to the citizens. At the regional level, Kenya aims at improving its trade of goods and services with fellow East Africa Community (EAC) members. ICT has a major role to play in regard to facilitating communication and engagements among the members.

There are various planned integrations such as implementation of the customs union, common market, monetary union and political federation including the legal, regulatory, and policy reforms required to accomplish the plans. seamless ICT infrastructure and info-structure within the community is crucial to address the emerging mobile and cyber security issues perpetuated through ICT and fuelled by the borderless nature of the services delivered though the technologies.

2.1.3   National ICT Trends

Information and Communication Technology ICT has been identified by the Government of Kenya as a key infrastructure, as a dynamic and promising institutional/ services sector and as a platform for enabling technological and institutional transformation of all sectors in the economy.

Vision 2030 articulates the government's strategic vision for Kenya's development and focuses on three primary pillars of: the economic pillar, the social pillar and the political pillar.

ICT is one of the foundations for economic development in the second MTP of Vision 2030, with the theme, "strengthening the foundation for a knowledge economy". ICT is a critical tool in Kenya's vision of knowledge-based economy, which aims at shifting the current industrial development path towards innovation where creation, adoption, adaptation and use of knowledge as the key source of economic growth are key. As a foundation of the second MTP, the concern of ICT would be:

1) Upgrading the national ICT infrastructure
2) Improving public service delivery
3) Developing the ICT industry; and
4) Upgrading human resource ICT capacity

The following sections (2.2 and 2.3) represent a distillation of ideas germane to The Kenya National ICT Master Plan 2014-2017(Hereafter referenced as KNIMP). KNIMP identifies

three foundations and three pillars critical for a thriving digital economy.

2.2 ICT Foundations

The National ICT Master Plan identifies three critical actions that need to be undertaken in order to lay a basis of Kenya transitioning to a Knowledge Society and positioning the country as a regional ICT hub by developing quality ICT infrastructure, developing integrated and secure information infrastructure and developing critical mass of high-end ICT human capital. The developed three foundations are:

2.2.1 Human Capital and Workforce Development

This is the first foundation of the KNIMP. The aim is to develop quality human resources as a prerequisite for the development of a viable ICT sector. Laikipia County is a vast county. In spite of this, a sizeable percentage of the general human population is illiterate in matters ICT. The specific ICT sector is also grossly understaffed. This indicates that this is a critical area of investment for Laikipia County.

2.2.2 Integrated ICT Infrastructure

This is the second foundation of the KNIMP. Here is to provide an integrated infrastructure backbone for cost effective delivery of ICT services and products to all Kenyans. The nation is currently plugged into the international broadband superhighway through SEACOM, TEAMS, EASSY and LION. Taking advantage of this, the Kenyan government has inter-connected most major towns to the National Optic Fibre Backbone Infrastructure (NOFBI). This is in tandem with the National Broadband Strategy (NBS). It envisions "connectivity that is always on and that delivers a minimum of 5mbps to individuals, homes and businesses for high end speed access to voice, data, video and applications for development".

Nyahururu and Nanyuki towns have connection to NOFBI. The mandate to extend this connectivity to the sub counties rests with the County government according to the NBS.

2.2.3 Integrated Information Infrastructure

This is the third and final foundation identified in the KNIMP. The aim here is to improve e-Government services and enable the country to transition into a knowledge-based society. The strategy is to ensure maximum access to information held by public authorities by all Kenyans and that this information is availed through consolidated portals in an affordable and secure manner. This then makes it mandatory for all Counties, Laikipia County included; to not only maintain a web presence, but also to ensure that such a presence is collaborative and unified.

2.3 National Government Enterprise Architecture

To address the inconsistency and misalignment of ICT plans, the ICTA has developed the Kenyan Government Wide Enterprise Architecture (GEA) Framework as a minimum standard for use across all government departments and agencies. The GEA Framework supersedes any prevailing Enterprise Architecture and ICT planning frameworks and methods in use in government.

The National Government of Kenya recognises that Strategic management of Information, Information Systems and Information & Communication Technology is key and needs coordination. According to the GEA framework, the Government notes that MCAs have been using variety of frameworks and methods to develop ICT plans and implement the ICT projects, which resulted in inconsistency across government and agencies and not aligned with the Government ICT House of values. The Ministry of ICT and ICT Authority constitute the collective governing body of Information & Communication Technology (ICT). They have the responsibility to govern Government-Wide ICT plans and programmes in pursuance of the outcomes, principles of the ICT pillars as depicted in Figure 2.1;

Figure 2-1 ICT House of Values
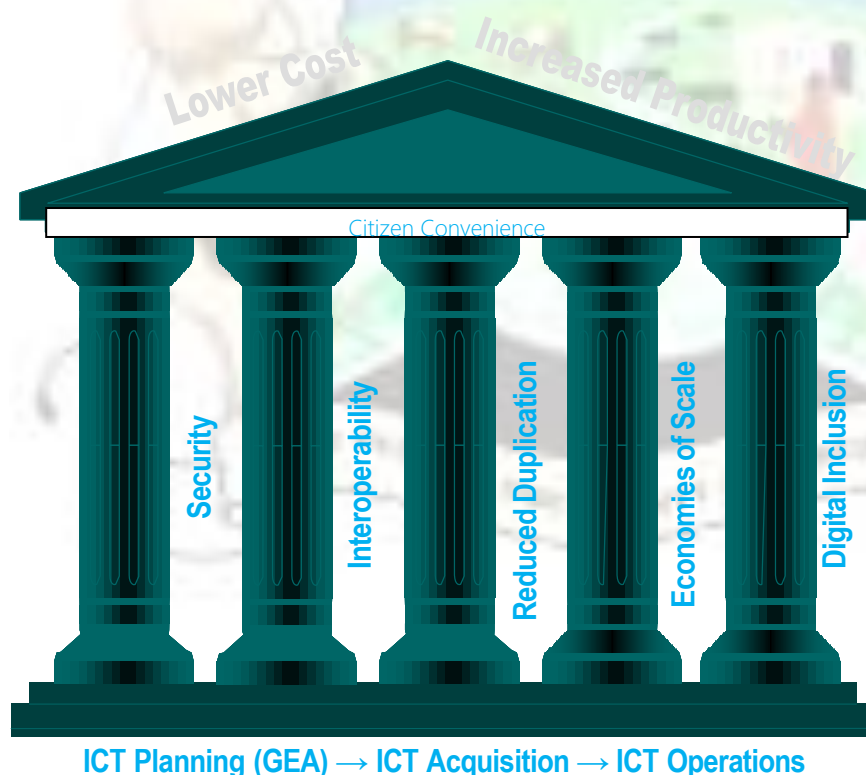
ICTA has developed the Kenyan Government Wide Enterprise Architecture (GEA) Framework as a minimum standard for use across all government departments and agencies. The GEA Framework supersedes any prevailing Enterprise Architecture and ICT

planning frameworks and methods in use in government. County Governments are no exception to this policy requirement. Hence the need for Laikipia County Government to conform and abide by the GEA framework as prescribed by the government policy.

The GEA Framework is generic and applies in all spheres and levels of government. It is valuable to produce department/agency Enterprise Architecture Plan (also referred to as ICT Plan or ICT Roadmap) that fully aligns with the department/agency business plan, whilst observing the objectives and principles of the e-Government as defined in the ICT House of Values. In this ICT Road map, the County government shall use this guide to tailor or establish its Enterprise Architecture capability to meet the minimum requirements as contemplated in the GEA Framework.

The GEA Framework prescribes a method and defines the minimum components of an ICT Plan and its implementation. The Government Enterprise Architecture is a mission-focused framework to improve government performance. By aligning Governments, business processes, information flows, and technology consistently across and throughout the Government, the GEA builds a blueprint for improving programs. In the development of the Laikipia County ICT strategy road map, the foregoing (GEA) framework shall guide the County Government Enterprise Architecture accordingly.

The purpose of Laikipia County utilizing Enterprise Architecture will be to provide an overview of how information technology can support the County in achieving the vision and mission of the core business strategy; run business in a better way; support business strategies that are constantly evolving; direct and motivate the development of information technology activities. The implementation of the ICT Road map for the County Government of Laikipia shall be guided and informed by the Government Enterprise Architecture as summarized in Figure 2.2 below;

Figure 2-2 Government Enterprise Architecture
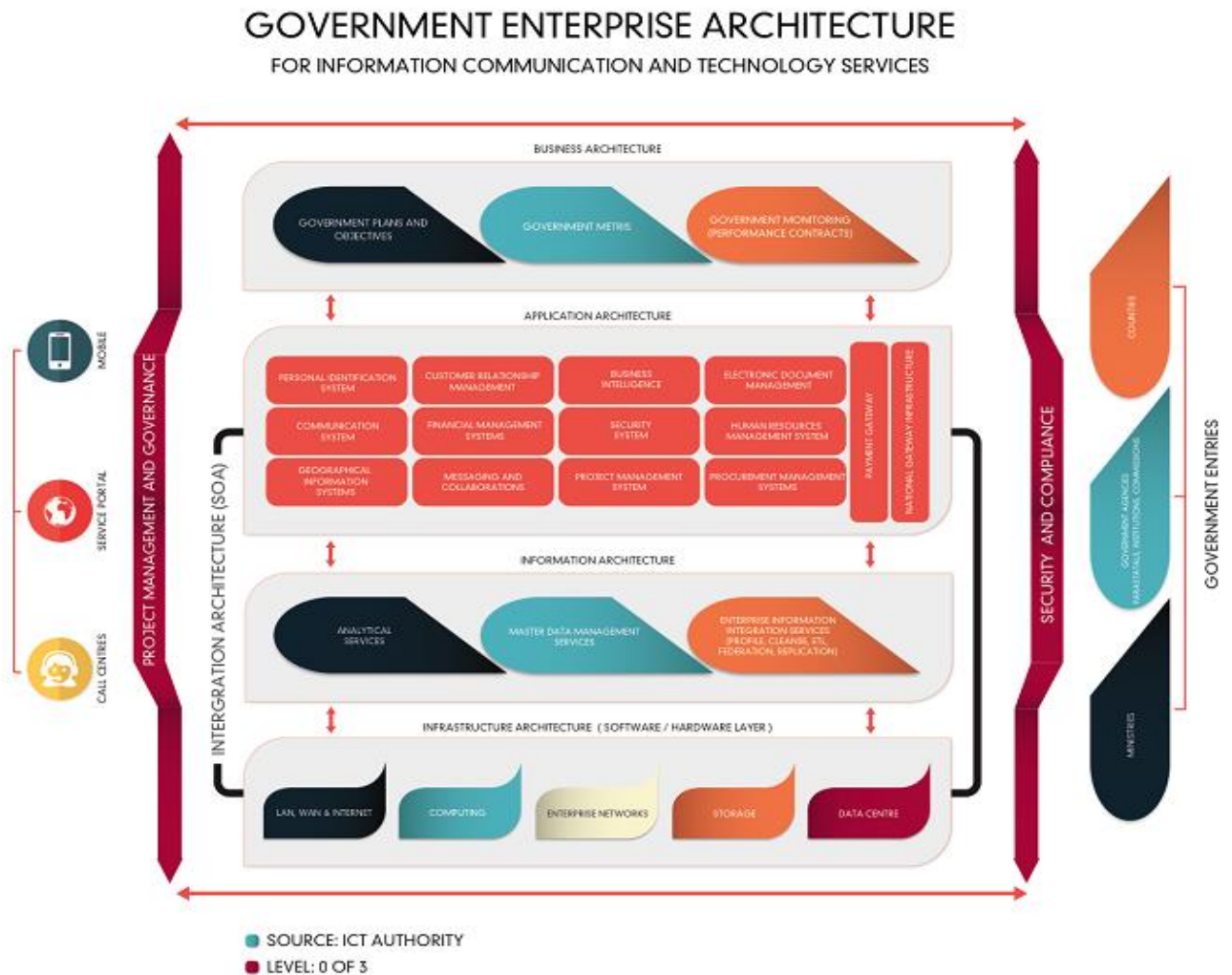
2.4 Strategic Pillars in line with the National Master Plan

This section discusses the strategic pillars for ICT development that the national government is propagating. The section below describes in detail the strategic pillars.

2.4.1 Introduction-: Common Infrastructure, Standards and Capability

This sub -section highlights the common infrastructure, standards and capability advocated by the national government. These are:

1) Common Infrastructure

At the heart of the ICT Roadmap is the creation of a common, secure and flexible infrastructure that is available across the County public sector. To achieve this, the roadmap sets out the vision for the following:

1) **Integrated Public Infrastructure and Connectivity:** The County shall pursue a single holistic telecommunications infrastructure that will deliver converged voice, video and data communications. A program of data centre consolidation that will deliver department wide economies of scale, meet environmental and sustainability targets and provide secure, resilient services. Aligned with development of the National Government Services, this program will reduce the number of data centres planned or already in use at National and County levels. The National Government Infrastructure shall provide for shared services plan to further exploit opportunities.

2) **The Government Cloud**: A government cloud infrastructure that enables public bodies to select and host ICT services from a secure, resilient and cost-effective shared environment. The Government Cloud is a key enabler, as it shall provide a single access point for ICT services, applications and assets.

3) **Desktop services:** While all public sector bodies need to provide their staff with access to functions such as email, word processing, spread sheets, document management, and internet browsing, historically each public sector organisation has separately specified, built and run its desktop service, creating additional cost and complexity. Instead, there will be a set of common desktop designs that conform to information assurance and sustainability requirements, setting this as a best practice across the County public sector.

2) Common Standards

All products, services and assets contained in the County government ICT infrastructure will benefit from a suite of common standards for security, interoperability and data standards, which will facilitate data sharing and make it easier to integrate public services. The key focus being on:

1) **Architecture and standards**: The technical architecture and standards work underpins all elements of the County ICT Roadmap. This will ensure security, interoperability and common data standards that will facilitate transition of supplier or product, as well as data sharing and the joining up of public services.

2) **Open Source, Open Standards and Re-use**: Traditionally, the public sector has relied on Commercial Off-The-Shelf (COTS) software or bespoke developments from global providers. This restricts the ability of the public sector to reuse solutions, reduces flexibility to manage assets efficiently and prevents government organizations from switching suppliers. The Open Standards, Reuse Strategy provides government's approach to alternatives that meet public sector requirements. This strategy will build capability within the public sector to increase the applications and software in use and to make it available for reuse elsewhere.

3) **Information security and assurance**: Data losses within the public sector have rightly raised the profile of information assurance. However, data sharing is an essential element of integrated services. This means that there must be effective, proportionate management of information risk. By developing a secure infrastructure, as outlined above, will provide a trusted platform that will allow public sector bodies to match their information risk appetite with their information risk exposure: Without feeling compromised, users of the infrastructure will confident about their information.

3) *Common Capability*

The County Roadmap incorporates building capability as well as capacity in ICT. The strategy requires people who work within public sector ICT, and a cultural change in ICT usage and procurement.

1) **ICT Skills & Capacity Building**: Increasing the capability will not only improve the performance of ICT, but it will also reduce the amount the public sector spends on ICT consultants and contractors. The ICT Directorate provides a focal point for increasing the professionalism of ICT delivery within the county public sector. A County Government IT Professional skills and competency framework is necessary in recruitment, training and performance management of government ICT professionals.

2) **Reliable project delivery:** Reliable project delivery is critical and the ICT Directorate will work closely with stakeholders to identify those major programs and projects that have a high complexity and associated high delivery risk, and take a more proactive role in managing them and overseeing their success

The National ICT Master plan developed to actualise Vision 2030 Economic Blue Print for Kenya identified key Pillars that are essential to actualising the ICT Vision as a driver of economy. The embracing of ICT has in the past few years has brought noticeable growth in the ICT sector especially in the mobile sector, which rose to 31.3 million subscribers and a penetration of 76.9 per cent by September 2013. It also led to 25.1 million mobile money subscribers and an estimated 19.1 million Internet users with 47.1 per cent inhabitants having access to Internet services (CCK, 2014). The main ICT pillars that will continue to the growth of ICT as a service enabler in the Country are:

2.4.2 *The e-government services*

The Government of Kenya has implemented electronic systems in various state Departments and other state-owned institutions, including national tax systems, immigration information system, legal information system, the integrated financial management system and education system. Most of these systems are in the national Treasury, Kenya Revenue Authority, Home affairs state Department and Immigration Office. In addition, the

information exchanges manually between departments and institutions using fax, e-mail and electronic media. These systems provide partial electronic services to citizens and businesses through Government portals.

County Governments are taking ICT as an important tool for delivering services to citizens and businesses. There are few electronic governance systems, most focusing on revenue collection based on local authorities integrated financial and operations Management system (LAIFOMS). The system used by the local authorities that preceded the creation of County Governments. Most County Governments at this level have begun developing County ICT Master Plans, which will be aligned to this national ICT Master Plan at the ministry level.

2.4.3   ICT as a Driver of Industry

The transformational power of ICT presents a strategic opportunity that Laikipia County must take and focus on as it formulates its development agenda. The rapid growth of Kenya's mobile networks and the internet as well their continued rapid expansion in reach, including to the lowest income segments of low income countries has accorded every citizen an opportunity for access to quality services. It is therefore the responsibility of the County government to exploit the available ICT infrastructure for delivery of services to the lowest administrative unit. The trend in readily available "open government data" also provides initiatives from citizens and private enterprise to produce a wide range of new services products. These trends create an opportunity to use technologies to improve service delivery in all the sectors of the economy.

2.4.4   Developing ICT Businesses

This area focuses on developing the information and communication industry through the creation of new businesses that produce products and services that will contribute to jobs and economic development. Developing ICT businesses divided into three areas: technology innovation, IT enabled services (ITes) and development of the ICT sector.

2.4.5   National ICT flagship Projects

The KNIMP identifies sixteen flagship projects, some have a direct bearing on Laikipia County and others have an indirect bearing. The sixteen projects are under the broad areas identified below:

1) **Legal and regulatory framework**: One project identified, that is, designing an enabling legal and regulatory framework. This provides the bedrock on which the implementation of other flagship projects will ride. As the national bodies mandated with this finalise their work, the expectation for Laikipia County is to adopt this national initiative.

2) **Information infrastructure and e-government services:** Four projects identified are People's data hub; Establishments data hub; Assets data hub and a National spatial data infrastructure. Laikipia and indeed all other Counties will ride on these in the context of defined shared services.

3) **ICT infrastructure**: Three projects identified are Affordable and quality broadband infrastructure to underserved areas, school network and health network. This is where NOFBI connectivity comes in. the national government's mandate is to ensure connectivity terminates at every county headquarter. The County mandate (Laikipia included) entails extending this connectivity to the sub-county towns. Each county is also at liberty to explore PPP in enhancing their infrastructure.

4) **ICT human capital and workforce**: Three projects identified. Five centres of excellence in ICT education and training, Financing a 1-2 year intensive structured training and attachment programme producing 500 high-end graduates annually and Development of MOOCs-type ICT continuous education courses for training of trainers and the public. This again forms important bedrock in the national to county government shared services architecture. All ICT directorates across the counties complain of insufficient staff. These projects will provide relief to counties human capacity needs.

5) **Developing ICT businesses**: One project identified, Scaling up ICT innovations. This project is associated with the planned Konza Techno City as the main national innovation hub connected to other innovation hubs in some selected counties. The underlying idea is the commercialization of ICT innovations.

6) **ICT as a driver of industry**: This final umbrella under which three listed projects: The National electronic single window system, the National payment gateway and the National agriculture commodity are of critical importance to Laikipia (an agricultural County), is the national agriculture commodity envisioning an agricultural portal, an electronic tea auction and an electronic animal monitoring system.

2.5   ICT Status in Laikipia County

This section presents the actual status of ICT in Laikipia County. The status compares itself to the international benchmarks, good practices, and legal obligations in acquisition and deploying ICT in County operations. The status focuses on the four thematic areas as outlined in Section 1.3 above. The status cuts across the three arms of the County Government.

2.5.1   *Infrastructure and Connectivity*

The County Government requires a robust infrastructure through networks, internet connectivity, electricity connections, mobile telephony networks and business continuity plans. These aspects facilitate adequate deployment of ICT for superior and efficient service delivery. Currently, Laikipia County has developed an infrastructure that can support deploying ICT enabled service delivery. However, this infrastructure is still sub-optimal. Currently;

1) Laikipia County is connected to the national fibre optic backbone infrastructure at Nyahururu, Rumuruti and Nanyuki towns. In addition, the infrastructure for mobile communication like masts, VSAT do exist.
2) Internet connection is reliable in urban areas in the County
3) Monitoring of network availability and capacity is carried out.
4) All the major ISP Players are in the County. They include liquid Telcom, Jamii, Access Kenya, Safaricom, Airtel, Orange
5) Laikipia County has a server room.

2.5.2 Public Service Delivery Systems

The purpose of developing the ICT infrastructure is to facilitate deploying ICT enabled service delivery. This requires developing and implementing interoperable systems that facilitate faster service delivery, internal coordination, public communication and information management. This reduces wastage and pilferage that results in increased efficiencies. In general, the County is low on systems beyond the legal requirements; service delivery is largely manual while internal coordination mechanisms are manual resulting in loss of time. Currently,

1) Laikipia County implements several ICT enabled systems in finance and administration. They include LAIFOMS (for revenue collection), IFMIS (for procurement, budgeting, back office accounting) and IPPD (Salaries processing). However, IFMIS and LAIFOMS are not interoperable.
2) Laikipia County has a domain name and the officials mails are hosted on the same.
3) Laikipia County has a website. This website is externally hosted
4) The county assembly has its own website: laikipiaassembly.go.ke.
5) Social media usage in official communication within Laikipia County is high.
6) Automation of workflows and processes is limited.

2.5.3 Human Capital and Workforce Development

Deploying ICT requires a skilled human capital and workforce development that is alive to that reality. This calls for developing skills in general and specialised ICT skills, recruiting and maintaining a motivated human capital as well as continuously building the capacity of the citizens to embrace and use ICT. Currently, the County is sub-optimally operating. The current workforce cannot fully support deploying ICT. Specifically,

1) There is an elaborate ICT organogram
2) The ICT staff in the County are currently 7 in number
3) The ICT staff support the technical implementation of the existing systems in Finance and administration.

2.5.4 Policy Environment and Legal Framework

Deploying ICT requires a robust and sound legal and policy framework. The framework covers policies, laws, investment frameworks as well as ICT allocation levels. The policy framework should conform to the national legislations and standards. Currently, Laikipia County has an ICT policy in draft form. In addition, the ICT department has developed an ICT commitment service charter. The County has neither a strategic plan nor an investment framework.

2.5.5 Shared Services

There are two shared services plans in place.

2.5.6 Change Management

1) **Technical-** the techno infrastructure is not flexible enough to accommodate: not scalable and not interoperable
2) **Structure –** the current organizational structure of ICT is flexible enough to support change
3) **People-** no programmes currently in place to train in change manage

2.5.7 Citizen Involvement and Participation

Citizen participation in County Government processes such as budgeting is limited and mostly conducted through public non-ICT based channels like public *barazas.* In addition, a citizen participation portal is not in place

2.6 The ICT SWOT Analysis

The internal ICT situation is analyzed using the SWOT analysis. However, the SWOT uses the PESTLE model to strengthen the analysis. Table 2.3 summarizes this analysis.

Table 2-1 ICT SWOT within PESTLE Framework

SWOT WITHIN PESTLE FRAMEWORK		
	Strengths	**Weaknesses**
P	Politics: There is political goodwill from the elected leaders (23 MCAs,)	The only internal politics is on succession debate.
E	Economics i.e. Actualized budget votes on ICT	Economics i.e. Inadequate budgetary resources
S	Socio-metrics i.e. Capacity building, Designated and qualified ICT staff	Socio-metrics i.e. Limited number of ICT staff, Non programmed capacity building of the ICT staff

T	Technology: Connectivity access to the Fibre Optic cable, Available equipment	Infrastructure i.e. Non-integration of Systems (IFMIS, IPPD, LAIFOM, HRIMS and G-Pay)
L	Legal: Draft ICT Policy, Finalized County Strategic Plan, County Integrated Development Plan	Policy environment i.e. Slow speed to finalize ICT policy and formulate ICT regulations
E	Environment: High points on connectivity in Major urban areas (Nanyuki and Nyahururu)	Expansiveness terrain characterized with low connectivity points e.g. Laikipia North Sub-county (Sosian, Mukogodo West and East)
	Opportunities	**Threats**
P	National politics – High representation in the National Assembly (5 MPs – three elected, one nominated and one woman representative)	National politics – Disunity on County as an entity
E	Economics –Goodwill of partners (CHS, SNV, UNDP,) and National Government (ICTA)	Economics i.e. Support terms, time frames and Sustainability conditions
S	Socio-metrics i.e. Capacity Building of County ITC staff (ICTA)	Socio-metrics i.e. Poor/Weak implementation follow up
T	Technology: Existing National Connectivity Infrastructure (Fiber Optic Cable), Lead Service Providers e.g. Safaricom, Orange, Airtel, Jamii Telcom.	Infrastructure i.e. Limited Coverage in parts of the County
L	Legal: National ICT Policy i.e. National ICT Master Plan, Ministerial Strategic Plan	Policy environment i.e. uptake and implementation at the devolved level.
E	Environment: High points of connectivity in the Major towns, ICT Hubs e.g. Konza City)	Geographic barriers e.g. terrain topography and Features

2.7   Stakeholders Analysis

Implementing an ICT roadmap comes with expectations that touch on the mandate of different stakeholders that directly or indirect affect or are affected by the roadmap. Table 2.2 below summarises the stakeholders and their expectations and how their expectations are met.

Table 2-2 Stakeholder Analysis

No.	Category / Organization	Mandate/Role/Interests/Expectations of Stakeholder	How expectation will be addressed during the planned period

No.	Category / Organization	Mandate/Role/Interests/Expectations of Stakeholder	How expectation will be addressed during the planned period
1	The County Executive	1. Conduct Strategic planning 2. Design and Implement plans 3. Conduct Monitoring 4. Develop Budgets 5. Collect and allocate revenue	1. Coordinating relevant functions and or departments 2. Availing resources for implementation 3. Implementing timely

2	The County Assembly	1. Approve
		  - Budgets
		  - Implementation plans
		  - Operational Policies
		2. Conduct public awareness
		3. Formulate regulation
		4. Carry out oversight on implementation
			1. Enhancing public participation and involvement
			2. Steering the project through fact finding from the relevant committee

3	County Public Service Board County Assembly service Board	1. Recruit sufficient skilled and qualified personnel 2. Develop human resource base	1. Maintaining standards and discipline among County staff. 2. Deploying appropriately 3. Human Resource fitting 4. Conducting interviews 5. Continuous HR development
4	The Citizens (Publics) i.e. Youth, Gender, PWDs and Other Interest groups	1. Source of information 2. Consume the services 3. Protect the specific individual interest. 4. Create need for services and goods(demand) 5. Promote innovation and creativity 6. Create partnerships and linkages	1. Giving feedback 2. Demanding for accountability from the County responsible 3. Participating in public forums 4. Paying fees, levies and charges 5. Lobby and advocacy
5	**National Government Ministries/State**	1. Provide legal and policy framework 2. Provide standards and regulations 3. Allocate revenue	1. Forming frameworks and policies for ICT 2. Allocating funds

No.	Category / Organization	Mandate/Role/Interests/Expectations of Stakeholder	How expectation will be addressed during the planned period
	Agencies		
6	**Strategic Partners** *Media, Funding Partners/Donors, Institutions of Higher Learning*	1. Provide technical support 2. Provide financial support 3. Promote efficiency 4. Support organizational development	1. Offering expert advice 2. Financing specific projects 3. Supporting research and development
7	*Civil Society organisations* *NGOs, FBOs*	1. Relay information 2. Promote Moral protection 3. Provide financial support 4. Provide technical support 5. Support Innovation 6. The voice of the minority	1. Mobilising the public 2. Conducting public awareness 3. Participating in issues of public interest
8	**Commerce & the Business Community** *Public Private Partnerships*	1. Support and fund projects 2. Give standards (standardisation) 3. Promote Research and development Consume ICT products	1. Participating in projects 2. Providing basic infrastructure 3. Engaging in public private partnerships

2.8   Gap Analysis

This section presents the ICT gap analysis for Laikipia County. The analysis uses a customised maturity level analysis model.

2.8.1   ICT Maturity Level

The development of the ICT roadmap used an international process called ICT maturity modelling to benchmark the county's maturity level. The process utilised the famed CMMI, approach to analyse identified aspects (in this case, thematic area) in the context of a set of structured levels that describe how well the behaviours, practices and processes of an organization can reliably and sustainably produce required outcomes.

The consultancy developed a customized model addressing directly the realities germane to the Counties in Kenya. This customized model identified five progressive levels of maturity, the norm in the industry. However, whereas CMMI graduates the levels from one to five, our model adopted a zero to four progressions. The five levels are maintained but results from our

model would have a different meaning from those obtained on the CMMI model. That is, a score of four on the CMMI must be interpreted as a score of three on our model. The diagram below shows a comparative snapshot. A comprehensive description of the levels by way of specific indicators is in the table below.

Table 2-3 ICT Maturity Levels

CMMI LEVELS	CONSULTANT LEVELS
LEVEL 1 (Initial)	LEVEL 0 (Relative immaturity)
LEVEL 2 (Repeatable)	LEVEL 1 (Ad hoc maturity)
LEVEL 3 (Defined)	LEVEL 2 (Emerging maturity)
LEVEL 4 (Managed)	LEVEL 3 (Relative maturity)
LEVEL 5 (Optimizing)	LEVEL 4 (Robust maturity)

The process identified and analysed four broad thematic areas listed in the context of the five levels identified.

1) Infrastructure and Connectivity
2) Public Service Delivery Systems
3) Human Capital and Workforce Development
4) Policy Environment and Legal Framework

The results for each category (thematic area) with respect to Laikipia are in the table below:

Table 2-4 County ICT maturity Level

Category	Computed maturity level	Interpretation
Infrastructure and Connectivity	0.8	This component reflects ad hoc maturity. It is defined by the presence of NOFBI at the county headquarters, a lack of extension of NOFBI to the sub county towns. Wireless connectivity also exists, strong in the urban centres but weak in the rural areas. There is also an absence of WAN and LAN connectivity.
Public Service Delivery	1.0	This score defines what our model calls ad hoc maturity. There exists some basic level of public service delivery systems. The website is functional but in need of upgrading. Revenue streams are minimal automated with car parking still manual. Social media presence needs to be enhanced.
Human Resource and	0.9	The score still defines ad hoc maturity. This is characterized

Category	Computed maturity level	Interpretation
Capacity Building		by a grossly understaffed ICT sector, lack of mainstreaming of ICT staff in other county departments and the bulk of the rural population residing in the analogue era.
Policy Environment and Legal Framework	0.7	Though still close to ad hoc maturity, this area has the weakest score. ICT policies for both the county executive and assembly still exist in draft form. Mechanisms for project management are absent and a framework for shared services is not yet in place.
Overall county maturity	**0.85**	**Reflects ad hoc maturity, the second level in a five level maturity continuum indicating Laikipia county has a lot of work to do to realize the transformative power of ICT.**

The radar representation below grants a bird's eye view of each category's maturity.

Figure 2-3 Radar Representation of Laikipia County maturity
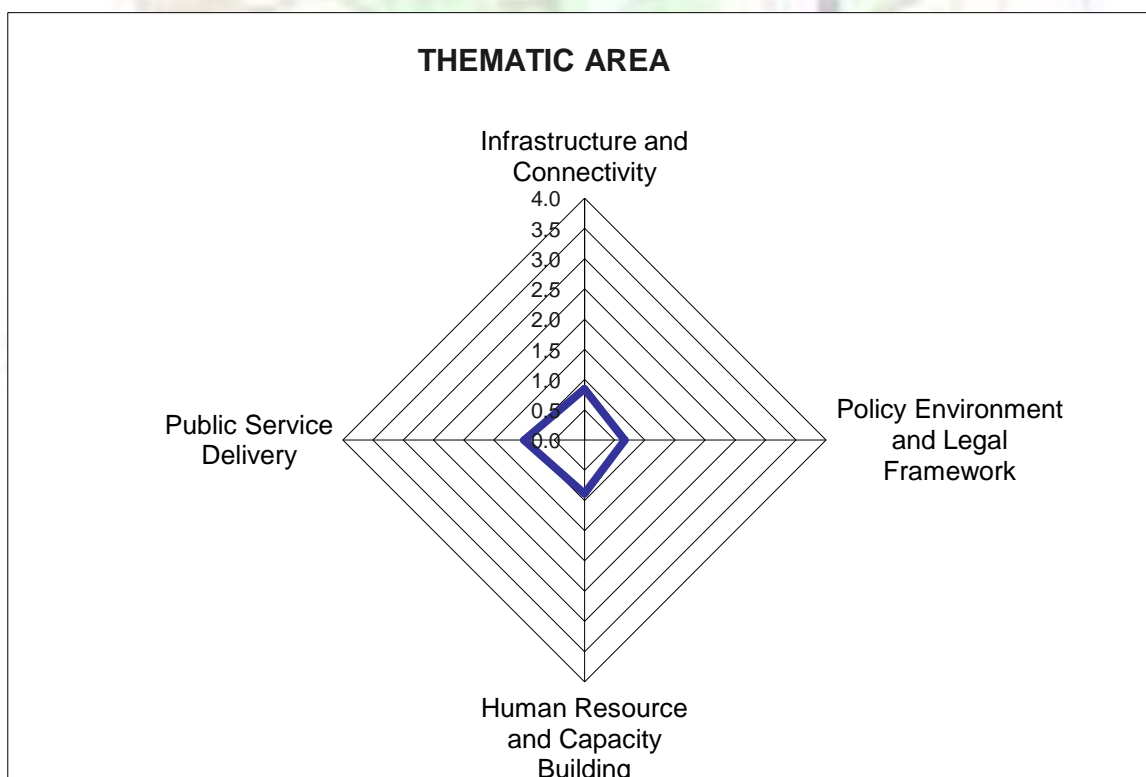
Figure 2-4 Weighted maturity Ratio

Weighted Maturity Ratio

	Infrastructure , Connectivity	Public service delivery	Human Resources & Capacity Building	Policy Environment and Legal Framework
■ Weighted Maturity Ratio	80	75	77.5	82.5
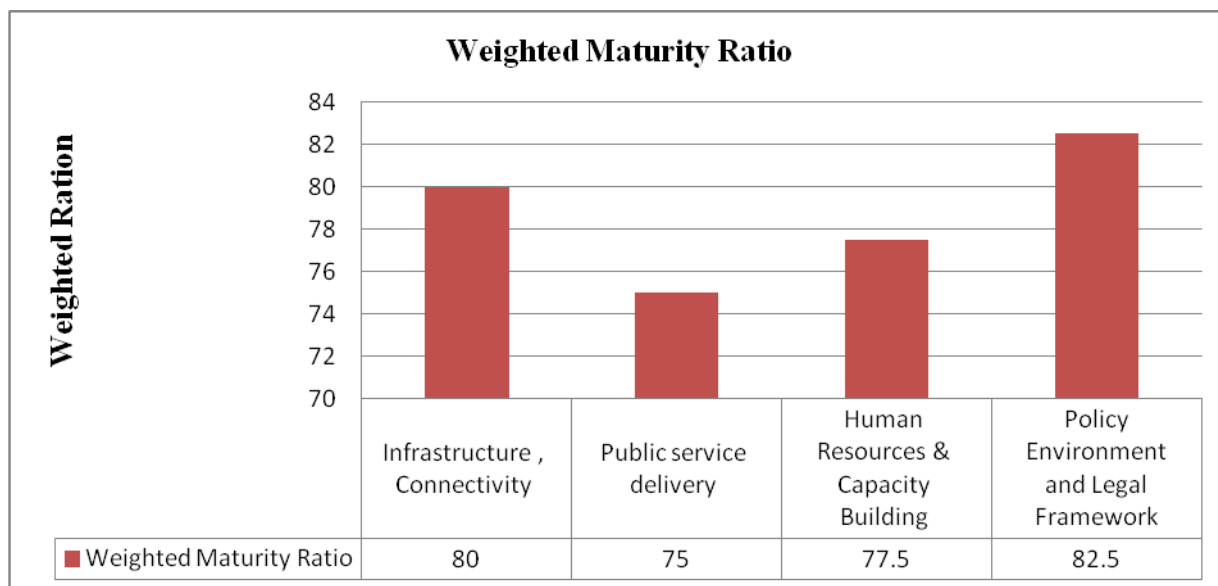
The weighted result of 315 is way too low and therefore shows a combination of very low maturity results and a high degree of importance to the county. Comparatively, Policy Environment and legal framework, Infrastructure and connectivity as well as Human resource presented very low maturity level and will require more attention in Laikipia County.

Gap Analysis: The maturity levels brings to fore existing gaps in deploying ICT in Laikipia County. The gaps are identified and listed in the section that follows;

2.8.2 *Infrastructure and Connectivity*

Laikipia County's infrastructure is still underdeveloped. Currently, NOFBI terminates at Nyahururu, Nanyuki and Rumuruti town. Internet connectivity in rural areas is erratic and almost none in Laikipia North. The county has an acute shortage of ICT equipment. Furthermore, the business continuity plans are weak since the County lacks a data centre. LANs and a WAN need to be put in place to enhance interconnectivity across the county. Mobile telephony network is also weak in some parts of the County. Electricity connectivity is uneven across the County with Laikipia North totally devoid of this connectivity.

2.8.3 *Public Service Delivery Systems*

Although the County is progressively automating is public delivery systems, several gaps are still evident. They include
1) Main service delivery systems are not interoperable (IFMIS, IPPD, LAIFOMS).
2) Sub optimal utilisation of ICT facilities due to a departmentalized architecture.
3) Laikipia County is devoid of ICT management systems like the ERP to manage countywide resources and a GIS to produce electronic geo-spatial records.

4) Inadequate service centres modelled on the central government Huduma concept.

5) Incomplete process and workflow automation

2.8.4 Human Capital and Workforce Development

Some of the gaps in human resource include:

1) Shortage of ICT staff in the County offices

2) Lack of end user training for ICT users in the County

3) Lack of a County government ICT training unit

4) No training needs assessment done

2.8.5 Policy Environment and Legal Framework

The County is yet to develop fully a robust framework. The policy documents such as the ICT policy are in draft. Furthermore, ICT investments drawn from the CIDP a document that is not comprehensive in matters ICT. The County lacks a strategic document to guide the investments in ICT. ICT investments rely on the fiscal strategy paper that draws largely from the departmental needs that are non-strategic in nature. The ICT allocations are low.

2.8.6 Shared Services

Lack of enough shared services framework

2.8.7 Change Management

1) **Technical**- lack of a flexible techno infrastructure to accommodate scalability and interoperability

2) **People**- lack of programmes to train people to embrace ICT

2.8.8 Citizen Involvement and Participation

Lack of an ICT based citizen's participation platform

2.9 Current ICT Expenditure Analysis

The current level of budgeting in the County was to be analysed based on Gartner IT key metric data report (2012) which provides a market benchmark for key ICT metrics including spend level as compared to revenue. These ICT key metrics such as average percentages of ICT expenditures or budgets against the organisation revenue and analysed per industry give high-level benchmark for assessing organisations' ICT department. The budgets for the financial year 2014/2015 were not availed to enable for this analysis.

The Kenya Government ICT Master Plan recommended expenditure of 5% on ICT of the overall revenue in line with a study by Gartner in 2012 that observed ICT spending as a percentage of total revenue for organisations close to the County to range between 3% to 5%.

3   THE COUNTY ICT STRATEGY ROAD MAP

The ICT roadmaps refer to the cost effective and user-friendly infrastructure acquired and deployed in Laikipia County for improving operational efficiencies in the County that enhances superior service delivery to the citizens of Laikipia County. The ICT road map takes cognisance of reversing the existing gaps in the use and application of ICT in service delivery in the County.

The roadmaps respond to systems, equipment, and skills that will be required to deliver optimal services at the 4 levels between:

1)   G2G (County government to governments (other counties and National Government))
2)   G2C (County government to citizens)
3)   G2E (County government to employees)
4)   G2B (County government to businesses

3.1   Strategic Principles

This section details the desired end state definition for ICT in Laikipia County. It is described in the Vision and Mission statement, the core values embraced in deploying ICT as well the roadmaps that shall be implemented over the 5-year period.

3.1.1   Vision

The Vision of ICT in Laikipia County is

"Be the leader in transforming Laikipia into a regional ICT hub and a globally competitive digital economy"

3.1.2   Mission

The Mission of ICT is to realise

"To champion and harness ICT for efficient and effective public service delivery, wealth creation and well-being of all"

3.1.3   Core Values

The following core values shall guide the implementation of the ICT roadmap

1)   **People-centeredness** - Shall always aspire to delight our customers through service quality, efficiency and promptness
2)   **Equity** - we shall endeavour to be treating everyone fairly
3)   **Accountability** - we shall aspire at delivering on promises and being open and honest

4) **Efficiency** - we shall all the time be making improvements through being efficient and delivering value

5) **Professionalism** -we shall aspire at wanting to be the best and working together to achieve this and encouraging questions and listening to our customers

6) **Integrity** - Shall at all-time endeavour to adhere to moral and ethical principles in service to our customers

7) **Innovativeness** - we shall aim at learning to be different and improving

8) **Passion-** Working together to improve how we provide services to customers

3.2 Roadmaps

The County Government shall implement the following four roadmaps in order to meet the identified ICT needs:

1) Roadmap 1: Infrastructure and Connectivity
2) Roadmap 2: Public Service Delivery systems
3) Roadmap 3: Human Capital and Workforce Development
4) Roadmap 4: Policy environment and legal framework

Table 3.1 below presents the rationale and parameters for each roadmap.

Table 3-1 ICT Roadmaps Framework

No	Roadmap	Roadmap Rationale	Roadmap Parameters
1	Roadmap 1: Infrastructure and connectivity	ICT based service delivery rely on infrastructure. ICT infrastructure is the basis upon which public service delivery shall be made possible	1) Internet Connectivity 2) Basic ICT equipment 3) Network infrastructure- LAN/WAN, mobile phone 4) Electricity connection 5) Business Continuity plans- servers, network attached storages, data back-ups, co-location facility
2	Roadmap 2: Public Service Delivery systems	The aim of this roadmap is to deliver highly efficient and quality services to the people of Laikipia County. ICT in service delivery is viewed as the most attractive strategy to realising this goal. This is the main roadmap.	1) System automation 2) Workflow automation 3) Internal coordination- unified communication system 4) Service delivery points

3	Roadmap 3: Human Capital and Workforce Development	The human resource is critical in implementing ICT enabled service. County staff require targeted training and capacity building to use and apply systems in service delivery	1) Training needs assessment 2) Basic ICT training 3) System (application) based specialised trainings 4) ICT department human resources establishment
4	Roadmap 4: Policy environment and legal framework	ICT is not a devolved function. The ICT frameworks and investments should conform to the National Master-plan	1) County ICT policy framework 2) County ICT investment framework-PPPs in infrastructure acquisition 3) County ICT legal framework 4) County ICT budget allocations

3.2.1 Road Map 1: Infrastructure and Connectivity

Network infrastructure and information access to enhance with the latest technology. This ICT strategy road map is based on a radical shift in the technology used to deliver ICT services. The County shall seek to achieve the following objectives by implementing five interventions under infrastructure, connectivity and interoperability

Overall Objective: Communication networks in all parts of the County improved and infrastructure enhanced.

Specific Objectives: The County shall implement the following interventions

1) Construction and equipping of the county Data Centre by June 2018
2) Extend NOFBI connectivity to the sub-county towns by December 2015
3) Creation of LANs and WAN by June 2016 (sub county hqs),June 2018(wards)
4) Purchase Computing Devices by December 2016
5) Establish a Unified Communication infrastructure by June 2017
6) Purchase and install a GIS Server by June 2018
7) Establish 3 Community ICT Service Centres infrastructure by June 2020

3.2.2 Road Map 2: Public Service Delivery Systems

ICT will act as a hub for knowledge and best practice of the latest solutions available to the public sector in the County of Laikipia. The County shall seek to achieve the following objectives that touch on public service delivery systems. The County shall implement nine interventions.

Overall Objective: Develop and implement automated public service delivery systems

Specific Objectives:

1) Operationalize all IFMIS modules by June 2016
2) Purchase and install a Revenue Collection System integrated to IFMIS by December 2016
3) Purchase and install a GIS-core integrated to IFMIS by June 2018
4) Purchase and install an ERP System (core) and basic services modules by June 2018
5) Design and operationalize a County Web Portal by December 2017
6) Purchase and install an Electronic Document Management System by December 2018
7) Purchase and install a Customer Relationship management System (CRM) by June 2017
8) Purchase and install Community ICT Service Centres' software systems by June 2020
9) Reposition ICT department from education department to finance by july 2017
10) Purchase and install Unified Communication systems by June 2017

3.2.3 Road Map 3: Human Capital and Workforce Development

The successful implementation of ICT projects is heavily dependent of the availability of human resource with the relevant ICT skills. Skill sets demanded in the Information and Communication Technology (ICT) cluster are particularly dynamic and require continuous learning. The County shall seek to achieve one objective by implementing the following five interventions

Overall Objective: To improve the ICT capacities in the County

Specific Objectives: The County shall implement the following specific interventions

1) Develop County ICT Training programs for both specialized ICT personnel and end users by June 2020
2) Establish a County ICT Governance structure (PMO and Secretariat) by December 2016
3) Recruit County ICT staff in line with the proposed organogram by June 2017

3.2.4 Road Map 4: Policy Environment and Legal Framework

Legislation frequently lags behind technology, but the County Government cannot afford to disregard the issues. The County Government shall ensure the enactment of ICT laws that are in tandem with the national ICT laws. The County shall seek to achieve the following objective:

Overall Objective: To develop and implement a comprehensive ICT legal and policy framework

Specific Objectives: The County shall implement the following interventions

1) Develop a Comprehensive ICT Policy (Security, Document workflow, Procurement, SLAs, e-Waste management) by June 2016
2) Develop Disaster Recovery and Business Continuity (DRC) Plans by June 2016
3) Design and adopt Shared Services Policy by April 2016
4) Design and adopt Change management policy by April 2016
5) Adopt Systems Standardisation as prescribed by international bodies (ITIL, ISO Certification) by December 2015

3.3 Shared services Plan

Sharing entails utilizing resources available to ensure optimal performance and reduce duplication.

Specific Objectives (Interventions)

1) Identify ICT based services to be shared by December 2017
2) Develop a comprehensive policy for sharing ICT based services by June 2017

3.4 Change Management Plan

A fundamental element of ICT road map is change. People are crucial in change management, without people this strategy will not be achieved.

Specific Objectives (Interventions):

1) Structure: re –engineer the organizational structure and positioning of ICT sector to support ICT change by June 2018
2) People: training to facilitate a paradigm shift with respect to ICT based change will be done annually till June 2020
3) Technology: Procure and install scalable, interoperable and integrated ICT systems throughout the road map period

3.5 Citizen Involvement and Participation

Transforming ICT based citizen involvement and participation is key to their access to services and contribution to County affairs.

Specific Objectives (Interventions):

1) Develop web based collaborative platforms by December 2017
2) Open official social media accounts to facilitate interaction with the citizens by December 2015
3) Promote the use local radio stations and television to enhance citizen participation till June 2020

4) Source ICT technologies to address people with special needs (PWDs) to effectively participate in county affairs by June 2016

3.6 Key Strategies Guiding Implementation of the Roadmaps

Laikipia requires a mix of strategies to achieve the desired ICT enabled service delivery. Some strategies cut across the four roadmaps while others are roadmap specific. The matrix in Table 3.2 presents some of these strategies.

Table 3-2 Key Strategies for Implementation

1	Roadmap 1: Infrastructure and Connectivity
	Key Strategies 1) Engaging the private telecommunications to enhance connectivity 2) Connecting the sub county headquarters to NOFBI 3) Connecting the departments and arms to a Wide Area Network 4) Optimising public private partnerships to finance capital ICT investments 5) Progressively increasing ICT allocations over the 5 years 6) Sharing the data centre with other Counties
2	**Roadmap 2: Public Service Delivery**
	Key Strategies 1) Optimizing the existing systems 2) Replicating the Huduma centre approach by establishing service centres at the sub-county and ward levels 3) Collaborating with the national Government 4) Jointly pursuing meeting common needs with neighbouring Counties and the national Government
3	**Roadmap 3: Human Capital and Workforce Development**
	Key Strategies 1) Progressively recruiting ICT savvy human resources 2) Continuously training the existing staff 3) Embedding skills development on the specific systems being implemented
4	**Roadmap 4: Legal Environment and Policy Framework**
	Key Strategies 1) Aligning the laws to the national Government regulations 2) Pursuing joint ventures with the national Government

4   IMPLEMENTATION PLAN

This chapter focuses on the structure that the County requires to implement the roadmap successfully. In addition, it highlights the key priorities, critical success factors, project timelines as well as discussing change management and shared services plan.

4.1   ICT Governance, Management and Organisation

This section presents the governance, management and organisation in the implementation of the roadmap

The roadmap requires a governance structure that aligns itself to the dynamic realities of mobilising resources and sustaining the implementation vigour. This can only occur when the County adopts a cost-effective structure that aligns to the current functional structure if resource sharing is the strategy to adopt. In addition, an implementation unit that largely borrows from a matrix structure is the most desirable.

The existing structure requires a little boost to maximise the ICT deployment. The current structure requires two additional tiers- technical and planning committee as the core decision-making organs. The implementation shall continue through the existing ICT department organogram. However, the County shall lay more emphasis on building the internal capacities to deploy sufficient ICT in the departments. The County shall implement the roadmap through the existing ICT organogram.

Delivery of this road map is going to be a major transformational programme, which will require diligent planning, excellence in implementation, cultural change and an increase in capability across all county government. Successful implementation requires a detailed implementation plan with associated change and programme management. This will also require leadership and support at the Governor's level, Ministerial and senior official levels across the county, as well as the engagement of other key stakeholders, including the Private Sector, in creating a new and modern ICT enabled service delivery programmes in the county.

In the current arrangement, the ICT department is under the County ministry of finance and Planning. This implies that the ICT is not a stand-alone department in the County Government. Currently, the ICT department is grossly understaffed with two members only.

4.2   Projects identification and Prioritisation

In addressing the current and end state in chapter two, critical gaps were identified. Interventions to close the gaps were identified in chapter three under the four thematic areas. This section crystalizes the interventions into projects required to propel Laikipia County to the desired end state. Table 4.1 below displays the main projects identified in each thematic area and the priority attached to each project.

Table 4-1 Projects Identification and Prioritisation

ROADMAP 1: INFRASTRUCTURE, CONNECTIVITY		
NO.	MAIN PROJECT	PRIORITY
1	Data Centre Construction	5
2	NOFBI Installation and Connection	1
3	LAN, WAN and Internet	2
4	Computing Devices	3
5	Unified Communication (infrastructure)	4
6	GIS Server	6
7	3 Community ICT Service Centres(infrastructure)	7
ROADMAP 2: PUBLIC SERVICE DELIVERY SYSTEMS		
NO.	MAIN PROJECT	PRIORITY
1	Integrated Financial Management Information System (IFMIS)	1
2	Revenue Collection System	3
3	Geo- Spatial Information System (GIS-core)	7
4	Enterprise Resource Planning System (core)	2
5	County Web Portal	6
6	Electronic Document Management System	8
7	Customer Relationship management System (CRM)	5
8	Community ICT Service Centres(systems)	9
9	Unified Communication (systems)	4
ROADMAP 3: HUMAN CAPITAL AND WORKFORCE DEVELOPMENT		
NO.	MAIN PROJECT	PRIORITY
1	County ICT Training – ICT and Users	3
2	County ICT Governance – PMO and Secretariat	1
3	County Staffing - Structures	2
ROADMAP 4: POLICY ENVIRONMENT AND LEGAL FRAMEWORK		
NO.	MAIN PROJECT	PRIORITY
1	Comprehensive ICT Policy – Covering Security (Cyber), Document workflow, Procurement, SLAs, e-Waste management	4
2	Disaster Recover and Business Continuity (DRC) Plans	5
3	Shared Services Policy	2
4	Change management policy	3
5	Systems Standardisation (ITIL, ISO Certification, Information Systems Security	1
CHANGE MANAGEMENT		

NO.	MAIN PROJECT	PRIORITY
1	Citizen education and sensitisation meetings and workshops	2
2	Change management Partners/Agents	1

4.3 Implementation Plan

The ICT road map provides the County's direction for the use of ICT to 2020. The Implementation Plan outlines the proposed projects. The rolled out of the projects will be progressive to achieve the objectives set out in the strategic plan. The County Government will assess and review the delivery of the work program of the road map annually.

4.3.1 Time Lines

The time lines show the time periods during which the proposed projects will be implemented. Once projects have been prioritized based on the criteria of dependency, alignment to county strategy and importance to the citizens in terms of anticipated service delivery, one is now able to place actual timelines for implementation. For Laikipia projects, this is captured in table 4.3.

Table 4-2 Project Timeliness

ROADMAP 1: INFRASTRUCTURE, CONNECTIVITY						
NO.	MAIN PROJECT	TIMELINES				
		July'15-June'16	July'16-June'17	July'17-June'18	July'18-June'19	July'19-June'20
1	Data Centre Construction		███	███		
2	NOFBI Installation and Connection	███				
3	LAN, WAN and Internet	Nanyuki town	Sub-county hdqs	wards		
4	Computing Devices	███				
5	Unified Communication (infrastructure)		███			
6	GIS Server			███		

NO.	MAIN PROJECT	TIMELINES				
		July'15-June'16	July'16-June'17	July'17-June'18	July'18-June'19	July'19-June'20
7	3 Community ICT Service Centres(infrastructure)				🟩	

ROADMAP 2: PUBLIC SERVICE DELIVERY SYSTEMS

NO.	MAIN PROJECT	TIMELINES				
		July'15-June'16	July'16-June'17	July'17-June'18	July'18-June'19	July'19-June'20
1	Integrated Financial Management Information System (IFMIS)	🟩				
2	Revenue Collection System		🟩			
3	Geo-Spatial Information System (GIS-core plus service modules)			core	Lands water Agric. Educ.	
4	Enterprise Resource Planning System (core plus service modules)	core	Health trade Educ. Agric.	Tourism County assembly		
5	County Web Portal			🟩		
6	Electronic Document Management System				🟩	
7	Customer Relationship management System (CRM)		🟩			
8	Community ICT Service Centres(systems)					🟩
9	Unified Communication (systems)		🟩			

ROADMAP 3: HUMAN CAPITAL AND WORKFORCE DEVELOPMENT

NO.	MAIN PROJECT	TIMELINES				
		July'15 - June'16	July'16- June'17	July'17-June'18	July'18- June'19	July'19 - June'20
1	County ICT Training – ICT and Users		███	███	███	███
2	County ICT Governance – PMO and Secretariat	███				
3	County Staffing – Structures & capacitation	███				

ROADMAP 4: POLICY ENVIRONMENT AND LEGAL FRAMEWORK

NO.	MAIN PROJECT	TIMELINES				
		July'15 - June'16	July'16- June'17	July'17-June'18	July'18- June'19	July'19 - June'20
1	Comprehensive ICT Policy (Security, Document workflow, Procurement, SLAs, e-Waste management)		███	███	███	
2	Disaster Recover and Business Continuity (DRC) Plans	███				
3	Shared Services Policy	███				
4	Change management policy	███				
5	Systems Standardisation (ITIL, ISO Certification, Information Systems Security	███				

CHANGE MANAGEMENT

NO.	MAIN PROJECT	TIMELINES				
		July'15 - June'16	July'16- June'17	July'17-June'18	July'18- June'19	July'19 - June'20
1	Citizen education and sensitisation meetings and workshops	🟩	🟩	🟩	🟩	🟩
2	Change management Partners/Agents	🟩				

4.3.2   Shared Services

It will be recalled that in chapter one, shared services was identified as a principal aim of this road map. The philosophy of shared services was seen as addressing resource optimization with the attendant benefit of lowered operational costs. To further refine the implementation of the projects identified, Laikipia County needs to be aware of which projects can be realized through a national government initiative and which projects fall under its sole mandate.

In concretizing this philosophy, IFMIS and NOFBI need to be recognized as national government initiatives requiring minimal investments from the county government. Internally, one avenue of realizing shared services is the installation of an ERP solution to eliminate the traditional silo based architecture in county government operations.

4.3.3   Change Management

Change Management is a structured and systemic approach to achieving a sustained change in human behaviour within an organisation. Change is a problem finding problem solving activity. It focuses on the desired future state, some currents states to leave behind and some the organised process for getting from one state to the other.

In order to have a successful implementation of the Laikipia County ICT Roadmap, a change management plan is critical. The change management process shall adopt the McKinsey 7-S Framework.   This organisational change framework focuses on the hard Ss strategy – strategy, structure and systems and the Soft Ss strategy - Skills, staff and style. Most organisations focus of the Hard Ss and overlook the Soft Ss. This model addresses the critical role of coordination rather than structure in organizational effectives.

Figure 4-1 The McKinsey 7-S Framework
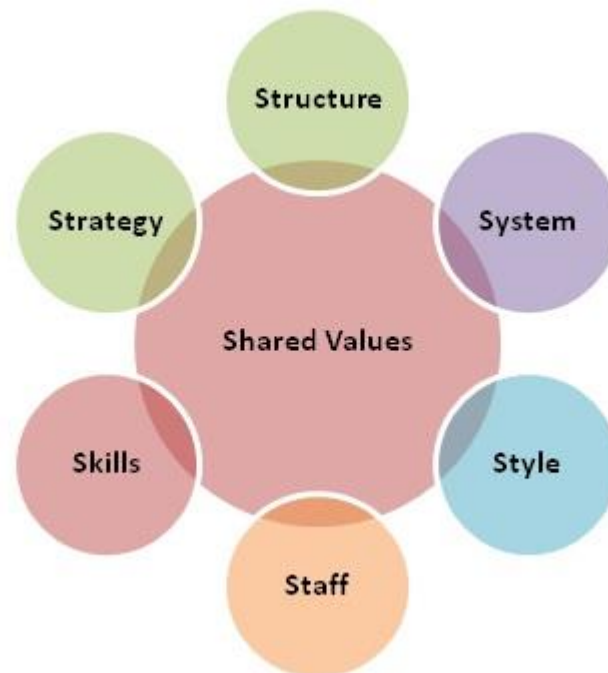
1) Strategy, Structure, systems Changes

Laikipia County has an approved CIDP that mentions ICT as an important aspect in service delivery. The Development of this roadmap is of great importance to linking the citizens with the County since the focus of the county is poverty eradication. The county is currently using manual processes in most departments. This roadmap is proposing the purchase and implementation of an enterprise resource program that will enable online processes resulting in faster, integrated, and cost effective services.

While Laikipia County has an ICT structure in place, there is need to align it to the recommendations of ICT Authority and have a technical planning committee incorporated into the structure. This important structure will monitor the implementation of the ICT plan of action within the roadmaps. The Technical planning team has representation from all the County departments. This structure will work hand in hand with the ICT department and the stakeholders to ensure that departments integrate ICT in services delivery and feedback from the citizens.

2) Skills, staff and style, shared Values

The soft Ss are a very critical and important area of a successful change plan. Placing shared values at the middle of the process is an indication that they are central to the development of all other elements. Laikipia County ICT department has already developed shared values that include Integrity, Innovativeness, Allegiance, Creativity, and Teamwork. All the other aspects of the organization align themselves to what the county stands for as stipulated in the Mission and vision.

The staff skills are important portion of the county's success in the implementation of this roadmap. These include both basics and Technical ICT skills. In addition to the skills, development of greater importance is the attitude towards change from manual processes to ICT enabled ones. There is need for development of change management plan that will tackle the issues of culture and attitude. There is need to identify a change management agent that will lead in the formulation of a change management plan and ensure its implementation.

4.3.4   Citizen Involvement and Participation

Citizen involvement and participation in all county affairs is a constitutional requirement. The primary mandate of this road map is highlight those projects that will transform this participation from the traditional village barazas onto a digital platform. A digital platform ensures timely and location independent participation. That is the reason behind the proposal to design a collaborative web portal and to infuse the major social media platforms in county communications.

4.4   Critical Success Factors

Table 4.3 below summarises the critical success factors in implementing the roadmap.

Table 4-3 Critical Success Factors

		Factor	How it will affect
1	People – Staff and Citizen	Governance 1) HR Management Structure 2) Top management and Staff	1) Effective governance of ICT services is crucial in the successful implementation of ICT roadmap. 2) It is important to have a well-structured ICT department or unit 3) A strong Competent and empowered team central in key ICT investment decision making
		Change management 1) Attitude change 2) Systems/technology change 3) Structural change	1) Both attitude change, system change as well as structural changes that support ICT in the county is necessary; Capacity-building programs designed should address this. 2) The County Governments should initiate steps to reduce this divide by using information technology to rapidly develop all sectors of the economy. There is need to enhance universal access to ICT services throughout the counties.

		Factor	How it will affect
		1) Citizens e-readiness	1) Capacity building of end users to enhance optimal usage of systems
		2) User acceptance	1) Key in utilisation of ICT services
2	Resources	Financing 1) Development of Private And Public Partnerships (PPP) 2) Information as a resource	Budgetary allocation 1) Sharing of responsibilities to create strong synergy 2) County Governments should generate, collect, organize, leverage, secure and preserve information for the citizens living within the counties.
3	Technology	1) ICT Infrastructure - NOFBI , Mobile network coverage, Data Centre 2) Systems and Applications 3) Digital Divide between Rural and urban areas	1) The County Governments should initiate steps to reduce this divide by using information technology to rapidly develop all sectors of the economy. There is need to enhance universal access to ICT services throughout the counties. 2) It is important that systems are implemented in an integrated manner to allow to allow sharing of services
4	Policy, Legal and Regulatory Framework	1) Comprehensive County policy, legal and regulatory framework	ICT implementations should be anchored on sound ICT policies. This will enable counties: 1) Support ICT development, investment and application; promote competition in the industry where appropriate; 2) Ensure affordability and access to ICT in the County; 3) Address issues of privacy, e-security, ICT legislation, cyber-crimes, ethical and moral conduct, copyrights, intellectual property rights and piracy; 4) Support research and development in ICT; and 5) Develop an institutional framework for policy development and review

4.5   Risk Management

Risk management is the process of identification, analysis and mitigation of uncertainty in investment decision-making. Essentially, risk management occurs anytime an investor

analyses and attempts to quantify the potential for losses in an investment and then takes the appropriate action (or inaction) given their investment objectives and risk tolerance. Having identified Issues and Opportunities using the SWOT analysis, a comprehensive analysis of risks is presented in the table below.

Table 4-4 Risk Management Matrix

Risk Parameter	Risk	Probability H/M/L	Impact H/M/L	Mitigating Action planned
POLITICAL	Insufficient buy-in by the top management	Low	High	Re-write the ICT strategy to reflect the level of commitment
ECONOMIC	*Disaster Recovery/Business Continuity (DR/BC):* Events such as fire wilful damage could see County operations affected for an extended period and therefore DR/BC capability is an important business risk decision.	Medium	High	1) Establish DR/BC requirements to meet business expectations and identify extent of gap and a strategy to address that gap. 2) Build consideration and necessary additional funding requirements of DR/BC into every new ICT project.
SOCIAL	Citizen viewing ICT as not a priority in County development	Medium	Medium	Strategy must reflect the citizen's changing needs

TECHNOLOGICAL	Insufficient staff resources available to develop common solutions and support change while maintaining business operations			1) Careful prioritisation of work through Portfolio management; 2) Effective programme management; 3) Collaboration with internal and external partners; 4) Strategic sourcing adopted when it delivers business value
LEGAL	Ineffective framework of shared common solutions	Low	High	Share developments and procurement with partners
ECOLOGICAL	Very vast County with rugged terrain Voluminous e-waste emission	Low	High	Construction of access roads in the Sub-Counties Acquire ecologically friendly infrastructure and align investments with global good practice on e-waste disposal

4.6 Communication Strategy

Effective communication will be essential to disseminate information to those with an interest, to encourage comment and participation and to maintain the profile of the ICT road map. The County Government will have a key role to play in facilitating communication. Roadmap implementation success requires communication to the stakeholders, support from the stakeholders and participation of the stakeholders.

The communications objectives should to contribute to the achievement of the overall objectives of the County. In particular, the communication strategy should provide a regular flow of information to key stakeholders; regularly display County successes in the local media and be approached by local media for opinions on availability of services for County citizens.

The ICT road map implementation for Laikipia County will involve a variety of stakeholders. These are described in the table given below.

Table 4-5 ICT Communication Strategy

Target	Messages	Means of Communication	Frequency of Communication
County Executive	Project State and Initiative Summary	ICT Metrics County website Quarterly policy briefings on specific policy areas Ensure all press releases are sent to relevant government department in advance Positive media coverage	Monthly
County Assembly	Project State and Initiative Summary What we want to see changed in policy terms	ICT Metrics County Assembly website: A good knowledge of the policy environment well-respected, authoritative County	Monthly
County Public Service Board	Status of staffing levels in the ICT department	Reports County website County website Quarterly policy briefings on specific policy areas	Annually
National Government	Status of ICT in Laikipia County in terms of alignment to national ICT Master plan and National ICT laws Project State and Initiative Summary	Reports ICT Metrics County website Quarterly policy briefings on specific policy areas	Quarterly
Development Partners	Project State and Initiative Summary	ICT Metrics County website	Quarterly
Civil Society	All aspects of the road map. For example, policy statements, business cases and other studies and working documents Make easily	County website: facilitate a very open form of communication. Recent news' service and links to other useful sites. The county provides	Periodically to update the website

Target	Messages	Means of Communication	Frequency of Communication
	available details of management structures What the County government offers How to access services Where to go for advice	useful, practical information and support It is trustworthy and reliable The county puts services users first and value their opinions	
County citizens	County Government activities and events: What the County government offers How to access services Where to go for advice	effective County website Recent news' service and links to other useful sites. The county provides useful, practical information and support It is trustworthy and reliable The county puts services users first and value their opinions	Periodically to update the website

4.7   Monitoring and Evaluation (M&E)

An effective and commensurate monitoring and evaluation system is necessary to ensure timely, focused, objective and evidence-based information on the performance of the County ICT road map implementation. Continuous observation, monitoring, measurement, feedback and corrective action will inform the anchorage of the County M&E system.

There will be continuous strengthening of the M & E structure and linking to the specific activities. The ICT department CEC and the County Assembly ICT Director will be responsible for the M & E process. In consultation with the Heads of departments (Directors and Chief Officers) The ICT department CEC will prepare reporting formats for the ICT road map, incorporating Key Performance Indicators (KPIs) selected from the implementation matrix. He/ she will collate, verify, analyse and compile the monthly, quarterly and annual
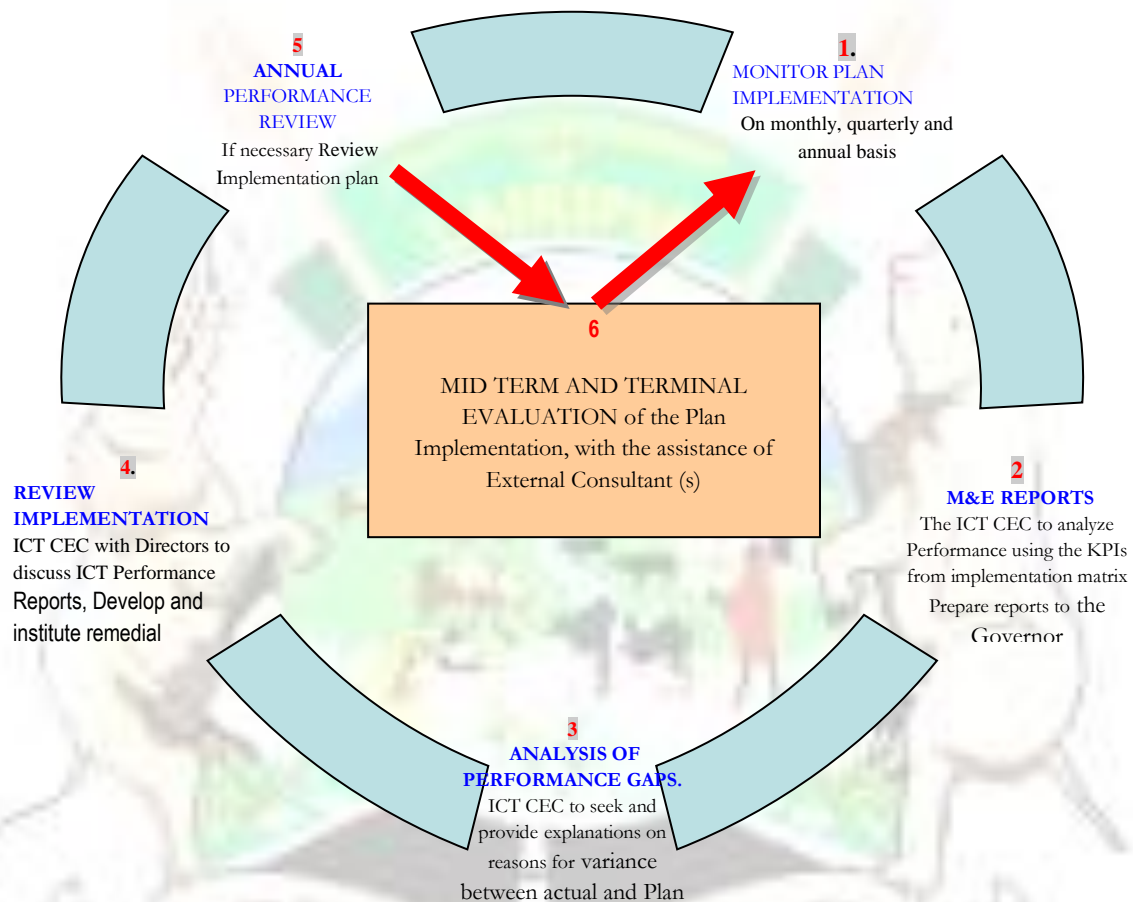
M&E reports.

Figure 4-2 Monitoring and Evaluation Structure

ICT road map developments from the various departments for onward transmission to the County Senior Management (Governor and CEC level monthly/quarterly meetings).

Monitoring of the ICT road map will be a continuous process in which information (data) will be collected on specified performance indicators to provide the Senior County Management Team (Governor's level) with measures of the extent of progress and the attainment of specific road map objectives; and progress in the use of allocated funds. The monitoring will be based on the objectively verifiable indicators (OVIs) as set out in the Implementation Matrix.

The evaluation system will provide for annual assessments of the results arising from the implementation of the road map objectives. A mid-term review of the Plan will be undertaken with the help of an external consultant at the end of year two and at the end of the Plan period. The purpose of the mid-term review will be to improve overall plan implementation while the terminal evaluation will facilitate the improvement of the next County ICT road map through lessons learned during the implementation of the current Plan.

5   BUDGETS AND FINANCIAL PROJECTIONS

This chapter presents the ICT investment forecasts for the Laikipia County ICT road map for the 5-year strategic period 2015-2020. It also provides the sources of funds for investing in ICT for the County. The current level of budgeting in the County was analysed based on Gartner IT key metric data report (2012) which provides a market benchmark for key ICT metrics including spend level as compared to revenue. These ICT key metrics such as average percentages of ICT expenditures or budgets against the organisation revenue and analysed per industry give high-level benchmark for assessing organisations ICT department.

The Kenya Government ICT Master Plan recommended expenditure of 5% on ICT of the overall revenue in line with a study by Gartner in 2012 that observed ICT spending as a percentage of total revenue for organisations close to the County ranged between 3% and 5%.

While this is so, it is worth to appreciate that the Gartner Study was on organisations with high ICT maturity as Compared to Laikipia County. Initial investments in Laikipia County need to be higher in the initial years to enable the County ICT mature faster.

5.1   Financial Projections

This section gives the financial projections of ICT projects that have been ear marked for implementation in Laikipia County for the next five years. The tables below summarise the investments for the roadmap for Laikipia County. The tables below summarise the budget projections for the four roadmaps.

Table 5-1 Summary of Investments

THEMATIC AREA	TOTAL	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
	KSH	KSH	KSH	KSH	KSH	KSH
Infrastructure and Connectivity	1,200,000,000	150,000,000	450,000,000	450,000,000	75,000,000	75,000,000
Public Service Delivery Systems	1,100,000,000	110,000,000	335,000,000	255,000,000	300,000,000	100,000,000
Human Capital and Workforce Development	130,000,000	106,000,000	6,000,000	6,000,000	6,000,000	6,000,000
Policy Environment and Legal Framework	61,000,000	21,000,000	20,000,000	20,000,000	0	0
TOTAL	2,491,000,000	387,000,000	811,000,000	731,000,000	381,000,000	181,000,000

Table 5-2 Infrastructure and Connectivity budget projection

	TOTAL	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020

	KSH	KSH	KSH	KSH	KSH	KSH
Data Centre Construction	150,000,000		100,000,000	50,000,000	0	0
NOFBI Installation and Connection	50,000,000	50,000,000			0	0
LAN, WAN and Internet	500,000,000	50,000,000	200,000,000	250,000,000	0	0
Computing Devices	100,000,000	50,000,000	50,000,000		0	0
Unified Communication (infrastructure)	100,000,000		100,000,000		0	0
GIS Server	150,000,000	0	0	150,000,000	0	0
Community ICT Service Centres(infrastructure)	150,000,000	0	0	0	75,000,000	75,000,000
Total	**1,200,000,000**	**150,000,000**	**450,000,000**	**450,000,000**	**75,000,000**	**75,000,000**

Table 5-3 Public Service Delivery System Budget Projection

	TOTAL	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
	KSH	KSH	KSH	KSH	KSH	KSH
Integrated Financial Management Information System (IFMIS)	10,000,000	**10,000,000**	0	0	0	0
Revenue Collection System	100,000,000	0	100,000,000	0	0	0
Geo- Spatial Information System (GIS-core) plus service modules	250,000,000	0		100,000,000	150,000,000	0
Enterprise Resource Planning System (core) plus service modules.	350,000,000	100,000,000	125,000,000	125,000,000	0	0
County Web Portal	30,000,000	0	0	30,000,000	0	0
Electronic Document Management System	150,000,000	0	0	0	150,000,000	0
Customer Relationship management System (CRM)	60,000,000	0	60,000,000	0	0	0
3 Community ICT Service Centres(systems)	100,000,000	0		0	0	100,000,000
Unified Communication (systems)	50,000,000	0	50,000,000	0	0	0
Total	**1,100,000,000**	**110,000,000**	**335,000,000**	**255,000,000**	**300,000,000**	**100,000,000**

Table 5-4 Human Capital and Workforce Development Budget Projection

	TOTAL	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
	KSH	KSH	KSH	KSH	KSH	KSH
County ICT Training – ICT and Users	30,000,000	6,000,000	6,000,000	6,000,000	6,000,000	6,000,000
County ICT Governance – PMO and Secretariat	50,000,000	50,000,000	0	0	0	0
County Staffing – Structures	50,000,000	50,000,000	0	0	0	0

| Total | 130,000,000 | 106,000,000 | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 |

Table 5-5 Policy Environment and legal frameworks Budget Projection

	TOTAL	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020
	KSH	KSH	KSH	KSH	KSH	KSH
Comprehensive ICT Policy – Covering Security (Cyber), Document workflow, Procurement, SLAs, e-Waste management	50,000,000	10,000,000	20,000,000	20,000,000	0	0
Disaster Recover and Business Continuity (DRC) Plans	5,000,000	5,000,000	0	0	0	0
Shared Services Policy	2,000,000	2,000,000	0	0	0	0
Change management policy	2,000,000	2,000,000	0	0	0	0
Systems Standardisation (ITIL, ISO Certification, Information Systems Security	2,000,000	2,000,000	0	0	0	0
Total	61,000,000	21,000,000	20,000,000	20,000,000	**0**	**0**

5.2 Road map Financing

After many years of low investments in the Northern Region of Kenya, achieving the vision of the National ICT Master Plan will require the mobilization of significant financial and human resources. Just as it is envisioned for funding of the flagship projects in this Master Plan, Laikipia County will be able to mobilise funds from the National and County Governments, development partners and other public or private institutions through Private Public Partnerships (PPPs) and collaborations to align with the National Master-plan.

1) **Private Sector through Public Private Partnerships:** The County has a great opportunity to collaborate with the private sector players. This shall provide incentives such as waiver of way leaves charges for the private sector to accelerate investments especially in connectivity.

2) **Development Partners:** The County Governments will focus on engaging development partners to get direct financial support especially for critical sectors such as Health Care systems, Resource Mapping and e-Government solutions among others.

3) **County Budget Allocation and Resources Sharing within Departments:** The County will work to consolidate all Departments ICT Budgets and their implementation plans were possible to ensure sharing of ICT resources. The County will also ensure an allocation of at least 5% of the total County budget to ICT.

4) **National Government ICT Flagship Projects:** The County will also work closely with the National Government in rolling out the ICT Flagship projects in the County.

6   ANNEXES

Annex 1: Map of Kenya – Location of the County
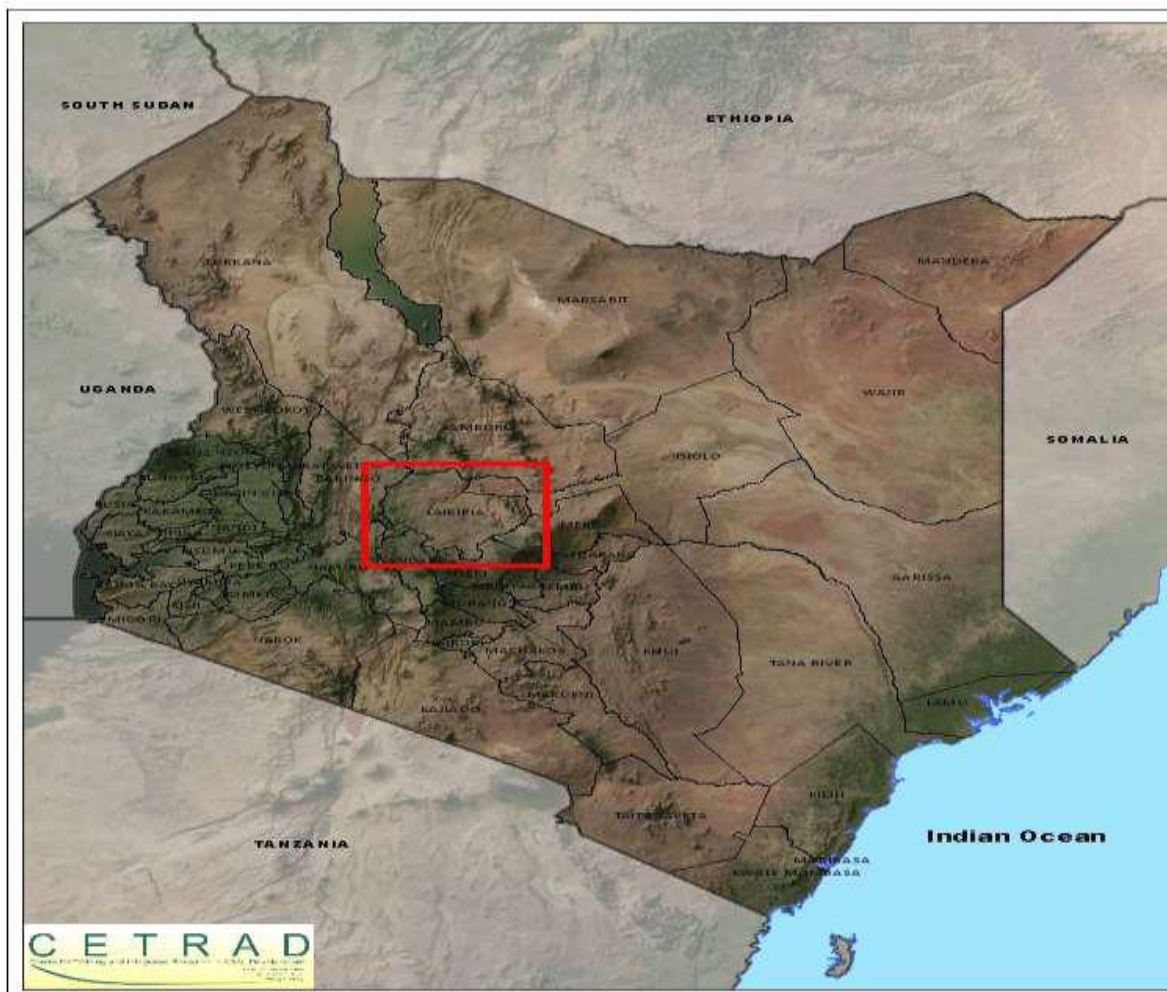
Annex 2: Technical Committee List

The implementation of this policy will be co-ordinated by an advisory committee comprising of **9 members hosted by the Department of Education, Science and ICT:**

1) The Chairperson and Secretary to the advisory committee will be the Chief Officer and Director in charge of ICT respectively.
2) Other members include a representative from each of the following : the Office of the Governor, County Assembly, County Public Service Board, Finance, Private Sector , Learning Institutions and Youth
3) The advisory committee may co-opt other members

Mandate:

1) Mainstreaming ICT in county government departments
2) Advise the County on regulations and legislative framework affecting various target groups
3) Evaluate and review the performance of the ICT activities and opportunities in the county functions
4) Networking and building partnerships with key stakeholders at County, National Government and the International fora
5) Mobilizing resources that are geared towards the objects of the policy
6) Carryout reviews periodically and on need basis
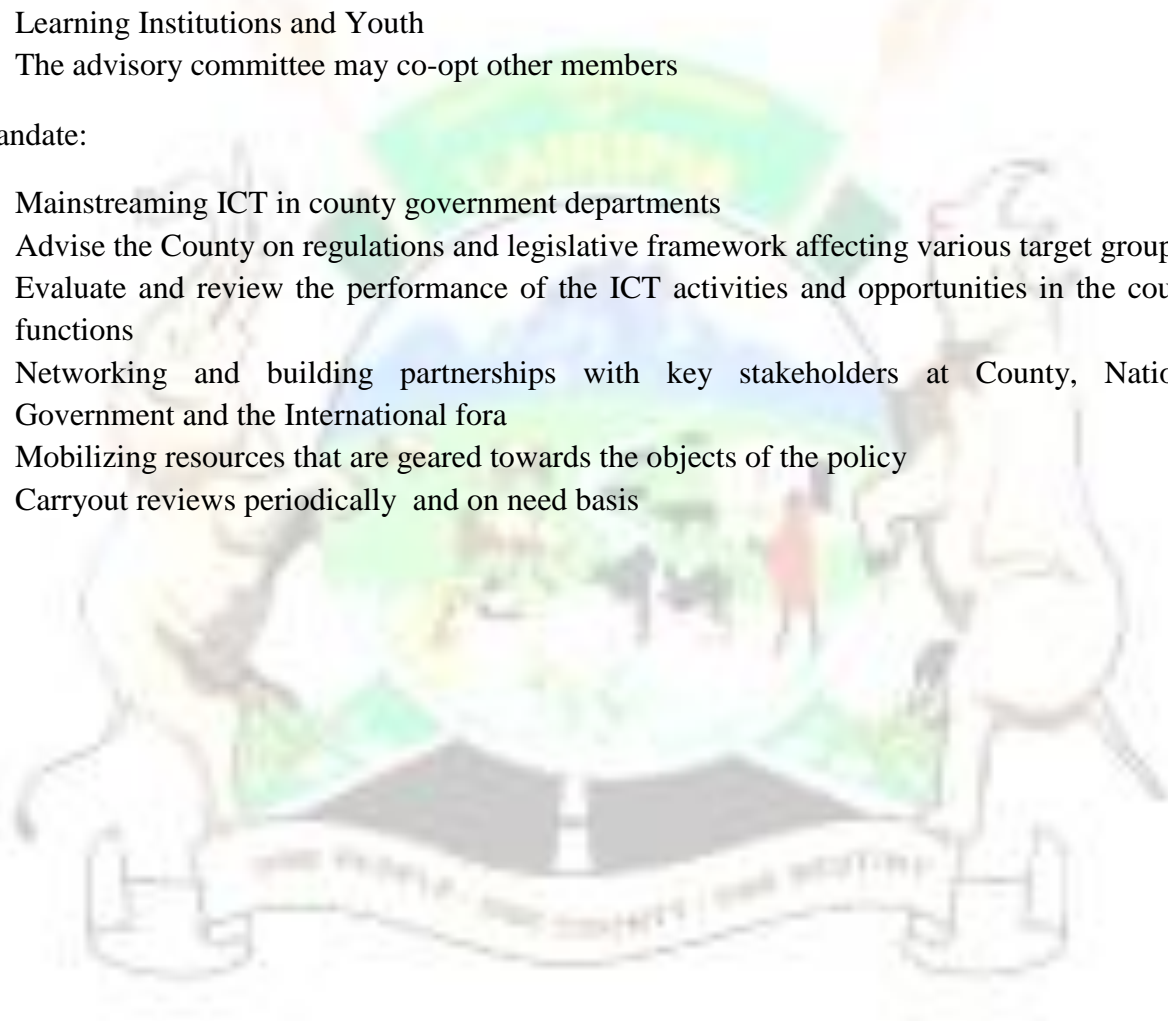
Annex 3: Planning Committee / Stakeholders List

Mr. John Mwaniki	– County Secretary
Mrs Anne Cheptoo	-CECM Education, ICT and Social Development
Mr Ndiritu Chiuri	-Education, ICT and Social Development
Hon Mwangi Maruga	-Member of County Assembly-Education (chairman)
Hon. Cherubo Kaparo	-Member of county Assembly (Edu & ICT Committee)
Hon. Elizabeth Paratton	-Member of county Assembly (Edu & ICT Committee)
Hon. Dann Ndegwa	-Member of county Assembly (Edu & ICT Committee)
Hon. Beth Muchiri	-Member of county Assembly (Edu & ICT Committee)
Mr Edward Kirega	-Committee Clerk (Edu & ICT Committee)
Mrs Mary Mutonyi	- Laikipia County Public Service board (Chairperson)
Mr Godfrey Mwangi	- Laikipia County Public Service board (CEO/Secretary)
Mr John Wambugu	- Chief of Staff & Governor's Personal Secretary
Dr. Alice Njuguna	- KCA University – Faculty of ICT
Mr. Sammy Linus	-ICT director (Laikipia County)
Mr. James Ndeti	- Ag Director of Education
Mr. Joseph M.Kamau	- Economic Planning
Joseph Gichuki	-ICT Officer
Dr. Timothy Panga	-Chief officer Health
Dr.Mogoi Donald	- Director Health & Medical Services - CDH
Eng. Peter Macharia	-Chief Officer-Infrastructure
Dr.Waihenya Mwangi	-Director Health - CDH
Mr. Kenneth Irungu	-ICT-County Assembly
Ms. Caroline Kirichu	-ICT research co-ordinator - county assembly
Mr. Daniel Sitole	-Director of the Governors press
Mr. Peter Gathimba Ng'ang'a	-Representing Agriculture Sector-County Assembly
Mr. Godfrey O.Kiche	-ICT officer
Mr. Peter Kipturu	-ICT Intern
Mrs Veronicah Wahome	- ICT officer
Ms Lucy Kariuki	- ICT officer
Mr. Francis njoroge	- ICT officer
Mr. Moses Njoroge	- Youth representative
Mr Theuri Kimata	– Business community
Mr George Githu	– Business community

Mr. Muhoro Muriithi   – Business community

Annex 4: ICT Maturity Model Description

MATURITY INDICATOR	MATURITY DESCRIPTION	LEVEL INDICATORS
0	Relative Immaturity	**Infrastructure and connectivity**: No internet connectivity, no computers, no servers, no data centre. NOFBI absent, No connection to KPLC, Assets register manual. Data manually stored in one location. **Public service delivery and interoperability**: government services 100% manual. **Human resource and capacity building**: workforce computer illiterate, great resistance to change and no training opportunities available in ICT. **Policy environment and legal Framework**: Complete lack of ICT policies. No laws to govern the ICT sector.
1	Ad Hoc Maturity	**Infrastructure and connectivity**: basic internet connectivity (narrow band), few computers of varying degrees of power and age, few servers stored in a multi-purpose room, no data centre. NOFBI presence only at the County headquarters. Unstable power supply. Assets register manual. Data electronically stored in one location. **Public service delivery and interoperability**: some government services automated but the bulk of services still ran on a manual platform. Existing digital platforms not interoperable. **Human resource and capacity building**: most staff uncomfortable using the computer or internet. Noticeable resistance to change. No government structured training opportunities available in ICT for employees. **Policy environment and legal Framework**: Few ICT policies in place. Critical laws to govern the ICT sector absent.

MATURITY INDICATOR	MATURITY DESCRIPTION	LEVEL INDICATORS
2	Emerging Maturity	**Infrastructure and connectivity:** broadband internet connectivity, standard computer procurement procedures, few servers stored in a defined room, no data centre. NOFBI presence extension to the sub county offices. Measures in place to mitigate unstable power supply. Assets register being digitized. Data electronically stored in one location. **Public service delivery and interoperability**: some government services automated but the bulk of services still ran on a manual platform. Existing digital platforms not interoperable. **Human resource and capacity building**: a small number of staff comfortable using the computers or internet but have limited skills. Pockets of resistance to change. Outsourced ICT training for staff. **Policy environment and legal Framework**: ICT plan in place. Not deployed publicly. Policies in draft form. County ICT legislations under drafting.
3	Relative Maturity	**Infrastructure and connectivity:** broadband internet connectivity, standard computer procurement procedures, server rooms and a data centre meeting international standards. NOFBI presence extension to the sub county offices. Measures in place to mitigate unstable power supply. Computerized assets register. Offsite backup, security and redundancy provisions exist. Key systems supported. **Public service delivery and interoperability**: up-to-date systems in place with reliable support, enabling efficient service delivery. Active social media presence, engagement with stakeholders and website functional and current. **Human resource and capacity building**: staff can use the county's computers systems well. Training needs and plans identified.

MATURITY INDICATOR	MATURITY DESCRIPTION	LEVEL INDICATORS
		Policy environment and legal Framework: comprehensive ICT plan in place aligned with management objectives, supported by effective governance. Published policies and legal provisions in place.
4	Robust Maturity	**Infrastructure and connectivity:** broadband internet connectivity, standard computer procurement procedures, server rooms and a data centre meeting international standards. NOFBI presence extension to the sub county offices. Measures in place to mitigate unstable power supply. Computerized assets register. Practical ICT data recovery plan regularly tested. **Public service delivery and interoperability**: information accessible anywhere, supported by functional and easy to use collaboration tools. Integrated accessible solutions support efficient processes, service delivery and track outcomes. **Human resource and capacity building**: Staffs are keen innovators, drive technology improvements and keep skills up-to-date. **Policy environment and legal Framework**: comprehensive ICT plan in place aligned with management objectives and supported by effective governance. Published policies and legal provisions in place.

Annex 5: ICT Maturity Model Description

N°	County	County Headquarter	Access to Fibre Optic	N°	County	County Headquarter	Access to Fibre Optic
1	Baringo	Kabarnet	N	25	Laikipia	Laikipia	Ye
2	Bomet	Bomet	Yes	26	Marsabit	Marsabit	Ye
3	Bungoma	Bungoma	Yes	27	Migori	Migori	Ye
4	Busia	Busia	Ye	28	Mombasa	Mombasa	Ye
5	Elgeyo-Marakwet	Iten	No	29	Nairobi	Nairobi	Yes
6	Embu	Embu	Yes	30	Murang'a	Muranga	Ye
7	Garissa	Garissa	Ys	31	Nakuru	Nakuru	Ye
8	Homa bay	Homa bay	N	32	Nyamira	Nyamira	N
9	Isiolo	Isiolo	Ye	33	Nandi	Kapsabet	N
10	Kajiado	Kajiado	Ye	34	Narok	Narok	Ye
11	Kakamega	Kakamega	Ye	35	Nyandaru	Nyahururu	Ye
12	Kericho	Kericho	Ye	36	Nye	Nyeri	Ye
13	Laikipia	Nanyuki	N	37	Samburu	Maralal	N
14	Laik	Malindi	N	38	Siaya	Siaya	N
15	Laikipia	Nanyuki	Ye	39	Tana river	Hola	N
16	Kitui	Kitui	Ye	40	Taita	Wundanyi	N
17	Kisumu	Kisumu	Ye	41	Tharaka	Chuka	N
18	Kisii	Kisii	Ye	42	Trans	Kitale	Ye
19	Kwale	Kwale	N	43	Turkana	Lodwar	Ye
20	Machakos	Machakos	Ye	44	Uasin	Eldoret	Ye
21	Laikipia	Nanyuki	Ye	45	Vihiga	Vihiga	N
22	Lamu	Lamu	N	46	Waj	Wajir	Ye
23	Meru	Meru	Yes	47	West	Kapenguria	Ye
24	Makueni	Wote Boma	N				

Annex 5: Implementation Matrix

Action Area (Road Map)	Projects	Targets					Indicators, Means of Verification	Roles & Responsibility
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020		
Infrastructure & Connectivity	Data Centre Construction		▓	▓			Operational data centre	Governor / CEC in charge of ICT
	NOFBI Installation and Connection	▓					Enhanced internet speeds	CEC in charge of ICT
	LAN, WAN and Internet	▓	▓	▓			County-wide stable connectivity	CEC in charge of ICT
	Computing Devices		▓				Number and type of computing devices bought	CEC in charge of ICT
	Unified Communication (infrastructure)		▓				UC infrastructure in place	CEC in charge of ICT

Action Area (Road Map)	Projects	Targets					Indicators, Means of Verification	Roles & Responsibility
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020		
	GIS Server			██			GIS server installed	CEC in charge of ICT
	3 Community ICT Service Centres(infrastructure)				██	██	Physical infrastructure in place	CEC in charge of ICT
Public Service Delivery	Integrated Financial Management Information System (IFMIS)	██					All IFMIS modules activated	CEC in charge of ICT
	Revenue Collection System		██				All revenue streams automated	CEC in charge of ICT
	Geo- Spatial Information System (GIS-core) plus service modules			██	██		County geo-spatial information documented	CEC in charge of ICT

Action Area (Road Map)	Projects	Targets					Indicators, Means of Verification	Roles & Responsibility
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020		
	Enterprise Resource Planning System (core) plus service modules	▓	▓	▓			County processes integrated across all departments	CEC in charge of ICT
	County Web Portal			▓			Collaborative web portal in place	CEC in charge of ICT
	County radio station					▓	Operational radio	CEC in charge of ICT
	Electronic Document Management System				▓		EDMS operational	CEC in charge of ICT
	Customer Relationship management System (CRM)		▓				CRM system operational	CEC in charge of ICT

Action Area (Road Map)	Projects	Targets										Indicators, Means of Verification	Roles & Responsibility
		2015/2016		2016/2017		2017/2018		2018/2019		2019/2020			
	Community ICT Service Centres(systems)									▇	▇	ICT services operational	CEC in charge of ICT
	Unified Communication (systems)				▇							Unified communication operationalized	CEC in charge of ICT
Human Capital and Workforce Development	County ICT Training – ICT and Users			▇	▇	▇	▇	▇	▇	▇	▇	Number of staff trained	CEC in charge of ICT
	County ICT Governance – PMO and Secretariat	▇										Number of qualified ICT staff recruited for PMO	CEC in charge of ICT
	County Staffing – Structures		▇										CEC in charge of

Action Area (Road Map)	Projects	Targets					Indicators, Means of Verification	Roles & Responsibility
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020		
								ICT
Policy and Legal Environment	Comprehensive ICT Policy – Covering Security (Cyber), Document workflow, Procurement, SLAs, e-Waste management						Detailed policy document	Department of ICT and public service board
	Disaster Recover and Business Continuity (DRC) Plans						Document detailing DRC	Department of ICT
	Shared Services Policy						policy document on SS.	Department of ICT
	Change management policy						Policy document on CM	Department of ICT
	Systems						ITIL, ISO	Department

Action Area (Road Map)	Projects	Targets					Indicators, Means of Verification	Roles & Responsibility
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020		
	Standardisation (ITIL, ISO Certification, Information Systems Security						documentation	of ICT
Change Management	Citizen education and sensitisation meetings and workshops						Number of workshops held	Department of ICT
	Change management Partners/Agents						Documented MOU a selected change partner.	Department of ICT
Shared Services Plan:	common, shared and integrated applications and software across departments						No. of integrated applications in place.	Department of ICT
	Provision of shared physical						A shared infrastructure	Department

Action Area (Road Map)	Projects	Targets					Indicators, Means of Verification	Roles & Responsibility
		2015/2016	2016/2017	2017/2018	2018/2019	2019/2020		
	infrastructure to save on maintenance cost and especially civil works in the county jurisdiction.						plan.	of ICT
Citizen Involvement and participation:	Develop an ICT based citizen's participation platform						Number of ICT-based platforms established for citizens use	Department of ICT

Annex 7: Departmental Current ICT Statuses

No.	Department	Current status	Desired Future
1.	Land , Infrastructure and Urban development	Desktops-3 Laptops-3 Printers-2 Photocopiers-0(A2 SIZE)	15 8 8 2
		Networking-1 Internet access-1 Large scale plotters-2 Projector and screen 2 Design softwares-2	Office wide Office wide(WIFI and LAN) 1 1 Archie (AD-2 licenses Auto desk building-6 licenses Auto desk infrastructure-4 licenses Ms office-All computers
		GIS data base-0	1
		Website-0	Dedicated page on county website for ministry's works/achievements/offerings
		Physical planning approval system-0	System for online approvals
2.	Water, Environment and Natural Resources	1) Very weak internet connectivity 2) Low ICT skills among staff 3) Lack of ICT equipment 4) old masts which use 2G technology	1) Sufficient ICT equipment 2) Inter office communication 3) Networks, connectivity 4) E-Revenue collection 5) Resources mapping 6) Provision of resource mapping systems 7) GIS 8) Revenue Collection Systems 9) Budgeting and Billing Systems 10) Improved internet Connectivity and access 11) Data storage and back-up systems.

No.	Department	Current status	Desired Future
			12) ICT short-term-adaption and application in operational matters, projects and programmes.
3.	Education, ICT and Social development	1) lack of ICT equipment 2) Poor Internet connection 3) Lack of ICT skills among Teachers and students 4) Lack of ICT infrastructure in the education institutions 5) No fibre optic connectivity	1) ICT capacity to host digital learning 2) Management of information system 3) Fibre optic cable connectivity 4) Capacity building among teachers and students. 5) Provision of ICT infrastructure to schools 6) Provision of ICT skills at Early Childhood Development (ECD).
4.	Trade, Tourism and Enterprises development	Few computers machines available in the offices Not all offices connected to WIFI facilities	Additional computers Internal connectivity at the county and sub county level More training on ICT Laptops and Ipads required for the offices
5.	Agriculture, Livestock and fisheries development	Few computers Poor network	Improved connectivity Computers
6.	Public services and county administration	1) Shortage of ICT staff 2) Low ICT skills among the staff 3) Low ICT skills sub county and ward administrator 4) Lack of ICT equipment	1) Develop a policy for ICT operations 2) Capacity building for ICT staff 3) Provision of ICT infrastructure/equipment at ward offices
7.	Health and medical services	1) Shortage of staff with ICT skills 2) No fibre optic connectivity 3) Lack of ICT infrastructure 4) Reluctant to change from	1) Automation of Health sector facilities 2) Information management systems 3) Capacity building

No.	Department	Current status	Desired Future
		analogue to digital style of operation.	4) Fibre optic cable connected.
8.	Finance and Economic planning	1) Limited ICT infrastructure 2) Partial automated revenue system 3) Fibre Optic Connectivity (NOFBI) 4) Limited ICT staff	1) County central payment system 2) Capacity building among the staff on ICT. 3) Full automated revenue system 4) monitoring and Evaluation 5) Installation of ICT infrastructure 6) CCTV on banking halls