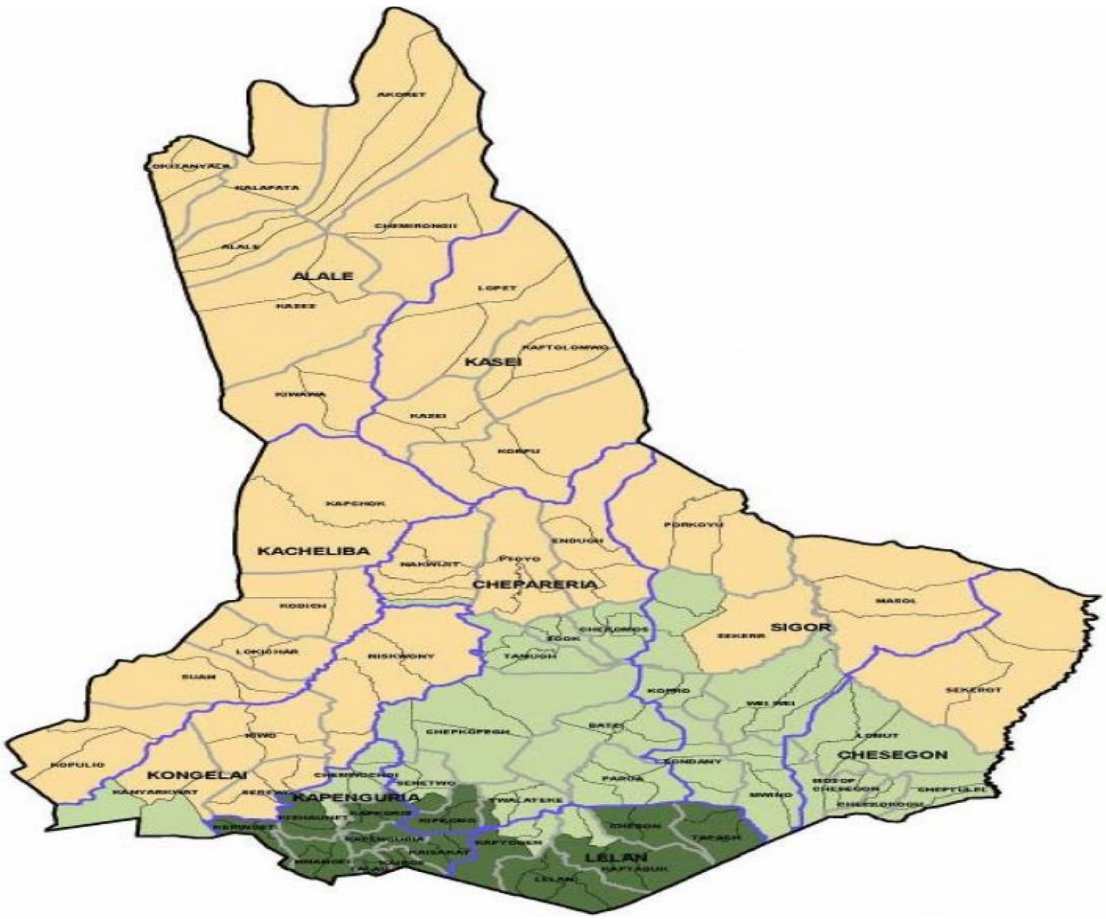
WEST POKOT
County ICT Roadmap

November, 2015



West Pokot County ICT Authority Information Professionals Africa Ltd

SIGN-OFF AND APPROVALS

Project: County ICT Roadmap

Sign-off for: County ICT Roadmap Final Draft

County: WEST-POKOT

	_____	**Accepted**
Sign-Off:	_____	Accepted with Modifications
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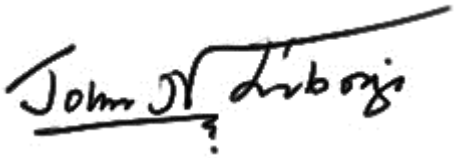
Signature:		*Accepted* Date 14/7/15
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ACKNOWLEDGEMENT

While submitting the ICT Road Map, IPA Consultants take this opportunity to thank all stakeholders for the cooperation extended, timely inputs provided and hospitality extended, during the various stages of our assignment. We would like to acknowledge that the successful completion of our assignment is largely as a result of the stakeholder's level of commitment and involvement in understanding the purpose and importance of the assignment.

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

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

IPA
Mr. John Liboyi

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PREFACE

The world economy is experiencing the impact of rapid globalization, the emerging new information age and the dynamic Information and Communication Technology (ICT), which is bringing about a new global economic order to be dominated by information and knowledge-based economies.

The emerging information age is characterized by Information and Communication Technologies (ICTs), and it is having an impact on socio-economic development efforts in a number of countries as well as counties in Kenya especially those that are focused on ICT utilization and the development of ICTs. In the information age it is not possible for a County to remain competitive, even in its traditional areas of comparative advantage, without using and developing ICTs to support its developmental process.

Counties out of the capital city in Kenya are confronting new additional challenges as a result of the globalization process and the emerging new information age. Without an appropriate ICT Road Map, the counties risk worse socio-economic status that can be promoted by the digital divide.

Having recognized and accepted the importance and role of ICTs in West-Pokot's socio-economic development, and committed to minimize the digital divide, the County Government of West-Pokot has developed this ICT Road Map to guide her utilization and development of ICTs for socioeconomic development. To support implementation of this policy, there shall be a County Governance Planning Committee.

As part of this ICT Road Map commitment, special policy initiatives will be devoted to promoting foreign direct investment in the area of ICTs including, financial and capital investments in the local communication sector; joint venture arrangements in developing the local ICT sector; technology transfer capital investment initiatives and investments with research and development component as well as human resource development components in the area of ICT skills and other information economy related skills to aid the socio-economic development process of West-Pokot County.

I call upon all residents of West-Pokot County and our cooperating partners, to support my County Government's effort to promote the development and utilization of ICT.

H.E. The Governor Hon. Simon Kachapin

The Governor, West-Pokot County

ACRONYMS

CIDP	County Integrated Development Plan
CSFs	Critical Success Factors
GDP	Gross Domestic Product
ICT	Information Communication technology
IFMIS	Integrated Financial management Information System
IPPD	Integrated Personnel & Payroll Database
LAIFOMS	Local Authority Finance Operation Management System
LAN	Local Area network
M and E	Monitoring & Evaluation
MCAs	Members of County assembly
NGOs	Non-Governmental Organizations
PPPs	Public private Partnerships
SMS	Short Messaging System
NOFBI	National Optic Fibre Backbone

EXECUTIVE SUMMARY

The ICT Roadmap for West-Pokot has been developed by the County Government of West-Pokot with help from ICT Authority, World Bank and IPA Consultants, as a guide to how the County designs its ICT services and structures to deliver positive outcomes for its customers – Citizens, County Staff, Business Community and other stakeholders.

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

This document proposes five key ICT focus areas geared towards addressing the County development agenda:

1. ICT Infrastructure development - especially last mile connection of the National Fibre Optic Cable for Local Area and Wide Area Network connectivity. Infrastructure development is essential in enabling the move to paperless office, access to information and devices sharing.
2. Service Delivery Mechanisms, this is the implementation and integration of ICT systems that deliver Government Services to Citizens and improve internal Government processes and communication
3. ICT Policy and regulation – This ICT strategy proposes the development and operationalization a Disaster Recovery plan, Information Security Policy, ICT Literacy Policy and acceptable use policy.
4. Staff training – aimed at increasing ICT literacy among the County Government Staff to enable them effectively use the proposed systems. The County CIDP identifies a number of challenges that affect the growth and uptake of ICT services such as lack of ICT instructors in youth polytechnics and low ICT skills among the population
5. COBIT Implementation – to enable the government measure and benchmark its ICT efforts.

To successfully implement the projects and systems proposed in this Roadmap, it is proposed that the County should address a number of challenges which determine the success or failure of the ICT development agenda:

1. Policy and legislation: This is necessary to address concerns such as Cyber Security, Open Data, Service quality, funding and more.
2. Staff skills: Investments in continuous staff training to equip staff with skills such as customer care (so as to improve citizen experiences), ICT Literacy
3. Governance: In particular the creation of a project management unit and an ICT Governance Committee responsible for driving the ICT agenda within the County.

The Roadmap also proposes that West-Pokot should rethink how it procures and implements ICT systems. In addition the Roadmap proposes that the County should work with the neighbouring counties to formulate a roll out strategy for shared services such as:

1. Revenue Collection Systems
2. Health Information Systems
3. Infrastructure development. The County should consider offering extra capacity to neighbouring counties for services such as co-location as a way of investment and revenue generation.
4. GIS applications for resource mapping of the County which include planning for urban development, identification of tourist sites and other resources.

The Roadmap further proposes a number of methods that can be used to fund or deliver the proposed systems.

1. There is need to fundraise regionally and pool resources for purposes of implementation of shared services, thus two or more counties can get together implement systems that are cross cutting and of value to all the regions concerned.
2. There is need to enact policies that are suitable, share costs and liabilities while promoting sustainable work methods such as service level agreements and public private partnerships.
3. Some projects such as the National Fibre Optic cable to Sub Counties, that capital intensive, the County could lobby the ICT Authority for support.
4. The County should explore partnerships with universities and youth polytechnics to offer training and ICT literacy Programs to staff and citizens.
5. There is need for a paradigm shift from owning infrastructure and capital intensive equipment to leasing out arrangements or a move to cloud services. Cloud infrastructure and use of open source software can help the County access infrastructure, services and skills at low costs using models such as pay as you go.

The document is organized as follows.

Part 1: This part presents the County profile, strategic direction, the organisational structure and also the current status of ICT in West Pokot County.

Paert2: Presents the desired end state which indicates the gaps noted and closure strategies at Departmental and processes areas, projects are proposed to achieve the ICT vision of the County, priority projects to be implemented in the period of 6months to 1 year. Also considered is the shared services plan at various levels within the County, within the neighboring counties and the national level. Critical success factors and guiding principles are provided in this part

Part 3: Presents the roll out strategy chart with twelve projects, highly prioritized for implementation by West Pokot County.

Part 4: Presents the implementation and the change management frameworks including formation of the Governance Planning Committees and the project management office

Part 5: Presents the annexes

LITERATURE REVIEW

Globally, ICT is recognised as a tool for social-economic growth and development, and as an enabler of service delivery. As a driver of the ICT industry, ICT has become a key catalyst for the emergency of a knowledge society and a knowledge economy. In the past, ICT innovation was mostly led and driven market changes. However, today as consumers become better informed we expect to see the industry become more consumer rather than technology driven. The latest ICT trends are set to drive strong GDP growth across the continent modernizing continent, modernizing and optimizing every sector of the economy and facilitating closer intra-Africa trade. Against this backdrop, those governments with relevant, effective national ICT policies will begin to dominate the economic landscape. Governments are increasingly using ICT as an enabler of service delivery, with e-government and m-government initiatives high on the agenda for addressing the challenges presented by rapid urbanization. Haphazard urban expansion serves as an obstacle to economic growth, so we expects more governments to pursue an integrated approach to urban development, with ICT playing an important role in ensuring good urban governance through smart grids utilities, water supply monitoring, safety and security, and video surveillance.

Globally, ICT has been shown to have impacts on economic and social development, and one of the indicators that has gained global recognition is the network Readiness Index (nRI), that includes skills as a critical pillar for nations to exploit ICT for development. According to the Global Information Report (2013), the skills pillar gauges the ability of a society to make effective use of ICT. It is thus critical to have the appropriate human capital and workforce for successful implementation of ICT products and services in Kenya. To achieve them, both the National and Counties' governments have to invest in hiring skilled ICT staff, continue to develop the current staff and build a training programme that will ensure the right skills are domiciled in both the National level and County levels.

The National ICT Master plan was developed to actualise Vision 2030[1] as Economic Blue Print for Kenya; it identified E-government and ICT as a Driver of Industry as well as Developing ICT Business as 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 brought about noticeable growth in the ICT sector especially in the mobile sector, which rose to 31.3 million subscribers, resulting into 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).

[1] The National ICT Master Plan, ICTA 2014

The E-Government by the National government is an initiative to use ICTs to transform both back-office and front-office government processes and provide services, information and knowledge to all government customers, that is the public, businesses, government employees and other government agencies. E-Government services will continue to facilitate and transform service delivery while increasing value for money to the citizens through sharing common resources, elimination of duplication and uncontrolled redundancy.

The E-Government effort leverages on the use of the network developed under the Government Common Core Network (GCCN) services, this network will improve the quality of services. E-Government is segmented into what are known as primary delivery models. Some of the E-government services with limited availability and resources at the County include Huduma centre services, IFMIS and the national government owned eCitizen portal. The GCCN was developed to serve as a shared and secure interoperable Government-wide ICT architecture. This system will not only integrate work processes and information flows, but also improve inter-ministerial sharing of databases and exchange of information. This will ensure maximum access to information held by public authorities to all Kenyans and that public information is readily available through consolidated portals in an affordable and secure way.

The Kenya Vision 2030[2] has identified BPO as a priority sector under Economic Pillar. It is widely expected to create over 20,000 jobs and contribute over 10 per cent to GDP. The government is implementing various initiatives that include improving universal access to ICTs, promotion of the BPO/ITES, capacity building, development of digital content, roll out of e-government services and promotion of ICT based industries among others. During the First MTP, Kenya witnessed growth of key BPO companies such as KenCall, Safaricom, Kentech and Horizon. Other related industries such as computer hardware manufacturing, software development, information and broadcasting, filming and digital content development and mobile money applications have grown over time. The IBM science and technology research laboratory established in 2012, is also currently conducting both applied and exploratory research in the Country as well as a number of other initiatives focussing on finding local ICT solutions to local problems and challenges in the Kenyan business environment.

The current on-going Digital Migration brings huge opportunities to exploit in the ICT field. This will cover development of multimedia local content, e-government, e learning, tele-medicine, e-health, e-commerce, e-marketing etc. Development of e-commerce will enable entrepreneurs to obtain use of their ICT skills to sell their products and services over the internet and reach international markets while in the comfort of offices. Such business programmes will involve use of high-resolution GIS maps of all the inhabited areas of Kenya which will encourage and strengthen an innovative culture. In addition it will engage local entrepreneurs and innovators to develop solutions that will transform the

[2] Vision 2030, Kenya Vision 2010

current business markets, as we know them to new markets that will transform Kenyan markets to global markets.

In conclusion, the National Government has initiated many ICT Flagship projects that have a direct impact on all Counties and how the Counties can tap in to these projects to drive their own ICT Strategies.

METHODOLOGY AND APPROACH

In order to carry out this project successfully Team IPA followed procedures embracing our understanding of the objectives of the assignment as outlined in the Terms of Reference (ToRs). In the following sections we expound on the technical approach and methodology we adopted for implementing the tasks to deliver the expected outputs.

Our Understanding of the Assignment Objectives

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

FOSTER INNOVATION, BEST PRACTICE, AND VALUE FOR MONEY IN THE USE OF ICT IN MANAGEMENT OF COUNTY RESOURCES, LEARNING AND CITIZEN OUTREACH

In to address this objective we were to develop a roadmap that will lead to improved communication, operations and enhanced interaction between the County governments and the citizenry, better communication and interaction between the business communities and the County governments, improved efficiency in operational activities between the County government structure as well as National government. This will help in the push for connected government operations and innovation that will see the implementation of revenue collection and accountability systems for resources at the County level; connected citizen for business operations; citizen satisfaction in service provision, and connected legislator for the County governance. These four (4) thematic areas formed the major facets of the assignment in developing County ICT Roadmap.

TO DEFINE THE CONDITIONS UNDER WHICH IT WILL BE POSSIBLE TO PROVIDE AN SHARED AND OPTIMIZED ICT INFRASTRUCTURE WITH APPROPRIATE USER SUPPORT AND STANDARDS FOR THE NATIONAL AND COUNTY GOVERNMENTS IN KENYA

Accurate determination of return on investments in ICT infrastructure remains a mirage partly contributed by failure to optimize on the already installed ones. As part of solution or equipment life cycle, any ICT system requires retuning and optimization to meet the changing human needs and demand patterns. Sharing of ICT infrastructure will go a long way in optimizing their usage. It is envisaged that neighbouring counties will be able to share some ICT resources in order to minimize the investment required and ensure higher usage. Just like other heavy investment infrastructures such as roads, it's inevitable that counties will share

some ICT resources either among themselves or with the National government in order to make their investment viable. Such may include systems like Fiber Networks, Data Centres, and National Security Systems etc. The concept of infrastructure sharing brings forth adoption of standards in any systems in order to ensure inter-operability and systems synchronization. Thus addressing this objective in our roadmap we put into consideration, the capacity of systems to be adopted, existing ICT infrastructure nationally and regionally, usage capacity within various counties and the need to have ease of use, wider acceptability and adoption by all users.

FOR EACH COUNTY, TO DEVELOP AN ICT STRATEGY ROADMAP FOR THE NEXT FIVE YEARS, IDENTIFYING

1. Short term quick wins
2. the priorities for investment;
3. the plans for development, deployment and support of ICT services and infrastructure which support the County's Citizen outreach, learning, and administrative activities;
4. a change management plan, and 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

A road map is a process to connect vision, values and objectives with strategic actions that are required to achieve those objectives. The ICT roadmap is to provide an action plan for the County Governments and respective stakeholders. The goal is to identify initiatives of high-potential ICT-investments in the County Government structures. We realized that with limited resources and many projects to be implemented, we had to come up with an order of implementation based on some criteria. The priority plan took into consideration the local requirements and investments as its initial focus. We identified the shared and Central ICT services that are essential for local services to operate effectively. Having evaluated the current situation we agreed on our target solution which was the desired state. We did a gap analysis and then developed a County ICT roadmap based on four (4) .The following organizational levels will were investigated along with their associated ICT skills.

Approach

Team IPA established guidelines and best practices to facilitate a disciplined process to provide a structured and balanced approach to understanding the current state of ICT infrastructure within each County.

The Project Process

In order to achieve the desired results, Team IPA approached the road mapping process through an established and tested framework that comprised the following broad phases to facilitate a structured process. The phases include project preparation, which is not part of the adopted methodology, but is included to suit the circumstance. The main phases were:

1. Understanding the current state of the County ICT infrastructure as aligned to the development programs;
2. Definition of the desired end state;
3. Conduct a Gap Analysis exercise;
4. Prioritize the findings from the Gap Analysis exercise into a series of gap closure strategies;
5. Discover the optimum sequence of actions
6. Develop and Publish the Road Map.

Project Phases

Phase One

The project required various aspects of planning. Designing the instruments of work was one of the aspects. Team IPA worked closely with each of the counties' personnel and relevant respective County stakeholders to develop a clear and unambiguous understanding of the current state of the business within the counties. The understanding facilitated partly through design and use instruments that included questionnaires for data collection. The questionnaires were developed based on the COBIT framework to identity the ICT maturity levels within a County. In addition data collection tools included developing of needs evaluation tools to be administered to key identified stakeholders. Specifically, e-readiness and other relevant questionnaires were developed and tested. The outputs from these questionnaires reinforced with quantitative data collected from existing systems, literature review and observations. Questionnaires, structured interviews, observations and focus group discussions were central in the data collection process.

INITIAL MEETING

To kick-start the consultancy process, a meeting was held which consisted of the top executive echelon of the County and Team IPA. After the formal project initiation procedures Team IPA commenced data collection for the understanding the current state.

Phase Two – Defining the Current State

The objective of this phase was to develop a clear and unambiguous understanding of the current state using the instruments developed.

DATA COLLECTION AND COLLATION

With the tools already designed and tested, Team IPA embarked on data collection from both the County offices and the field. The instruments developed and tested will now be put to their intended use. Data was collected about both the internal and external operational environments of the respective counties thus helping to define the current state in terms of the key ICT domains of each County. The domains were clustered according to COBIT framework as described later in the document.

DATA ANALYSIS

IPA's approach was based on COBIT framework to assess the Information Maturity levels within the County based on ICT Governance & Management Framework i.e.

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

Then SWOT analysis was a key variable that Team IPA carried out as part of the project deliverables at the validation workshop. This task falls under the Service and IT alignment to the County vision. We used this framework to get the tone of the project as key in building acceptance within the user community.

Phase Three – Definition of Desired End State

In this phase, Team IPA crafted a suitable desired End State definition, using the results from the Current State and move towards gap analysis. The major task was to organize the data obtained into what the County needs to be.

DEFINE DESIRED END STATE

Armed with data analysis results, which included recommendations, Team IPA was poised to craft a suitable desired End State definition. We used COBIT analysis of the Current State define the Desired State. The intent here was to identify the difference between where the County currently stands, in terms of ICT domain and what it aspires to become. We used the findings from the

previous stage as baseline data to identify what needs to be accomplished to meet the challenges.
The Desired End State was defined in terms of initiatives and performance targets. Having evaluated the strengths, weaknesses, opportunities and threats, we now had the strategic data from the previous stage and needed to apply it to the desired state by aligning the findings with strategic goals and objectives of the respective County. This was done bearing in mind the fact that the desired end state would be reviewed and approved by all stakeholders when this activity gets underway at the *validation workshop.* However, in order to define both current and end state, reference had to be made on BENCHMARK state. Benchmarking targets roles, processes, and critical success factors. Roles are what define the job or function that a person fulfils. Processes are what consume resources.
Critical success factors are issues that must address for success over the long-term in order to gain a competitive advantage. Benchmarking focuses on these things in order to point out inefficiencies and potential areas for improvement. Through COBIT framework Team IPA applied Benchmarking in response to needs that arise within a County needs assessment process. This was triggered by the need to re-align County strategic actions to the goals and objectives.

VALIDATION WORKSHOP

Besides the consultants input, the process was validated by workshop attended by the key stakeholders and IPA Team. Defining the desired end state was collaborative effort between the key stakeholders and the consultants and was accomplished through a set of questions used to draw participants into the process to meet our SMART objectives. The set of questions designed for the workshop were compiled, evaluated, and presented in a way that was easy to understand. IPA's goal here was to help stakeholders to immediately grasp where the true gaps or shortcomings exist and why this was happening when we get to the gap analysis phase.

Phase Four - Gap Analysis

The objective of this phase is to provide an in-depth understanding of how to close the identified gap and eliminate the risks to achieve the desired future state.
Team IPA used the findings begin developing strategy alternatives (and related initiatives) to address deficiencies, inefficiencies, risks and organizational challenges that had been uncovered during data analysis stage. This exercise was critical as it must identify the initiatives to be accomplished. The gap analysis leads to a well-organized set of alternative approaches and viable strategies to use to close the identified gaps.

Phase Five – Fit Analysis (Prioritization)

Team IPA used the results from Gap Analysis in order to prioritize the actions (projects) that have been identified to close the gap or difference from where the County is, to what it aspires to be. We performed this process by evaluating the relative business value and the technical complexity of the situation. It was important that stakeholders were engaged in the collection of the data points during the harmonization workshop. Team IPA helped in identifying what is feasible and what has the highest business value, balancing business need with the capability to execute.

Phase Six -Develop the County ICT Roadmap

The methodology identified specific actions, grouped into phases, using an overall pattern all roadmaps follow. We have undertaken the requisite activities in all. The phases/steps required to complete this work to:

1. Develop a clear and unambiguous understanding of the current state
2. Define the desired end state
3. Conduct a Gap Analysis exercise
4. Prioritize the findings from the Gap Analysis exercise into a series of gap closure strategies
5. Discover the optimum sequence of actions (recognizing predecessor – successor relationships)

Armed with the facts (current vs. desired end state), the prioritization effort (what should be done), and the optimum sequence (in what order), we began to assemble a sensible, defensible road map that describes what should be done and in what order. The reporting of findings have been presented in the drafting of E-Readiness, Draft 1, Draft 2, Daft 3 and finally this County ICT Roadmap Document.

PART 1: INTRODUCTION AND BACKGROUND OF THE COUNTY

1.1. County Strategic Direction

Strategic directions provide guidance for the County as it works to maximize its value to Its Citizens. The main purpose of this is to ensure all individuals and work groups within the County are working toward the achievement of the County's overall strategic direction. West-Pokot County mission and vision statements as per the County's CIDP are:

Vision: "To be a leading County in effective and efficient resource management coordinated sustainable development and service delivery."

Mission: "To facilitate equitable development and improved public service delivery to stimulate sustainable social-economic development, high quality of life and become the best County in Kenya."

1.2. County Profile

1.2.1. Governance Structure

Governor is the Chief executive of the County and the Deputy Governor is the deputy Chief Executive of the County. The Governor is designated to provide leadership in the County's governance and development. The County executive committees who are the ministry heads supervise the administration and delivery of services in the County and all decentralized.

1.2.2. Strategic Focus Areas and Plans

The County has developed a County Integrated Development Plan 2013 – 2017, with priority areas for investment being in the departments of Agriculture & rural development, Health, Infrastructure, Education, social services and water. The critical success factors for the attainment of the set focus areas, the County is looking at:

- Community Sensitization
- Seek more staff
- Political good will

1.2.3. County Socio-Economic Data

LOCATION & SIZE:

West Pokot County is one of the 14 Counties in the Rift Valley region. It is situated in the north rift along Kenya's Western boundary with Uganda border. It borders Turkana County to the North and North East, Trans Nzoia County to the South, Elgeyo Marakwet County and Baringo County to the South East and east

respectively. The County lies within Longitudes 340 47'and 350 49'East and Latitude 10 and 20 North. The County covers an area of approximately 9,169.4 km2 stretching a distance of 132 km from North to South.

Figure 1: Map of West Pokot County

POPULATION:

The population of the County is estimated at 631,231 persons as per 2013 projections. This population consists of 313,746 males and 317,484 females giving sex ratio of 100:101. The County inter-censal growth rate is 5.2 percent which is higher as compared with the national average of 3.0 percent. If current trends prevail, the County population is expected to grow to 700,414 and 771,180 in 2015 and 2017 respectively.

The proportion of the population aged below 14 years and above 64 years comprises about 55 per cent. These age groups are dependents and their proportion is higher than the population in the labor force (15-64 years) which constitutes 45 per cent. These dependents are therefore likely to exert pressure on the workforce to provide for their basic needs.

ECONOMIC DRIVERS:

Agriculture & Livestock keeping

The main crops produced include maize, finger millet, potatoes, beans, onions sweet potatoes, green grams, peas, mangoes, oranges, bananas, coffee and pyrethrum. Maize is the staple food in the County and is mainly grown in West Pokot Sub-County. Potatoes and pyrethrum are grown in South Pokot Sub-County. The traditional zebu is the main breed in Pokot Central and North Sub-Counties for meat production while West Pokot and Pokot South Sub-Counties keep improved dairy cows such as Ayrshire and Friesian.

Tourism

Tourism sites in the County have largely remained unexploited. For instance tourist attraction sites in the County include (Nasolot Game reserve), scenic sites, escarpments (Marich escarpment, Kaisagat viewpoint, Mtelo and Koh hills), ecotourism and Turkwel Dam remain untapped. Others tourism attractions include the rich Pokot Culture and artefacts in Kapenguria museum, curio shops and wildlife. Apart from these, the County is a proud home of the infamous "Kapenguria Six" Cells that is found in Kapenguria Museum. There are a variety of wild animals at the Nasolot Game Reserve. The animals include Elephant, Buffalo, Hyena, Impalas, Leopard and Lions. Currently, there are more than 160 elephants and more than 20 leopards in the County

Natural Resources:

The County has limited gold deposits along river Muruny, Seker and parts of Alale, limestone deposits in Sebit, Ortum, Muino and parts of Alale. However, the deposits have not been commercially exploited. Sand harvesting is carried out in most parts of the County but is mainly in Kongelai Division.

Mining Potentials

The County mineral potentials remain untapped. The following minerals are unexploited: limestone, gold, and ruby. Massive limestone deposits are found in Sebit, Ortum, Muino, and Alale. There is a proposed cement industry to be established in Sebit to fully exploit the limestone deposits. In addition to these potentials, the County has prospect of oil reserve in parts of Pokot North and Central Pokot. All these minerals in the County have the potential of generating additional revenue to the County government. There is need for the County government to enter into partnership (PPP) with investors to be able to explore and tap these natural resources.

1.3. County SWOT Analysis

In evaluating the factors both internal and external that are favourable and unfavourable in achieving the objectives of West-Pokot County, a SWOT analysis matrix as illustrated in the table 1 below is drawn.

Table 1: County SWOT Analysis

County Strengths	County Weaknesses
• Political good will • Existence of several NGO's • Existence of gender equality law	• Inadequate electrical power supply • Poor road network • Inadequate Educational facilities • Food insecurity • Inaccessible health services
County Opportunities	**County Threats**
• Presence of mineral deposits • Sensitization against retrogressive cultural practices e.g FGM • Presence of scenic environment e.g	• Intra and Inter community conflicts • Effect of climate change on rainfall patterns • High population pressure

the Turkwel escarpments for tourists • Construction of more security posts • Implementation of joint projects with neighboring communities. • Training opportunities to stakeholders on things like management of irrigation schemes, importance of conserving of natural resources etc.	• Retrogressive cultural activities • Nomadic lifestyles • Destruction of forests and catchments • Natural disasters like drought, landslides etc

1.4. County Monitoring and Evaluation Systems

Unlike for the ongoing and past projects, the new projects have been provided for the expected outputs and the monitoring indicators across the ministries, County assembly and the public service board. The overall objective of this monitoring and evaluation (M&E) framework is to ensure that the County is fully equipped and enabled to systematically generate, capture and disseminate information, through monitoring and evaluation as a mechanism of strengthening the impact and effectiveness of its programmes and projects. For the CIDP, the first evaluation should be conducted one year after completion of the project to assess the impact of the project. In accordance with provisions in the national guidelines for M&E, the CPU and other stakeholders are supposed to conduct mid-term and terminal evaluations of the CIDP

1.5. County Stakeholders Analysis

The purpose of Stake-holder analysis is to assess which individuals or groups are likely to support, resist, or remain neutral during the project implementation [3] . The process looks at why the stakeholders respond the way they do and how they may be influenced to ensure a response most favorable to achieving project goals.

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

1= negatively, actively or subversively working against
2= moderately negative, passive resistance
3= Neutral
4= moderately positive, passive support
5= Active support, "All in"
The following Table 3 shows stakeholder matrix for West-Pokot County.

[3] Savage, G.T., T. W. Nix, Whitehead and Blair (1991). "Strategies for assessing and managing organisational stakeholders.

Table 2: Stakeholder Analysis Matrix

Stakeholder	Strategic Importance	Current Commitment	Involvement	Goals/Needs
ICT governance committee	Defines and prioritizes use of resources to drive transformation	5	Decision making	• Define key performance measures • Guide deployment of efforts • Implement strategy • Report on successes
Leadership	Provides resource support and endorsement for transformational leadership	5	Support/Endorsement	• Overview of key activities/ service issues • Overview of performance measures
Staff	Streamline process and increase capacity; improve service delivery	3	Feedback	• Demonstrate expected behaviours • Provide feedback on leading practices and experiences
Assembly	Provides checks and balances on excesses of the executive and legislate on projects issues	4	Oversight	Overview of project implementation in regard to policies and legislation
Citizens	Provide feedback on service delivery systems and citizen satisfaction	3	Public participation	Understanding of the project and its needs/effects of implementation

PART 2: CURRENT STATE

2.1. Current state of ICT in the County

2.1.1. Current State of ICT in Departments

In the ministries, the state of ICT usage and coverage is average if ranked in terms of usage, availability and prioritization. Website for instance is seen to have been developed and is used in most sectors while internet connectivity is still a major problem in the same sectors. Modems are being used widely to access internet. There is major need for high speed and reliable internet connectivity across the ministries.

For the IFMIS system, there is need for capacity building and training on the same since most staff complain about the complexities of the system. There is also insufficient staff/ personnel as seen in the Finance and Economic Planning department.

ICT facilities such as Desktops and Laptops are insufficient at some quarters of the County. For example at the ministry of Trade and Industry, the ratio of computer to staff is 1:3, hence the need for the increase of computers.

Backup and security of data is also a cross cutting issue in the County. Most departments need a backup system to store their backup such as in cloud. Currently there is no any public sensitization program on ICT issues in the County. Most stakeholders-public- do not utilize some ICT resources such as login on the website of the County and getting online content. State of ICT in County Assembly

Currently, there's good internet connectivity, established website for the Assembly and also a hybrid server. The department has also been able to procure current utility software's such as Antiviruses for the PCs. However, the challenges of office space, insufficient support team are experienced in the ICT department, are a hindrance to achieving the department's objectives. The department priority areas include the installation of CCTV cameras for security and a remote backup system for data safety and security

2.1.2. State of ICT in Sub-counties and Wards

Currently there are insufficient ICT skilled personnel at the sub-County and ward levels. ICT facilities such computers, Internet connectivity are the major challenges experienced at the sub-County offices. Power supply has not been installed at most sub-County offices in the County.

Budget constraints, poor public sensitization and also poor infrastructure at the sub-County and the ward levels are major challenges to development at these levels of the County government.

2.2. County ICT Structure

2.2.1. Governance

The ICT department in the County falls under the ministry of Education which is headed by the CEC member in charge of Education. Below the CEC head, there is a director in charge of ICT who runs the day to day activities of the department and reports to the CEC. The director of ICT works with the ICT manager at that level. Their functions among others are to oversee the ICT functionalities in the County and provide support.

The ICT staff capacity in the County is stretched and it needs more recruitment of staff in order to serve the many ICT functions in the County. Apart from the director in charge of ICT, his assistant and the ICT manager, there are other staff working as casuals and also interns who are working in the office temporarily.

2.3. County ICT M&E System

The ICT department currently does have any M&E framework but the projects at the department uses the NIMES framework which is part of the National Government M&E. The main aim of this framework is to improve the effectiveness and quality of tracking implementation of various projects, policies and also strategies.

2.4. County ICT SWOT Analysis

From the interaction of IPA consultants with the County staff and other respondents from the County of West-Pokot several aspects that are crucial to business planning were examined and an ICT SWOT analysis done. The results obtained are shown in the following Table 3.

Table 3: ICT SWOT Analysis

County Strengths	**County Weaknesses**
Human resources skilled in ICT Availability of equipment and infrastructure at the HQ Political goodwill	Inadequate office space Inconsistent power supply Inadequate staff capacity
County Opportunities	**County Threats**
Increasing ICT Literacy in the populace Emerging mid-level ICT institutions Available National ICT Policy Availability of Internet and Cloud Computing technology.	Fast-changing technology Cyber security risks

2.5. Current County Integration to National ICT Master Plan

2.5.1. National Fibre optic cable connectivity:

One of the expected outputs of the project of synoptic observing stations (weather stations) in the County is the optic Fibre linkage and RANET FM station establishment.

2.5.2. IFMIS, E-procurement integration and usage:

IFMIS system has been implemented in the finance department and other departments have also followed suit. The only major setbacks of the system are staff ability to handle all the modules of the system. A larger response of staff said that they needed capacity building on the use of the system.

2.6. Current state of County ICT maturity – COBIT

2.6.1. The ICT Governance & Management Framework

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

As a way of guiding the County to overcome the above ICT challenges, Control Objectives for Information and Related Technology (COBIT) has been proposed as a framework for maturity modelling of County ICT maturity. The COBIT Framework consists of linkages between organizational and ICT objectives while

providing a mechanism for continuous measurement and maturity of ICT processes. These processes were customised to seven elements as listed below:

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

The methodology proposes a systematic and coherent maturity of all the above seven elements as the basis for sustainable ICT development within the County. There are six levels (stages) of ICT maturity ranging from Level '0' through '5', with Level '1' being set as the BENCHMARK target.

The County should aim to achieve Level '1' status by performing various activities under each listed process as defined in the Process-Activity Table in Annex I A. Once Level '1' status is achieved, the County embarks on refining and continuously improving on the execution of these processes as it matures through Level '2' and beyond. The proposed ICT Governance & Management Framework maturity Levels (0-5) map well onto the generic maturity model as proposed by ICT Authority as shown in Figure 2 below.

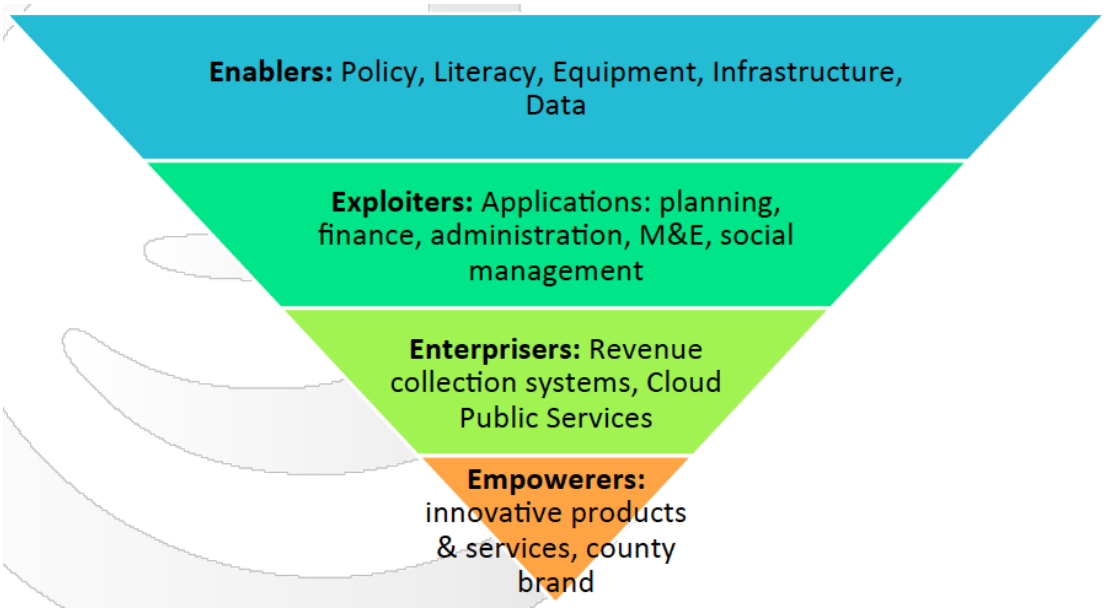


Figure 2: Generic ICT Maturity Level, source ICT Authority

The **Enabler stage** maps onto **Level 1** where basic ICT enablers are in place. The **Exploiter stage** maps onto **Level 2** where systems are implemented to deliver internal efficiency. The **Enterpriser stage** maps onto **Level 3** where ICT

infrastructure and applications deliver a good return on investment while supporting ICT businesses. Finally, the **Empowerer stage** maps onto **Level 4** where innovative ICT systems emerge and thrive - given the prevailing and highly mature ICT environment.

In establishing the Current State, IPA consultants reviewed and measured the maturity levels of the seven elements: Strategy & Governance, Financial Management, Applications, Security, Infrastructure& Operations, Service Planning & Architecture and People & Resources of the COBIT ICT Governance and Management Framework. The specific maturity level for each process for this County are indicated in appendix *Annex 1C*.

The Figure 3 below summarizes the County performance along the seven elements of the ICT Governance & Management Framework. This ideally shows the maturity levels of the County along the seven elements. The specific process performance levels for this County are as indicated in *Annex 1 C* with their subsequent spider charts in *Annex 1 D.*

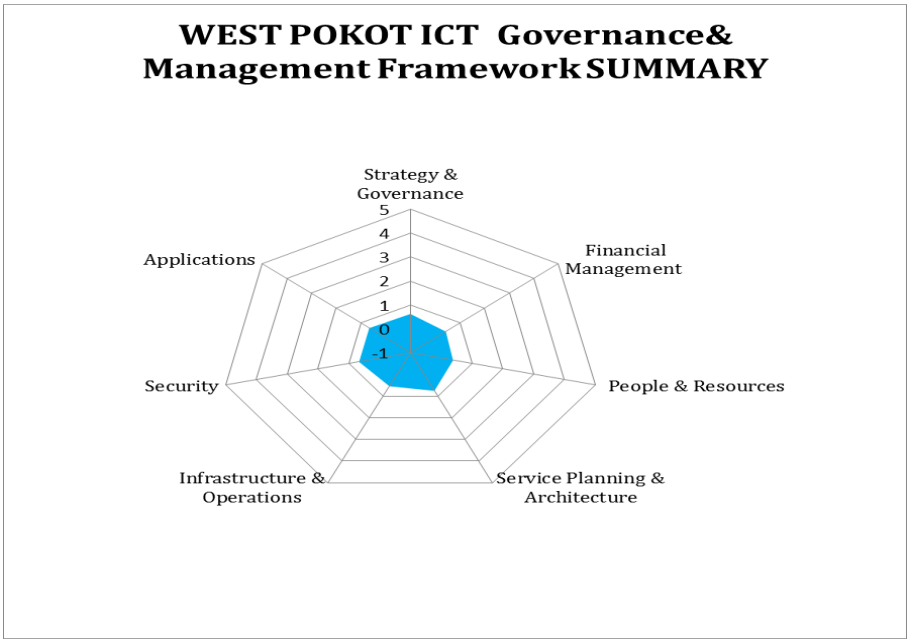


Figure 3: Current State

2.7. Financial Policy and Strategy for ICT

According to CRA- Commission on Revenue Allocation County Budget Report 2013-14, West-Pokot County ICT Budget was Kshs 49 million representing 1.63% of the total budget. Of this, Kshs 1.1 million was spend on hardware & infrastructure Kshs 11.6 million on purchase of ICT equipment and Kshs 0.17 million on maintenance of ICT equipment. As a rule of thumb, the County target should target to increase their spending on ICT to at least 5% of the total budget in line with the national broadband strategy. This funding will be targeted at infrastructure, software, consultancy and training needed to move the West-Pokot County from current state to desired state as defined in the COBIT framework.

PART 3: DESIRED END STATE

3.1. Desired End State Description

The ideal, general state of ICT in the County can be realized in four main thematic areas: *Connected County Government, Citizen Satisfaction*, *Connected Citizens* and *Connected Legislators*. These thematic areas constitute the four components for the ICT Roadmap and are pertinent to the attainment of the desired ICT connectivity levels.

In addition to the above four thematic areas ,IPA consultants used the COBIT framework as for modelling the County ICT maturity. The model puts the County in a level on the basis of its maturity ranging from level '0' through '5' with level '1' being set as BENCHMARK target. The framework aims at tasking the County to always aim a level higher by performing activities under each process as shown in Annex 1B and in that way aid in achieving the desired state of ICT.

In establishing the Current State, Benchmark State and proposed Future State of the County ICT maturity using COBIT framework, IPA consultants reviewed and measured seven elements, as described in section 2.6. The desired state of ICT in the County within the next five years therefore, places the County automatically one level above its current state. A summary of the desired state of ICT and governance and management framework with respect to current and benchmark states in the County is showed in the Figure 5 below.

The first theme, *Connected County Government,* seeks to ensure an ideal ICT environment for government-government interactions for the purpose of both national and County level development. The second theme, *Citizen Satisfaction*, is geared towards the ideal state of ICT in the County and focuses on enabling interaction between the government and its citizens. Thirdly, the *Connected Citizens* theme, builds on the *Citizen Satisfaction* pillar focusing on enhanced citizen-citizen interaction from government efforts in ICT. Finally, the *Connected Legislators* theme, looks at the ideal state of ICT at which the County facilitates the interactions of the County leaders with citizens.

In summary, the ideal description of the desired state along the four thematic areas are illustrated in the Figure 4 below.

Connected County Government

- Integrated ICT infrastructure
- Enhanced Information security
- Automated service delivery systems
- Effective and Efficient Service delivery
- Well-Defined ICT Strategic plan &policies
- Paperless Offices
- Adequate and well trained staff
- Better staff collaboration
- Data visualization dashboards

Connected Citizen

- Better security and surveillance systems
- Well Informed Citizenry
  - Broad-band connectivity
  - Radio and TV coverage
  - Toll free USSD's
- E-Citizen Portal for Information sharing
- ICT incubation and Innovation Hubs
- ICT literacy and empowerment Programs

Connected Legislators

- Public Participation systems
  - Live Broadcast of county Assembly Proceedings
  - Web and Mobile technologies
  - Social Media
- Capacity Building of MCA's and other County Assembly staff
- Digital Record Management systems
- Electronic Voting systems

Citizen Satisfaction

- Modern Information Centres/ ICT 'kiosks'
- Established Help Desks and call centres
- Digital Economy-Online payments of permits
- Online Job Applications
- Integrated Public Interaction systems such as Bulk SMS's, USSD's and E-portals
- E-learning systems

Figure 4: Desired States along for the 4 c's

3.1.1. COBIT Desired State

The desired state of the County within the next five years is automatically placed one level above its current state across all the 34 processes reduced to the seven elements. Figure 5 is a summary of the desired state of ICT Governance and Management Framework with respect to Current and Benchmark States in West-Pokot County.

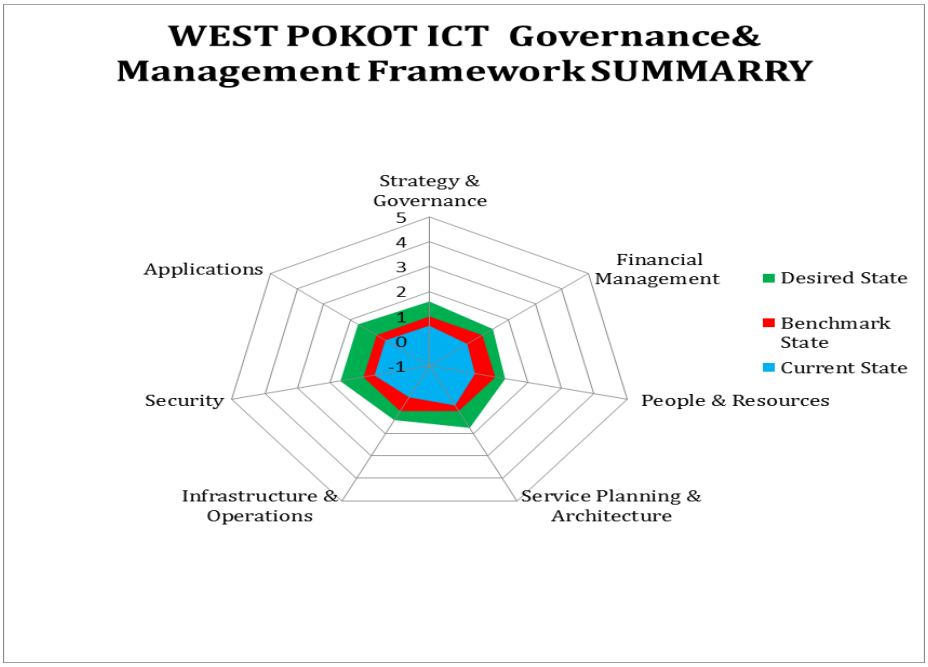


Figure 5: Desired State

3.2. Gaps Analysis and Closure Strategy

Gaps were identified by comparing the current state and desired state in each of the thematic areas, using the COBIT processes in Annex 1B as well as referencing the scores in Annex 1C for the levels' scores. The gaps were analysed (see section 3.2.5) and interventions were developed that culminated into projects and strategies to fill the gaps the identified gaps are summarized along the four thematic areas as follows:

3.2.1. Connected County Government

Connected County theme for ICT development looks at ICT as driver of County productivity and internal business, shared services (email, VoIP communication, video conferencing, collaboration, and social media), project management as shown in the Table 4 below

Table 4: Connected County Government Gap Analysis

Current State	Gap Identified	Strategies
Basic ICT connectivity in the HQs and some departments	Lack of an integrated ICT Infrastructure	Investment in an integrated infrastructure
ICT strategic plan for development	Lack of an ICT strategic plan	Development and update of ICT strategic plans
Sharing of computer hardware and software in 1:3 staff to computer ratio	Lack of adequate computer hardware and software	Invest in purchase of adequate computers in the County
Disintegration of the available systems	Lack of seamless communication	Development of integrated systems
Manual revenue collection systems	Lack of revenue collection systems	Automation of revenue collection systems
Poor and manual backup systems	Lack of an information security system	Investment of a backup and redundancy system

3.2.2. Connected Citizens

This theme looks at ICT as a driver of business and industry as shown in Table 5. This can entail the empowering of business people, youth, women and special groups, availing of data and information for trade and investment for citizens, providing data on business opportunities in the County, data on social economic status of the County, linkages of citizens to business or employment opportunities, etc.

Table 5: Connected Citizen Gap Analysis

Current State	Gap Identified	Strategies
Limited public participation on governance	Lack of automated public relations systems	Investment in CRM, call centres
No public sensitization on the use of County existing web portal such as the website	Lack of public sensitization programmes	Introduction of public sensitization programmes in the County
Limited access of internet to the public	Lack of a free WIFI hotspots in the County	Investment in provision of free internet hotspots and subsidies on cyber cafés

3.2.3. Citizen Satisfaction

This theme considers delivery of E-government Services and use of ICT as a driver of County ministries and departments, public service board up to sub-County and ward level as shown in the Table 6 below.

Table 6: Citizen Satisfaction Gap Analysis

Current State	*Gap Identified*	*Strategies*
Bottlenecks in service delivery due to the use of manual systems at service delivery points	Lack of online systems	Development of online portals for service delivery
Education systems manual	Lack of an E-learning system	Investment of E-learning systems in learning institutions
Decision making mostly not based on a standard framework	Lack of GIS-based decision making mechanisms	Lobby for the implementation of the existing GIS system
Inadequate electronic processing of processes	Lack of e-readiness in the County	Investment and lobbying for a digital economy
Inadequate health management systems	Lack of integrated health management systems	Investment of integrated health care systems

3.2.4. Connected Legislators

This strategic theme will include strategies towards ICT being as a driver of legislative assembly productivity, collaboration, communication and services to the electorate as shown in Table 7.

Table 7: Connected Legislator Gap Analysis

Current State	*Gap Identified*	*Strategies*
No public participatory processes	Lack of an electronic public participation systems	Development of public participation electronic systems such as web, social media and mobile technologies and live broadcasting
Manual handling of documents and processing	Lack of document management and processing systems	Investment in Electronic document management systems
Slow uptake of technology amongst the MCA's	Inadequate training of MCA's	Establishment of ICT proficiency and capacity building programmes
No attendance register resulting to lack of quorum In passing bills in the Assembly	Lack of means to track MCA's attendance	Investment in Electronic clocking systems –Biometric systems

3.2.5. COBIT Gap Analysis

Table 8 below shows the gap analysis for the seven elements of the ICT Governance & Management Framework with respect to the desired state. As stated earlier, the process matures from current state to desired state with one level step function. Within each level, the maturity progression can be described as Not Achieved, Partially Achieved, Largely Achieved and Fully Achieved. In our case we need all the processes to be fully achieved for the desired state.

Table 8: Gap Analysis

N – Not Achieved (0%-15%)

P – Partially Achieved (15%-50%)

L – Largely Achieved (50%-85%)

F – Fully Achieved (85%-100%)

	WEST POKOT COUNTY RESULT SUMMARY						
		Achieved Capability Level					
Element	**0 Little/No Achievement**	**1 Performed**	**2 Managed**	**3 Established**	**4 Predictable**	**5 Optimising**
Strategy & Governance	L	L				
Financial Management	P	P				
Personnel & Resource Management	P	P				
Service Planning & Architecture	L	L				
Infrastructure & Operations	L	L				
Security	L	L				
Applications	L	L				

	Current State
	Desired State

NOTE: The comprehensive processes to fill into the gap between the County's current state and the Desired state are detailed in ANNEX 1B..

In determining the specific processes to the roadmap the County should follow the guideline in Table 9 which shows a summary of the purposes of the criteria in each of the six levels of the COBIT framework. Idealy, the activities in level 1, which is the benchmark level detail the developmental criteria which the County shall build on using the guideline in Table 9 below. The table also shows the implications of each of the levels

.

Table 9: Summary of the purposes of the criteria in each of the six levels of the COBIT model

Level	Process Attributes where gaps occur	Potential Implications for failing to achieve the level
Level 0 (Incomplete)	Proces is not implemented or fails to achieve its process purpose. At this level, there is little or no evidence of any systematic achievement of the process purpose.	The governance and management framework is not in existence.
Level 1(Performed)	Implemented processes (at level 0) is able to achieve its process purpose.	Missing work products Process outcomes not achieved
Level 2 (Managed)	Performance Management Work Product Management	-Cost or time overuns; innefficient use of resources; unclear responsibilities. -Uncontrolled decisions; uncertainity over whether time and cost objectives will met. -unpredictable product quality and integrity; uncontrolled versions; increased support costs; integration problems; increased rework costs
Level 3 (Established)	Process Definition Process Deployment	-Identified best practice and lessons leaernt from previous projects not defined, published and available within organizations. -No foundation for County wide process improvement. -Implemented process not incorporating identified best practice and lessons learnt from previous project; incosistent process perfromance across the County. -Lost opportunities to understand process and identify improvements.
Level 4 (Predictable)	Process Management Process Control	-No quantitative understanding of how well process performance objectives and defined business goals are being achieved. -No quantitative ability to detect

		performance problems early. -Process not capable and/or stable (predictable) within defined limits -Quantitative performance objectives and defined business goals not met.
Level 5 (Optimizing)	Process Innovation Process Optimization	-Process improvement objectives not clearly defined -Opportunities for improvement not clearly identified. -Inability to change process effectively to achieve relevant process improvement objectives - Inability to evaluate effectiveness of process changes

3.3. ICT Vision Roadmaps and ICT Maturity

3.3.1. Connected County

Connected County Government theme looks at ICT as driver of County productivity and internal business, shared services (email, VoIP communication, videoconferencing, collaboration, and social media), project management, etc. table 10 below shows flagship projects, their objectives and the desired outcomes towards development of the ICT roadmap.

Table 10: Connected County Government Flagship Projects

Flagship Projects	Objectives	Desired outcomes
➢ GIS system for planning ➢ Establishment of Data banks ➢ Fleet management systems ➢ Development of an Integrated ICT Network Infrastructure ➢ Teleconferencing systems ➢ Procurement of secure security systems and frameworks ➢ Capacity building programmes ➢ Digital security systems ➢ E-registration of citizens ➢ Wireless Hotspots	➢ Build the capacity of County technical staff in ICT skills and competencies ➢ Lobby the County government to increase ICT budgets to 5% in the total County Government budget ➢ Construction of resource centres at least one per sub-County ➢ Provision of free and or subsidized wireless hotspots ➢ Introduction of ICT literacy programmes	➢ *Centralized website with portals for various County government arms.* ➢ *Inter connectivity of sub counties* ➢ *Backup system and improved information security* ➢ *Resource mapping and planning* ➢ *Prompt and timely response.* ➢ *Improved communication* ➢ *Timely, efficient, and effective communication within and across departments* ➢ *Effective and efficient resource planning, management, monitoring and evaluation*

3.3.2. Citizen Satisfaction

This theme considers delivery of E-government services and use of ICT as a driver of County ministries and departments, public service board up to sub-Counties and ward level. Table 11 below shows the summary of Flagship projects, objectives and the desired outcomes under the citizen satisfaction theme.

Table 11: Citizen Satisfaction flagship projects

Flagship Projects	Objectives	Desired Outcomes
➢ Information Centres at the sub-County and Ward levels ➢ Establish Incubation Centres ➢ Bulk SMS systems and USSDs and social media platforms to link the County government to the Citizens of West-Pokot ➢ Integrated health management system ➢ County FM radio and TV. ➢ Development of centralized website.	➢ Setup Integrated Health Management System ➢ Procure and install a GIS system ➢ Install a Security and Surveillance system at the County ➢ Setup Early Warning Systems ➢ Set up provisions or a digital economy through an interactive website ➢ Lobby for legislation and policy on digital documents. ➢ Enhance an optimized service delivery mechanisms ➢ Citizens to be empowered in terms of ICT knowledge and skills	➢ Increased literacy levels of ICT in the society ➢ accessibility to information and research to the public ➢ GIS mapping of the learning facilities ➢ Website portals for members of the public

3.3.3. Connected Citizen

Under this theme, we look at ICT as a driver of business and industry. This entails the empowering of business people, youth, women and special groups, availing of data and information for trade and investment for citizens, providing data on business opportunities in the County, data on social economic status of the County, linkages of citizens to business or employment opportunities, etc. Table 12 below shows a Summary of Flagship Projects, objectives and the desired outcomes under the Connected Citizen theme

Table 12: Connected Citizens Flagship Projects

Flagship Projects	Objectives	Desired Outcomes
➢ ICT Incubation/Innovation Hubs ➢ E-Citizen Portal for information sharing ➢ Provision of ICT literacy skills to the citizens of West-Pokot County to create self- sufficiency in ICT skills. ➢ Development of Entrepreneurship resource platforms for County citizens ➢ Introduction of ICT training programs for citizens ➢ Connecting all resource centers and improve network connectivity in the County ➢ Equipping resource centers and distributing learning resources to the community. ➢ Provision of subsidized or free Internet	➢ Set up Quarterly Magazines and Newsletter to sensitize citizens of the County ➢ Set up Digital Literacy and information Centres in all sub counties ➢ Develop an e-citizen portal ➢ Lobby for National Broadband connectivity in all sub counties ➢ Set up Customer Relationship Management systems (CRM) and call centers in the County ➢ Install a bulk SMS and USSD systems	➢ Increased connectivity of the people of West-Pokot ➢ Secure west-Pokot County ➢ Informed citizens ➢ ICT literate citizens

Hotspots		

3.3.4. Connected Legislator

The theme looks at strategies towards ICT being as a driver of legislative assembly productivity, collaboration, communication and services. Table 13 below shows the Summary of Flagship Projects, objectives and the desired outcomes under the Connected Legislator theme.

Table 13: Connected Legislators Flagship Projects

Flagship Projects	Objectives	Desired outcomes
➢ Committee management systems ➢ County news paper ➢ Biometric systems for check-in ➢ Web, Mobile and Social Media enabled system for citizens access and feedback ➢ Electronic Document Management System ➢ Integrated live Broadcast Technology System ➢ Incorporating Radio, TV, Internet and Mobile technologies ➢ ICT Proficiency Capacity Building Program for staff and all assembly members (MCAs)	➢ Introduction of trainings and capacity building to the members of the County assembly ➢ Allocation of resources to the crucia ➢ Set up an Integrated Live Broadcast System ➢ Install an integrated Public Participation System ➢ Employ electronic management and digitization of bills and legislative proposals	➢ Public participation on policy matters ➢ public awareness on the current issues affecting the citizens ➢ Efficient and flexible County assembly

3.3.5. COBIT Implementation

The need for ICT Governance & Management (ICT G&M) is widely recognized by top leadership and management as an essential part of enterprise or corporate governance. Information and the pervasiveness of information technology are increasingly part of every aspect of business and public life. This has added pressure to drive more value from IT investments and manage an increasing array of IT-related risk.

Increasing regulation and legislation over business and public use of information is also driving heightened awareness of the importance of a well-governed and managed ICT environment.

ISACA[4] developed the COBIT framework to help organizations implement sound governance practices for the ICT domain. Indeed, implementing good governance is almost impossible without engaging an effective ICT governance framework. COBIT provides a framework, best practices and standards to support ICT governance.

[4] ISACA-www.isaca.org

However, frameworks, best practices and standards are useful only if they are adopted and adapted effectively. There will be challenges that need to be overcome and issues that will need to be addressed if ICT Governance & Management is to be implemented successfully. COBIT Implementation provides guidance on how to do this and covers the following subjects:

1. Positioning ICT G& M within an enterprise
2. Taking the first steps towards improving ICT G& M
3. Implementation challenges and success factors
4. Enabling ICT G& M-related organisational and behavioural change

5. Implementing continual improvement that includes change management and programme management
6. Using COBIT and its components

ISACA provides seven implementation steps to guide and facilitate the adoption of the COBIT framework within organizations as shown in Figure 6 below:

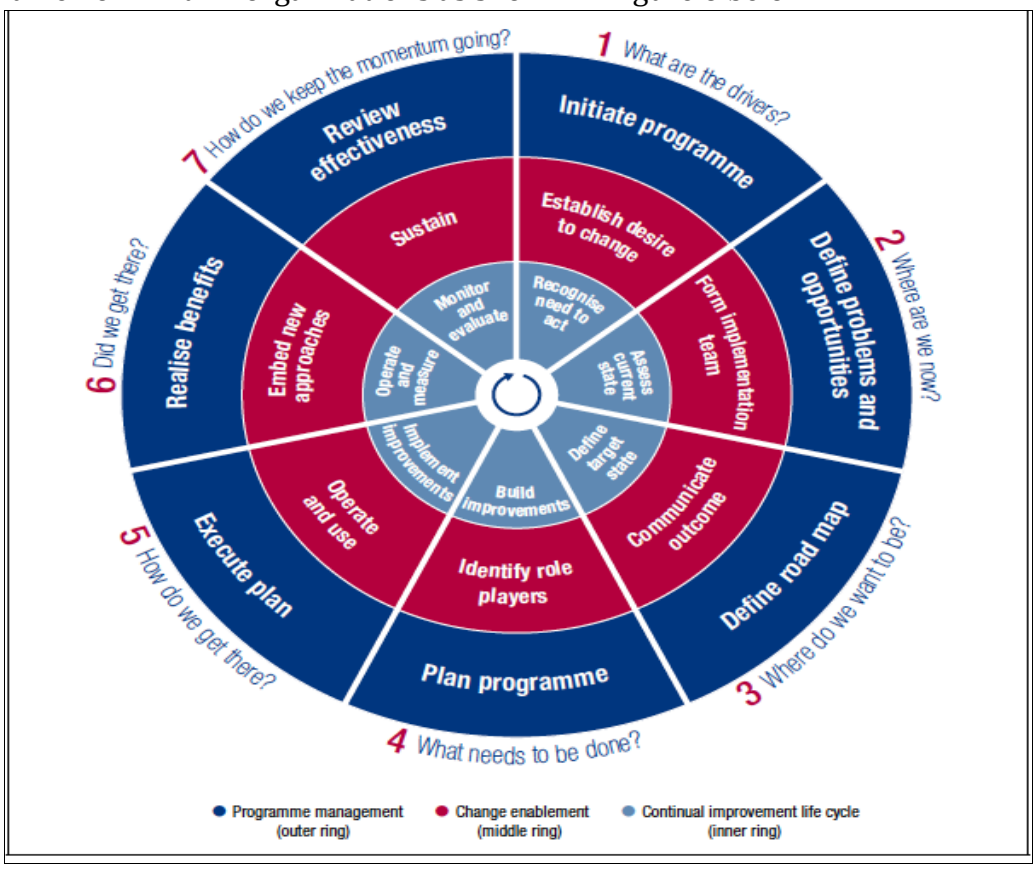


Figure 6: COBIT implementation Phases (source ISACA)

Counties are advised to engage a qualified (certified) COBIT implementer from ISACA-KENYA Chapter (www.isaca.or.ke), to guide them through the implementation process. The typical activities, costs and timeframes are summarized in Annex 3

3.4. Priority Projects for Quick Wins (6 Months to Year 1)

Projects for quick wins are derived from the process of selection and prioritization discussed by stakeholders in conjunction with IPA consultants which can be implemented within 6 months to one year. The projects are seen as the quick wins that the County can easily implement simply because they are not capital intensive. The figure below shows the flagship projects that can be implemented within six to one year.

Figure 7: Quick Wins

3.5. Shared Services Plan at the County Level

Shared Services can have a significant impact on improving services, reducing costs over time and increasing the transparency and effectiveness of County Government and its relationship with citizens. The successful deployment of Shared Services will also help propel the Counties into high performing and demonstrate the ability to receive and provide shared technology. Operational measures such as client computing and data centre costs comprise IT spending in Government today, low spending on applications could strategically enhance business processing

3.5.1 Shared Services Plan at County Level

Sharing of Services can be done at Infrastructure Level (Data Centres, LANs, Internet Service, etc), Hardware Level (Servers, Routers, etc), and Application level (Software) as well as Technical Personnel levels.

What can be shared will depend on the County departmental priorities. Once the top prioritized projects of each thematic area have been established as described before in draft 3, an evaluation is done as shown in the Table 14 below if there is possibility of sharing platforms (H/W, S/W, Network, etc platforms)

Table 14: Shared Service Matrix for West-Pokot County

	Connected County Government	**Citizen Satisfaction**	**Connected Citizen**	**Connected Legislator**
	Development of an Integrated ICT Network Infrastructure	**Lobby for Legislation and Policy on official digital documents**	**County Information Centers/ Digital Literacy Program Centers**	**Public participation Systems**
Shared Server(Hardware)	YES	YES	YES	YES

Shared Database	NO	YES	NO	NO
Shared Network	YES	YES	YES	YES
Shared Data-Center	YES	YES	YES	YES
Shared Tech Personnel	YES	YES	YES	YES

3.5.2 Proposed Sharing Plan (Across neighbouring counties)

At this level, we are looking at Sharing of Services which cut across the Neighbouring counties due to their geographical proximities are considered. Sharing can be done at Infrastructure Level, Hardware Level and Application level as well as Technical Personnel levels. What can be shared will depend on the County priorities. Once the top prioritized projects of each County have been established, the common projects between counties can then be established for areas of Shared Services.

Counties that are to share services need to agree on common objectives and share similar strategic vision. This calls for negotiations and agreements while focusing on the greater need for sharing to reduce on costs while increasing ICT capability for those counties that may choose to run their shared services in the cloud. The following Table 15 below outlines the top priority projects by thematic areas for the counties i.e. Connected County, Connected Citizen, Citizen Satisfaction and Connected Legislator. The table therefore gives the shared service matrix across the neighbouring counties.

Table 15: Shared Services Matrix across Neighboring counties

	Top Priority Project by Thematic Area			
Neighboring counties	**Connect County Government**	**Citizen Satisfaction**	**Connected Citizen**	**Connected Legislator**
Baringo	Development of an Integrated ICT Network Infrastructure	Last-mile connectivity of NOFBI to the Sub-County and Ward offices	County Information Centers/ Digital Literacy Program Centers	Public Participation System- Live Broadcasts of County Assembly proceedings
Elgeyo Marakwet	Integrated ICT of all administrative units	Integrated health management Systems	Development and equipment of ICT center s for entrepreneurs	Public Participation System- Live Broadcasts of County Assembly proceedings
Uasin-Gishu	Government Administration Information Systems-GAIS	Last-mile connectivity of NOFBI to the Sub-County and Ward offices	ICT Incubation/Innovation Hubs	Public Participation System- Live Broadcasts of County Assembly proceedings
Trans-Nzoia	Development of an Integrated ICT Network Infrastructure	Last-mile connectivity of NOFBI to the Sub-County and Ward offices	Centre's of excellence ICT Incubation/Innovation Hubs	ICT Proficiency Capacity Building Program for staff and all assembly members (MCAs)
West-Pokot	Development of an Integrated	Lobby National Broadband	Integrated Health Management System	Integrated ICT Network

	ICT Network Infrastructure	Connectivity, Implement last mile NOFBI to sub-counties		Infrastructure at the County Assembly
Shared Service Plan(Most Common Systems proposed for Sharing)	**Development of an Integrated ICT Network Infrastructure**	**Last-Mile connectivity of NOFBI to Sub-Counties and Ward Levels**	**ICT Hubs for Entrepreneurs/Innovation centres'**	**Public Participation systems such as Live Broadcasting of Proceedings**

3.5.3 Shared Service Plan at National Level

At National Level, the County is already sharing the IFMIS and IPPD systems with other Counties. In healthcare, the DHIS is used across 47 counties in Kenya. The National Fiber Optic Network has been rolled to many towns in Kenya and will provide a set of core shared services to counties using virtual private networks. At policy and regulatory level, the County shares the National ICT Masterplan and other National ICT Policies such as the open data policy. This proves that counties have many things to share if a common ground can be found.

To enhance sharing of ICT resources, including staff, service level agreements and systems, counties must find a common ground including common ICT standards and shared objectives such as lowering ICT costs. This roadmap proposes two strategies that will promote service sharing with other counties and with the National Government. These are:

- Shared institutions. A good example is the Council of Governors. Creating an ICT unit within this framework that is, at first, responsible for policy development, will lay the foundation for shared services.
- Using National ICT flagship projects to identify core shared services and common areas of investment. Those projects such as e-learning, broadband infrastructure, teleconference services, policy, legal and regulatory frameworks should be shared by default. The projects identified as flagship projects by the National ICT masterplan should be rolled out uniformly to all counties.

The National ICT Master plan identifies common areas where services can be shared. These are:

- Education and Training as envisioned under the ICT Human Capital and Work-Force Development. Counties can directly benefit from the flagship projects identified under this foundation. For example, the proposed Five Centres of Excellence in ICT Education and Training and the 1-2 Year Intensive Structured Training and Attachment Program Producing 500 High-End ICT Graduates per Year can add value to staff training. This roadmap therefore proposes joint development of E-Learning applications that deliver training courses to all counties. Given that this is a National Flagship project, the counties should only focus of developing joint HR and ICT courses while the national government rolls out the infrastructure and necessary training necessary to optimize e-learning for development.
- Broadband infrastructure such as the National Fiber Optic Cable. Developing a joint County Government Cloud comprising of both infrastructure and services will save counties a lot of money and time.
- Content Development is a common objective for many counties. This is variously described as setting up of incubation centers, development of mobile applications, business process outsourcing among others. The National ICT master plan identifies content development as a priority area. Counties can come together to develop and equip joint ICT centers (or work with the National flagship centers of excellence) to Increase capacity. This will make not just affordable but also provide opportunities for shared innovation, benchmarking and access to best practices.

Other areas of co-operation are in sharing of technical ICT staff. Using common ICT infrastructure and services offers counties the opportunity to access not just cutting edge technology but also staff skills that will otherwise be expensive to hire.

The following projects under Table 16 below are sponsored and driven by the national government and counties are expected to leverage on the same for better efficient use of resources.

Table 16: Shared Services Matrix at National Levels

PROJECTS	FOUNDATIONS
ICT Human Capital and Work-Force Development	1. Five Centres of Excellence in ICT Education and Training; 2. 1-2 Year Intensive Structured Training and Attachment Program Producing 500 High-End ICT Graduates per Year; 3. Research and innovation and emerging technologies 4. School Curriculum; 5. Presidential Digital Talent Programme
Integrated ICT Infrastructure	1. iTax 2. Border Control System 3. Registration of Persons
PROJECTS	**PILLARS**
E-Government Services	1. IFMIS and related modules 2. HUDUMA Centres 3. Assets Data Hub and Associated Systems 4. EMS 5. Recruitment and Selection
ICT as a Driver of Industry	1. IPPD National Payment Gateway 2. National Agriculture Commodity Ex-Change 3. National Spatial Data Infrastructure (NSDI) and Associated Systems
Developing ICT Businesses	1. Science & Technology Park 2. ITES enabled services 3. Call Centres

3.6 National ICT Master Plan Integration Plan

3.6.1 Introduction and Background

The National ICT Master Plan envisages Connected Kenya with regard to Information and Communications Technology (ICT) with a range of technologies for gathering, storing, retrieving, processing, analyzing, and transmitting information. It recognizes that dynamic market and technology developments have led to convergence where boundaries between previously separate ICT services, networks, and business practices are converging into shared services. The Master Plan takes into account the local, regional and global changes that have an influence on the ICT sector. In the 47 County Governments, ICT infrastructure and services are prerequisites to development. It is now imperative that the role of ICT be noted as important not only at the National level, but at the County level with regard to the infrastructure and services. This Master Plan has three foundations and three pillars. The foundations are the critical things that need to happen in order to lay a basis of Kenya transitioning to a Knowledge Society and positioning the country as a regional ICT hub while the pillars are meant to facilitate the achievement of socio-economic growth and Vision 2030 targets.

3.6.2 National ICT Master Plan: Foundations and Pillars

FOUNDATIONS

First, ICT human capital and workforce development ensures that ICT development, implementation and exploitation are integral and sustainable components of development.

Second, Integrated ICT infrastructure, which seeks to provide the integrated infrastructure backbone required to enable cost effective delivery of ICT products and services to Kenyans

Third, Integrated information infrastructure, these aims at improving the quality of e-Government services and enable the country to transition to a knowledge-based society through consolidated portals in an affordable and secure way.

PILLARS

First, for E-Government services which aim at ensuring provision of e-Government information and services as key to improving productivity, efficiency, effectiveness and governance in all key sectors.

Second, ICT as a Driver of Industry, which aims at transforming key Vision 2030 targets, 2nd MTP economic sectors to significantly enhance productivity, global competitiveness and growth.

Third, Develop ICT Businesses that can produce and provide exportable quality products and services that are comparable to the best in the world.
The ICT County roadmap should be aligned to National ICT Masterplan with regard to:

3.6.3 Broadband Strategy and Infrastructure Sharing Plan

The country is connected to the international broadband highway through the SEACOM, TEAMS, EASSY, and LION undersea fibre cables. Most major towns in Kenya are connected through the National Optic Fibre Backbone Infrastructure (NOFBI). The Government is making effort to extend fibre capacity to all parts of the country by reviewing NOFBI with a view of extending and building additional links to enhance redundancy

The Broadband Strategy is an important component of Vision 2030 that seeks to provide Kenyan citizens with a lifestyle and experience for a newly Industrialized Country by 2030. Further, the Government, having completed the 1st Phase of the National Optical Fibre Backbone Infrastructure (NOFBI) which covers major towns across the country, is now in

the process of expanding (NOFBI Phase II) the network to cover more towns and strategic institutions including public, social and learning institutions. The private sector players have also complimented Government efforts by laying fibre to some parts of the country. But despite this significant progress having been made to provide broadband to all Kenyans, a large number of the population is still yet to be connected especially in the rural areas. In order to facilitate the last mile connectivity the Government invested in Government Common Core Network (GCCN) to connect all Government buildings in Nairobi. Leveraging on NOFBI, connectivity will be extended across the country thus enabling the Government to roll out e- services countrywide.

Broadband connectivity is considered essential for socio-economic development and in several developed countries it is now a fundamental right for citizens. Although significant progress has been made to provide broadband to all Kenyans, a large proportion of the population has yet to be connected, especially in the rural areas. The emergence and proposed deployment of LTE technology through a Government-led open access initiative could result in provision of broadband connectivity to the entire country. This initiative is driven by the need to roll out sufficient broadband connectivity countrywide and also the need to take advantage of the digital dividend that would accrue from analogue to digital migration of TV broadcasting. This will allow the freeing up of spectrum such as the 700-800MHz band to be utilized to roll out the wireless broadband network.

The strategy provides a roadmap for the citizens to derive the following thirteen (13) categories of benefits:

1. *ECONOMIC GROWTH AND EMPLOYMENT:*

It has been shown that Broadband network enables access and economic growth and development as it lowers the cost of communication which is an enabling environment to attract investment particularly in rural areas for local economic development. Furthermore, Broadband networks have been shown to have a direct impact on employment – an increase in broadband penetration would result in additional job.

2. *PROMOTE IT ENABLED SERVICES*

This refers to development broadband infrastructure and ICT skills within the country for the success of the IT enabled Services.

3. *BUSINESS OPPORTUNITIES AND INVESTMENT COMPETITIVENESS*

Broadband is meant to establish ICT sector that provides a conducive environment for business incubators which will impact on entrepreneurial ventures for SMEs particularly in rural areas.

4. *E-GOVERNMENT*

The National Broadband Strategy is meant to address issues related to efficient backhaul, last mile broadband network and end user devices to support an efficient e-government strategy.

5. *NATIONAL SAFETY AND SECURITY*

Broadband can aid communication of national security alerts on security websites and other relevant agencies in order to protect the citizen, besides emergencies alerts and disasters.

6. *DISTANCE LEARNING OPPORTUNITIES*

National Broadband should enable citizen to undertake online learning and thus argument expanding education both particularly for those who may be unable to physically attend educational institutions.

7. *E&M-HEALTH*

Access to internet via broadband will provide solutions to the constraints of healthcare delivery systems in the rural and other marginalized areas by facilitating roll-out of e-health applications in the country.

8. *E&M-EDUCATION AND TRAINING*

Provision of education via e-platforms (e-learning) will enhance the National Education Transformation Program Policy to provide education-based Broadband Transformation.

9. *WORKING AND ENVIRONMENTAL BENEFITS FROM TELECOMMUTING*

Telecommuting is becoming a popular mode of working (at home) especially where Internet access is reliable and vehicle traffic (in urban areas) is in bad taste.

10. *EFFICIENT FREQUENCY SPECTRUM USE:*

Frequency spectrum is a natural scarce resource that is required for wireless services. A coherent broadband plan in Kenya would greatly derive maximum benefits from efficient utilization of frequency spectrum by promoting sharing of infrastructure including spectrum and use of alternative technologies.

11. Broadband for People Living with Disabilities.

This component of broadband strategy is for citizen inclusion in which people with disabilities will be provided with equal employment opportunities through distance education learning programmes that provide job certification among other preparations.

12. Universal access

With increased infrastructure Telecommunication service providers are able to provide ICT services in the form of triple play services to a wider population.

13. Broadcasting services

Broadband connectivity will enable NBS particularly in rural communities who will be empowered to participate and contribute towards national socio-economic development and national cohesion.

3.6.4 Human Capacity and Work Force Development

The Government and the private sector have been investing heavily in the ICT infrastructure. However, there has comparatively been little investment in the human resources required to design, develop and operate this infrastructure and the associated e-applications. Therefore the increasing sophistication of ICT and its applications, high-end skill sets are increasingly required and availability presents a challenge to growth and to achieving the vision of the National ICT Master Plan.

3.6.5 Policy Environment and Legal Frameworks

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 to be found in the National Treasury, Kenya Revenue Authority, Home Affairs State Department and Immigration Office.

3.7 Critical Success Factors

Soh Bong Yu[5], a leading Korean e-Government specialist identifies the following five major areas for ensuring successful implementation of e-Government initiatives as articulated below.

[5] Source: Soh Bong Yu, "e-Government of Korea: How we have been working with it" (KADO presentation), 25, https://www.kado.or.kr/koil/bbs/board_view.asp?config_code=362&offset=0&board_code=3246

Figure 8: Critical Success Factors

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

1 VISION, OBJECTIVES AND STRATEGY

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

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

2 LAWS AND REGULATIONS

Soh Bong Yu says that it is important to plan for sufficient time and effort for legislative changes that may be required to support the implementation of new processes. The following laws need to be in place for e-government initiatives to succeed:

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

3 ORGANIZATIONAL STRUCTURES

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

1. Strong leadership with commitment
2. Planning – IT management and change management
3. Budget preparation and budget execution
4. Coordination and collaboration
5. Monitoring and performance measurements
6. Government-private sector-citizen partnership

4 BUSINESS PROCESS

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

5 INFORMATION TECHNOLOGY

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

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

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

1. Good working relationship between the Executive, The County Assembly and Public Service Board
2. Top leadership and management support. Political goodwill and top management buy in is the key to success of the ICT Master plan since financial investments and the right competencies can only be achieved from the top. Top leadership and management are critical both at the planning and implementation phases of the road map development.
3. Establishment of a Project Management Office / Team. This office or team will be responsible for all aspects of the ICT Projects.A Change Management and Capacity

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

4. User trainings and continuous testing to ensure users are capable of using the technologies. These trainings must focus on both internal users as well as external users of the new ICT technologies and services.
5. System Integration and projects sequencing: it is critical that projects are rightly sequenced and systems are implemented in an integrated manner to allow for seamless operations. An appropriate project implementation plan must be put in place and followed to ensure projects are prioritized on the basis of sequencing first followed by impact and costs.
6. Periodic performance monitoring, evaluation, reporting and reviews and taking appropriate corrective actions. An appropriate project management application and monitoring and evaluation staff are a must.
7. Managing people's expectations, maintaining clarity and focus of the projects and ensuring deliverables are realistic.
8. The right organizational structure to support the ICT Strategy and ensuring right leadership and governance of the project.
9. Adequate Financing of the projects. An appropriate investment and financing strategy must be put in place and implemented to ensure the County can obtain finances from diversified sources and partners.

The Table 17 below summarizes the critical success factors necessary for successful implementation, use and optimization of the solutions proposed in the previous sections.

Table 17: Critical success factors

FACTOR	DESCRIPTION
Vision, Objectives and Strategy	Develop a long-term plan with a clearly articulated vision and strategy and move away from quick fix or piecemeal approach Use top-down design but to start small and prioritize tasks (bottom-up) during the implementation process. The County Vision must be available, with the ICT County Vision clearly aligned with County Development Plans In summary, there is need for: • **A clear vision by the leaders** • **Strong support from citizens** • **Sustainable ICT Agenda setting**
Legislation and Policy	Plan for sufficient time and effort for legislative changes that may be required to support the implementation of new processes. Laws on privacy and related issues such as the Data Protection Act. Other laws include e-Transaction Act, ICT Policies
Organization Structure and Governance	Restructuring the County Organizational arrangements to make it correspond to e-Government Including Change Management programme Implementation Strong leadership with commitment to ICT Appointment of ICT Governance Committees
Business Process Redesign	Use Business Process Re-engineering to Redesigning the work flow within or between department levels to increase process efficiency The County should have a major review of existing processes with a view to re-defining them in order to leverage on ICTs.
ICT Infrastructure	Development of integrated ICT infrastructure that support or forms the base of other systems

ICT Procurement	Rapid Change in Information technology demands that the County Considers the following Reduce ICT Procurement Delays Move from owning ICT capital Equipment to leasing / outsourcing Prioritizing shared Services Standardization Focus on Technical and human resource capabilities

3.8 Guiding Principles

The Road Map is based on seven guiding principles: infrastructure development, stakeholder participation, appropriate legislation, institutional arrangements and regulatory frameworks and e-Government Services which are critical in addressing the creation of jobs, economic growth and a knowledge-based society

- To ensure high performance management, accountability and public value, thus public value through alignment among existing policies, citizen service and business needs and ensure accountability and high performance service delivery through best-practice performance management.
- To ensure privacy, transparency, security and public trust thus public trust by providing optimal levels of security, open Government, citizen privacy, disaster avoidance and mitigation.
- To ensure shared solutions, platforms, standards and flexible, open boundaries thus maximize on sharing solutions, services and infrastructure within the County, other levels of Government, the private sector, moving toward compatible shared standards.
- To ensure maturation and modernization solutions thus sustained modernization of a comprehensive range of solutions and technologies with transformational or high-performance potential that are suitable for connecting tiers of Government, public and private sectors as well as improving performance and customer service.
- Coordinate with Public Works to ensure new public buildings and road infrastructure are constructed with adequate c conduits and ducts for public use and Server room space provisioned with proper air conditioning.
- To support and engage a workforce: develop and maintain a high-performance workforce and workplace capable of supporting current service needs and meeting future requirements

- To provide ICT research, innovation and transformation thus develop an expectation, culture and capacity for research, innovation and transformation of government to serve as a catalyst in business processes enhancement and organizational change.
- To leverage the state's ICT organization for economic growth and diversification thus align the organization for success in information management and smart computing awareness, analysis and related solutions through continuous training.
- To create a stable investment climate that will facilitate the mobilization of the necessary resources by both domestic and foreign private sector organizations to aid the process of developing and utilizing ICT and Conducive.
- To facilitate mobilization of the necessary financial and technological resources through both domestic and foreign direct investment.
- Adopt best practices and standards in the World ICT Sector.

3.9 Roll Out Plans

Projects for Roll out plans were derived from the process of selection and prioritization in draft 3 of which only twelve projects are proposed as interventions to close the gaps of achieving level of the COBIT framework as shown in figure 9 below.

W.P County

ID	Flagship Projects	Start	Finish	Duration
1	Development of Integrated Infrastructure	16/12/2015	14/09/2016	39.2w
2	County security and surveillance system	13/06/2016	28/12/2018	133w
3	Centre's of excellence- ICT Incubation Hubs	20/06/2016	08/11/2018	124.8w
4	E-Citizen Portal Information sharing	16/12/2015	09/05/2016	20.8w
5	Introduction of ICT training programs for citizens	19/09/2018	29/11/2019	62.6w
6	Lobby National Broadband connectivity	19/02/2016	08/02/2017	50.8w
7	Information Centre's at the sub-county and Ward Level	16/12/2016	01/10/2018	93.4w
8	Establishment of Citizen Satisfaction Index System for Online surveys	13/06/2018	29/03/2019	41.6w
9	Lobby National Broadband Connectivity, implement last mile NOFBI to sub-counties	19/04/2018	09/09/2019	72.6w
10	Public Participation System- Live Broadcasts of County Assembly Proceedings	04/07/2016	13/09/2017	62.6w
11	ICT Proficiency Capacity Building Program for staff and all Assembly members MCA's	07/03/2017	17/05/2018	62.6w
12	Committee Management Systems	10/04/2019	28/08/2020	72.6w

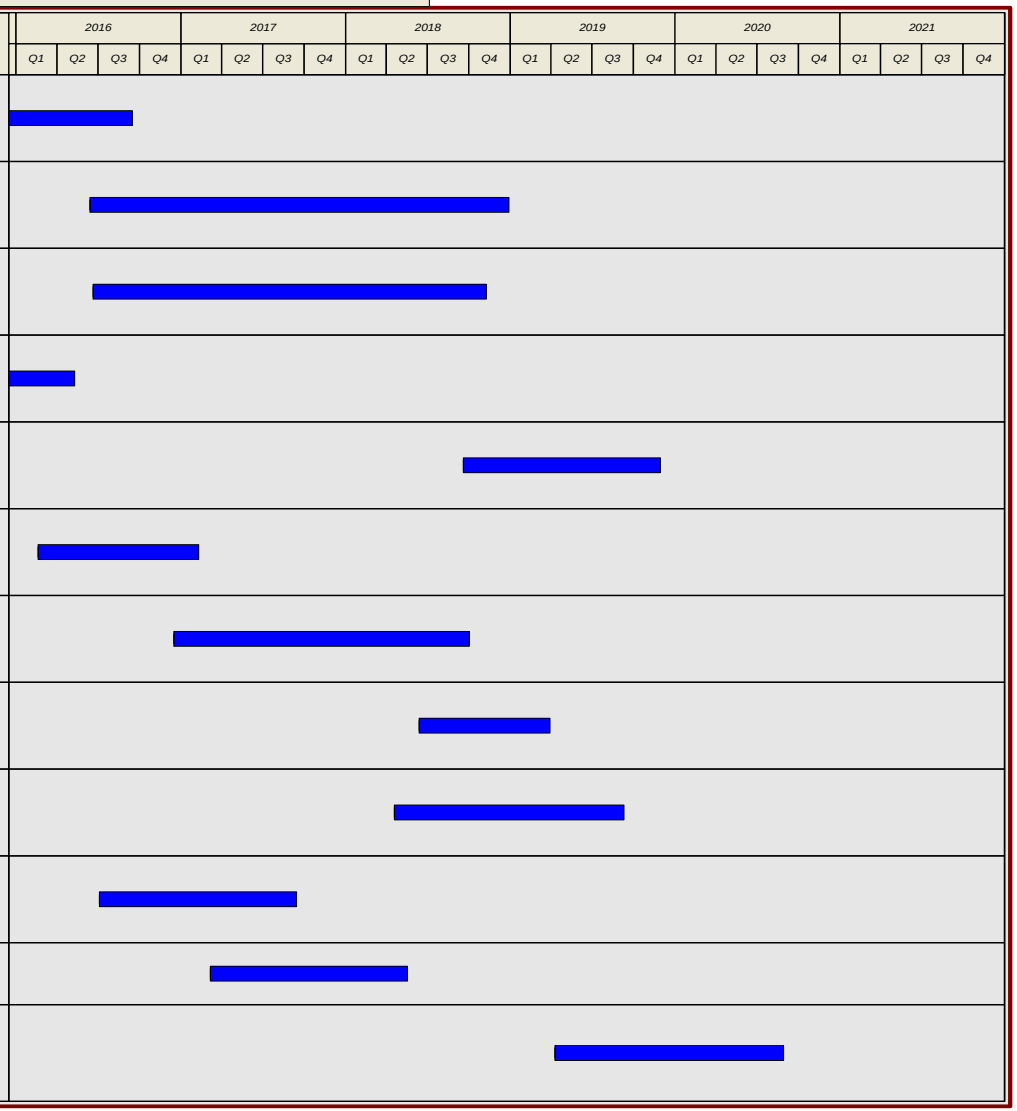


Figure 9: Consolidated Gantt chart

3.10 Financing Plan

In order to achieve any strategy and implement flagship projects, the road map will require an appreciation of the resources needed. Funding of the proposed projects in this road map is envisioned to come from:

1. The National and County Government budget,
2. Development partners,
3. Private institutions through Public Private Partnerships, and
4. Direct investments.

County Budgets could be further supplemented by special taxes (licenses, rates) and user fees.

3.10.1 Financial Policy and Strategy for ICT

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

Secondly, counties can also leverage on funding their priorities by approaching development partners who have ICT at the top of their support lists to meet the costs of ICT related expenditure. Creation of strategic mutually-beneficial partnerships with e-ready states in sectors such as education, tourism and entrepreneurship, counties can effectively leverage these partnerships for ICT funding[6].

3.10.2 Proposed Financial Partners

Thirdly, the County ICT Road Map can be financed through Public Private Partnerships (PPPs). ICT projects have a high risk associated with their implementation. These can be overcome by working with a partner that has demonstrated ability to deliver. One trend is to use a shared services approach to the provision of public services. This reduces costs and in some cases, these shared services can be developed as a PPP. In India, PPPs have been used successfully at the local and community level (Bhoomi and eSeVA centers in India)[7]. Some private sector operators have developed business models to provide national and federal government services using a PPP type of approach.

In the same light, the World Bank released a new ICT sector strategy (2002) comprising three strategic directions: Connect, Innovate, and Transform. The strategy's *Connect* pillar

[6] Younie, S. (2006). Implementing government policy on ICT in education: Lessons learnt. *Education and Information technologies*, *11*(3-4), 385-400.

[7] Bhatia, D., Bhatnagar, S. C., & Tominaga, J. (2009). How do manual and e-government services compare? Experiences from India. *Information and communications for development 2009: Extending reach and increasing impact*, 67-82

focuses on expanding connectivity infrastructure and promoting stability and predictability in regulatory systems. More recently, the World Bank has stepped up its financing of

innovative public-private partnerships as catalytic vehicles to attract additional private sector investment in broadband infrastructure. This is an avenue that the County Governments can explore through deepened PPPs with favourable terms for partnerships for broadband and high-speed Internet, helping bring down retail prices and increasing the take-up of services.[8]

3.10.3 User fees to be levied for ICT use

The introduction of user fees and special taxes to populations engaging in County-owned ICT equipment is also a type of funding for the ICT road map. Special taxes will include licenses and rates for the various entities interacting with the ICT segment. The user fees will include membership and access to public computers, internet connectivity, County ICT databases and libraries among others. This category of funding will fundamentally aid in maintenance of the equipment, and ensure accountability in the uses of the various hardware and software. These avenues will also serve to sustain the standards, quality and affordability of the ICT projects.

3.10.4 Policy and Legislation Framework

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

3.10.5 Proposed additional Funding Strategies

Finally, the road maps can also be funded through direct investment ventures. The creation of investor friendly environment at the national and County levels is a potent channel through which counties can realize growth in their ICT environment. The clear vision articulated in the road map would provide a viable profile through which investors can develop solid development-based inputs into the counties.

3.10.6 Shared Resources

There is need to fundraise regionally and pool resources for purposes of implementation of shared services, thus two or more counties can get together implement systems that are

[8] http://documents.worldbank.org/curated/en/2012/06/16837585/information-communication-technology-ict-greater-development-impact-world-bank-group-strategy-ict-information-communication-technology-ict-greater-development-impact-world-bank-group-strategy-ict

cross cutting and of value to all the regions concerned. A case in point is Revenue Collection Systems and Health Information Systems.

PART 4: IMPLEMENTATION AND CHANGE MANAGEMENT FRAMEWORK

4.1 Introduction

The ICT strategic roadmap will bring major changes in IT, business processes, organizational structures, and job assignments during its implementations. We have come up with a set of activities focused on ensuring that there is less resistance to change and that various projects to be implemented stand a high chance to succeed. Our change management plan has been crafted by identifying five groups with each requiring different strategies to manage change. These groups are

i. Executive
ii. Senior Management
iii. Junior Management, Operational and Administration personnel
iv. Technical personnel
v. County citizens

Among the factors critical to effective change management programs and which we have considered in our change management strategy include

1. An effective sponsor at a senior level within the County government. This change sponsor will have the authority and organisational power to initiate the change and sustain it through its implementation and also be senior enough to ensure that the necessary resources are available throughout the change process;
2. Dedicated change management agents/teams. Change agents will be responsible for making the change a reality through activities such as the design of the elements of the change and the development of plans for its implementation. We have identified members from the County that will spearhead the change management program required to successfully implement the ICT roadmap.
3. Effective communication between the key sponsors and County staff. A primary focus of the communication will be to market the project to management and staff, with the objectives of building realistic expectations and reducing resistance to the new system;
4. Involvement of stakeholders including specific interest groups in ICT strategy activities. This will assist in reducing resistance to the changes that will occur as a result of the implementation of new systems. In the case of interest groups they can influence the people who must change and play a key role in promoting acceptance of the change
5. Adequate training of staff in the new processes and technology so that they can become familiar with its use thereby reducing the possible resistance to its introduction. We have identified and proposed appropriate training for each group
6. Monitoring and evaluation of the change management program will be done to ensure that the program remains on course. This will help to identify challenges

during the implementation and mitigate. We have identified and proposed monitoring activities as well as expected results

1. THE EXECUTIVE

This group forms the top level decision makers. It includes law and policy makers as well executers of the same. These includes

1. The Governor and the Deputy Governor
2. County executive committee
3. County assembly members
4. The Public Service Board
5. County Secretary and Advisors

They hold the most important role in implementation of ICT strategic road map as they pass the budget, enforce the laws and policies as well create an enabling environment to enable change to take place. They will require awareness training to enable them make informed decisions and support the change champions. It is at this level that partnerships are created and decisions on inter-County collaborations such as sharing infrastructure is made.

2. SENIOR MANAGEMENT

In terms of hierarchy and responsibility, this group comes after the Executive. The group comprises mostly of departmental and sectional heads. The team leads in budget forecasting, leadership of teams and execution of County projects. Unlike the executive who has majority being political leaders, majority of staff in this group are professionals.

1. Chief officers of the Departments
2. Directors of the Departments
3. Sub-County Administrator and Ward Administrators
4. ICT Heads
5. Sectional heads

This group is more functional in its composition and therefore will take lead in implementation of key projects in their respective departments

3. JUNIOR MANAGERS,OPERATIONAL & ADMINISTRATIVE PERSONNEL

In terms of hierarchy this group comes after the Senior Management. They form the largest team that makes use of ICT systems within the County government and therefore equally critical in the success of the ICT strategic roadmap. This group interacts with ICT systems on a day to day basis and therefore must have a buy in order to make them succeed. This group requires both skills in some ICT systems as well as a culture change in order to successfully implement the changes. Among others they include

i. Personal assistants
ii. Procurement personnel
iii. Section managers
iv. HR Staff

v. Legal staff
vi. Project Managers

4. TECHNICAL PERSONEL

The technical staff comprises of people who are the masters of knowledge and skills in ICT. They take lead in implementation as well as support of both new and old systems. This team will require further training on both existing and new systems. They will also require a culture change to accept new ways of working as well as be able to support others more. In addition to training the County government will be required to restructure and recruit more technical personnel in order to have the capacity to offer and support more services. This group includes

- System administrators
- Web developers
- Network Administrators
- ICT Project Managers
- ICT Maintenance officers

5. COUNTY CITIZENS

The public or County citizens form the largest group that require change. However with proper leadership and appropriate activities it requires less change initiatives compared to the rest. The group also includes special groups such as traders, schools, health institutions e.t.c. This group will require sensitization and in some cases skills to embrace new methods of engaging the County government as shown in Table 18 below.

4.1.1 Identified Skills Gaps and Training Area

Table 18: Identified Skill Gaps and Training areas

GROUP	TRAINING NEED	PROPOSED COURSE TITTLES
EXECUTIVE AND SENIOR MANAGEMENT		
1. The Governor and the Deputy Governor 2. County executive committee 3. County assembly members 4. The Public Service Board 5. County Secretary and Advisors 6. Chief officers of the Departments 7. Directors of the Departments 8. Sub-County Administrator and Ward Administrators	To create awareness about the need to have a structure approach to manage Change To instil knowledge among the top decision makers on change dynamics and components of change management	**Change Management**
	To create awareness of available technologies in ICT and the need to embrace them with the County	Information communication Technologies
	To create awareness within the County's top decision makers of how ICT serves a solution to many problems facing the County	IT as a Solution
	To create awareness among the County's top decision making body of the need to ensure business continuity by putting systems in place to minimise disruption	Business Continuity and Disaster Recovery planning
	To create awareness among the County's top decision making body of how to make use of ICT to facilitate trade and business	E-commerce
	To create awareness among the County's top officials on how to use ICT to improve governance	E-Governance
	To create an understanding of the COBIT as a framework that will be	COBIT

GROUP	TRAINING NEED	PROPOSED COURSE TITTLES
9. ICT Heads 10. Sectional heads	used to govern growth of ICT within the County	
	To enable the County's top team make use of basic computer systems in their day to day work such as e-diaries, mails, internet, social media	Basic ICT applications
TECHNICAL PERSONNEL		
1. System administrators 2. Web developers 3. Network Administrators 4. ICT Project Managers 5. ICT Maintenance officers	To equip the technical staff with knowledge and skills how to ensure that IT systems and data are secure from access by unauthorised people Troubleshooting skills and training	Network Security, Computer hardware maintenance
	To equip the technical staff with knowledge and skills how to ensure that internet does serve as an entry point to hackers plus any other persons with malicious intentions	Cyber Security, Cyber security, CISSP or CISM
	To equip the technical staff with knowledge and skills to make of ITIL as a standard software for successfully managing IT projects	ITIL,PRINCE II
	To equip the technical staff with skills and knowledge in extraction of useful information from data collected to help the County government in making decisions to grow the County	Data Mining
	To equip the technical staff with knowledge and skills to help make use of ICT to investigate fraud and crime	Computer Forensics and Investigation
	To equip the technical staff with knowledge and skills to help them	DBMS, SAP, ERPs, Oracle

GROUP	TRAINING NEED	PROPOSED COURSE TITTLES
	install, maintain and upgrade Enterprise systems	
	As the County will make use of various vendor's equipment such as Microsoft, Oracle, HP, Cisco etc there is a need to have technical staff acquire full knowledge and skills on use of these equipment in order to increase their productivity	Product/equipment training such as CISCO CCNA, CCNP, CCIE, MCSE, MCTIP, Linux & Microsoft
JUNIOR MANAGERS, ADMINISTRATIVE AND OPERATIONAL PERSONNEL		
1. Personal assistants 2. Procurement personnel 3. HR Staff 4. Legal staff 5. Customer care representatives 6. Project Managers	With ERP systems becoming the default way on interconnecting activities in all organization departments there is a need to adequately train the administrative and management staff in their usage	ERP systems/Office Automation, IFMIS,IHRMIS, Library IMS, ESS/Board MIS, Document Management System
	There exists many computer applications ranging from MS office, Internet explorer, PDF that users must be adequately trained increase their usage as well as increase efficiency within the County	Computer applications-MS OFFICE,PDF,INTERNET
	With most ICT projects being implemented there is a need to equip this group with appropriate skills in usage of Project management tools in order to improve on project delivery	Project Management
	The customer care teams manning call centres require this training in order to efficiently help and engage the County citizens in solving any challenges they may have in accessing e-services offered by the County government	Call Centre Management

4.1.2 Proposed Organisational Structure for ICT in West-Pokot County

ORGANISATION STRUCTURE RECOMMENDED ROLES

In the roles shown in the figure 10 below, the CEC's role will be lobbying for legislation and prioritization of ICT, providing leadership and direction and championing the vision of the road map. The CO will primarily oversee the accounting and budget management aspects in the project. The Director and his/ her deputies will be expected to communicate the departmental vision, strategy and road map, in addition to assisting the lobbying for legislation and budgetary allocations for ICT projects, leading executive ICT interaction, carrying out needs analyses, formulating policy, team management and budget management. The infrastructure roles will be focused on installing of devices, setting up of networks, providing repair and maintenance support, and managing the various vendors. Project management will be responsible for the project's implementation and monitoring, managing COBIT, and building capacity for the project. With regards to employee ICT skills training at the County Assembly and County executive levels, the County public service board and the County assembly service boards will respectively perform these duties. Notably, training and capacity building in ICT centres and within projects can be structured to be revenue generating. The figure 7 below shows the proposed Organisational structure for ICT.

Proposed Organisation Structure for ICT in counties

The Figure 10 below shows the proposed Organisational structure for ICT

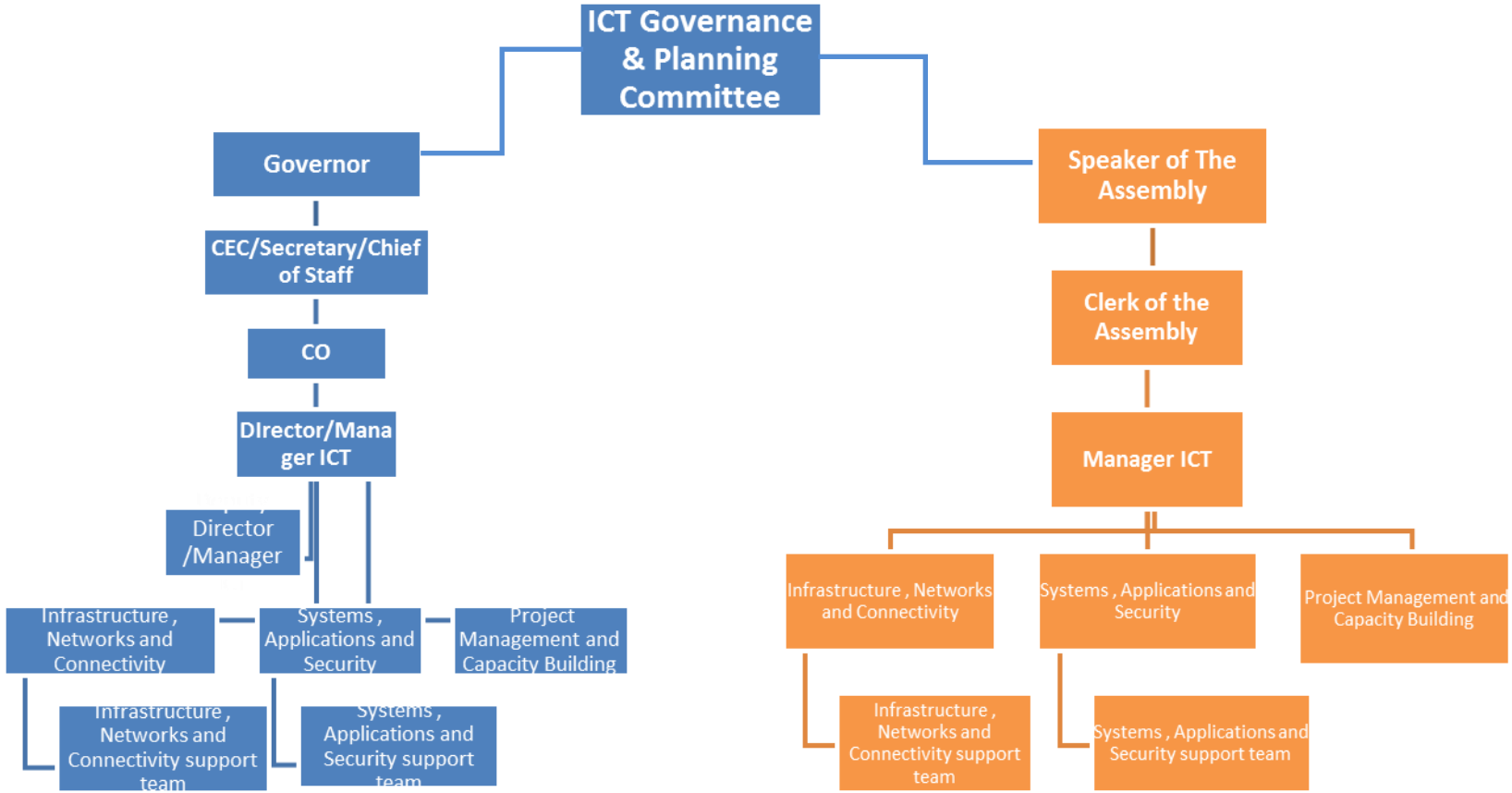


Figure 10: Proposed Organizational Structure

4.1.3 Project Management Office and Institutional framework

In order to ensure that projects deliver the expected investment value to the Government of Kenya it is necessary to follow a project implementation and management methodology that is geared towards the achievement of value. Best practice worldwide has recognized the importance of project governance as well as project management in the success of projects. Project governance, as provided for in Figure 12, provides the necessary ownership, leadership and accountability that drives the successful completion of projects. Project management methodologies enable the day to day process of implementing a project to be carried out in such a way that the project moves towards completion.

The Project Management office will, among other things:

1. Meet before inception of the project and on successful completion of the project and at least once every two months in between
2. Set the business objectives, principles, strategies and priorities of the project
3. Approve the project charter.
4. Approve the project budget
5. Approve the metrics for gauging the success of the project
6. Receive and discuss regular reports on the progress of the project
7. Discuss and approve any changes to the project
8. Measure project value using ROI or any other pertinent method in line with e-Government standards
9. Assist in the implementation of the project change management strategy
10. Make all major decisions regarding the implementation and execution of the project
11. Ensure adherence to laid down e-Government standards

4.1.4 Monitoring and Evaluation Framework

Monitoring and evaluation, as shown in Table 19, will be done by the established ICT governance committee. The committee will meet twice a year to carry out a half year and full year evaluation of the County roadmap implementation. The ICT governance committee will produce an annual scorecard outlining the progress that the County is achieving towards implementation of the County ICT roadmap. The ICT governance committee will liaise with the ICT Directorate to ensure that the projects are implemented on time.

Ministries responsible for implementation of key flagship projects will be responsible for reporting the progress of their projects to their Chief Officers, County Executive Committee representative and the ICT governance committee. Ministries will be required to report to the County executive committee on a quarterly basis in order to keep the ICT governance committee informed of progress, challenges and changes to the roadmaps. The ICT governance committee will evaluate the progress based on the key expected outcome.

Table 19: Monitoring & Evaluation

Institutional Structure **Monitoring & Evaluation Component**	**County ICT Executive/Ministry**	**County ICT Roadmap Governance Committee**	**National Agency/ICT Authority**
Organization/Unit responsible for M&E across all sectors and levels of County Government	ICT Directorate	ICT Governance Committee	ICT Secretary at the National ICT Ministry.
How will the targets be negotiated with the various organizations responsible in various sectors and levels of County Government	Chief Officer/ICT Director in charge of Information and Communication	County Executive in charge of Information and Communication	Targets As Defined in the County ICT Roadmaps
How will the realization of these targets be monitored	Internal Quarterly Audit of COBIT Processes Annual Performance Contracts External Annual Audit of COBIT Processes	Internal Quarterly Audit of ICT Projects Annual Performance Contracts	Bi-annual Progress Reports of ICT Projects External Annual Audit of ICT Projects

4.1.5 Strategies to improve M&E

Due to the fact that there is no current collection of ICT oriented data in the different initiatives within the County, there will be need for improved collection of ICT data in terms of implementation of projects, usage of ICT systems and impact on service delivery. Types of data collection will include,

- Usage of ICT tools and technologies by the County employees, citizens and visitors
- Service delivery improvement (time to deliver services)
- Cost savings for the County or citizens
- Access to ICT infrastructure
- Internet and connectivity coverage of the County
- Improvement of general and specialized ICT skills in the County amongst the government
- Employees, legislators and citizens.
- Inclusion of marginalized and disadvantaged groups

The ICT directorate will work with relevant Ministries to continuously collect data that pertains to the implementation of the roadmaps projects. The ICT directorate will keep score of the main data from all the agencies involved in the implementation and the Governance committee to oversee collection of relevant data from time to time and suggest improvements to the ICT directorate and ministries.

4.1.6 Risks and mitigation

The following risk matrix is used in this document, however there are several variations on this matrix that can be found in the literature. It does not matter which matrix you use as long as you consistently use the same matrix.

	CONSEQUENCE				
LIKELIHOOD	Insignificant (1)	Minor (2)	Moderate (3)	Major (4)	Extreme (5)
Rare (1)	Low	Low	Low	Low	Low
Unlikely (2)	Low	Low	Low	Medium	Medium
Possible (3)	Low	Low	Medium	Medium	Medium
Likely (4)	Low	Medium	Medium	High	High
Almost certain (5)	Low	Medium	Medium	High	Extreme

In order to easily identify project risks and possible impact if the risks occur, a risk register and risk matrix are used to indicate whether the risk is likely to occur and how severe its impact will be if it occurs. A risk register is a list of all risks that have been identified, their significance and whether there is a way of mitigating (reducing) the impact. The Risk Matrix is a visual tool derived from the risk register to highlight key risks facing a project. It is used to offer managers a quick view of key risks.

The table below presents a global risk register for the proposed projects. When implementing individual projects, a unique risk register and risk matrix in Table 17 should be developed for each project by the project owner.

Table 20: Risk Matrix

Risk No	Risk Type	Details	Assessment		Mitigation strategies	Risk Owner
			Occurrence Likelihood	Impact if it occurs		
R1	Insufficient funding of proposed flagship Projects	• Lack of Commitment from Government • Lack of Political goodwill • Competing Government priorities • Lack of private sector investment	Medium	High	• Promote Government buy-in • Integrate broadband strategy into Performance Contracting process • Political advocacy/lobby groups	• County Executive • County Assembly • Finance Department
R2	Poor implementation of ICT Roadmap	• Capacity challenges • Poor Project management and planning skills • Procurement delays • Bureaucracy leading to project delays	High	High	• Recruit competent personnel • Adopt international Project Management methodologies • Adhere to procurement regulations	• ICT Governance Committee • Monitoring and Evaluation Manager • CEM, ICT • ICT Director

Risk No	Risk Type	Details	Assessment		Mitigation strategies	Risk Owner
			Occurrence Likelihood	Impact if it occurs		
R3	Lack of supportive policy and legal framework	• Delays in enacting legislation • Delays in operationalizing enacted legislation	High	High	• Advocacy and lobbying • Government agencies to operationalize legislation	• ICT Governance Committee • County Executive • County Assembly
R4	Low staff Skills and Motivation	• Lack of proper training and skills match	Medium	High	• High End training on ICT use is needed at the National Level	• Governor
R5	Poor or no Change Management plan	• Lack of Champions for Change Management	High	Medium	• Lack of training on change management	• Governor
R6	User Resistance	• Users or staff may refuse openly or covertly from using a system	Low	High	• Involve users when making project selection decisions. • Train users to give them the skills needed to use systems	• ICT Director • Planning Governance • Committee

Risk No	Risk Type	Details	Assessment		Mitigation strategies	Risk Owner
			Occurrence Likelihood	Impact if it occurs		
					• Provide usage incentives	
R7	Abandoned Projects	• Abandoning projects when champions are transferred or retire	Low	High	• Lack of proper business continuity plans	• Governance Planning Committee
R8	Procurements	• Procurement Delays (see R2) • Vendor Related risks • System compatibility and interoperability risks	High	High	• Vendor due diligence • Ensure there is availability of detailed implementation framework • Procure standard based systems	• Procurement Department

To be effective, a project manager should be assigned to continuously update and report on project risks. A regular risk review process should be in place to ensure that all active risks are reviewed, monitored and action taken to mitigate them. From the risk register, it is possible to develop a risk matrix. As said early, a Risk Matrix is a visual tool derived from the risk register highlight to key risks facing a project. By quickly highlighting risks in the medium and high categories, a risk matrix allow project managers to intensively focus on the risks to minimize the risk they pose if risk mitigation action is not taken. Only projects with low likelihood and low impact are considered low risk. Projects with medium or high likelihood irrespective of the impact are considered medium risk projects. This is also true for those projects with low likelihood but high impact. Projects are considered high risk is the likelihood is medium or high and the impact is medium or high.

PART 5: ANNEXES

5.1. Annex 1: COBIT

5.1.1. Annex 1 A: ICT Governance & Management Framework

<table>
<tr><td colspan="2">Strategy & Governance
P01: Define a Strategic IT Plan</td><td>Personnel & Resource Management</td><td colspan="2">Infrastructure & Operations</td><td colspan="2">Applications</td></tr>
<tr><td colspan="2">P04: Define IT Processes, Organization & Relationships</td><td>P07: Manage IT HR Resources</td><td>AI6: Manage Changes</td><td>DS9: Manage Configurations</td><td colspan="2">AI1:Identify Automated Solutions</td></tr>
<tr><td>P06: Communicate Management Aims & Direction</td><td>ME1: Monitor & Evaluate IT Performance</td><td>AI4: Enable Operation & Use</td><td>DS3: Manage Performance & Capacity</td><td>DS10: Manage Problems & Incidents</td><td>AI2: Acquire & Maintain Applications</td><td>AI7: Install & Accredit Solutions and Changes</td></tr>
<tr><td>P09: Asses Risks</td><td>ME4: Provide IT Governance</td><td>DS7: Educate Train Users</td><td>DS8: Manage Service Desk & Incidents</td><td>DS13: Manage Operations</td><td>DS11: Manage Data</td><td>DS12: Manage Facilities</td></tr>
<tr><td>P10: Manage Projects</td><td>DS6: Identify and Allocate Costs</td><td>P02: Define Information Architecture</td><td>P08: Manage Quality</td><td>DS1: Define & Manage Service Levels</td><td>ME2: Monitor & Evaluate Internal Control Adequacy</td><td>ME3: Ensure Compliance with external requirements</td></tr>
<tr><td>P05: Manage IT Investments</td><td>AI5: Procure IT Resources</td><td>P03: Determine Technology direction</td><td>AI3: Acquire & Maintain Technology Infrastructure</td><td>DS2: Manage 3rd Party Services</td><td>DS4: Ensure Continuous Service</td><td>DS5: Ensure System Security</td></tr>
<tr><td colspan="2">Financial Management</td><td colspan="3">Service Planning & Architecture</td><td colspan="2">Security</td></tr>
</table>

5.1.2. Annex 1 B: Process Activity Table

PROCESS NAME	ACTIVITIES
PLAN AND ORGANISE	
PO1 Define a strategic IT plan.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1:**PO1-*01***Value management processes, including business cases and benefits realisation, are established. **PO1-*02*** Business and IT are involved in strategic planning. **PO1-*03***Current IT capabilities are defined. **PO1-*04***An IT strategic plan is prepared that defines IT goals and priorities based on the business objectives. **PO1-*05***IT tactical plans are prepared. **PO1- *06***Project and service portfolios are prepared and managed.
PO2 Define the information architecture.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **PO2-O1** There is an effective information architecture and data model. **PO2-O2** A data dictionary is maintained to enable the sharing of data elements amongst applications and systems, and to promote a common source of data throughout all IT applications. **PO2-O3** A data classification scheme is maintained. **PO2-O4** Processes are in place to ensure the integrity and consistency of all data stored in electronic form.
PO3 Determine technological direction.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. **PO3-O1** A technology infrastructure plan is developed and maintained based on an analysis of existing and emerging technologies and in accordance with the IT strategic and tactical plans. **PO3-O2** An IT architecture board (or equivalent) exists to provide architecture guidelines and advice on their application, and to verify compliance.

PROCESS NAME	ACTIVITIES
PO4 Define the IT processes, organisation and relationships.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level1: **PO4-O1**An IT process framework is defined to include an IT process structure and relationships, ownership, maturity, performance measurement, and improvement. **PO4-O2** The appropriate organisational bodies and structure are established to advice on strategic direction and review major investments on behalf of the board. **PO4-O3** Roles, responsibilities and reporting lines are defined and integrated into business and decision processes. This includes responsibilities for quality assurance, risk management and data ownership. **PO4-O4** Implementation of adequate supervisory practices includes separation of duties in the IT function to ensure that roles and responsibilities are properly exercised and to assess whether all personnel have sufficient authority and resources. **PO4-O5** Staffing requirements are evaluated on a regular basis or upon major changes to the business, operational or IT environments to ensure that the IT function has sufficient resources to adequately and appropriately support the business goals and objectives. **PO4-O6** Appropriate policies and procedures exist for contracted staff. **PO4-O7** An established and maintained optimal co-ordination, communication and liaison structure exists between the IT function and various other internal or external interests.
PO5 Manage the IT investment.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **PO5-O1** Budgets for IT-enabled investments are forecasted, allocated and managed. **PO5-O2** Formal investment criteria (return on investment [ROI], payback period, net present value [NPV]) are defined. **PO5-O3** Business value is measured and assessed against forecast.
PO6 Communicate management aims and direction.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **PO6-O1** An IT control framework is established. **PO6-O2** IT policies are defined
PO7 Manage IT	Level 0: At this level, there is little or no evidence of any achievement of

PROCESS NAME	ACTIVITIES
human resources.	the process purpose. Level 1: **PO7-O1** Recruitment and retention policies and processes ensure that skills are available to achieve organisational goals. **PO7-O3** Risks of overdependence on key resources are mitigated. **PO7-O5** Staff performance is regularly evaluated and reviewed. **PO7-O6** Risks associated with job changes and terminations are mitigated.
PO8 Manage quality.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **PO8-O1** A quality management system (QMS) is developed and maintained, with the purpose of supporting continuous improvement. **PO8-O2** Standards are maintained for all quality, development and acquisition activities.
PO9 Assess and manage IT risks.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **PO9-O1** An IT risk management framework is established that is aligned to the organisation's (enterprise's) risk management framework. **PO9-O2** Risk remediation action plans are defined and communicated.
PO10 Manage projects.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **PO10-O1a** A programme management framework is defined. **PO10-O1b** A programme management framework is followed. **PO10-O1c** Contributions of projects within the programme are managed to expected outcomes. **PO10-O1d** Activities, interdependencies, resource requirements and conflicts of multiple projects are managed and resolved. **PO10-O2a** A project management framework is defined. **PO10-O2b** Projects follow a defined project management framework/process that requires appropriate approvals, planning, risk management, quality management and monitoring. **PO10-O3** Project planning is performed for each project and is detailed in the project portfolio. **PO10-O4** There is commitment to, and involvement of, business and end users in projects.

PROCESS NAME	ACTIVITIES
ACQUIRE AND IMPLEMENT	
AI1 Identify automated solutions.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **AI1-O1** Business and technical requirements are defined and maintained. **AI1-O2** Risk are identified and analysed as part of requirements development. **AI1-O3** Business requirement feasibility studies are prepared. **AI1-O4** Approved (or rejected) requirements and feasibility study results are prepared.
AI2 Acquire and maintain application software.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **AI2-O1** Design specifications are prepared based on business requirements and managed for new systems or major changes. **AI2-O2** Application control, security, availability and auditability controls are included in the design, development and implementation. **AI2-O3** The application software is developed and/or configured and maintained according to design specifications and development and documentation standards. **AI2-O4** Development and maintenance are subject to the requirements of a quality assurance (QA) plan. **AI2-O5** Software requirements are subject to requirements management. **AI2-O6** A strategy for application software is in place.
AI3 Acquire and maintain technology infrastructure.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **AI3-O1** A technology acquisition plan is produced that aligns to the technology infrastructure plan. **AI3-O2** Internal control, security and auditability measures are implemented for infrastructure components. **AI3-O3** Infrastructure maintenance is planned. **AI3-O4** Technology infrastructure changes are tested.
AI4 Enable operation and use.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **AI4-O1** Plans are produced for knowledge transfer during the

PROCESS NAME	ACTIVITIES
	implementation of an application system or infrastructure change. **AI4-O2** Knowledge is communicated and users, business management, support staff and operational staff are trained.
AI5 Procure IT resources.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **AI5-O1** Procurement procedures and standards are defined and followed. **AI5-O2** Procedures exist that ensure that legal and contractual arrangements are addressed when establishing, modifying and terminating contracts for all suppliers. **AI5-O3** Requested hardware, software and services are procured in line with defined procedures.
AI6 Manage changes.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **AI6-O1** Change standards and associated procedures, including those for emergency changes, are defined and communicated. **AI6-O2** Changes are assessed, prioritised and authorised. **AI6-O3** Change status is tracked and reported.
AI7 Install and accredit solutions and changes.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **AI7-O1** A test strategy/plan based on organisational standards for testing of the system and data conversion is prepared and followed. **AI7-O2** Release planning, including planned approval and fall back mechanisms is undertaken. **AI7-O3** An appropriate environment for testing, including training, is established. **AI7-O4** Test results are evaluated and approved by business management prior to approval of release to production.
DELIVER AND SUPPORT	
DS1 Define and manage service levels.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS1-O1** A service management framework is in place to define the organisational structure for service level management, covering the base definitions of services, roles, tasks and responsibilities of internal and

PROCESS NAME	ACTIVITIES
	external service providers and customers. **DS1-O2** Internal and external SLAs are formalised in line with customer requirements and delivery capabilities. **DS1-O3** OLAs are developed to specify the technical processes required to support SLAs. **DS1-O4** Processes are in place to monitor (and periodically review) SLAs and achievements.
DS2 Manage third-party services.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS2-O1** Supplier services are identified and relationships managed. **DS2-O2** Supplier risk is identified and mitigated. **DS2-O3** Supplier performance is monitored and measured.
DS3 Manage performance and capacity.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS3-O1** Current and future system capacity and availability are planned and provided. **DS3-O2** System performance is monitored and reported.
DS4 Ensure continuous service.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS4-O1** An IT continuity framework and plan are developed and maintained (improved). **DS4-O2** Training on and testing of IT contingency plans occur. **DS4-O3** Contingency plans and data are stored at offsite locations.
DS5 Ensure systems security.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS5-O1** A security plan is developed and approved. **DS5-O2** User identities and authorisations are managed in a standardised manner. **DS5-O3** Security is monitored and tested. **DS5-O4** Techniques are in place to ensure that networks and information are secure.
DS6 Identify and	Level 0: At this level, there is little or no evidence of any achievement of

PROCESS NAME	ACTIVITIES
allocate costs.	the process purpose. Level 1: **DS6-O1** A cost model is developed and maintained based on the service provided and the business processes supported. **DS6_O2** Charges are implemented as per the agreed-upon policy.
DS7 Educate and train users.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS7-O1** A training curriculum is established based on identified needs. **DS7-O2** Training is delivered and evaluated to meet identified needs.
DS8 Manage service desk and incidents.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS8-O1** A service desk is installed and operating, with logging and tracking of calls, incidents, service requests and information needs. **DS8_O2** Trends are monitored and reported. **DS8-O3** Clear escalation criteria and procedures are defined.
DS9 Manage the configuration.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS9-O1** A central repository of all configuration items is established, with procedures to support management and logging of changes. **DS9-O2** Integrity of configuration data is periodically reviewed.
DS10 Manage problems.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS10-O1** A service desk is installed and operating with logging and tracking of calls, incidents, service requests and information needs. **DS10-O2** Trends are monitored and reported.
DS11 Manage data.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS11-O1** Policies and procedures exist for data management that are based on business requirements. **DS11-O2** Onsite and offsite data storage is managed. **DS11-O3** Data and equipment are disposed of securely. **DS11-O4** Data are backed up and restoration is tested.

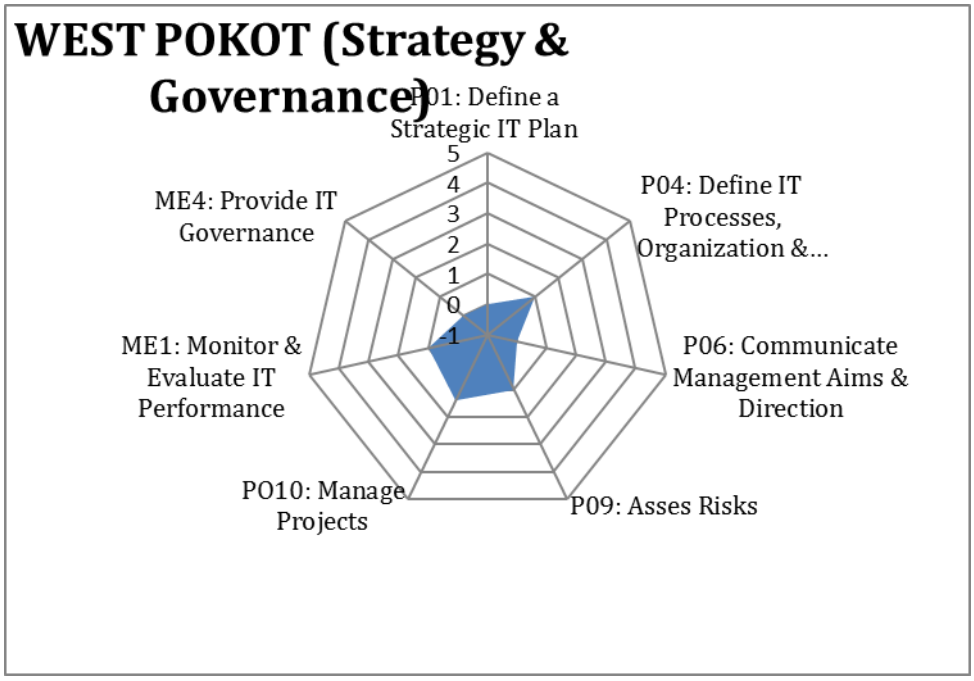
PROCESS NAME	ACTIVITIES
DS12 Manage the physical environment.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS12-O1** Facilities are selected and managed. **DS12-O2** Physical security measures are implemented. **DS12-O3** Facilities are protected against environmental factors.
DS13 Manage operations.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **DS13-O1** The IT environment is operated in line with agreed-upon service levels and defined instructions. **DS13-O2** The IT infrastructure is subject to appropriate preventive maintenance.
MONITOR AND EVALUATE	
ME1 Monitor and evaluate IT performance.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **ME1-O1** Processes exist to collect, collate and translate process performance reports into management reports for operational, executive and board reporting. **ME1-O2** Performance is verified against agreed-upon targets and any necessary remedial action is performed.
ME2 Monitor and evaluate internal control.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **ME2-O1** A system of internal controls is embedded in the IT process framework. **ME2-O2** Monitoring and reporting on the effectiveness of the internal controls over IT occur. **ME2-O3** Control exceptions are reported to management for action. **ME2-O4** Monitoring and reporting on the effectiveness of IT internal controls at third-party suppliers occur.
ME3 Ensure compliance with external requirements.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1: **ME3-O1** Legal, regulatory and contractual requirements related to IT have been identified and appropriate policies are communicated. **ME3-O2** Compliance with legal, regulatory and contractual requirements is monitored and reported.

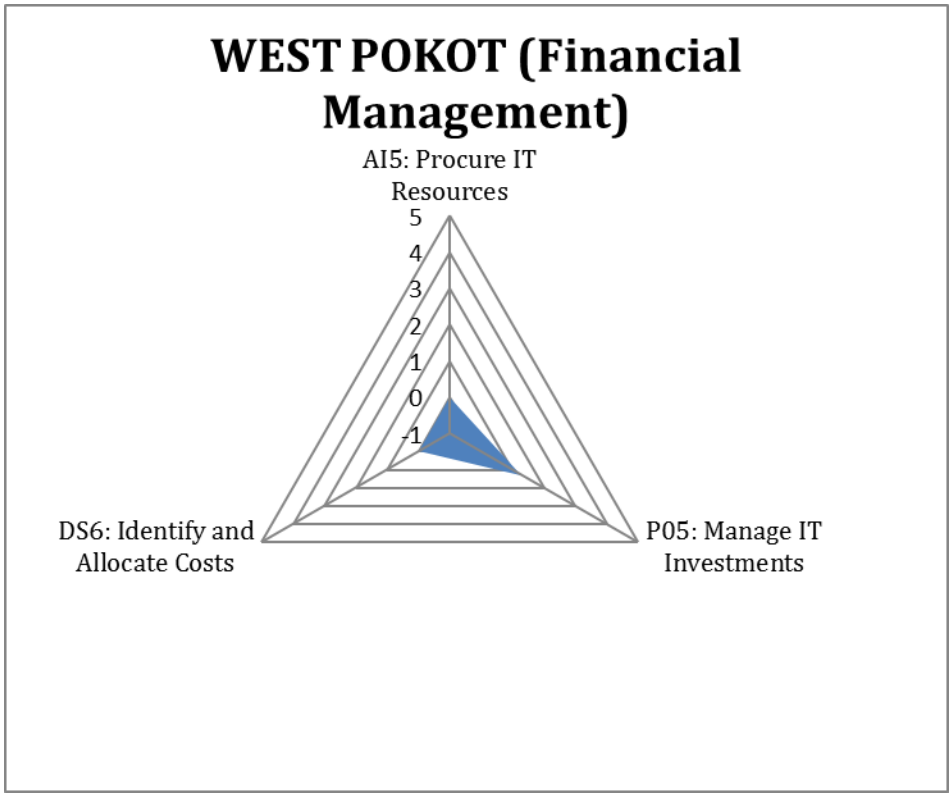
PROCESS NAME	ACTIVITIES
ME4 Provide IT governance.	Level 0: At this level, there is little or no evidence of any achievement of the process purpose. Level 1**: ME4-O1** There is an IT governance framework integrated into enterprise governance that enables the board and executive to have appropriate oversight and direction over the achievement of strategic alignment, value delivery, resource management and risk management. **ME4-O2** Business and IT are involved together as part of governance bodies such as an IT strategy committee in strategic decision making and IT benefit optimisation. **ME4-O3** There is a disciplined approach to portfolio, programme and project management, with business taking ownership of all IT-enabled investments and IT ensuring optimisation of the costs of delivering IT capabilities and services. **ME4-O4** There is oversight of investment in and use and allocation of IT resources to ensure appropriate resourcing and alignment with current and future strategic objectives and business imperatives. **ME4-O5** There is reasonable assurance that IT risk management practices are appropriate and do not exceed the board's risk appetite.

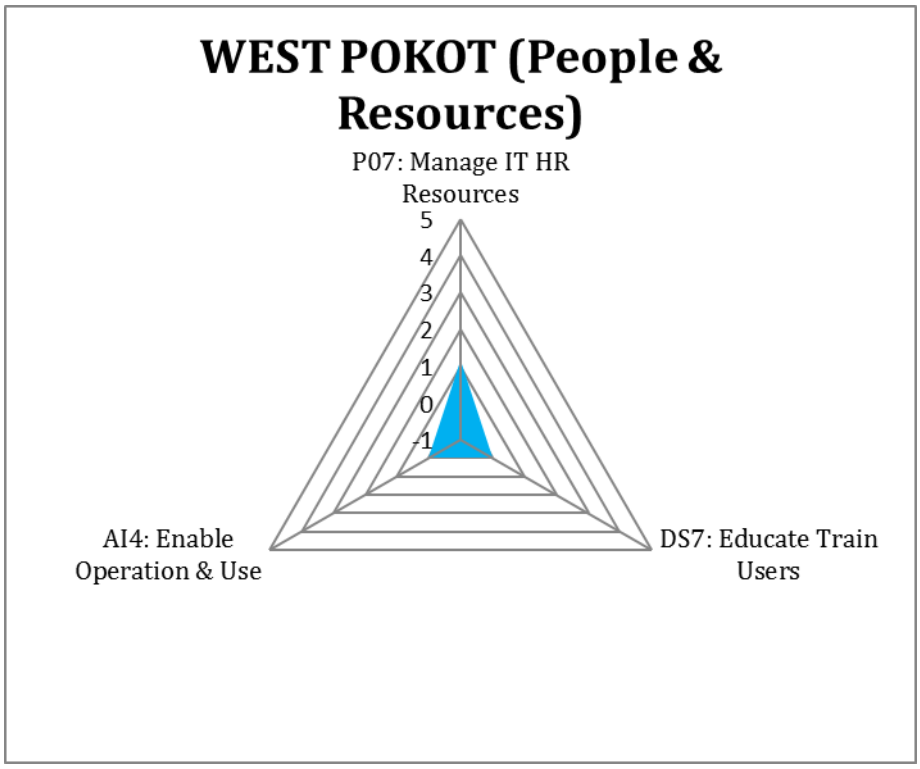
5.1.3. Annex 1 C: Process Scores Table

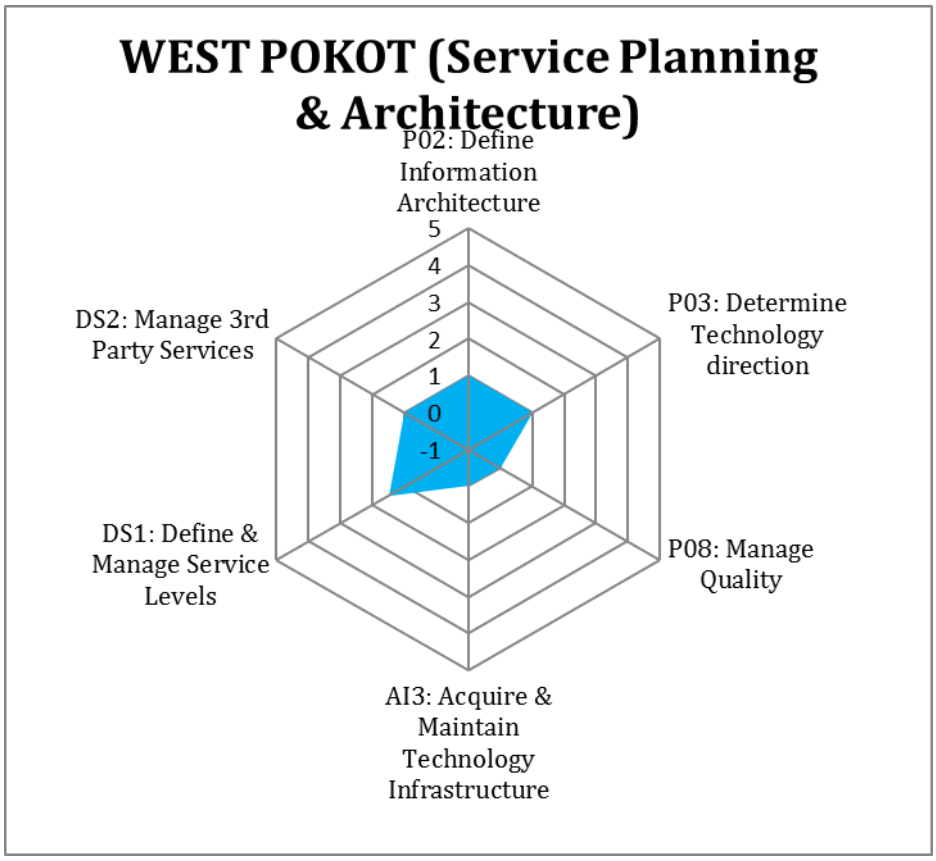
Element	Process	Current State	Benchmark State	Desired State
Strategy & Governance	PO1	0	1	1
	PO4	1	1	2
	PO6	0	1	1
	PO9	1	1	2
	PO10	1.4	1	2.4
	ME1	1	1	2
	ME4	0	1	1
Financial Management	PO5	1.3	1	2.3
	DS6	0	1	1
	AI5	0	1	1
People & Resource	PO7	1.15	1	2.15
	AI4	0	1	1
	DS7	0	1	1
Service Planning & Architecture	PO2	1	1	2
	PO3	1	1	2
	PO8	0	1	1
	AI3	0	1	1
	DS1	1.5	1	2.5
	DS2	1	1	2
Infrastructure & Operations	AI6	0	1	1
	DS3	1	1	2
	DS8	1.3	1	2.3
	DS9	0	1	1
	DS10	0	1	1
	DS13	0	1	1
Security	DS11	0	1	1
	DS12	2	1	3
	ME2	0	1	1
	ME3	1	1	2
	DS4	0	1	1
	DS5	1	1	2
Applications	AI1	1	1	2
	AI2	1	1	2
	AI7	0	1	1

5.1.4. Annex 1 D: Current State Spider Charts

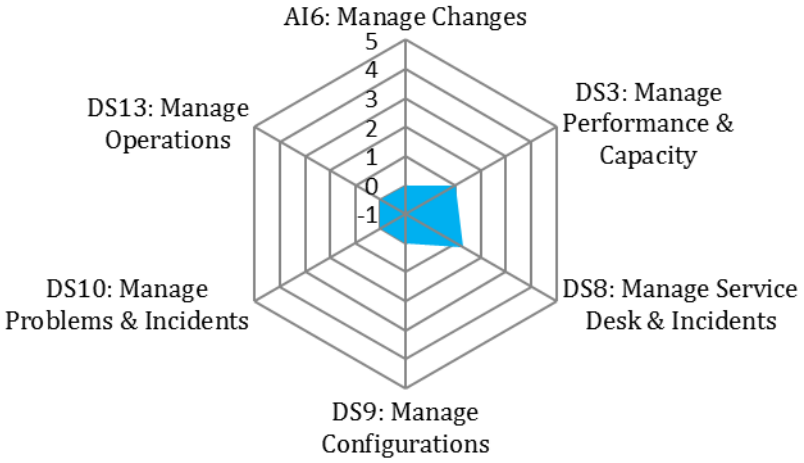




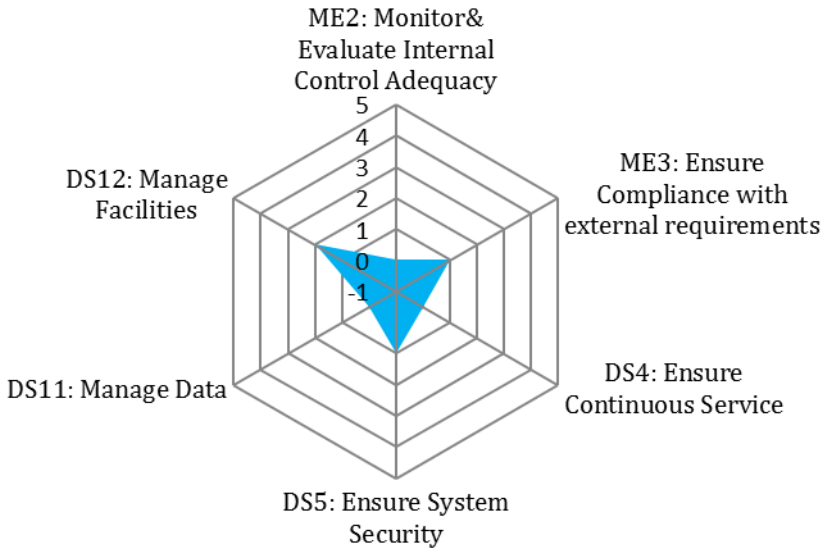

WEST POKOT (People & Resources)
P07: Manage IT HR Resources
5
4
3
2
1
0
-1
AI4: Enable Operation & Use
DS7: Educate Train Users

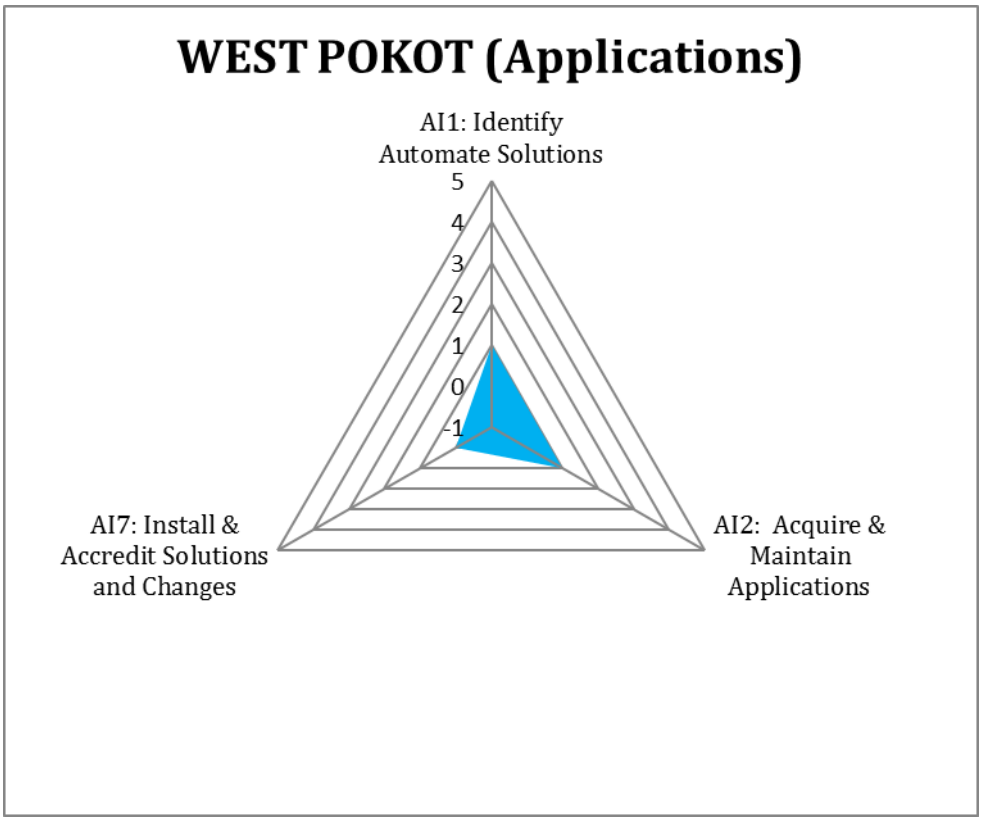

WEST POKOT (Service Planning & Architecture)
P02: Define Information Architecture
5
4
3
2
1
0
-1
P03: Determine Technology direction
P08: Manage Quality
AI3: Acquire & Maintain Technology Infrastructure
DS1: Define & Manage Service Levels
DS2: Manage 3rd Party Services

WEST POKOT (Infrastructure & Operations)

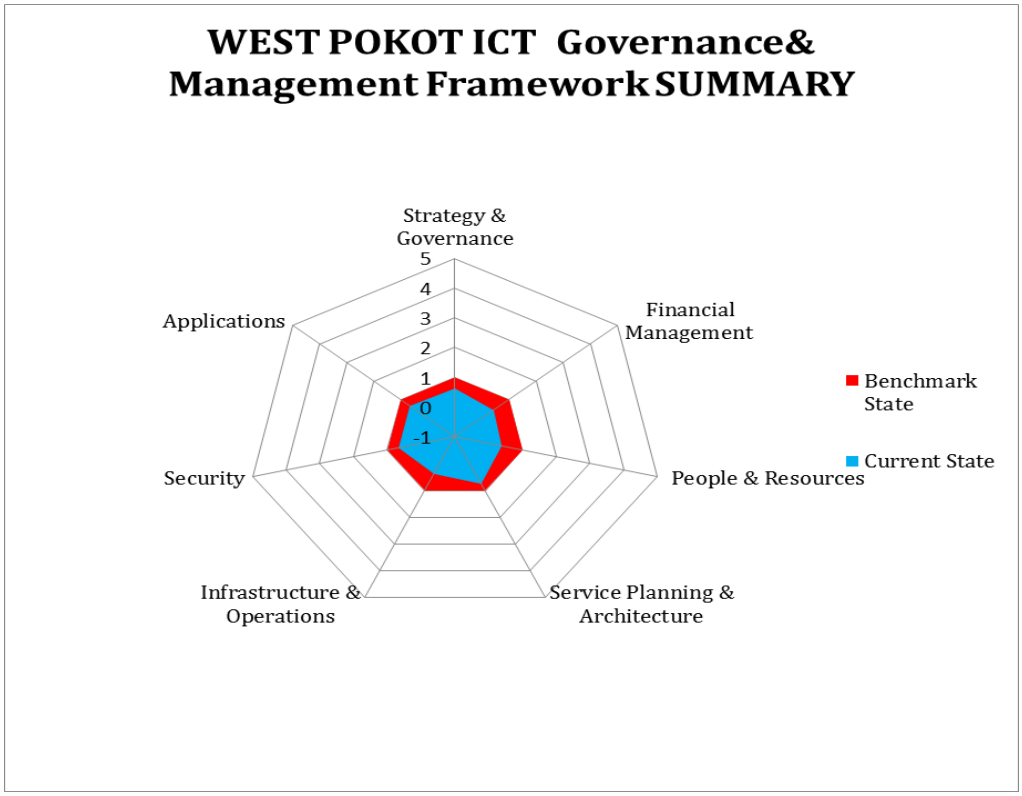


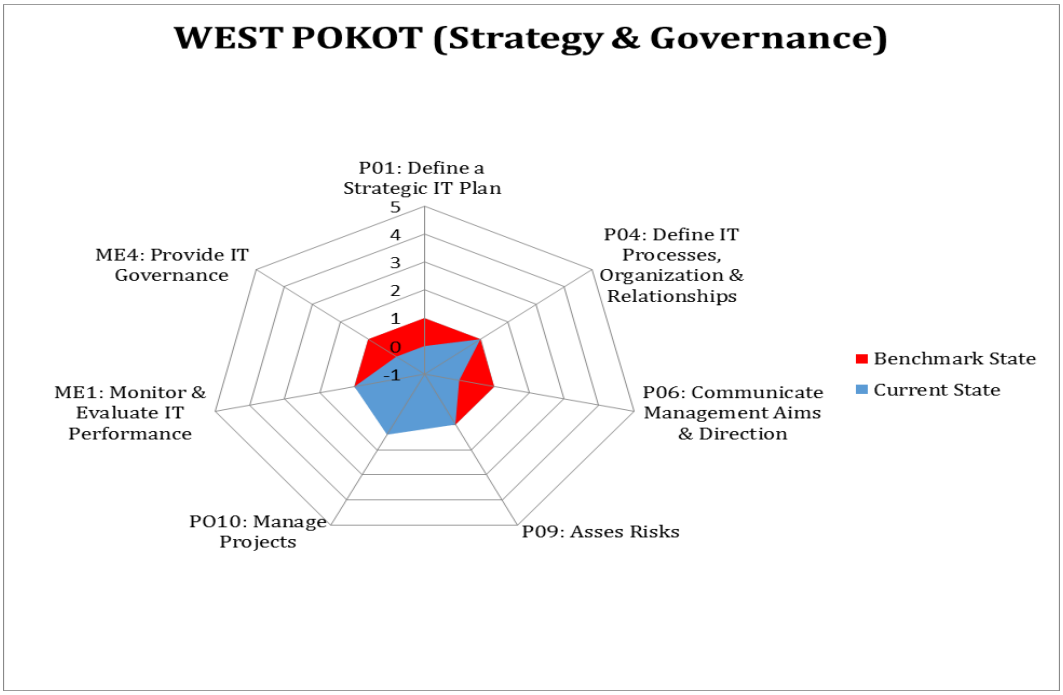
WEST POKOT (Security)

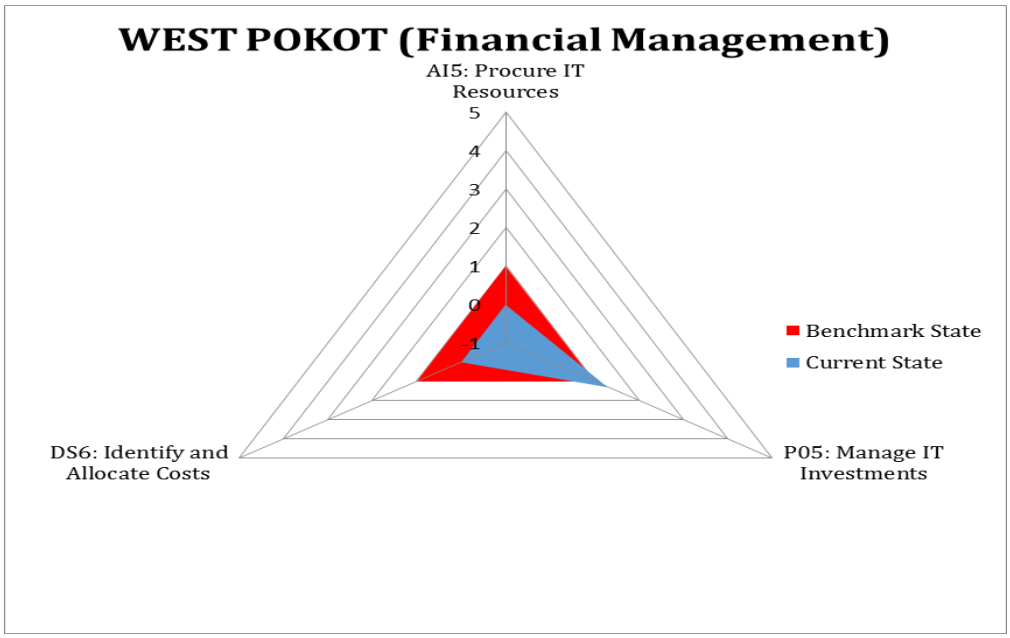


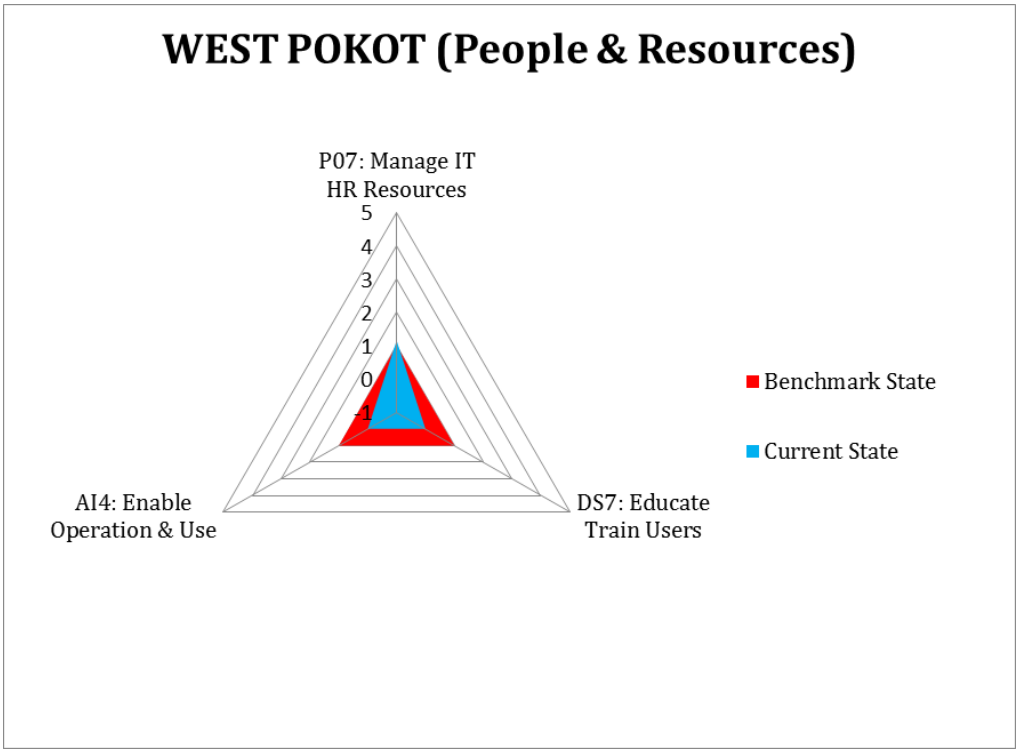

WEST POKOT (Applications)
AI1: Identify Automate Solutions
5
4
3
2
1
0
-1
AI2: Acquire & Maintain Applications
AI7: Install & Accredit Solutions and Changes

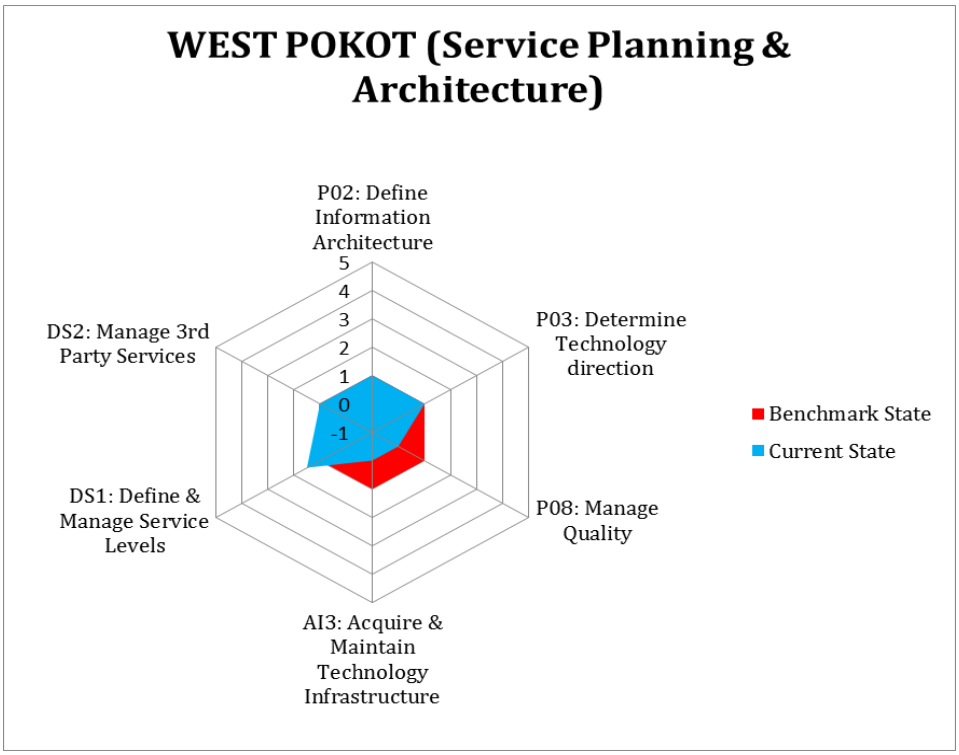
5.1.5. Annex 1 E: Benchmark State Spider Charts






WEST POKOT (Financial Management)
AI5: Procure IT Resources
5
4
3
2
1
0
-1
DS6: Identify and Allocate Costs
P05: Manage IT Investments
Benchmark State
Current State


WEST POKOT (People & Resources)
P07: Manage IT HR Resources
5
4
3
2
1
0
-1
AI4: Enable Operation & Use
DS7: Educate Train Users
Benchmark State
Current State


WEST POKOT (Service Planning & Architecture)
P02: Define Information Architecture
P03: Determine Technology direction
P08: Manage Quality
AI3: Acquire & Maintain Technology Infrastructure
DS1: Define & Manage Service Levels
DS2: Manage 3rd Party Services
5
4
3
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1
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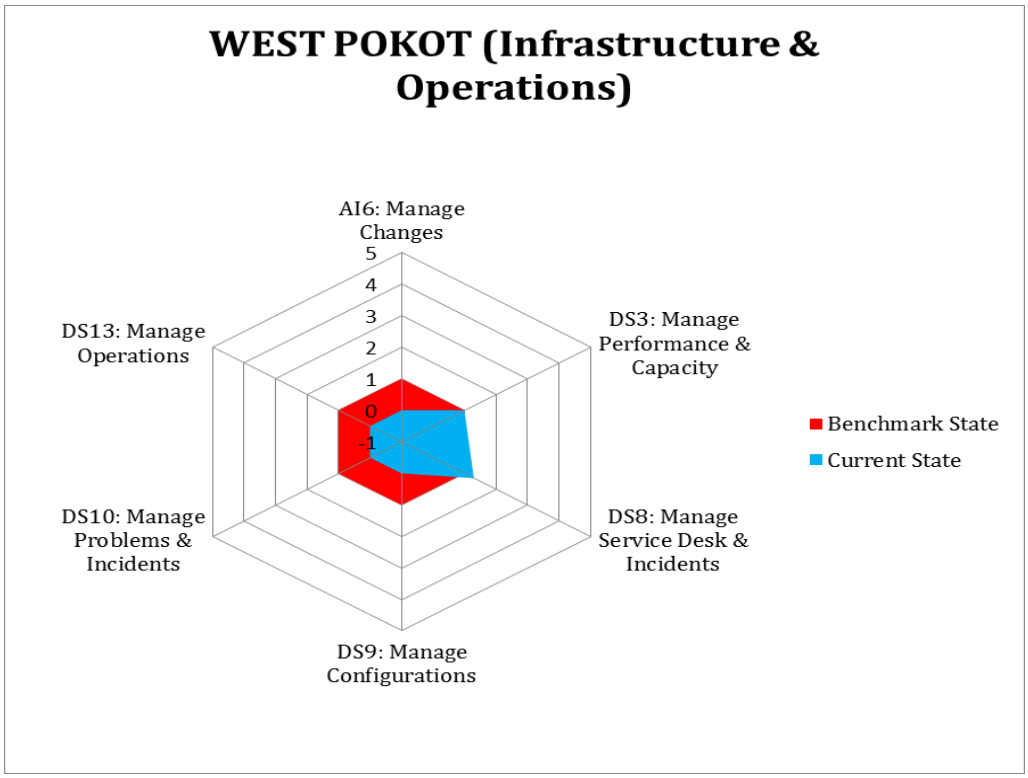
-1
Benchmark State
Current State


WEST POKOT (Infrastructure & Operations)
AI6: Manage Changes
DS3: Manage Performance & Capacity
DS8: Manage Service Desk & Incidents
DS9: Manage Configurations
DS10: Manage Problems & Incidents
DS13: Manage Operations
5
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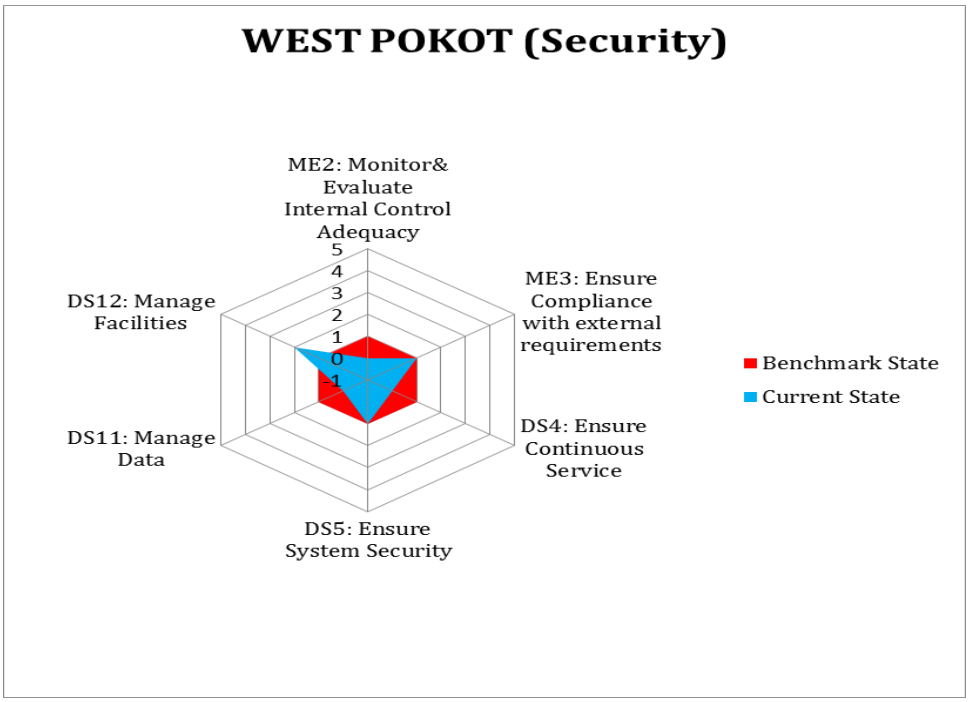
-1
Benchmark State
Current State


WEST POKOT (Security)
ME2: Monitor& Evaluate Internal Control Adequacy
ME3: Ensure Compliance with external requirements
DS4: Ensure Continuous Service
DS5: Ensure System Security
DS11: Manage Data
DS12: Manage Facilities
5
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1
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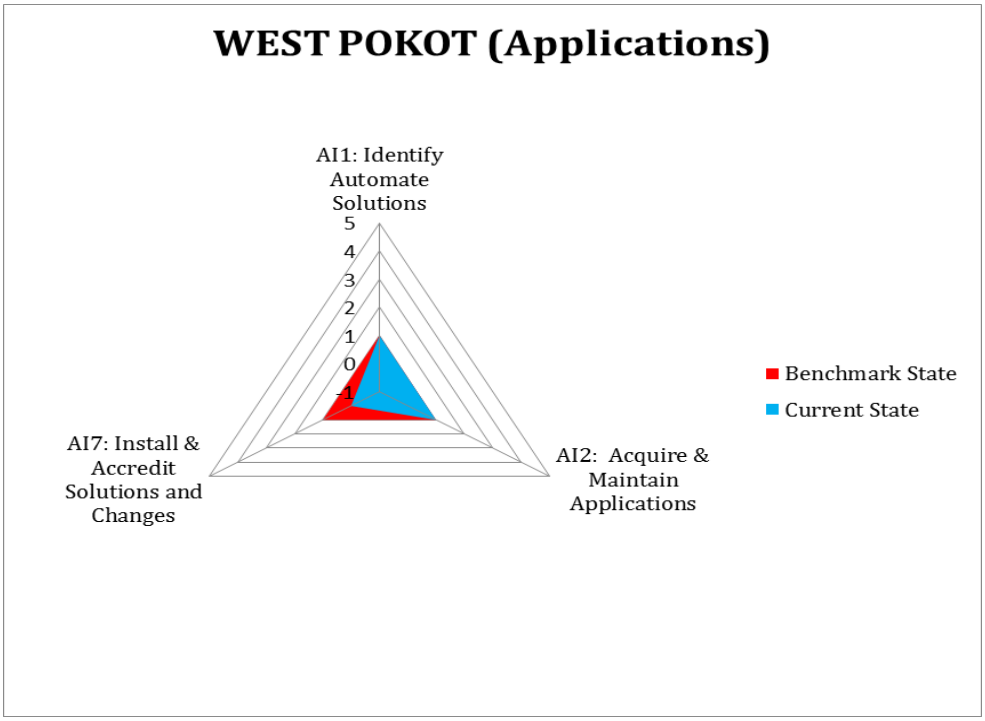
-1
Benchmark State
Current State


WEST POKOT (Applications)
AI1: Identify Automate Solutions
AI2: Acquire & Maintain Applications
AI7: Install & Accredit Solutions and Changes
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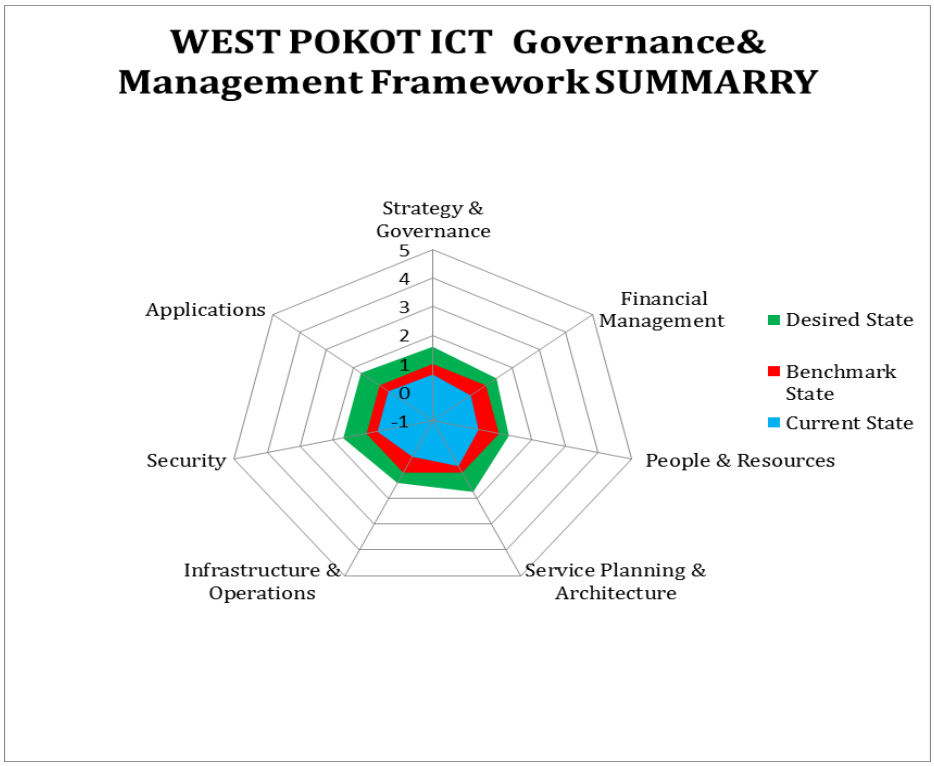
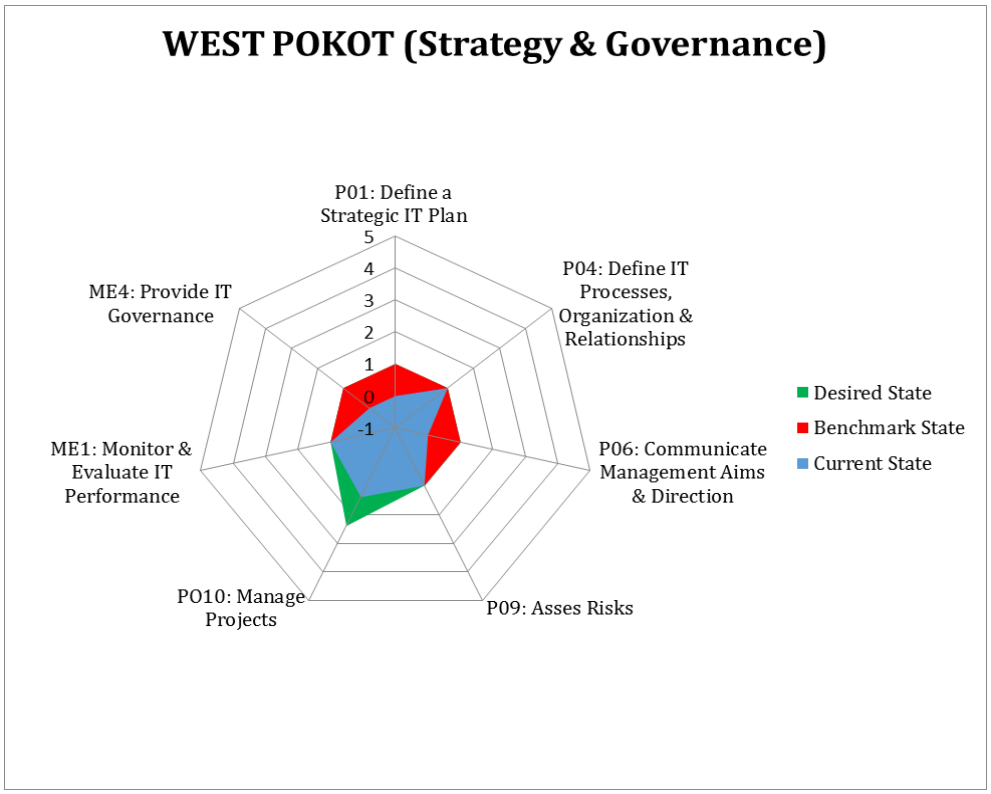
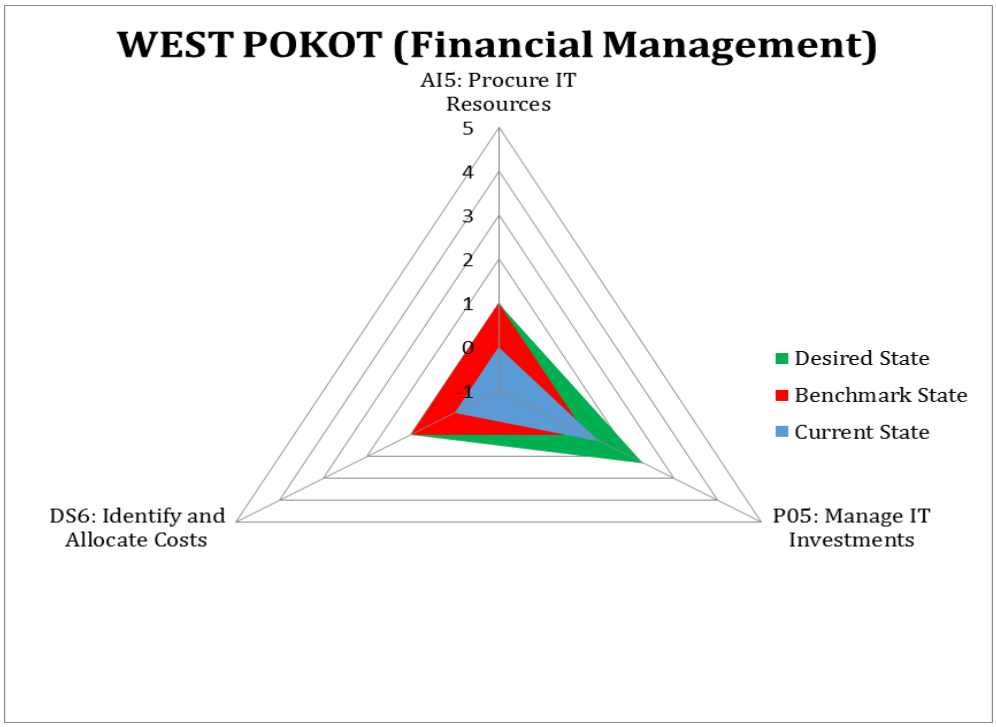
-1
Benchmark State
Current State

5.1.6. Annex 1 F: Desired State Spider Charts






WEST POKOT (Financial Management)
AI5: Procure IT Resources
5
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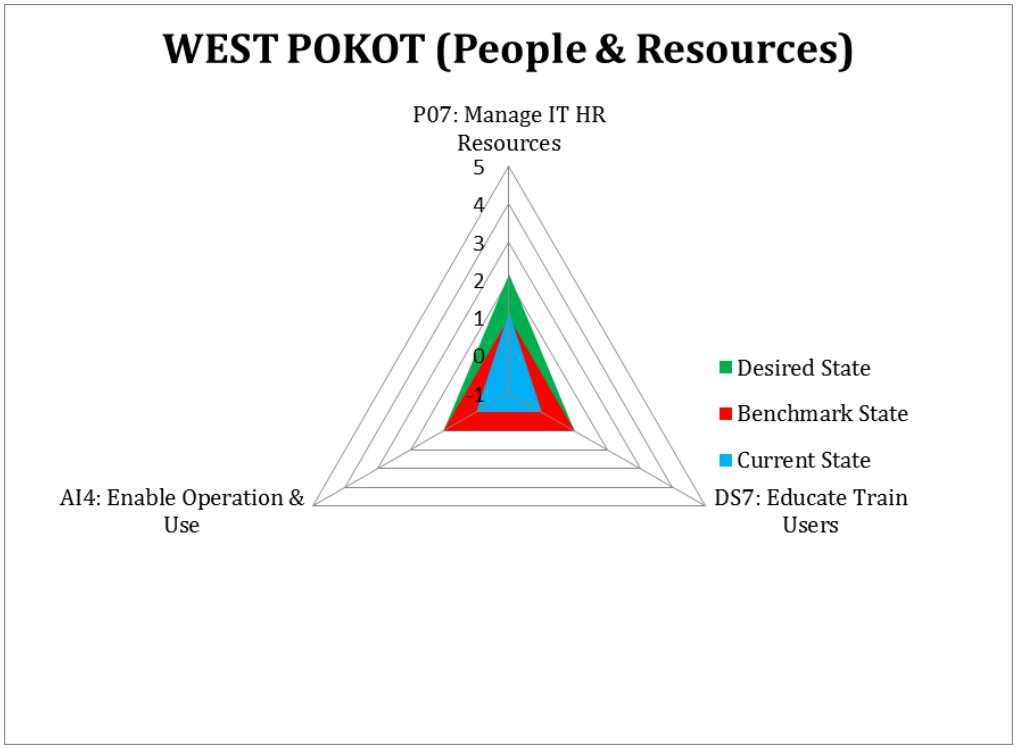
-1
Desired State
Benchmark State
Current State
DS6: Identify and Allocate Costs
P05: Manage IT Investments


WEST POKOT (People & Resources)
P07: Manage IT HR Resources
5
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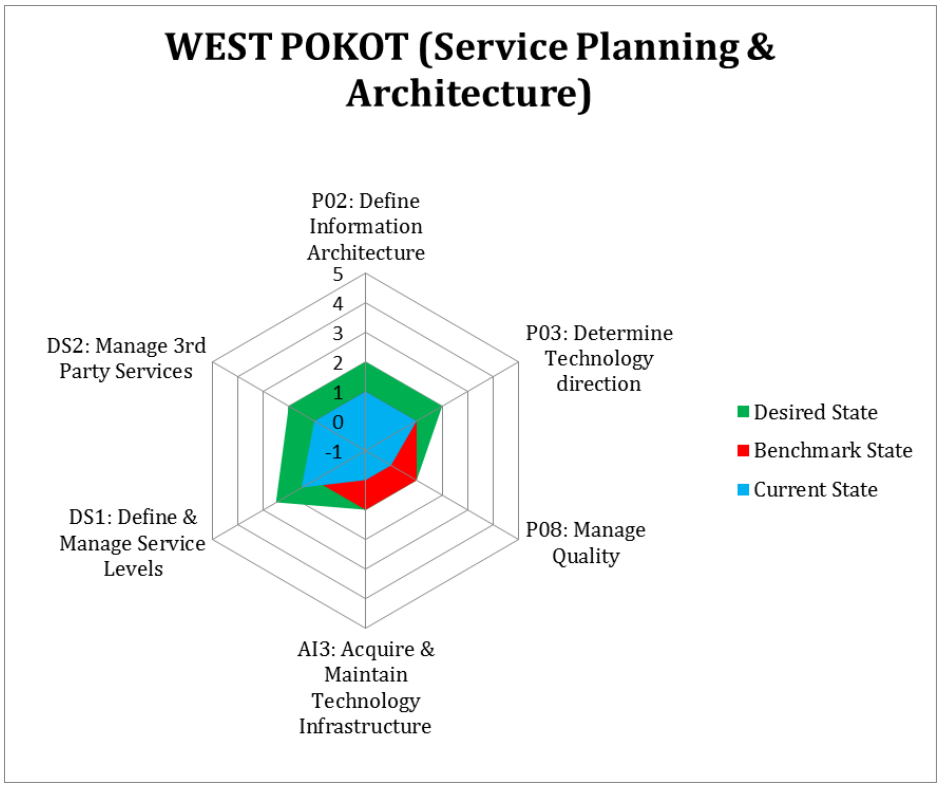
-1
Desired State
Benchmark State
Current State
AI4: Enable Operation & Use
DS7: Educate Train Users


WEST POKOT (Service Planning & Architecture)
P02: Define Information Architecture
P03: Determine Technology direction
P08: Manage Quality
AI3: Acquire & Maintain Technology Infrastructure
DS1: Define & Manage Service Levels
DS2: Manage 3rd Party Services
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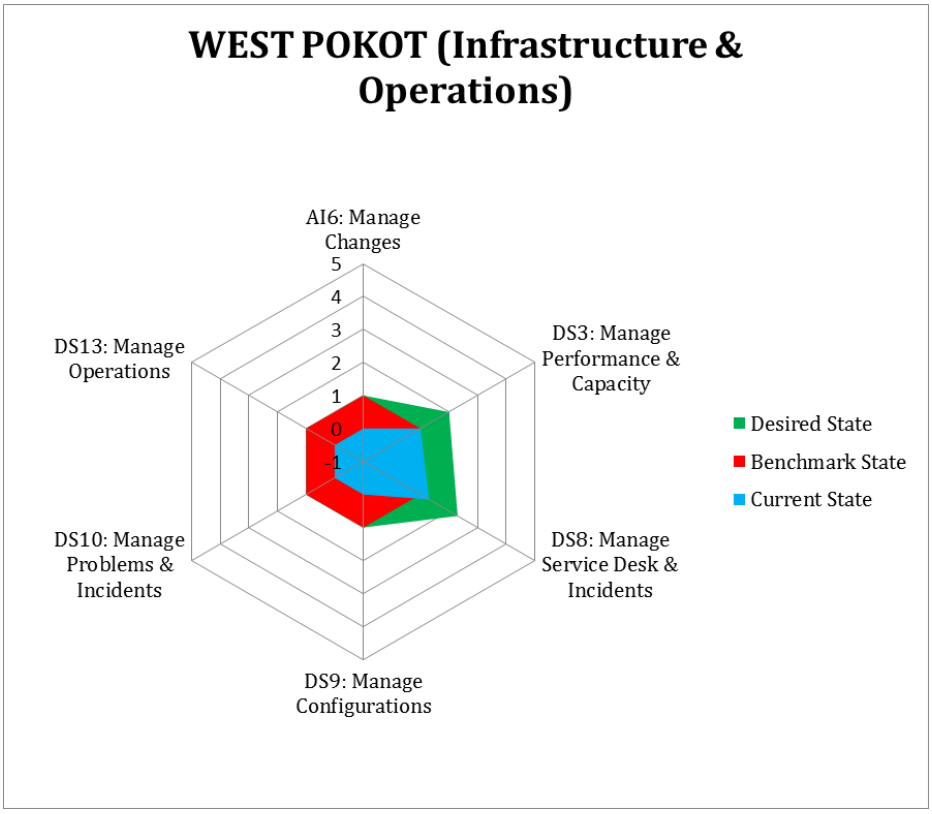
Desired State
Benchmark State
Current State


WEST POKOT (Infrastructure & Operations)
AI6: Manage Changes
DS3: Manage Performance & Capacity
DS8: Manage Service Desk & Incidents
DS9: Manage Configurations
DS10: Manage Problems & Incidents
DS13: Manage Operations
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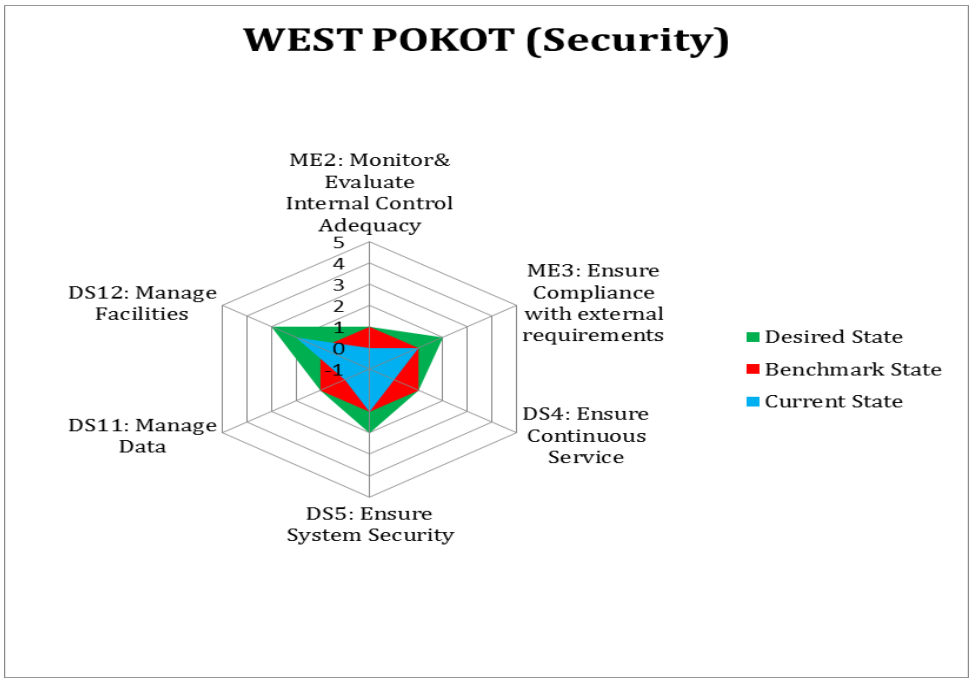
Desired State
Benchmark State
Current State


WEST POKOT (Security)
ME2: Monitor& Evaluate Internal Control Adequacy
ME3: Ensure Compliance with external requirements
DS4: Ensure Continuous Service
DS5: Ensure System Security
DS11: Manage Data
DS12: Manage Facilities
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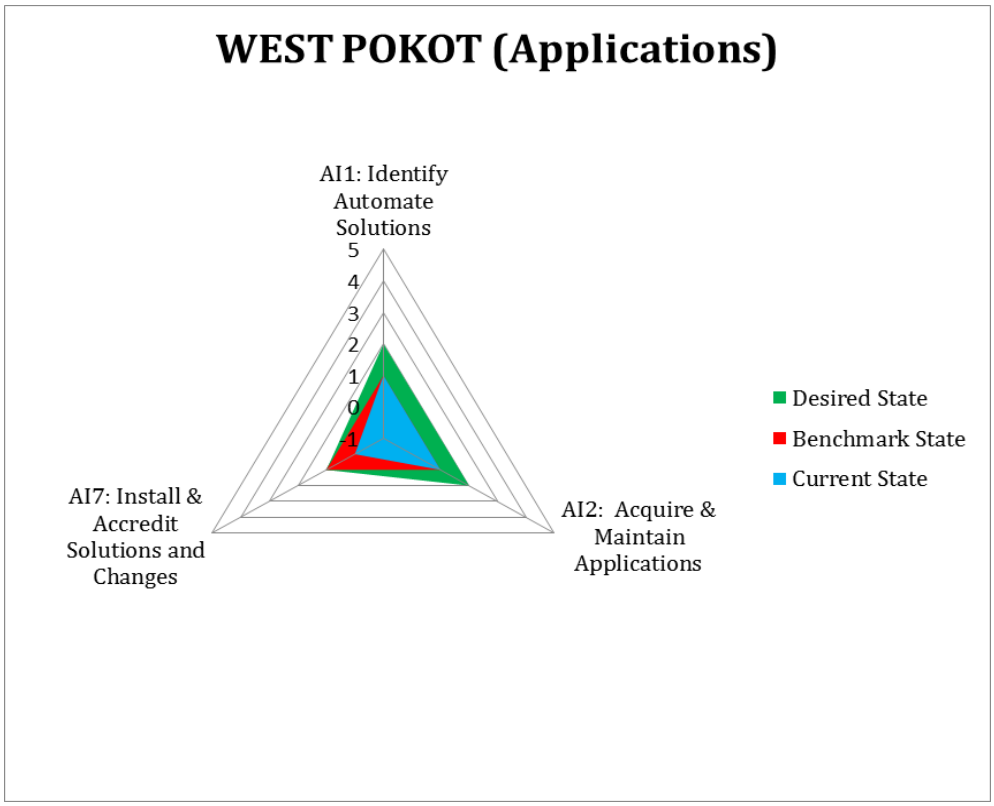
Desired State
Benchmark State
Current State


WEST POKOT (Applications)
AI1: Identify Automate Solutions
AI2: Acquire & Maintain Applications
AI7: Install & Accredit Solutions and Changes
5
4
3
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1
0
-1
Desired State
Benchmark State
Current State

5.2. Annex 2: Project Prioritization Matrix

Connected County Government project Prioritization

Flagship Project	Importance Ranking		Importance Score	Feasibility Ranking		Total Score (max 18)	Priority/Ranking
	Alignment to County Strategy	Urgency		Available Technical Capability	Available Institutional Funding		
Development of an Integrated ICT Network Infrastructure	H	H	6	H	L	12	1st priority
GIS system for planning	H	M	5	M	L	7.5	3rd priority
Digital security systems	H	H	6	M	L	9	2nd priority
Fleet management systems	H	H	6	L	L	6	4th priority

Connected Citizens project Prioritization

Flagship Project	Importance Ranking		Importance Score	Feasibility Ranking		Total Score (max 18)	Priority/Ranking
	Alignment to County Strategy	Urgency		Available Technical Capability	Available Institutional Funding		
Centre's of excellence ICT Incubation/Innovation Hubs	H	H	6	H	L	12	1st
Development of Entrepreneurship resource platforms for County citizens	L	H	2	H	L	4	4th
E-Citizen Portal for information sharing	H	H	6	L	L	6	3rd
Introduction of ICT training programs for citizens	M	H	5	H	L	10	2nd

Citizen Satisfaction Project Prioritization

Flagship Project	Importance Ranking	Importance Score		Feasibility Ranking		Total Score (max 18)	Priority/Ranking
	Alignment to County Strategy	Urgency		Available Technical Capability	Available Institutional Funding		
Connectivity of ICT infrastructure to Sub-counties and to Ward levels	H	H	6	H	L	12	1st priority
Information Centres at the sub-County and Ward levels	H	M	5	H	L	10	2nd priority
E-learning systems	H	H	6	L	L	6	4th Priority
Establishment of Citizen satisfaction Index Systems- for online surveys	H	M	5	M	L	7.5	3rd Priority

Connected Legislator Project Prioritization

Flagship Project	Importance Ranking		Importance Score	Feasibility Ranking		Total Score (max 18)	Priority/Ranking
	Alignment to County Strategy	Urgency		Available Technical Capability	Available Institutional Funding		
Public Participation System- Live Broadcasts of County Assembly proceedings	H	H	6	H	L	12	1st
Teleconferencing	M	H	5	M	L	7.5	4th
Incorporating County Radio, TV, Internet and Mobile technologies	H	M	5	L	L	5	5th
ICT Proficiency Capacity Building Program for staff and all assembly members (MCAs)	H	H	6	M	L	9	2nd
Committee management systems	M	M	4	H	L	8	3rd

5.3. Annex 3: Proposed Budgets For The Five Year Plan

The proposed budgets are arrived upon by taking into consideration

1. Size of County in terms of population and number of sub County units
2. Number of public schools in the County
3. Number of tertiary institutions in the County
4. Size of County government in terms of number of ministries (departments)
5. Number of level 2 and 3 hospitals in the County
6. Size of County assembly in terms of number of elected and nominated members
7. Quoted equipment prices in international websites
8. Recent project proposals submitted to select County governments
9. Project proposals submitted to other local authorities
10. Budgets of other local authorities

Connected County Government Budgets

No.	Project	Budget (Ksh)	Start	Timeframe
1	Development of an Integrated ICT Network Infrastructure	46M	Sept-15-2015	1 yr
2	County Security and Surveillance System	15M	Jun-18-2016	2 yrs
3	GIS system	50M	Jun-18-2017	2 yrs
	Total	111M		

Citizen Satisfaction Budgets

No.	Project	Budget (Ksh)	start	Timeframe
1	Centre's of excellence ICT Incubation/Innovation Hubs	14m	Sept-15-2016	2 yrs
2	E-Citizen Portal for information sharing	10 million	Nov- 20-2015	4 months
3	Introduction of ICT training programs for citizens	20m	April-10-2018	6 mths
	Total	44m		

Connected Citizens Budgets

No.	Project	Budget (Ksh)	Start	Timeframe
1	Lobby National Broadband Connectivity	5m	Sep-20-2016	1 yr
2	Information Centres at the sub-County and Ward levels	14m	Jun-15-2015	2yrs
3	Establishment of Citizen satisfaction Index Systems- for online surveys	5m	Jan-10-2018	8mths
	Total	24m		

Connected legislator Budgets

No.	Project	Budget (Ksh)	start	Timeframe
1	Public Participation System- Live Broadcasts of County Assembly proceedings	7m	July -2016	I yr
2	ICT Proficiency Capacity Building Program for staff and all assembly members (MCAs	20m	Aug-2017	6 months
3	ERP-Committee management systems	10m	Sept -2019	10 months
5	**Total**	37m		

COBIT Costing

No.	Project	Budget (Ksh)	Timeframe
1	Search, Evaluate & Procure COBIT Consultant	0.1m	2 months
2	Contract & Sign up a COBIT Consultant	0.5m	1 day
3	COBIT Awareness & Appreciation Training for Top Leadership (Governor, County Exec, Speaker, Chief Officers)	0.05m	1 day
4	COBIT Technical Training for Mid-level Management (Directors, Managers across Ministries)	0.1m	2 days
5	COBIT Implementation Training for	0.1 m	2 days

	Technical Management (ICT Directors, ICT Technical Support, Auditors)		
6	External Annual Audits	0.5m	5 days
	Total	1.35m	

5.4. Annex 4: Implementation Matrix

	Flagship Projects	Objectives	Strategies	KPIs	Target 2015-2020	Outcomes	Responsibility	Budget
Connected County Government	Development of an Integrated ICT Network Infrastructure	Increasing network coverage in the County	Budgetary allocation to network infrastructure	Number of Sub-counties and Ward Offices networked	All sub-Counties and Wards(offices)	Efficient and Effective communication	ICT Directorate	46M
	County Security and Surveillance System	Reduce levels on insecurity	Installation of security cameras and equipment	Number of security cases reported	County offices and major towns	Faster responses to security alerts and emergencies	ICT Directorate	15M
	GIS system	Increase efficiency and Reduced paper	Acquire GIS system	percentage of data stored in the GIS integrated database	All relevant County departments /sectors	better geographic representation, database creation, and as a powerful tool for analysis	ICT Directorate	50M
Connected Citizens	Lobby National Broadband Connectivity	Connectivity to the Sub-County and Ward levels	Lobby for the last-mile connectivity	Number of sub-counties and ward offices networked	All County offices	Faster and convenient access of internet	ICT Directorate	5M
	Information Centres at the sub-County and Ward levels	Increase penetration rate of ICT to underserved citizens of et Pokot	Development of information centres at sub-count and ward levels	Number of youth employed in ICT industry	3 Information centres in the County	Improved financial independence amongst the youth	ICT Directorate	14M
	Establishment of Citizen satisfaction Index	Enhance accountability and transparency of the government	Establishment of an online survey	Number of responses/feed back to	Relevant departments in the	Citizen participation in governance	ICT Directorate	5M

	Flagship Projects	Objectives	Strategies	KPIs	Target 2015-2020	Outcomes	Responsibility	Budget
	Systems- for online surveys		platform	government inputs	County headquarters			
Citizen Satisfaction	Centre's of excellence ICT Incubation/Innovation Hubs	Promote entrepreneurship in the County	Establishment of incubation/resource centres	Number of innovation centres in the County	All sub-counties	Increased GDP and reduced poverty levels in the County	ICT Directorate	14M
	E-Citizen Portal for information sharing	E- portal system for online service delivery	Development of an E-portal	Reduced lengths or no queues at service delivery points	All service delivery points in the County	Online Self-care in regard to services offered by the County government	ICT Directorate	10M
	Introduction of ICT training programs for citizens	Promote ICT literacy to the people	Establishment of ICT literacy programs to the public	Number citizens enrolled and trained	All learning institutions	ICT literate citizens of West-Pokot	ICT Directorate	20M
Connected Legislator	Public Participation System- Live Broadcasts of County Assembly proceedings	Providing for public participation in legislative issues	Implementation of live-broadcasts in County assembly	Number of proposals and feedback from the public	All County proceedings	Transparency in legislation	ICT Directorate, Clerk, Speaker	7M
	ICT Proficiency Capacity Building Program for staff and all assembly members (MCAs	Increased passing of bills	Provision of capacity building on the use of the existing systems and devices	Number of MCA's skilled in ICT	All MCA's in the County Assembly	Effecive and efficient County assembly	ICT Directorate, Clerk, Speaker	20M

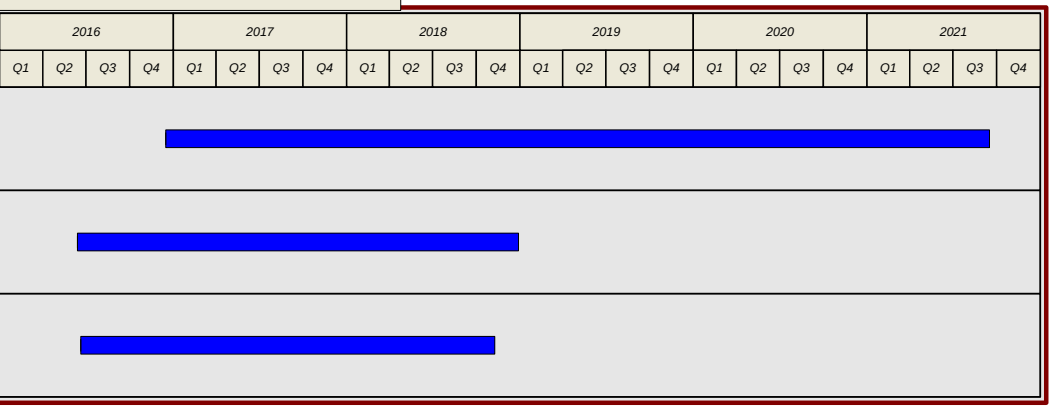
	Flagship Projects	Objectives	Strategies	KPIs	Target 2015-2020	Outcomes	Responsibility	Budget
	ERP-Committee management systems	Having an efficient administration of house committees and for easy data analysis for decision making	Development of an ERP module that manages house committee	Speed of productivity of house committees	All Relevant department in the Assembly	Systematic workflow of committees in the County assembly	ICT Directorate, Clerk, Speaker	10M

5.5. Annex 5: Roll out Plan Charts

Connected County Government

Connected County Government

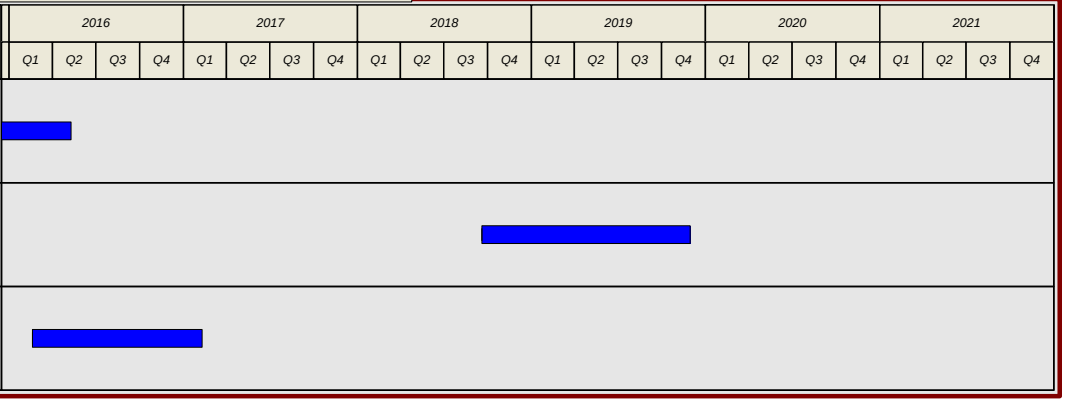
ID	Flagship Projects	Start	Finish	Duration
1	Development of Integrated Infrastructure	16/12/2016	15/09/2021	247.8w
2	County security and surveillance system	13/06/2016	28/12/2018	133w
3	Centre's of excellence- ICT Incubation Hubs	20/06/2016	08/11/2018	124.8w



Connected Citizens

Connected Citizens

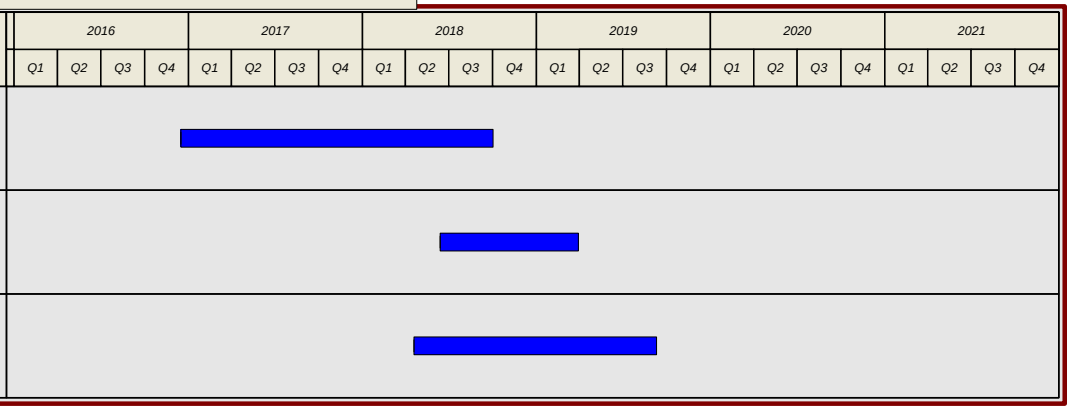
ID	Flagship Projects	Start	Finish	Duration
1	E-Citizen Portal Information sharing	16/12/2015	09/05/2016	20.8w
2	Introduction of ICT training programs for citizens	19/09/2018	29/11/2019	62.6w
3	Lobby National Broadband connectivity	19/02/2016	08/02/2017	50.8w



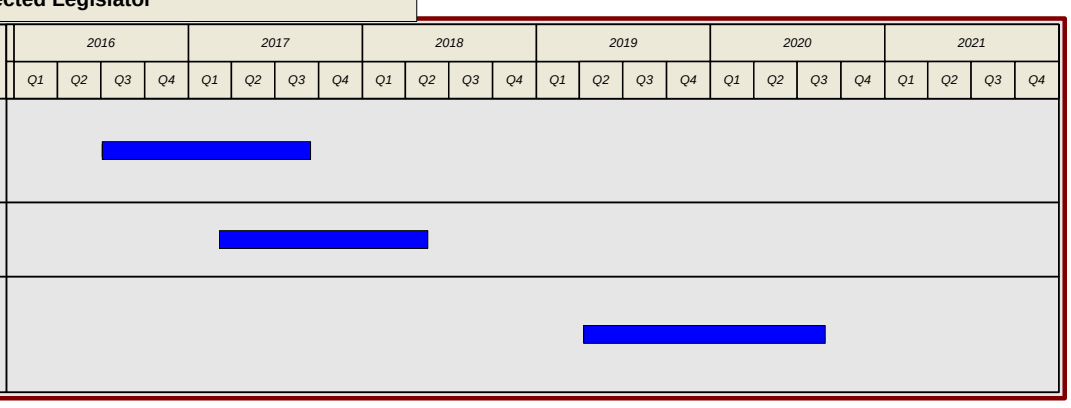
Citizen Satisfaction

Citizen Satisfaction

ID	Flagship Projects	Start	Finish	Duration
1	Information Centre's at the sub-county and Ward Level	16/12/2016	01/10/2018	93.4w
2	Establishment of Citizen Satisfaction Index System for Online surveys	13/06/2018	29/03/2019	41.6w
3	Lobby National Broadband Connectivity, implement last mile NOFBI to sub-counties	19/04/2018	09/09/2019	72.6w



Connected Legislator

Connected Legislator

ID	Flagship Projects	Start	Finish	Duration
1	Public Participation System- Live Broadcasts of County Assembly Proceedings	04/07/2016	13/09/2017	62.6w
2	ICT Proficiency Capacity Building Program for staff and all Assembly members MCA's	07/03/2017	17/05/2018	62.6w
3	Committee Management Systems	10/04/2019	28/08/2020	72.6w