

KIGAMBONI MUNICIPAL COUNCIL



INFORMATION AND COMMUNICATION TECHNOLOGY STRATEGY 2020 - 2022

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4.1. FOREWORD

Information and Communication Technologies (ICT) Strategy for Kigamboni Municipal Council aims at guiding the deployment of Information Systems to improve internal and external service delivery and to improve efficiency and effectiveness of operations in the Municipality. The strategy is aligned with the National ICT policy 2003 and e-Government Strategy 2009. The national e-government strategy has been developed as a higher level plan to address the need and role of the application of Information and Communication Technologies (ICT) in improving government services for MDAs.

It is intended to provide a framework for more coordinated and user driven focus on the use of ICT as part of streamlining the implementation of National ICT Policy and e-Government Strategy. The ultimate goal shall be systematic ICT deployment within the Municipality as a tool to facilitate the provision of quality services as well as implementation of various socio-economic and environmental projects within the area of jurisdictions as well as the M&E aspects of the same. The strategy sets ambitious and specific goals and targets whose achievement will not only deliver better services to more citizens, but will also result in cost saving in the delivery of services while enabling many new types of services to be created as part of the services delivered by the Municipal Council.

It is worth noting that this strategy will not only enable the Municipality to use ICT systematically, but also to apply ICT in reforming and improving the internal working processes, and ultimately making service delivery to the public easier and quicker, proper utilization of public resources and avoid duplication of efforts in information technology deployments.

Effective ICT Management requires people to deploy the right technology in the right way for the right reasons, commonly referred to as “people, process and technology”. The strategy explores these themes with a view to arriving at the best possible fit to ensure that the ICT mission is achieved.

This strategy is a result of considerable effort made by Kigamboni Municipal Council in which the challenges and opportunities facing the deployment of ICT were explored. I would like to thank all involved exhausting and in providing the valuable inputs.

I now look forward to the delivery of commitments contained in the Information Systems Strategy. Through this work we can achieve a more integrated approach to the management and development of ICT and information systems as we strive to achieve the Municipal wide mission and business goals.

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ACRONYMS

CBO	Community Based Organization
DP	Development Partner
EIA	Environmental Impact Assessment
GoT	Government of Tanzania
ICT	Information and Communication Technologies
LGAs	Local Government Authorities
MDGs	Millennium Development Goals
MTEF	Medium Term Expenditure Framework
NGO	Non-governmental Organization
NPES	National Poverty Eradication Strategy
NSGRP	National Strategy for Growth and Reduction of Poverty
PMO-RALG	Prime Minister’s Office - Regional Administration and Local Government
PRS	Poverty Reduction Strategy
PSP	Private Sector Participation
SWAP	Sector Wide Approach to Planning
TShs	Tanzanian Shillings
KGMC	Kigamboni Municipal Council
IT	Information Technology

CHAPTER 1: BACKGROUND

Introduction

ICT is an acronym for Information and Communication Technologies. The term encompasses a range of computing and communications technologies for capturing, manipulating, storing, retrieving, processing, analyzing and transmitting information. There is no universally accepted definition of term owing to the fact that the concepts, methods and applications involved in ICT are constantly evolving in line with the fast pace of change in technology itself. A simple definition is thus derived by considering all the uses of digital technology that help individuals, businesses and organizations use information to solve practical problems.

In business, ICT comprises traditional computer-based technologies - things you can typically do on a personal computer or using computers at home or at work; and the more recent, and fast-growing range of digital communication technologies - which allow people and organizations to communicate and share information digitally. Traditional Computer Based Technologies include:

Standard Office Applications, for example:

- **Word processing:** Used to process, store and transmit documents in text form, for example Microsoft Word
- **Spreadsheets:** used for calculation and analysis of numbers, analysis of financial information, calculations and creation of forecasting models, for example Microsoft Excel
- **Database software:** used for managing data in many forms, from basic lists such as customer contacts through to complex setups such as customer databases, and cataloguing systems. Examples of these include Oracle, Microsoft SQL Server and Microsoft Access
- **Presentation software:** used to make making presentations, either directly using a computer screen or data projector in digital format via email or over the Internet; for example Microsoft PowerPoint, Microsoft publisher, etc.
- **Desktop publishing:** used for producing newsletters, magazines and other complex documents; and publishing for example Adobe, Quark Express, Microsoft Publisher;
- **Graphics software:** Used to create and edit images such as logos, drawings or pictures for use in DTP, web sites or other publications. For example Adobe Photoshop and Illustrator; Macromedia Freehand and Fireworks;

Specialist Applications include the following examples:

- **Accounting package:** Used to manage an organization's accounts including revenues/sales, purchases, bank accounts etc. A wide range of systems is available ranging from basic packages suitable for small businesses through to sophisticated ones aimed at multinational companies. Examples are LGRCIS, Oracle and IFMIS (Epicor)
- **Computer Aided Design (CAD):** Used to aid in design processes. Specialized CAD programs exist for many types of design, including architectural, engineering, electronics, roadways and water networks.

- **Customer Relations Management (CRM):** Software that allows businesses to better understand their customers by collecting and analyzing data on them such as their product preferences, buying habits etc. They are often linked to software applications that run call centers, for example.

The 'C' part of ICT refers to the communication of data by electronic means, usually over some distance. This is often achieved via networks of sending and receiving equipment, wires and satellite links. The technologies involved in communication tend to be complex. However, there are aspects of digital communications that user's needs to be aware of. These relate primarily to the types of network and the ways of connecting to the Internet.

- **Internal networks:** Usually referred to as local area networks (LAN), this involves linking a number of hardware items (input and output devices plus computer processing) together within an office or building. The aim of a LAN is to be able to share hardware facilities such as printers or scanners, software applications and data. This type of network is invaluable in the office environment where colleagues need to have access to common data or programs.
- **External networks:** Often needed for communication outside internal networks; Links to internal network form the Wide Area Network (WAN).
- **Internet:** The Internet is the network of networks, linking various standalone computers to internal networks and wide area networks.

ICT in a Broader Context

ICT also takes into consideration some aspects that may not be directly technological, but inform how technology is harnessed to achieve business objectives. These include:

- Information (the "I" in ICT); covering such aspects as the nature of information, meaning and value of information; how information is controlled; and legal aspects of information.
- Management of information - this covers how data is captured, verified and stored for effective use; the manipulation, processing and distribution of information; keeping information secure; designing networks to share information.
- Strategies and policies – covering the aspects of how ICT should be used to achieve organizational goals and objectives; policies guiding the management of ICT, and guidelines on how to use ICT with optimal effectiveness and efficiency.

2.2. Rationale and Objectives

Rationale

In this strategy, the wider context of technology that encompass Information and Communication Technologies (ICT) as well as Information Systems (IS) is adopted in order to serve the purpose of systematic deployment of the Information and Communication Technologies in Kigamboni Municipal Council located in Dar es Salaam City.

The use of ICT in the Municipality therefore is intended to optimize performance, improve cost effectiveness; and enhance quality and speed in services delivery. The Municipality will Endeavour to provide the following:

- Shared databases, making information available for authorized users;
- Expert systems, allowing generalists to perform specialist tasks;
- Telecommunication networks, allowing the Municipality to be centralized and decentralized at the same time;
- Decision-support tools, allowing decision-making to be a part of everybody's life in the Municipality;
- Wireless data communication and portable computers, allowing field personnel to work office independent;
- Interactive videodisk, to get in immediate contact with potential stakeholders and service providers;
- Automatic identification and tracking, allowing the tracking and monitoring of municipal resources, infrastructure, projects and programs planned and undertaken;
- High performance computing, allowing on-the-fly planning and reviewing;
- Voice-over-IP (VoIP) to reduce the cost of having meetings by communicating virtually; and
- Increased efficiency by overcoming software/hardware incompatibility issues by using just one platform across the entire Municipality.

There have been many attempts over the past years to establish meaningful and operational Information Systems (IS) or Management Information Systems (MIS) in LGA's and other MDA's in Tanzania. Substantial time, human and financial resources are invested in procuring computer hardware and software without corresponding investment in field data collection. As a result success has not achieved to an expected level. Major two key reasons may be:

- Lack of systematic approach in the deployment of ICT and applications due to lack of well defined and approved ICT development strategic plans; and
- That policy and decision makers at all level lack the confidence to make decision and support ICT projects. Without this confidence, information systems cannot be successful. Confidence is the result of knowledge and belief about a subject. Policy and decision makers need to understand and appreciate ICT as well as the trend of its thrust in the modern world. They need to be presented with compelling cases for investing in ICT as an enabler of business processes. Decision makers have to understand the implication of ICT in redesign of their processes, particularly the need to sustain the data collection and updates of the systems.

Based on the above facts, the rationales for the ICT strategy is to enable achieve the benefits and returns through the following:

- To plan strategically the ICT investment;

- To manage scarce ICT resources optimally;
- To prioritize ICT processes and projects based on what provides the most value;
- To measure how well the Municipality is managing the portfolio to meet the community needs; and
- To minimize risks in ICT deployment in the Municipality.

Objectives:

The ICT Strategy for the Municipality is needed to address the existing challenges and benefits for the effective provision of services and implementation of projects as well as the overall Municipal's operations. The strategy will be used by the Municipality to guide the deployment of any ICT system. The strategy involves a statement of direction and commitment from top management on the continuing role of information systems.

The strategy establishes a framework in which to fit the existing and proposed systems, infrastructure investments and determines a framework for setting priorities. It also identifies the core systems and supporting resources and investment required over the medium term, it identifies the management and technical policies that determine the means and the ground rules by which information systems will be developed and managed.

Municipal Functions in Summary

Kigamboni was first established as a district in 2015 following the Decentralization Policy in Tanzania. Prior that time all area of Kigamboni Municipal Jurisdiction was under Temeke Municipal Council Until 2015. Kigamboni Municipal Council comprise of nine Wards Kigamboni Ward, Tungi Ward, Vijibweni Ward, Kibada Ward, Mjimwema Ward, Somangila Ward, Kimbiji Ward, and Pemba Mnazi Ward. Kigamboni Municipal Council make total of 6 Councils in Dar es Salaam Region, others Councils are Tekeme, Kinondoni, Ilala, Dar es Salaam City, and Ubungo.

Kigamboni Municipal Council was established on 06th November, 2015 under the Local Government (Urban Authorities) Act, Cap 288 R.E 2002 in section 9 and 10. The Municipality comprised of 19 Departments and 9 Wards. The functions of the Municipal Council as stipulated are:

- To maintain and facilitate the maintenance of peace, order and good government within its area of jurisdiction.
- To promote the social welfare and economic well being of all persons within its area of jurisdiction.
- Subject to the national Policy and plans for rural and Urban development to further the Social and economic development of its area of jurisdiction;
- To take necessary measure to protect and enhance the environment in order to promote sustainable development;

- To give effect to the meaning full decentralization in political, financial and administrative matters relating to the functions, powers, responsibilities and services of all levels of local government authorities.
- To promote and ensure democratic participation in, and control of decision making by people concerned and
- To establish and maintain reliable source of revenue and other resources enabling local government authorities to perform other functions effectively and enhance financial accountability of local government authorities, their members and employees.

Alignment with Public Sector Reform Programmes

The second phase of the Public Sector Reform Programme (PSRP II) aimed to harness the potential of ICT in service delivery. The programme identifies the following opportunities in harnessing ICT:

- In line with the public service all over the world, it is being increasingly expected to be accountable for results and to report these results to the public. This also includes increased demands on how government funds are spent and what effect these expenditures have on service delivery and welfare; and
- The ICT revolution is offering tremendous opportunities to governments to reduce operational expenditures while improving the efficiency of their internal operations, their ability to interface and relate to citizens in terms of information as well as access and quality of services.

In light of the above observation the PSRP II aimed to put in place systems, processes and structures that enable each MDA to develop the capacity and perform efficiently and effectively in service delivery. To achieve this goal, the following outcomes are planned:

- Reduced bureaucracy and red tape in the delivery of services;
- Improved systems and structures to enhance access and efficiency of service delivery; and
- Efficient delivery of internal operational and administrative services in MDAs; and Improved management of information that supports service delivery.

Some of the broad interventions that will be needed to achieve the planned outcomes are promotion of e-government and knowledge management systems; and improve the management of records that support service delivery. Therefore the ICT strategic goals for the Municipality of Kigamboni are aligned with the Public Service Reform Programme Phase I & II (PSRP I& II) broad interventions.

Alignment with National e-Government Strategy

The E-Government Strategy in Tanzania is to “delivering quality services to the public through technology”. With that intention, e-Government involves using ICT to support processes within the government (G2G) as well as for the delivery of services to beneficiaries, such as citizens,

businesses and other organizations in all sectors¹. The e-Government Strategy specifies seven guiding principles for developing initiatives and services. These are:

- **Service Innovation:** The use of e-Government must be geared towards introducing new work methods by creating new operational processes and changing current processes, as well as by changing the government's relationship with the public. Any such innovations must clearly identify resource requirements for sustainable operations. It requires continuous research, development and M&E;
- **Equal Access:** The implementation of ICT in government processes must ensure that all citizens will have equal access; for this purpose, factors such as geographic location, the issue of time, and diversity must be taken into account. It requires developing shared internal facilities that will enable service delivery channels to be available across the general public;
- **Ease of use:** Applications that are to be implemented must be oriented towards citizens and, hence, be user friendly. It requires providing user-friendly Citizen-Care and Business-Centric services for all;
- **Benefit Realization:** Applications should ensure that the benefits obtained by citizens from using e-Government services will be greater than those from visiting government offices in person. Thus e-Government investments need to be justifiable in terms of how they help citizens and tax payers. It requires ensuring services are aligned to client expectations and address pertinent needs;
- **Security and privacy:** When implementing applications, consideration should be given to using security and privacy mechanisms to ensure the proper use and handling of personal information and transactions. It requires assuring security, legality, protection of privacy, prevention of intrusion and detection of attempts at unauthorized access;
- **Partnership and Involvement of all stakeholders:** The private sector can assist the State in providing e-Government solutions, as well as in training government employees. It requires building strategic partnership with private sector stakeholders and encouraging private-sector led innovations in delivering public services; and
- **Interoperability:** Each government department will be responsible for maintaining its electronic services and data-sets, as well as for ensuring that newly implemented systems leverage existing systems and are aligned to the principle of Open Access. This requires holistic oversight and management of systems with broad participatory design processes for new systems.

The implication of these principles on the ICT strategy for the Municipality is that the ICT infrastructure for the Municipality will be designed to:

- Streamline business processes through use of technology to improve service delivery;
- Systems are designed as part of the government-wide information systems in terms of inter-operability;

¹ Tanzania National e-Government Strategy, President's Office – Public Service Management, Dec. 2008

- Information access is readily provided to citizen in an easy to use and with consideration to security and privacy; and
- The information is shared within the Municipality departments and authorized users for planning and decision making.

These considerations inform the strategic visioning of the Information and Communication Technologies for Kigamboni Municipal Council.

The Current ICT Environment

Organization and Governance of ICT

ICT is coordinated under Information and Communication Technology Unit. The main objective of the Unit is to align the overall organization objectives with Information and communication technology, in order to improve efficiency and effectiveness for internal and external service delivery. Current functions of the ICT section include among others:

- To provide technical advice and specification accordingly to the council on all Information and communication technology (ICT) matters.
- Provide user supports and training concerning the ICT usage, troubleshooting of ICT resources and maintenance.
- To develop (in-house or outsource) required Information systems according to Municipal specifications.
- To ensure that Network connection is available all the time and well maintained to ensure availability of network resources and Internet.
- To ensure availability integrity and confidentiality of server resources, databases, Data and information storage, backup management and security.
- To provide day-to-day technical support and management of existing information systems resources, include hardware, Software, and other ICT facilities.

Resources available are summarized as desktop and Laptop computers, Printers, Projector, and CD drive, Network devices (switches/hub, cables, RJ, routers), Servers, Databases (Data and Information), Telephones, UPS, Software (packaged programs), and External Hard disks.

IT Support Staff: KGMC has 7 IT Support Staffs and 2 Information Communication Staffs which make total of 9 staffs with different levels of qualifications from basic and advanced level, this means that there is one with Masters in Information Technology and Management who is the Head of the Unit, others staffs belongs to bachelor degree and one with diploma. It is advised IT staff to undergo specialized training on ICT to effectively manage IT systems and the rapid change of technologies.

Office: There exists 3 rooms for 9 staff which are enough for now. There exists two server rooms located in each Wing of the Office building. managed by ICT staffs. It is advised to secure server room by considering all security measures, physical access should be restricted. Dust, humidity and heat controls should be in place for security.

Maintenance of IT equipments: This is usually done internally by IT Support Staff and sometimes the activity is outsourced depending on the matter at hand. It is strongly advised the maintenance of IT equipments and Upgrade of any systems and Software to be coordinated by ICT Section.

Extent of Use and ICT Literacy

Almost 98% of staff in KGMC is aware of ICT usage but the challenge remains on security issues regarding the technology. A number of Councilors are computer literate and in this case are not aware of the potentials that can be provided by ICT to effectively save the people in their area of jurisdictions. It's therefore recommended that IT training should be provided to all Councilors and decision makers in the Municipality based on the Municipal ICT policy.

Current ICT Systems

Systems: Currently the Municipality is implementing two big systems namely Local Government Revenue Collection Manager (LGRSIS), and Financial Management System (EPICOR).

Router: Cisco 180 series (router), D-Link wireless router (802.11g/2.4 Ghz) for internet.

Cables: STP and UTP cat 5e

Switches: D-Link switches 24pts, 16 pts,; and Radios for Wireless internet.

Servers:

- Server for GoTHOMIS – HP Proliant DL380G9
- Domain Server – HP Proliant DL380G9

Inter-operability was not evident as an issue within the Municipality. The reason for this is that data and information gathered and processed by the different departments is not widely shared online and as a result this might provide duplication of efforts using the limited resources available.

The computers procured for the departments should be of the same standard. The standards are comprehensive enough for procurement of all electronic devices. However, as per approved functional structure for the Municipality it is envisaged that the department mandated to manage ICT issues is responsible for ensuring standards and providing specification of all the ICT equipments procured in the Municipality. Lack of detailed technology requirement and forecast means planning for acquisition is done on the needs basis and therefore it is not possible to achieve economies of scale in procurement, maintenance and support of systems.

Capacity Building for Managing ICT

Understanding of the ICT functionalities by various operators and users of the system is one of the most important factors in the successful implementation and continued functionality of the information systems. Training shall be part and parcel of the systems implementation and for

the initialization must involve all employees and decision makers (councilors). This means the training prepared shall consider the Technical Support, System Operators, System Users, Management Team and Councilors. In a broader sense capacity building include among other things:

- Preparation and executing training program;
- Putting in place Infrastructure requirements for running the systems including office space, office furniture, IT infrastructure (Base, network, telecommunications, tools and equipments, applications, staff and process).

Approaches for deploying IT Systems

The approach proposed in this strategy is not based on developing a single harmonized database to cater for the diverse requirements of the Municipality, but rather to ensure that specific databases or IT Systems are developed in a coordinated way taking into consideration a number of factors in order to spend the meager resources effectively. To take a few examples, some of the factors to be taken into consideration as proposed in the strategy are:

- The need to ensure that each database or IT system developed is designed to take into consideration all stakeholders (sources of data and clients for the information to be generated by the database);
- Whenever possible, data and information interchange is achieved electronically, as a way of improving efficiency, but also as a way of ensuring single source of data or information to enhance integrity ;
- To ensure that systems are managed by system's owners, rather than being centralized;
- To ensure sustainability of the databases and/or IT systems, particularly those as part of projects or programmes should not become obsolete at the end of such projects; and
- To ensure an effective coordination of all the efforts pertaining to the use of ICT in the Municipality.

KGMC approach to the Information analysis and ICT solution is therefore based on the following principles:

- Simplicity - The Municipality will avoid deploying applications that require elaborate and complex activities by the end user.
- Common User Interface - The Municipality will use applications and tools that will present a common look and feel to avoid confusion and reduce user training.
- User Focus - The Municipality will ensure that all applications will be of the highest quality, responsive to user demands, adaptable to changing user needs and easy to use.
- Methodology - The Municipality will strive to procure most of its applications to avoid heavy investment ICT experts within the municipality.
- Openness - The Municipality application components will use industry standards towards vendor-neutral implementations.
- Security - The Municipality will implement security to ensure that applications and data are protected from unauthorized access.
- Timing (Buy versus Develop) - The Municipality will evaluate purchasing application solutions or integrateable components before building solutions from scratch.

- Office Automation and Utility Services - The Municipality will provide office automation functions such as word processing, spreadsheets, query/reporting and graphic tools and common utility services such as electronic mail, messaging, and file transfer throughout the technology infrastructure.

SWOT Analysis

A SWOT analysis was carried out to evaluate the issues in ICT development for the Municipality and to develop strategies for action. The highlights of the SWOT analysis are shown in the matrix below.

		Strategies
Strengths	The Municipality has recognized the role of and need of ICT and it is part of the overall Strategic Plan for the Municipality	The ICT Strategy to include design for systematic and coordinated deployment of the information systems using available scarce resources
	Availability of operational databases or ICT systems in each department or unit	Harmonize technologies used in the existing databases and ICT systems to enable interoperability and data sharing
	The Municipality is partly networked for Internet facilities but there exist no intranet services that enable sharing of information resources	<ul style="list-style-type: none"> ● Explore ways of consolidating Internet provisions to take into consideration economy of scale, security and contingency planning. ● Establish Municipal wide networking to enable the deployment of Intranet and Extranet services for improved data and information sharing.
	Existence of qualified ICT staff at the Municipality	<ul style="list-style-type: none"> ● To take advantage of the existing staff in the Municipality and retain them ● Capacity building through general and specialized Management and ICT training to enhance capability to support new technologies ● Future Upgrade of the ICT into fully fledged Unit based on the anticipated services in supporting and managing the deployment and use of ICT or information resources
	The existence of good collaboration with other ICT development partners and training institutions	<ul style="list-style-type: none"> ● To take advantage of support from development partners and ICT training institutions to establish computer based systems in a systematic manner for sustainability ● To avoid duplication of efforts and utilize in a cost effective manner the scarce resources available.
	There are thousands of manual based	To computerize all manual based records

Strategies		
	records in the Municipality	and documents in the Municipality to facilitate access and easy retrieval as an improvement of the services delivery
	Management Commitment from the Municipal in relation to budgetary resources	To avoid duplication of expenditure and utilize the same in a cost effective manner
	The availability of standalone systems in various departments and units	Integrate the technologies used in order to make the available stand alone systems sharable
Weaknesses	Difficulty in accessing the different existing information from the Municipality or from respective departments and units	Design ICT architecture to ensure data sharing between departments and units taking into consideration other stakeholders requirements
	Incompatibility and non-linkages between various databases in the Municipality	<ul style="list-style-type: none"> • Municipal -wide definition of datasets by all the data stakeholders • To undertake Capacity building to ensure that the resources are available for update of data and related information
	Lack of cross skilling within the Municipality	Establish cross skilling mechanisms
	Lack of consistency with respect to deployment and management of ICT and information systems	<ul style="list-style-type: none"> • Establish a strategy for systematic management and deployment of information systems. • Establish fully fledged ICT Unit with strategic mandates as a coordinating role in ICT deployments.
	High operational costs	<ul style="list-style-type: none"> • Using automation of the office workflow, reduce stationary and equipment maintenance costs by 15% pa • Expand the WAN to include both data and voice communication to reduce telephony costs
	Weak customer service	<ul style="list-style-type: none"> • Implement an intranet portal to hasten information sharing flow • Computerize all the business processes • Establish front office with an electronic information flow • Develop a dynamic Website to increase global reach and access to Council information • Implement electronic feedback forms to capture enquires
Opportunities	The existence of various reforms that are taking place in the government MDA's such as Public Service Reform Programme and Local Government	<ul style="list-style-type: none"> • Take advantage of the existing reforms in government MDA's to improve services delivery through ICT • Position Kigamboni Municipality as a model

Strategies	
	<p>Reform Programme.</p> <p>Commitment under MKUKUTA to strengthen MIS, also support provided by PSRP II and National e-Government Strategy</p> <p>Availability of National ICT Policy and e-Government Strategy</p> <p>Existing modern technology base can be exploited</p> <p>The intended availability of reliable internet connectivity through optic fiber with cheaper bandwidth subscription fees</p>
	<p>and pilot for implementing ICT related projects</p> <p>Align the Municipal ICT Strategy with PSRP and other reforms aspiration and the National e-government strategic framework</p> <p>Using the political support in sourcing the resources and deployment of ICT through National ICT projects/initiatives</p> <p>Exploit the available modern technology base</p> <p>Exploit fiber based internet connectivity services</p>
Threats	<p>Fragile Institutional link (wards- district-region-national levels)</p> <p>Financial resources available are scattered to support ICT activities.</p> <p>Lack of adequate human resources to manage ICT at the level of Wards and Municipality</p> <p>Donor driven ICT projects that may not be sustainable</p> <p>The absence of Documentations for the existing ICT Systems in the Municipality</p> <p>Increasingly sophisticated security risks and threats</p>
	<p>Enhance system ownership at the lowest possible point and ensure automated transfer of data to the Municipality and National Level</p> <p>Provide clear ICT project charters and investment plans for budgeting and sourcing joint assistance funding</p> <ul style="list-style-type: none"> • Ensure that there are personnel at Ward level by training the available extension staff on ICT. • Employ enough professional ICT staff at Municipal level to provide technical expertise and support <p>To develop ICT systems that is demand driven by users and owned by the Municipality for sustainability. Focus on ICT strategy</p> <p>Adhere to systems development methodologies in which documentation is a prerequisite for further maintenance and troubleshooting</p> <ul style="list-style-type: none"> • Prepare and deploy Information security policy and business continuity plan for the Municipality • Design and implement disaster recovery plans

CHAPTER 2: STRATEGIC POSITIONING

Vision

To provide appropriate Information and Communication Technologies (ICT) as the enabler of the day to day operations and service delivery in Kigamboni Municipal Council.

Mission

To transform the Municipality of Kigamboni into a modern local government entity that utilizes state of the art technology to improve efficiency and effectiveness of its operations, delivering first class service to other stakeholders and public at large.

Goal

To ensure the Municipality has in place cost effective ICT services that will support successful provision of services based on the Municipal wide Strategy governed by policies and guidelines to improve the Municipal internal and external service delivery processes with improved public access to information.

Strategic Objectives

To address the existing challenges and fulfill the vision and mission, the Municipality is adopting nine strategic objectives which will be achieved by focusing on the continuous development of its people, processes and technologies.

The strategic objectives for information:

- The prime target of information is the citizen and centered on improved service delivery through Information and Communication Technologies; and
- Information generated by ICT to serve the municipality with cost- effective service delivery at the relevant level and be made conveniently available to all stakeholders in order to enhance participation in achieving Municipal wide Strategy on services delivery governed by national policies and municipal guidelines.

The strategic objectives for data:

- To ensure data is captured at source, timely and in the highest possible quality in format, currency, relevance, and correctness;
- Centers for data capture will be the lowest possible locations where data originates, for example Sub-wards and Wards;
- Data sets will have a common definition across the municipality and the common data sets shall not be duplicated in terms of collection and storage. For example geospatial data sets will be harmonized in order to obtain comprehensive GIS to support municipal wide services;
- Whenever possible, data and information interchange is achieved electronically, as a way of improving efficiency, but also as a way of ensuring single source of data or information to enhance integrity; and

- The IT Systems will be designed to ensure confidentiality and other requirements for data protection in line with common practice or as may be stipulated in laws of the land.

The strategic objectives for technology:

- To ensure all technology components across the municipality are compatible for interoperability, interfacing and interchange;
- Ensure technology is cost effective and future-proof; and
- Ensure that the standards adopted are commensurate with intended usage and in line with government-wide standards for ICT and e-Government.

The strategic objectives for applications:

- To deploy simple to use and scalable applications;
- To ensure data capture, processing and information provision is decentralized to the lowest practical level with upward consolidation; and
- Ensure that the design of any application within the municipality takes into consideration sub-systems that serve each stakeholder.

The strategic objectives for continued access to appropriate skills and resources:

- The structure of ICT function at the Municipality is well coordinated, staffed with skilled personnel and synergized to deliver high quality ICT services. As is evident from the situational analysis, the existing ICT staff for the Municipality is not in a position to provide all the necessary resources and skills from its current internal staff complement and it's likely that additional skilled staff can be added through outsourcing some of the services;
- The systems will be managed by system's owners, rather than being centralized; at the same time ensure decentralization in terms of data capture and information dissemination; and
- Each system to be implemented will consist of a capacity building component to address infrastructure issues, skills gap and to facilitate change management for process re-engineering.

The strategic objectives for infrastructure:

- The primary role for any IT function is to provide a secure ICT infrastructure that supports the business in its day to day activities. Secure ICT infrastructure is defined as one that delivers levels of confidentiality, integrity and availability that are appropriate to the value the business puts on its data; and
- Whenever possible, IT systems will utilize the shared National e-Government network infrastructure. Including the government independent telecommunication Network, web hosting facilities and data centers envisaged to be put in place by June 2012. Where this is not feasible, the municipality will utilize secured infrastructure shared by all departments and units to integrate and run IT systems as a whole.

The strategic objectives for public access to information:

- Ensure that interaction between Municipality and its stakeholders are achieved through technology wherever possible.

- Information available for public consumption will be published in National e-Government portal or Municipal website and will be available through one-Stop information centre with regular updates.

Strategic objectives for incorporating effective Governance to ensure close alignment between ICT and Service departments

- The Municipality invests significant financial and human resources in developing, operating and maintaining ICT assets. Even if these assets are operated efficiently and securely it does not necessarily follow that ICT is contributing effectively to the achievement of municipal goals. The Municipality must strive to maximize the business value that is derived from its existing and future ICT investments through a close alignment between ICT and the service or business departments/units.
- This alignment requires prioritization of ICT projects and the provision of services that are driven by a clear business case from service or business departments/units, recognizing the successful ICT is not simply about deploying leading edge technology. As a strategic partner to the business ICT should also suggest innovative ways of achieving corporate goals or improving the delivery of existing business processes and client services.
- During the course of this strategy, the Municipality will build on the existing governance mechanisms to continue to ensure that its activities are closely aligned with the Municipal business objectives and goals.

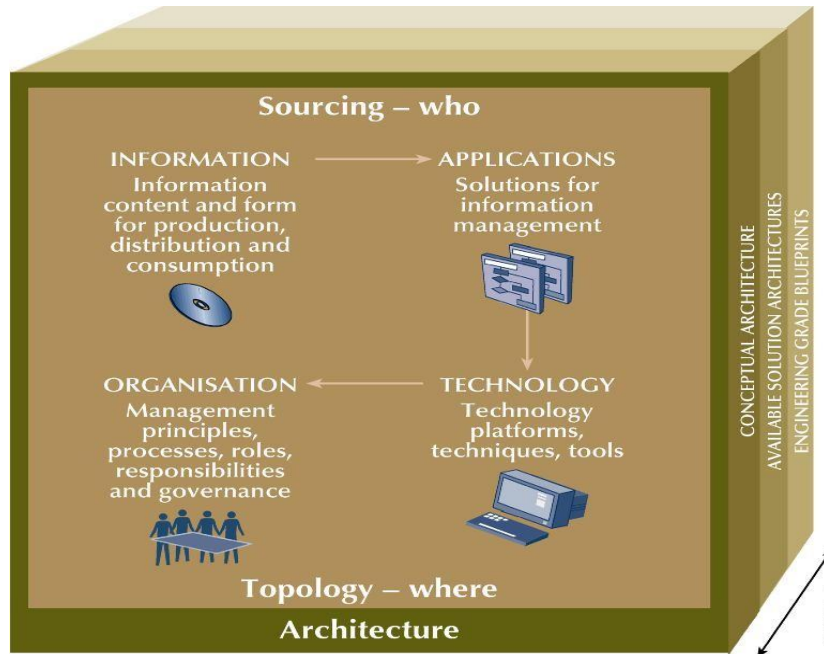
Strategic objectives for maximizing value for money from existing and future technology investments:

- Even where ICT is closely aligned with the business, full value may not be realized from ICT investments if the municipality does not make the right technology choices or does not obtain value for money from technology investments it chooses to make.
- During the course of this strategy the municipality will need to continue to invest in the core ICT infrastructure and upgrade or migrate this infrastructure where required, so that it has the technological flexibility to respond to future changes in the Municipal overall strategy.
- In doing so it must be recognized that while the municipality has over past years already made significant investments in ICT and IT systems it should not continue investing in technologies which have limited lifespan, where the vendor does not have a clear development roadmap or where the technology is not capable of meeting the municipal needs in the future (non scalability of technology).

CHAPTER 3: ICT ARCHITECTURE

The Architecture

The Municipal ICT architecture defines the detailed design of the components of ICT, including information requirements for various purposes, applications, technology, organization and strategy for public access to information. The figure below illustrates the interactions of the different components.



Information and Public Access Strategy

Improved information availability is perceived to have breakthrough in the levels of productivity, quality and improved customer service level. The Information architecture is based on the following strategic objectives:

Improve Service Delivery

The prime target of information is to improve service delivery to the citizen. To achieve this strategic objective, the following strategic actions should be achieved by 2012:

- Ensuring that each database developed in the municipality is designed to take into consideration all stakeholders within and outside the municipality. These would include sources of data, key users of the information, and clients for the information to be generated by the databases;
- Ensuring, whenever possible, that data and information interchange is achieved electronically, as a way of improving efficiency, but also as a way of ensuring single source of each data set or information to enhance integrity;
- Ensuring that databases are managed by database owners. The main thrust is to centralize each specific database to the key user entity (ownership by the key user) and

decentralize its access to data entry points (information/data suppliers) and to other information users (information clients);

- Ensuring sustainability of the databases through centralized technical support, particularly databases developed as part of projects or programmes should not become obsolete at the end of such projects; and
- Providing centralized contingency measures for all systems that form the Municipal ICT.

Improve Interaction with Stakeholders through Technology

Technology should be employed to improve the interaction between the Municipality and its stakeholders whenever and wherever possible. The strategic actions to be accomplished by 2011 are:

- All forms for service request will be made available in hard copy as well as on municipal website, whenever possible dynamic databases should be developed so that forms are completed on-line;
- All public information that is usually requested by and provided to the general public through calls, written requests or physical visits to the municipality offices shall be made available on the website;
- The webmasters and/or dedicated database staff will regularly keep the websites and databases updated, and ensure completed forms are channeled to responsible personnel and that response to the forms and queries are made in a timely manner, either on-line or by any other means possible;
- Customers' statements shall either be emailed when they are due, or made accessible to customers on line; and
- Each department and unit will describe what information, service or products can be provided by the Municipality to the public and other stakeholders; how the public can access such information, service or products and whether such is for free or for fee.

Ensure Quality of Data

The objective is to ensure data is captured at source, timely and in the highest possible quality (format, currency, relevance, correctness). The strategic actions to be actively achieved by 2012 are;

- Data capture equipment, such as computers, PDAs and the like will be used to capture data at source and entered at the lowest administrative point possible (the data collection forms/databases will be located at centers such as Sub-Wards and Wards offices);
- Whenever possible web-based databases will be implemented to enable remote centres to access them; and
- The design of the systems will be such that data is entered by the primary user rather than submitting hard copies of the same to the Municipality.
- Each system will have a matrix of information requirements and information clients.

Applications Strategy

The applications architecture is based on the following strategic objectives:

Decentralization of Systems Management

The objective is to ensure data and information management is decentralized to the lowest practical level while consolidation and coordination is upwards. The strategic actions to be achieved by 2012 are:

- Databases designed as components of the municipal wide ICT applications will be maintained by the relevant departments; and
- Databases will be designed to provide consolidation to the higher level (e.g. from Wards Offices to the Municipal Headquarter Offices).

Holistic Design of Systems

Ensure design of systems takes into consideration sub-systems that serve each stakeholder in the municipality. The strategic actions to be achieved by 2012 are:

- During systems design phase for any database, consideration will be made of all the information stakeholders in addition to the requirements of the key users;
- Definition of datasets will be based on the agreed municipal-wide definitions, and therefore database design will take into consideration existence of similar databases elsewhere in the municipality and other central government ministries and how such data can be sourced; and
- Based on decentralization process and cost effective management of data centres, the topology of the applications will be such that applications are deployed to the lowest coordination unit that gathers data from sources, and directly consolidated at the municipal headquarter with a database and backup servers managed by Municipal ICT office at the headquarter.

Technology Strategy

The key objective is for the municipality to harness technology in its service delivery. The technology chosen should be cost-effective, future proof and enable integration of all systems at the municipality. The technology architecture is based on the strategic objectives listed below:

Interoperability

To ensure infrastructure and technology in place allows for inter-operability, interfacing and interchange. The strategic actions to be achieved by 2012 are:

- Similar technology infrastructure will be implemented across the municipality. The municipal ICT unit will specify how the telecommunications link will work between departments, units, wards, etc, and what database engines should be used for new databases and how the databases will interface;
- The Municipal ICT unit will identify the need for custom vs. package vs. hybrid solution delivery; and
- The Municipal ICT Unit will determine the Municipal-Wide Standards for Operating Systems for personal computers, Applications (Office Software, GIS development, Web

Development, etc), Database engines, Server operating system, Firewall Software and Mail Clients.

Scanning of Technology

The technology horizon is fast evolving, with a turnover in technology evolution of around 18 months. For this reason, the ministry's choice of technology will have this long-view focus based on future trends rather than current ones. For example, the wireless technology is fast becoming a de-facto standard for vendors, replacing cabled networks which are expensive, less efficient and requiring continuous support and maintenance.

The strategic actions to be achieved by the end of 2012 are:

- For each technology platform identified, the municipality needs understanding the evolution of the platform and the relevance and value of their introduction to the municipality; and
- Whenever possible, the municipality will adopt open-source technology or any non-proprietary technology that is future proof but with approval from the PO-PSM.

Local Area Network Standards

There will be a Local Area Network (LAN) at the Ministry Head Quarters and at each satellite office (wards). The strategic actions for local area networks to be achieved by 2011 are:

- The municipal ICT Unit shall oversee design of LANs, WANs, Internet Provision, Intranet Provision, Website Design, Email Services, etc.;
- Each new building that is constructed by the Municipality must include a Local Area Network cabling as part of construction works. The minimum network standard must be Ethernet category six or higher as may be specified in government standards issued by the relevant body. Dual Port Points will be installed to serve for telephone and data; and
- The minimum network standards shall be as per standards provided by any government agency mandated to provide government standards as issued from time to time.

Wide Area Network Standards

The strategic actions on WAN to be achieved by 2012 are:

- The local area networks will all be linked to the Wide Area Network managed at the municipal Headquarters; and
- The WAN will be served by a Virtual Private Network (VPN) through Internet until the government independent network proposed in the e-Government strategy is in place. The Internet Link will be connected at headquarters through fiber technology adopted by the Government. Then one VPN links will be installed at the Head quarters, and one at each of the satellite LANs (Wards, etc).

ICT Hardware Standards

ICT Hardware will be based on standards proscribed by the relevant government body responsible for ICT Standards and based on the Municipal information security policy to be developed. The strategic actions by 2010 are:

- All ICT hardware shall be procured network ready at delivery;

- Servers will be installed at the Municipal Council as file and application server, database server, web/Internet server and backup servers. The web/internet server will also provide for VPN link between locations. An additional servers will be installed as a database server at points where databases are located;
- There shall be off-campus backup servers for security purposes. A secure place will be identified; and
- The ICT unit shall be responsible for ensuring that ICT hardware standards are adhered to during procurement processes.

Internet and Intranet

The Head office local area network will be installed essentially to facilitate the sharing of internet broadband, intranet and provision of management information. The strategic actions by 2012 are:

- Defining the objectives of the Municipal intranet and setting respective access privileges;
- Developing and deploying the intranet; and
- Building capacity for staff to utilize the Intranet for document and information sharing.

Organization

The Municipality is decentralizing by devolvement. The services will increasingly be decentralized from the municipal headquarters to the sub-ward and wards. The organization strategy is such that data and information management will be devolved to lowest appropriate level, with consolidation upwards to support decision making and coordination of activities. There will be enhancement data collection forms/data registries and databases at each level.

Relevant training will be provided to the technical personnel and all ICT users at each level to ensure they operate with the same sense of purpose.

Governance

The Municipal ICT Unit mandated role will be to provide expertise and services on application of ICT and e-Government services to the Municipality. These include among others the following:

- Implement IT and e-government strategy coordinated by the PO-PSM;
- Develop and Coordinate integrated IT systems for the Municipality;
- Ensure maintenance of hardware and software;
- Coordinate and provide support on procurement of software and hardware;
- Establish and Coordinate use of email, LAN and WAN; and
- Carryout studies for use of ICT to improve service delivery.

Capacity Building

The strategic actions for capacity building by 2012 are:

- To achieve 100% for basic computer knowledge and internet/intranet usage for all employees in the Municipality especially staff at strategic, tactical and operational level.

All officials who require information from specialized databases should be able to access the information directly;

- All members of staff should be able to use the Workflow and Document Management Systems to access documents stored therein in line with access privileges set;
- All technical staff (e.g., engineers, surveyors, planners, accountants, etc) should be trained at medium to high level specialized ICT training based on their area of usage of the systems and specialties;
- Personnel at the municipal council ICT Unit and in database sections of departments should be provided with professional ICT Courses; and
- Each system to be implemented will consist of a capacity building component to address skills gap and to facilitate change management for process re-engineering.

Policies and Procedures

ICT policies and procedures are key component of the overall management of ICT. The procedures illustrate how systems are used and managed, the roles and responsibilities of users and technical staff, and the routines that need to be carried out to ensure integrity and security of data and information. The strategic actions for policies and procedures by 2012 are:

- Each system to be introduced at the municipality shall have comprehensive technical documentation to ensure that maintenance and troubleshooting can be passed over to internal staff;
- Each system will have comprehensive user procedures, which will be used as training materials for users as well as first point of reference in operations;
- The ICT unit will develop overall information security policies and business continuity plan. These will include: An overall ICT Policy, Computer Security Policy, Internet and Email usage policy, Business Continuity Plan; and
- The ICT Unit will from time to time will monitor the adherence to these policies as well as their effectiveness. The policies will be reviewed from time to time as the need may arise.

CHAPTER 4: THE CONCEPTUAL FRAMEWORK FOR INFORMATION SYSTEMS

This chapter describes the conceptual framework of the Information Systems. The objective is to describe at a high level the general design of all Information Systems and sub-systems and linkages, sources of data or information and the databases to be used.

These will comprise of databases that will capture and organize data into information that can be used in planning and implementing projects. Technical database shall enable sharing of technical data for planning and execution of projects.

From the strategic visioning presented above, the high level systems requirements that are components of the overall Municipal-wide ICT usage are:

Core systems:

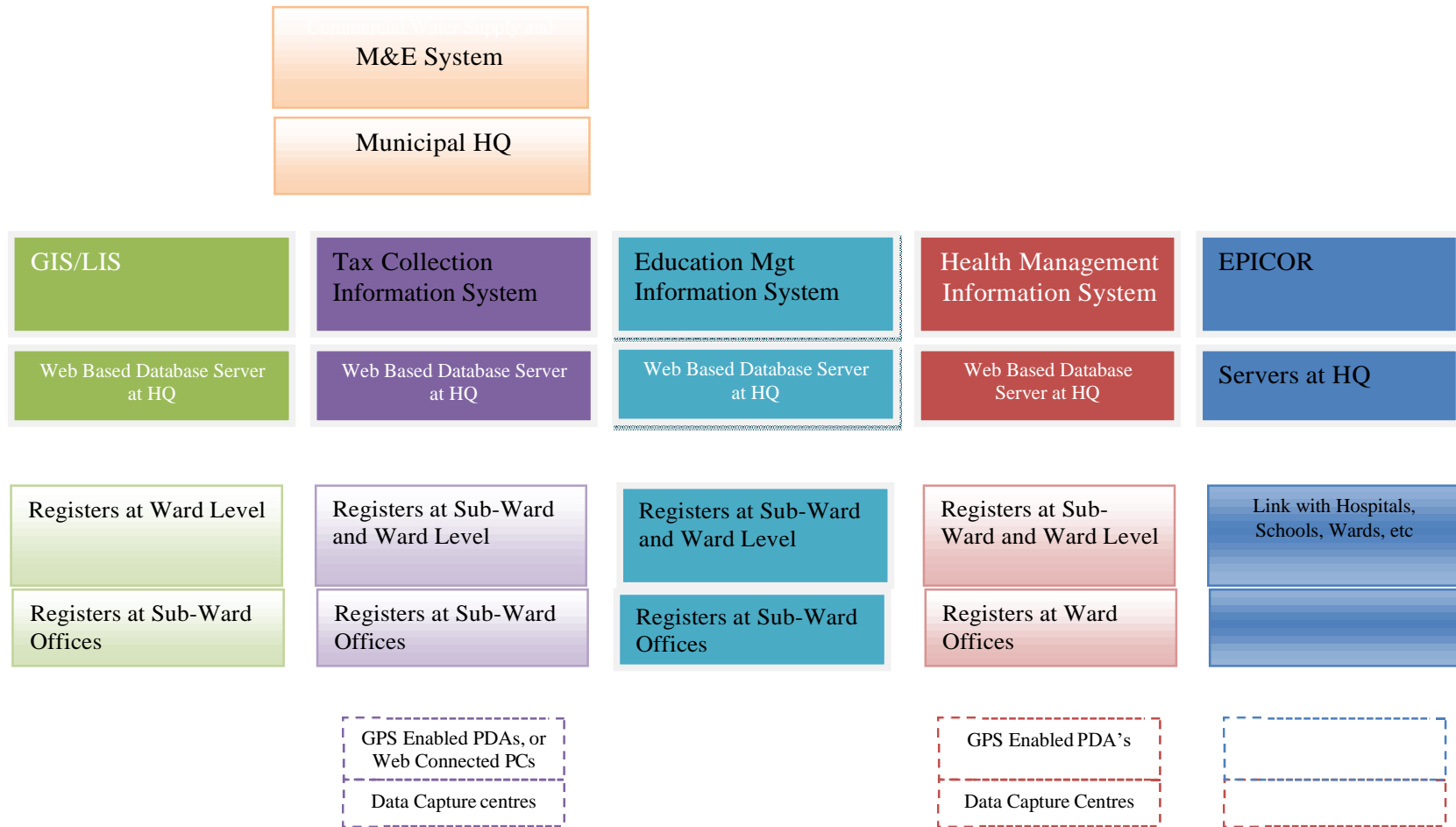
- Monitoring and Evaluation System;
- Geographic Information System/Land Information System;
- Human Capital Information System;
- Education Management Information System;
- Health Management Information System;
- Integrated Financial Management Information System; and
- Tax Collection Information System linked with GIS technology to capture tax payers

Support systems

- Workflow and Document Management System;
- Procurement and Contract Management System;
- Transport Management Information System;
- One stop information centre; and
- Specialized Application Systems.

Table 4.1 depicts the graphical framework of the core systems that are components of the overall Municipal ICT application. The diagram shows where the systems ownership will reside and where the systems will be implemented to capture data and provide information.

Table 4.1: Graphical Framework for some of Core Systems



ICT Project Outputs and Performance Indicators

Project Objective 1

Establish the technical infrastructure to facilitate communication, dissemination of information electronically and automation of key business functions.

No	Outputs	Performance Indicators
1.1	Equipment procurement, installation and configuration	Operational infrastructure facilitating <ul style="list-style-type: none"> • Internal information sharing among departments and units • Electronic communication between Kigamboni Municipal Council Headquarters, Wards, Health and Education facilities • Automation of key business applications at the Headquarters and their extension to the wards, health and education facilities
1.2	Software procurement, installation and configuration	
1.3	Local area network (LAN) design, procurement, installation and configuration	
1.4	Wide area network (WAN) design, procurement, installation and configuration,	

4.1.2 Project Objective 2

Improve and implement sound financial management system to include Expenditure Accounting, Revenue Accounting and Billing

No	Outputs	Performance Indicators
2.1	An operational expenditure accounting system to record and store annual expenditure budgets, payments, Cheques, loans, imprests and bank / cash details.	<ul style="list-style-type: none"> • Recording and production of payment vouchers from the system with budget control and tracking • Recording and production of cheques from the system with cash control • Recording of all staff debts – loans and imprests on the system • Reconciliation of the cash ledgers on the system • Production of monthly, quarterly and year-end financial reports from the system • Abandonment of parallel manual accounting system.
2.2	An operational revenue accounting and billing system to record and store details, enable billing / recording collection of all relevant payments due to KGMC	<ul style="list-style-type: none"> • Recording all revenue collections on the system • Printing all revenue receipts from the systems • Recording and production of all bills – Service Levy, Hotel Levy, business license and Land rent from the system. • Reconciliation of collections on the system • Tracking collections against the budget estimates • Production of monthly, quarterly and year end reports. • Abolishment of parallel manual systems

Project Objective 3

Establish and implement Customer Service system to handle inquiries, requests and complaints

No	Outputs	Indicators
3.1	An operational customer service system that records and tracks all inquiries,	<ul style="list-style-type: none"> • Well utilized KGMC Website • Number of inquiries, requests and

No	Outputs	Indicators
	requests and complaints from the general public, tracks all internal actions taken and the responses provided.	complaints handled <ul style="list-style-type: none"> • Response time for inquiries, requests and complaints • Availability and quality of response/information to citizens • Level of customer satisfaction (to be measured by surveys) • Reports

Project Objective 4

Institute ICT security and maintenance standards and strategies to ensure long-term sustainability and to realize benefits of the investments made.

No	Outputs	Indicators
4.1	Document entailing ICT security guidelines	<ul style="list-style-type: none"> • Approval and implementation of the recommendations made • Secure infrastructure and systems
4.2	Document entailing regular maintenance guidelines	<ul style="list-style-type: none"> • Approval and implementation of the recommendations made • Operational and functional infrastructure and systems

Project Objective 5

Provide ICT awareness and training sessions to employees and councilors

No	Outputs	Indicators
5.1	Council commitment to ICT	<ul style="list-style-type: none"> • Successful implementation and operations of all systems • Council ownership of the systems and resource allocations • Citizen satisfaction
5.2	Management commitment and capability	
5.3	End User commitment and capability	

Project Objective 6

Institute change management and communication strategies to facilitate evolution into an e-governance model

No	Outputs	Indicators
6.1	Document entailing changes in key processes with staff sensitization plans	<ul style="list-style-type: none"> • Successful ICT implementation and operations • Employee retention • Employee satisfaction • Customer satisfaction
6.2	Appointment of change agents	
6.3	Establishment of monitoring, evaluation and reporting mechanism	
6.4	Establishment of appropriate management, responsibility and accountability structures.	

Project Objective 7

To establish a Geographic Information System for handling Municipal spatial and non spatial datasets for improved planning and revenue collection.

No	Outputs	Indicators
7.1	GIS designed to support KGMC spatial and non spatial data handling	<ul style="list-style-type: none"> Available spatial data sets in digital format
7.2	GIS Equipment procurement, installation and configuration	<ul style="list-style-type: none"> Improved data management for physical and environmental planning Increased revenue from land rents, property tax, bill boards, business license, etc The Public is accessing spatial based revenue information on internet
7.3	GIS Software procurement, installation and configuration	
7.4	Physical Planning Departments computerized	

Project Objective 8

To improve the collection, processing and access of Health information

No	Outputs	Indicators
8.1	Health Information System operational	<ul style="list-style-type: none"> Municipal Health Office is accessing and sharing data on network/internet The Public is accessing health related information on from the Internet Improved planning and distribution of health facilities and services in the Municipality

Project Objective 9

To improve the collection, processing and access of education information.

No	Outputs	Indicators
9.1	Education Information System operational	<ul style="list-style-type: none"> Municipal Education Office is accessing and sharing data on network/internet The Public is accessing education related information on internet Improved planning and distribution of education facilities and services in the Municipality

Project Objective 10

To improve the collection, processing and access of human capital information.

No	Outputs	Indicators
9.1	Human Capital Information System operational	<ul style="list-style-type: none"> • Municipal Human Resource Office is accessing and sharing data electronically • Improved management of human resource information/data for planning and recruitment • Quick response for human resource requirements in terms of salaries, allowances, leaves, training, and other benefits.

Project Objective 11

To improve workflow and document management.

No	Outputs	Indicators
11.1	Document and Assets Management System operational	<ul style="list-style-type: none"> • Various documents and assets are properly indexed at the Municipality • Various documents and records are computerized and accessed electronically through indexing • Documents and records are shared electronically through intranet • Improved performance in accessing documents and records.

Project Objective 12

To improve the management of vehicles and usage

No	Outputs	Indicators
12.1	Transport Management System operational	<ul style="list-style-type: none"> • Various documents and records related to vehicles are computerized (vehicle information, fuel records, maintenance registry, etc) • Vehicles records are accessed electronically • Vehicle records are shared electronically among the departments through intranet • Trained users • Improved performance and monitoring of the usage of vehicles

Project Objective 13

To enhance the existing Planning, Budgeting and Procurement

No	Outputs	Indicators
13.1	The MIS for planning, budgeting and procurement operational	<ul style="list-style-type: none"> • Planning, budgeting and procurement processes documented • MIS for planning, budgeting and procurement design • Trained users • Support implementation activities • Support post implementation activities • Planning, budgeting and procurement processes integrated

ICT Projects and Activities

For each of the objectives mentioned, relevant supporting projects and their associated activities have been documented below.

Objective 1 – Establish Technical Infrastructure

No	Project	No	Activities
1.1	Procure ICT equipments	1.1.1	Procure and commission Central servers
		1.1.2	Procure and commission Workstations
		1.1.3	Procure and commission printers
		1.1.4	Procure and commission network components and accessories
		1.1.5	Procure and commission power stabilizers
		1.1.5	Procure GIS Hardware
1.2	Procure licensed applications and system software	1.2.1	Procure and install operating systems
		1.2.2	Procure and install RDBMS
		1.2.3	Procure and Install GIS software
		1.2.3	Procure and install Antivirus
		1.2.4	Procure and install Office Application software
1.3	Building Works	1.3.1	Prepare server room
		1.3.2	Prepare IT support rooms
		1.3.3	Prepare computer stations in respective departments and units
1.4	Recruitment and Training	1.4.1	Recruit IT personnel
		1.4.2	Train IT Personnel for various certifications and specializations

Objective 2 – Improve the revenue collection system and implement a sound financial management system.

No	Project	No	Activity
2.1	Revenue Collection System	2.1.1	Utilize available system (LGRCIS)
		2.1.2	Train users
		2.1.3	Support implementation activities
		2.1.4	Support post implementation activities
2.2	Interfacing with GIS and/or LIS	2.2.1	Design and develop interface
		2.2.2	Train users
		2.2.3	Support implementation activities
		2.2.4	Support post implementation activities

Objective 3 – Establish and implement customer service system

No	Project	No	Activities
3.1	Establish customer service function	3.1.1	Recruit customer service representatives
3.2	System Analysis, Training and Implementation	3.2.1	Specify contents of web-site
		3.2.2	Develop web site
		3.2.3	Procure base software
		3.2.4	Provide user training
		3.2.5	Support implementation activities
		3.2.6	Support post implementation activities

Objective 4 – Institute ICT security and maintenance standards

No	Project	No	Activities
4.1	Document ICT security Policy and Business Continuity Plan	4.1.1.	Prepare information security policy
		4.1.2	Prepare business continuity plan
		4.1.3	Approve Municipal information security policy and contingency plan
		4.1.4	Create awareness and train users
		4.1.5	Institute the ICT policy and business continuity plan

Objective 5 –ICT awareness and training sessions to stakeholders

No	Project	No	Activities
5.1	Training to Councilors	5.1-5.4	Prepare ICT Training Programmes and Conduct Training
5.2	Training to Heads of Departments and Sections/Units		
5.3	Train Ward Executive Officers		
5.4	Train Department Personnel		
5.5	Citizen Awareness and sensitization	5.5.1	Enable citizen orientation and participation
		5.5.2	Assess information needs of local community groups and businesses
		5.5.3	Identify appropriate communication media

		5.5.4	Tailor web site to community information needs
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Objectives 6: Establish a Geographic Information System.

No	Project	No	Activity
6.1	Develop a GIS to Support Physical Planning, Environmental Management; and Revenue Collection from various sources	6.1.1	Design and develop GIS
		6.1.2	Train users
		6.1.3	Support implementation activities
		6.1.4	Support post implementation activities

Objectives 7: To improve the collection, processing and access of Health information.

No	Project	No	Activity
7.1	Health Information System	7.1.1	Apply/Design and develop the system
		7.1.2	Train users
		7.1.3	Support implementation activities
		7.1.4	Support post implementation

Objectives 8: To improve the collection, processing and access of Education information.

No	Project	No	Activity
8.1	Education Information System	8.1.1	Apply/Design and develop the system
		8.1.2	Train users
		8.1.3	Support implementation activities
		8.1.4	Support post implementation

Objectives 9: To improve the collection, processing and access of Human Capital information

No	Project	No	Activity
9.1	Human Resource Info. System	9.1.1	Apply/Design and develop the system
		9.1.2	Train users
		9.1.3	Support implementation activities
		9.1.4	Support post implementation

Objectives 10: To improve workflow and document management system

No	Project	No	Activity
10.1	Workflow and Document Management Information System	10.1.1	Design and develop the system
		10.1.2	Train users
		10.1.3	Support implementation activities
		10.1.4	Support post implementation

Objectives 11: To improve the management of vehicles and usage

No	Project	No	Activity
11.1	Transport Management System operational	11.1.1	Apply/Design and develop the electronic system
		11.1.2	Train users
		11.1.3	Support implementation activities
		11.1.4	Support post implementation

Objectives 12: To enhance the existing Planning and Budgeting Systems

No	Component	No	Activity
12.1	Enhanced Planning and Budgeting System	12.1.1	Connect the system to all departments electronically
		12.1.2	Train all users
		12.1.3	Support implementation activities
		12.1.4	Support post implementation

CHAPTER 5: SUCCESS FACTORS, RISKS AND STAKEHOLDER ANALYSIS

Critical Success Factors and Risks

The success deployment of ICT in the Municipality requires a high level of coordination, a constant demand of tangible results, proactive leadership and strong management. There always a number of critical success factors and risks associated with ICT implementation. Some of the key ones are highlighted.

Critical Success Factors

The ICT strategy for the Ministry highlighted some of the critical success factors for the successful implementation of the ICT initiatives.

Table 5.1 Analysis of Critical Success Factors

Critical Success Factors	Requirements
Management support and commitments	<ul style="list-style-type: none"> Continuing engagement of management at all levels of implementation
Availability of Human Resource capacity	<ul style="list-style-type: none"> Continuous capacity development and public involvement
Institutional and Legal Framework	Clearly defined institutional framework and supportive legislation and enforcement mechanisms
Financial Resources	<ul style="list-style-type: none"> Recognition of ICT as a priority area in facilitating the delivery of Municipal services Cost effectiveness in the allocation and use of available financial resources and avoid duplication of efforts or redundancies
Commitment by all actors	<ul style="list-style-type: none"> Continuous coordination and buy-in by all actors or stakeholders Active coordination among all stakeholders to delivery and enforce the improvement of services delivery through ICT
Sustainable Infrastructure	<ul style="list-style-type: none"> Network and information security Infrastructure to sustain the use of IT systems Reliable infrastructure to support continuous availability of data from fields Availability of reliable power supply (generator can be used while power is off) Improved working environment

Risk Management

Risk is about uncertainties and constraints. There are a number of risks and dependencies which may impact the successful implementation of this strategy. In this manner risk management shall be a major concern and will involve activities undertaken with the intent of providing a plan that minimizes the adverse impacts of risk on project resources. Possible risks and mitigation measures have been identified in the table 5.2 below.

Table 5.2 Risk Matrix

Risk	Impact	Mitigation
Donor dependence	High	<ul style="list-style-type: none"> Local funding Public private partnerships
Resource availability	Medium	<ul style="list-style-type: none"> Government funding for IT projects Public Private Partnerships Effective Management of scarce funds available and integration of development partner's funds
Councilors and Management Commitments and support	High	<ul style="list-style-type: none"> Sustain political and management commitment Solve issues related to non-ICT solutions Public Private Partnerships Delivery of electronic services for decision making
Resistance to change	High	<ul style="list-style-type: none"> Raise awareness and continuous ICT training Manage expectations Involve all users Clarity of scope, roles and responsibilities Expose technology and do not underestimate the resistance to change within the Municipality
Technological failure	Medium	<ul style="list-style-type: none"> Business continuity Disaster recovery plan Do not over trust in technology solutions
Technological Obsolescence	Low	<ul style="list-style-type: none"> Planning of technological refresh Build internal capacity
Privacy and security	High	<ul style="list-style-type: none"> Information security policy Security measures Effective rules and regulations
Dependence on technology supplier	Medium	<ul style="list-style-type: none"> Use standard-based technology Effective contract management

Risk	Impact	Mitigation
Poor data quality	High	Computers will not clean up a mess that exists already. If the existing procedures are not well defined, if there is incomplete data and if there are conflicting objectives for the systems, ICT is not a substitute. Therefore the following are needed: <ul style="list-style-type: none"> • Well defined procedures • Non conflicting of objectives for the system
Stakeholders with different objectives	Medium	Support and commitment of key stakeholders is a critical success factor. If the stakeholders do not feel that their objectives are not being served by the proposed ICT solutions, they will not support it. This gap can be addressed by ensuring that the stakeholders participate in the process and their interests are considered. Frequent communication with the stakeholders as to what will be happening will reduce the stakeholders’ uncertainty.

Stakeholder Analysis:

Stakeholders are grouped into the following 6 groups: Their participation, commitment and interest in supporting the implementation of projects prioritized in this Strategy is vital to the overall success.

The Government of Tanzania through: the Ministry of Regional Administration and Local Government has initiatives to ensure that LGA’s in Tanzania are using IT in the improvement of services. For example, the LGA’s has been supported to operationalize EPICOR System; Planning and Reporting System (PlanRep); Local Government Monitoring Database, etc. The Sector Ministries such as Health, Education, and Water are interested in assessing impact of sector programmes and provision of quality sector services to the citizens

KGMC Councilors elected by the people, have the overall responsibility to ensure good governance and performance by employees. The Councilors are answerable to the citizens. This group is a key project promoter and their involvement is very critical.

KGMC Senior staff support can bring access to organizational resources, can signal the importance of the strategy to other stakeholders and may suppress some type of user resistance. They will need to be trained first – before other staff, in order to give them a head start on the expected changes, changes management and ultimately be effective change agents.

KGMC IT Staff as the core of ICT systems will need to combine technical skills with an understanding of the Council operations and management in order to become effective facilitators with responsibility to implement change along identified dimensions.

KGMC Employees – Of all stakeholders, this group best understands what will work and what will not work. Giving users a bigger say in selection /development of ICT solutions is critical.

KGMC citizens will be the primary beneficiaries of improved service delivery model. Their satisfaction will result in maximization of revenue generation for the council.

Donor Agencies and International community's emphasize accountability, transparency and social and economic development, when making decisions regarding financing for development.

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