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STRATHMORE RESEARCH AND CONSULTANCY CENTRE LIMITED (SRCC)

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**TECHNICAL PROPOSAL**

<b>TITLE OF TENDER:</b>	<b>CONSULTANT TO SUPPORT THE DEVELOPMENT OF THE AGILE CHATBOT</b>
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**10<sup>th</sup> MARCH 2022**

**SUBMITTED TO:**

LVCT Health

<https://lvcthealth.org/>

[recruitment@lvcthealth.org](mailto:recruitment@lvcthealth.org)

## CONTACT INFORMATION

Dr. Joseph Sevilla	Director, @iLabAfrica Strathmore University Email: <a href="mailto:jsevilla@strathmore.edu">jsevilla@strathmore.edu</a> Phone: +254723656009
Emmanuel Kweyu	Deputy Director, @iLabAfrica Strathmore University Email: <a href="mailto:ekweyu@strathmore.edu">ekweyu@strathmore.edu</a> Phone: +254 722 679154
Joyce Bodo	Bids Co-ordinator, @iLabAfrica Strathmore University Email: <a href="mailto:jbodo@strathmore.edu">jbodo@strathmore.edu</a> Phone: +254 710 596706
Cosmas Gitonga	Technical Writer, @iLabAfrica Strathmore University Email: <a href="mailto:cgitonga@strathmore.edu">cgitonga@strathmore.edu</a> Phone: +254 728 817079
Strathmore Research and Consultancy Centre (SRCC)	P.O. Box 28491-00200 Email: <a href="mailto:info@srcc.co.ke">info@srcc.co.ke</a> / <a href="mailto:bids@strathmore.edu">bids@strathmore.edu</a>



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## PROPOSAL SUBMISSION LETTER

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Nairobi, 10<sup>th</sup> March 2022

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To: LVCT Health  
[recruitment@lvcthealth.org](mailto:recruitment@lvcthealth.org)

Dear Sir/Madam:

We, the undersigned, offer to provide the consulting services for **development of a Chatbot Accelerating access to Gender-Based Violence Information and Services Leveraging a Technology-Enhanced Chatbot (AGILE-Self Care Model)** in accordance with your TERMS OF Reference and our proposal.

We are hereby submitting our proposal, which includes this technical proposal and our financial proposal. We agree, as evidenced by signature below, our completed and signed proposal including all required submissions.

We are not suspended, nor debarred, nor otherwise identified as ineligible by any local organization or any other international organisation nor conflicted in any manner. Additionally, by our response to this RFP and accompanying signatures, we confirm that the terms and conditions associated with this RFP document have been carefully read and understood and all requirements responded to.

We understand you are not bound to accept any proposal that you receive.

We remain,

Yours sincerely,



Emmanuel Kweyu - Deputy Director, @iLabAfrica  
Strathmore Research and Consultancy Centre (SRCC)  
Keri Road, Madaraka Estate  
P.O. Box 59857-00200  
Mobile: +254 717730466  
Email: [ekweyu@strathmore.edu](mailto:ekweyu@strathmore.edu)



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## 1.0 COMPANY AND KEY PERSONNEL

### 1.1 Consultant's Background Information

The development of agile Chatbot for LVCT Health shall be done by **@iLabAfrica - Strathmore University through Strathmore Research and Consultancy Centre (SRCC) Limited.**

SRCC is the consulting arm of Strathmore University and has been in operation since 2003 after being incorporated in 2002. Therefore, SRCC is a Limited Liability Company operating under Companies Act (2015) of Kenya. The firm coordinates the consultancy work of the Strathmore University to ensure that clients receive high quality advisory work under generally accepted commercial arrangements.

@iLabAfrica (<http://www.ilabafrica.ac.ke>) is Strathmore University's Centre of Excellence in ICT Innovation and Development established in January 2011. It was established to address the Millennium Development Goals (MDGs), the new 2030 Sustainable Development Goals (SDGs) and to contribute toward Kenya's Vision 2030. The research centre is involved in interdisciplinary research, students' engagement, collaboration with government, industry and other funding agencies.

@iLabAfrica has competency and experience in providing the following ICT solutions: Monitoring and Evaluation (M&E) Systems, Web Portals, Business Applications, API Development, Automation of County Government Operations: Citizen Services Delivery; Learning Management Systems, eCommerce Websites, Mobile and Telephony Applications, Supply-Chain Applications, Real-Time and Embedded Systems (RTOS), Payment Gateway Solutions and Data Visualisation Systems.

@iLabAfrica is managed by a director and a deputy director, who both report to the University Council of Strathmore University. @iLabAfrica as a centre has a team of over 65 members that comprises of a rich inter-disciplinary mix of researchers with technology and business expertise capable of meeting the requirements of the centre. Both @iLabAfrica and SRCC are located in the Strathmore University Student Centre along Keria Road, Madaraka Estate, Nairobi Kenya. The organization is structured into several units with each team being headed by a manager as shown below:

**Table 1: The Organisational Chart of @iLabAfrica**

Name	Title	Email
Dr. Joseph Sevilla (PhD)	Director	jsevilla@strathmore.edu
Mr. Emmanuel Kweyu	Deputy Director	ekweyu@strathmore.edu
Ms. Irene Gitangu	Grants and Operations Manager	igitangu@strathmore.edu
Dr John Olukuru (PhD)	Head of Data Science Research	jolukuru@strathmore.edu
Mrs. Imelda A. Mueni	IT Outsourcing Manager	imueni@strathmore.edu
Mrs. Lorna Mutegi-Kamau	Industry Relations Manager	lmutegi@strathmore.edu
Ms. Linda Kwamboka	@iBizAfrica (Business Incubator) Manager	lkwamboka@strathmore.edu
Ms. Eunice Maingi	IT Security Centre Manager	emaingi@strathmore.edu
Mr. Michael Gichure	Digital Learning & EduTech Manager	mgichure@strathmore.edu
Ms. Diana Mutua	Public Relations Manager	dmutua@strathmore.edu
Mrs. Joyce Bodo Orata	Bids Unit Manager	jbodo@strathmore.edu

**Source: Strathmore University (2022)**



## 1.2 Consultant's Organizational Experience

@iLabAfrica has undertaken and completed projects of a similar nature in the last 10 years.

<b>1.</b>	<b>Name of Project:</b>	<i>The Kenya Health and Research Observatory - KHRO</i>
	<b>Name of Client:</b>	World Bank / WHO/ Ministry of Health of Kenya
	<b>Project Description:</b>	<b>Kenya Health and Research Observatory (KHRO)</b> web portal ( <a href="https://khro.health.go.ke/#/">https://khro.health.go.ke/#/</a> ), is an information technology platform designed to facilitate multi-stakeholder collaboration and partnership in accessing and using information for strengthening national health information systems as well as serving as a repository for the best available information and provide tools to strengthen the monitoring of health sector performance. The KHRO has two distinct but interrelated functions, namely “ <b>Data and Statistics Platform</b> ” and “ <b>Research Knowledge Translation Platform</b> . <b>”</b> It plays an instrumental role in monitoring the country’s progress towards UHC.
	<b>Approx. Project Cost:</b>	USD: 200, 000
	<b>Duration of project:</b>	Phase 1 (May 2019 – Feb 2020); Phase 2 (Oct 2020 – April 2021)
	<b>Contact Person:</b>	Mr Leonard Cosmas, Health Information and M&E Technical Officer WHO Kenya Country Office Email: <a href="mailto:cosmasl@who.int">cosmasl@who.int</a>
<b>2.</b>	<b>Name of Project:</b>	<i>Development of Animated Training Manuals</i>
	<b>Name of Client:</b>	Alliance for a Green Revolution in Africa (LVCT Health)
	<b>Project Description:</b>	Development of animated training manuals on good agronomic practices on different crops. The project involved creation of three 3D animations and eight 2D animations. The animations were in languages majorly spoken throughout the African region, i.e. English, Swahili, French and Portuguese. The training videos will be used to train farmers across Africa.
	<b>Approx. Project Cost:</b>	USD: 48,494.96
	<b>Duration of project:</b>	Aug 2019 - Nov 2021
	<b>Contact Persons:</b>	Name: Qureish Noordin Position: Program Officer - Extension Services Email: <a href="mailto:QNoordin@agra.org">QNoordin@agra.org</a>
<b>3.</b>	<b>Name of Project:</b>	<i>Development of web-based tools for blended learning</i>
	<b>Name of Client:</b>	GIZ (German Development Cooperation)
	<b>Project Description:</b>	The project involved development of web-based tools for blended learning using SCORM compliant interactive content. The course was designed in modules, with each module having its own set of learning objectives and assessments. The course was also translated into French.
	<b>Approx. Project Cost:</b>	USD: 21,485
	<b>Duration of project:</b>	April 2020 - Sep 2020
	<b>Contact Persons:</b>	Name: Anja Teschner Position: Technical Advisor, GIZ Email: <a href="mailto:anja.teschner@giz.de">anja.teschner@giz.de</a>
<b>4.</b>	<b>Name of Project:</b>	<i>Digitization of Trade Manuals and Systems</i>
	<b>Name of Client:</b>	TMEA (TradeMark East Africa) and Partner Organizations



	<b>Project Description:</b>	Digitization of trade manuals and systems for ease of knowledge transfer to users (i.e. East African traders and new employees of TMEA, TCCIA, TWCC & ZNCCIA). Digitized (i.e. produced tutorials in the form of narrations, illustrations, text, graphics and cartoons) of the following systems and their manuals: 1) Rules and Procedures of trading in the EAC region 2) NTBs SMS and Online Reporting System 3) Gender constraints SMS reporting system for TWCC 4) Electronic Certificate of Origin System 5) Electronic Payment System i.e. LIPAFASTA
	<b>Approx. Project Cost:</b>	USD: 44,500
	<b>Duration of project:</b>	Aug 2018 - Sep 2018
	<b>Contact Persons:</b>	Name: Elibariki Shammy Position: NTBs Project Country Coordinator Email: elibariki.shammy@trademarkea.com
<b>5.</b>	<b>Name of Project:</b> <i>Wildlife Information &amp; Landscape Database (WILD) Project</i>	
	<b>Name of Client:</b>	USAID Funded:
	<b>Project Description:</b>	WILD is a comprehensive, off-the-shelf data collection and reporting tool designed for organizations engaged in conservation activities in both protected and community areas. The WILD mobile application tracks a unit's movement by taking GPS points and overlaying them on google maps. While on patrol the scouts or rangers can report on incidences such as recording wildlife; poaching; animal mortality; HWC; community service; and others. These incidences are geo-tagged and time and date stamped. The information and photos automatically transfer back to headquarters when the patrol has a telephone signal or stores on their phone until network or Wi-Fi is secured. WILD can also be used to track legal cases arising as a result of an organization's activities. Conservancy managers can customize the data collected by hiding or showing specific information fields in WILD.
	<b>Approx. Project Cost:</b>	USD: 688,750
	<b>Duration of project:</b>	Sep, 2016 - Sep, 2018
	<b>Contact Persons:</b>	Scott McCormick, Chief of Party, +254 786 404 003 scott.mccormick@ea-prepared.org
<b>6.</b>	<b>Name of Project:</b> <i>Basic Laboratory Information System (BLISS 3.0)</i>	
	<b>Name of Client:</b>	Association of Public Health Laboratories (APHL), Center for Disease Control (Kenya), Ministry of Health, Kenya, IBM Research Lab
	<b>Project Description:</b>	The project was a joint collaboration with the Centre for Disease Control and Prevention (CDC), Association of Public Health Labs (APHL), IBM Research Lab and the Ministry of Health; @iLabAfrica has implemented an Open-Source Lab Information System (HMIS). BLIS is configured primarily for specimen, testing and test results management supporting functionalities such as lab test equipment interfacing and electronic data transmission to other systems (e.g. EMRs).
	<b>Approx. Project Cost:</b>	USD: 100,000
	<b>Duration of project:</b>	4 years
	<b>Contact Persons:</b>	Edwin Ochieng, Local Project Coordinator, APHL Email: efochieng@yahoo.com



<b>7.</b>	<b>Name of Project:</b>	Kenya Association of Manufacturers Members Portal
	<b>Name of Client:</b>	Kenya Association of Manufacturers
	<b>Project Description:</b>	Project involved designing and developing an online centralized business portal to provide industry stakeholders and potential investors with information on Kenya's economic and legal environment as well as industrial and trade statistics relevant to the manufacturing sector.
	<b>Approx. Project Cost:</b>	USD: 60,000
	<b>Duration of project:</b>	Sep, 2017 - Nov, 2018
	<b>Contact Persons:</b>	Danson Ndetei, IT Officer, <a href="mailto:Danson.Ndetei@kam.co.ke">Danson.Ndetei@kam.co.ke</a>
<b>8.</b>		Enhancing Dissemination of Kenya National Bureau of Statistics County-Level Data, Phase 1
	<b>Name of Client:</b>	The Kenya National Bureau of Statistics (Kenya) and The World Bank
	<b>Project Description:</b>	The project involved data visualization-based that sought to enhance the Bureau's county data dissemination capabilities through the use of ICT tools. Data source from key publications was visualized and hosted on an online portal, the KNBS County Data Visualization Portal. Main components- Backend, Data Analysis, Visualization, Mobile portal app, Bulk Download, Data Search
	<b>Approx. Project Cost:</b>	USD: 65,000
	<b>Duration of project:</b>	2014 - 2015
	<b>Contact Person:</b>	Cleophas Kiio; Director, ICT Email: <a href="mailto:ckiiio@knbs.or.ke">ckiiio@knbs.or.ke</a> ; Mobile: +254 722 218 516
<b>9.</b>	<b>Name of Project:</b>	<b>County Automated revenue collection and Management System.</b>
	<b>Name of Client:</b>	<b>Kiambu, Taita Taveta, Kilifi, Kirinyaga, Kisumu and Busia County Governments</b>
	<b>Project Description:</b>	The project involves the implementation of a holistic e-Governance Integrated System for County Operations Management, Workflow Automation, Document Management, Electronic Citizen Services Delivery, Business Intelligence and Electronic Payment Systems
	<b>Approx. Project Cost:</b>	Kiambu- USD 500,000, Taita Taveta- USD 350,000, Kilifi – USD 300,000, Busia USD 350,000
	<b>Duration of project:</b>	Kiambu- 5 years, Taita Taveta – 3 years, Kilifi- 2 years, Busia- 3 years
	<b>Contact Person:</b>	<b>Kiambu County:</b> Samuel Karanja, ICT Director, Email: <a href="mailto:samuel.karanja@kiambu.go.ke">samuel.karanja@kiambu.go.ke</a> Mobile : 0725801911 <b>Kilifi County:</b> Moses Karema: ICT Director, Email: <a href="mailto:mkarema@kilifi.go.ke">mkarema@kilifi.go.ke</a> , Mobile: 0725504456 <b>Kirinyaga County:</b> Francis Kibuchi, ICT Director, Email: <a href="mailto:frankkibuchi@gmail.com">frankkibuchi@gmail.com</a> Mobile: 0721336392 <b>Taita Taveta County:</b> Gibran Mwadime, ICT Director, Mobile: 0722663213



### 1.3 Financial capacity

SRCC is in sound financial condition as evidenced by the Audited Financial Statements of 2018, 2019 and 2020 attached as **Annex 4**. Annual turnover of SRCC between 2018 and 2020 were: **2018 (Ksh 311,870,761), 2019 (Ksh 405,101,412) and 2020 (Ksh 249,791,409)**.

SRCC has no financial concerns such as negative net worth, bankruptcy proceedings, insolvency, receivership, major litigation, liens, judgments or bad credit or payment history. The organisation has not been declared bankrupt, is not involved in bankruptcy or receivership proceedings, and has no judgment or pending legal action that could impair operations in the foreseeable future.

Further, credit worthiness of SRCC can be verified by the banker:

Name of the Bank **NCBA Bank**

Address of the Banker: **P.O. Box 44599-00100**

Telephone No.: **+254 711056206/+254 722398252**

Contact Name and Title: **Ms Wambui Muhoro, Relationship Manager**

Email Address: **[wambui.muhoro@ncbagroup.com](mailto:wambui.muhoro@ncbagroup.com)**



## 2.0 UNDERSTANDING OF THE TOR

### 2.1 Background to the Project

LVCT Health is a Kenyan non-governmental and not-for-profit organization registered in 2002. The organisation has built a strong capacity in HIV, Gender-Based Violence, Sexual and Reproductive Health (SRH), and Mental Health, primarily focusing on vulnerable populations, including the youth. In this assignment, LVCT Health wants to accelerate access to gender-based violence information and services by leveraging a technology-enhanced Chatbot (AGILE-Self Care Model).

### 2.2 Key Areas of Responsibility and Deliverables

The purpose of this is to lead the development of a Chatbot Accelerating access to Gender-Based Violence Information and Services Leveraging a Technology-Enhanced Chatbot (AGILE-Self Care Model). The consultant's understanding of the key areas of responsibility and deliverables is as tabulated below:

Specific ToR	Our Response
1. The automation of WhatsApp through the official WhatsApp API. Chatbot will integrate artificial intelligence to build user flows.	The Chatbot will be based on the official WhatsApp API and libraries. We will integrate machine learning and artificial intelligence engines either through our own in-house build or third-party engines, this will depend on the level of learning required. This integration will enable the chatbot to generate its own knowledge overtime.
2. The consultant will build a client support dashboard on a progressive web application (PWA).	Through the use of analytic tools e.g., Power BI or Google Data studio, it helps the users to answer critical business questions immediately by creating an autonomous report, without the need to wait for standard analysis with the help of real-time data and dynamic dashboards that are generated.
3. The client support platform will allow multiple agents to login and support customers via WhatsApp. The platform will identify online and offline agents and auto-allocate incoming WhatsApp messages to the agents. Tickets can be escalated, closed, and even put on pending.	The intent is to build a central API which will be hosted on a central web server. The API will be scalable enough to serve several clients (users on browsers), each on their own devices and spread across limitless locations. The API will keep track of each user/device through tokens that will be shared upon authentication.
4. Customer Support reporting: The Chatbot should be able to capture inbound and outbound statistics/reports	The portal shall be integrated to Power BI/Google Data studio as it integrates easily with the existing business environment allowing it to adopt analytics and reporting capabilities using the data from the Chatbot. By incorporating third party applications which are best suited to generate dynamic reports and queries. This module will be integrated with CRM module.
5. Integrate WhatsApp Chatbot with FAQs	The chatbot will be integrated with FAQs that forms core part of its automation engine. The bot will be able to analyses the query and respond accordingly with all already existing information via the FAQs. A an inbuilt powerful search engine will auto-run the queries and populate the relevant FAQs.



6. Cross Channel Application: a design approach that makes applications render well on various devices, channels & screen sizes. The application should understand users' requests through AI and deep API integration and respond accordingly.	<p>A mobile first approach to user interface design shall be applied in order to make the platform available on whichever browser being used by the end-user while respecting screen size (mobile or desktop).</p> <p>The system will be able to integrate and interchange data with other LVCT systems through custom APIs. This interaction will be powered by AI driven methodologies to allow the chatbot to interpret new queries on the go.</p>
7. The platform will be integrated into the other inter-linking systems to allow users to get information and distribute information and services.	The APIs shall support integration with several other systems. Requests from other systems can be monitored and integrated to the current API or handled by the API directly if a connection to the core system and database can be made.
8. The platform will include a self-on-boarding process to help collect as much information and data from the user to compute and present the best way to serve the customer.	The registration module shall allow users to register themselves and for the platform to collect all required information by providing relevant input fields that shall allow for written responses or document upload if required. Feedback to applicants throughout the registration process shall be shared to applicants through the provided email through system generated notifications.
9. The product has a Customer Relationship Management (CRM) component to store customers' personalized information.	Through the use of third-party technologies like ZenDesk, the platform will be able have its custom CRM module integrated with core system via APIs.
10. Reporting & Insights: The platform will include a reporting and insights section on the main dashboard providing general and in-depth insights on the various customers and activities within the Chatbots.	<p>The portal shall be integrated to Power BI/Google Data studio as it integrates easily with the existing business environment allowing it to adopt analytics and reporting capabilities using the data from the portal.</p> <p>Search parameters shall be indexed and or cached to ensured fast data retrieval.</p> <p>By incorporating third party applications which are best suited to generate dynamic reports and queries.</p> <p>The system shall provide endpoints that, upon authentication, share data with other systems in JSON format. Similarly; the system will be able to hit endpoints of other systems and import data as provided or translate it to the various tables of the API.</p>
11. User-Centred Design Overview: the developer shall take a creative approach to interactive systems that aims to make systems usable and useful by focusing on the users and their needs.	<p>The frontend shall be responsive and allow for easy navigation between pages. None of the pages will be cluttered with irrelevant data while allowing for update of data without requiring page reloads.</p> <p>The platform will be light and friendly to low bandwidth due to the technology stack used, that is the front end will be separate from the backend. The user will only access what he/she is supposed.</p> <p>The system will be able to integrate and interchange data with other systems through custom APIs.</p> <p>All the common operating system and browsers will be supported since the technology stack is based on universal languages for browser applications.</p>



## 2.3 Project Scope

Our understanding of the consultant's scope of work as shown by our technical responses tabulated below:

Specific ToR	Our Response
<ul style="list-style-type: none"><li>A client journey map identifying the interactions of the Chatbot to seeking response services. The journey map should identify key points during which public health interventions (communication channels, key health messages) may intervene to build knowledge and motivation for target groups to seek these services.</li></ul>	<p>The consultant will carry out client journey map analysis to identify the client motivations and pain points. Client journey mapping will be done using Chatbot decision trees. The decision trees will define how the agile Chatbot will handle each situation by asking the clients the right questions and lead them along the right branches towards right resolution.</p> <p>This will be achieved through the following steps:</p> <ol style="list-style-type: none"><li>1. Journey map analysis</li><li>2. Setting Chatbot targets/goals</li><li>3. Creating Chatbot persona</li><li>4. Designing the Chatbot conversational flow using decision trees</li><li>5. Mapping content</li><li>6. Maximizing Touchpoints</li><li>7. Update the journey map with new data</li></ol>
<ul style="list-style-type: none"><li>A provider journey map identifying the physical and behavioural process for formal and informal health providers in promoting and providing GBV response services and, to both adopters and non-adopters, to inform how we can better design the client messaging and improve promotion and provision of integrated services.</li></ul>	<p>The consultant will carry out provider journey map analysis to understand how best to design client messaging, promote them and integrate to the client touchpoints.</p> <p>Provider journey mapping will be done using Chatbot decision trees. The consultant will showcase Chatbot analytics using indicators such Net Promoter Score and Customer Satisfaction Scores to identify opportunities for optimizing client messaging at different stages of the client journey.</p>
<ul style="list-style-type: none"><li>Prototyping report in which the consultants and AGILE team staff apply the interventions to refine and demonstrate the effectiveness of the proposed concepts.</li></ul>	<p>The consultant will use Draw.IO to prototype and mockup the chatbots. Draw.IO is an open source workflow visualizer that is ideal for showcasing conversational flows to both testers and developers.</p> <p>The consultant will use Active Participatory Methodology throughout the prototyping process to give the LVCT Agile team and other relevant actors an opportunity to review and approve the mockups.</p>
<ul style="list-style-type: none"><li>Final validated prototype concepts (designs, messages/transcripts of qualitative data used to develop messages, visuals, etc.) to be applied at scale during the project.</li></ul>	<p>The consultant will incorporate the LVCT's feedback into the prototype concepts (designs, messages/ transcripts of qualitative data used to develop messages, visuals, etc.) for validation.</p> <p>The validated prototype will then be developed into a fully-fledged agile prototype.</p>



<ul style="list-style-type: none"><li><b>Pilot Test:</b> Leading the pilot testing of the platforms and seeking feedback from various stakeholders while documenting all the insights, processes, and feedback. This will include feedback on stylistic features and functionality preferences across different populations.</li></ul>	The beta-version of the prototype will be piloted among the relevant stakeholders. Insights, processes, and feedback in regard to stylistic features and functionality preferences will be documented for incorporation.
<ul style="list-style-type: none"><li><b>Implementation:</b> The platform needs will be developed with the user in mind, which means the user experience must be straightforward. Most of the interactions will be on the user. Therefore, the technology needs to be clear on the product offerings and make the processes simple to use.</li></ul>	The consultant uses sprint-based agile software development methodology which is user-centric and encourages a creative co-design and co-development process. Since the app will be mostly user-facing, user journey map analysis will be used to identify the user touchpoints, motivations and pain points to inform on how best to design and promote the messaging.
<ul style="list-style-type: none"><li><b>Scalability:</b> The platform will be developed to handle increasing users concurrently interacting with the system. To ensure that the platform is scalable, it's essential to consider the following:<ol style="list-style-type: none"><li>App architecture with clean-code design plays a crucial role in building scalable platforms. The framework also has an impact on the application performance.</li><li>Load test helps to locate and overcome the weak sides of your application to guarantee its smooth performance.</li><li>Hardware/AWS Cloud can successfully influence scalability only if it is thoughtfully chosen.</li><li>Third-party services should also be carefully selected. Otherwise, they might cause operational failure.</li></ol></li></ul>	<p>Scalability shall be accomplished by using hosting provider solutions (e.g., Amazon Web Services). Such a solution includes AWS's to Scaling that is capable of deploying more resources or likewise limiting them based on the traffic at a particular time. By leveraging such resources, the API will be both scalable and keep performance at optimum levels.</p> <p>Technologies used to build the Chatbot, database, API and Interfaces shall be scalable and able to match demand when required.</p> <p>Scalability shall also be accomplished by using a cloud service provider such as Amazon Web Services which provides the ability to increase or decrease IT resources as needed to meet changing demand hence maintaining the Chabot performance at optimum levels.</p> <p>Elastic Load Balancing (ELB) will be used to automatically distributes incoming WhatsApp messages to the online agents.</p> <p>The consultant will prefer to use tried and tested open source technologies such as Node JS to build a robust Chatbot. Should there be a need to use third-party services, they will be carefully selected to prevent operational failure.</p> <p>Further, the consultant prefers modular design where failure of one module doesn't render the entire system inoperable.</p>



<ul style="list-style-type: none"><li><b>Security:</b> this involves ensuring up-to-date encryption, proper authentication, continuously patch discovered vulnerabilities &amp; have good software development practice. Security will be improved by protecting against DDoS, application layer &amp; DNS attacks.</li></ul>	<p>All users of the Chatbot will need to be registered and verified.</p> <p>Role-Based Access Control (RBAC) shall be used to set permissions and privileges to enable access by authorized users.</p> <p>All exchange of data and communication between the API/clients and API/API shall be conducted over HTTPS. All private fields shall be hidden by default and not shared unless required.</p> <p>HTTPS over SSL/TLS will be used designed to provide encryption in transit during exchange of data and communication.</p> <p>The Chatbot will be protected from common exploits such as SQL/XML/Code injection, Session hijacking/fixation, Output Escaping, Cross-Site Request Forgery, Cross-Site Scripting, Enforced Same Origin Policy, Parameter Tampering, Directory Traversal, Denial of Service etc.</p> <p>The system will also be continuously monitored for such occurrences or attempts. The same will be logged and reported appropriately.</p>
<ul style="list-style-type: none"><li>A firewall helps protect the platform against malicious HTTP traffic. It involves placing a filtration barrier between the targeted server and the attacker to protect against attacks like cross-site forgery, cross-site scripting, and SQL injection.</li></ul>	<p>The Chatbot will be operating behind a secure Firewall as a safeguard against common exploits such as SQL/XML/Code injection, Session hijacking/fixation, Output Escaping, Cross-Site Request Forgery, Cross-Site Scripting, Enforced Same Origin Policy, Parameter Tampering, Directory Traversal, Denial of Service etc. The HTTP traffic will also be continuously monitored for malicious events. The same will be logged and reported appropriately.</p>
<p>e. This is a data security solution that encrypts sensitive data at the application level. When encryption happens at this level, data is encrypted across multiple layers. This way, the platform can secure sensitive data before storing it in a database, big data or cloud environments.</p>	<p>The platform will encrypt sensitive data at the application level before storage as well as during transmission. All the encryption will be done with at least 128-bit SSL.</p>
<p>f. Two-factor authentication is a two-step verification process in which users provide 2 different authentication factors to verify themselves. This process is done to protect both the user credentials and the resources the user can access. The platform will use email and password, and OTP for 2FA verification.</p>	<p>The consultant will implement Two-factor authentication (email and password, and OTP) to protect both the user credentials and the resources the user can access.</p>

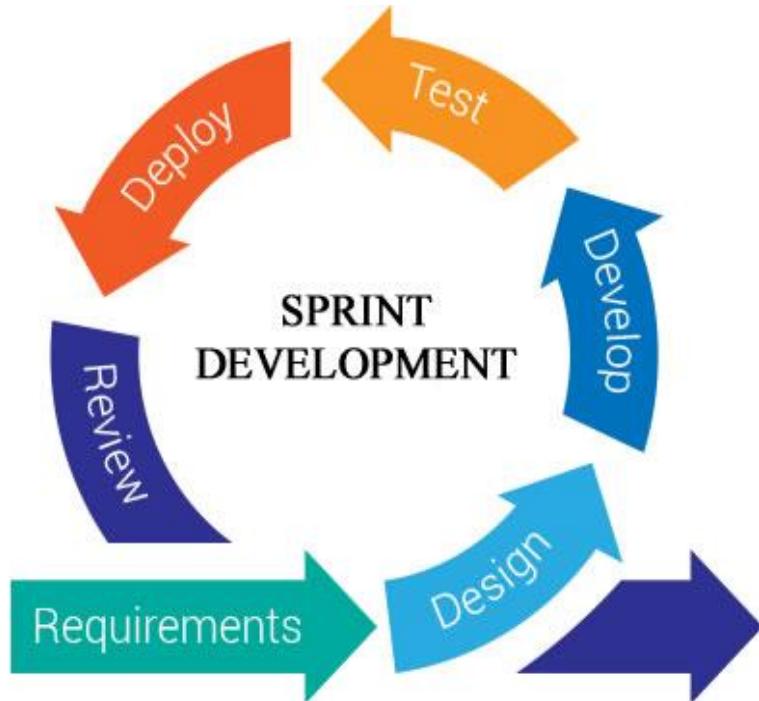


## **3.0 PROJECT MANAGEMENT AND TECHNICAL APPROACH**

### **3.1 Software Development Methodology**

The consultant proposes to employ sprint-based Agile software development methodology, to allow for incremental design and development, continuous improvement, and early delivery. Agile methodology entails breaking down a project into several stages for ease of implementation and involves constant collaboration with key stakeholders as well as continuous improvement and iteration at every stage.

The consultant prefers the Agile methodology because it will give LVCT Health early and frequent opportunities to look at the project and make fully informed decisions and changes. LVCT Health can make corrective adjustments even in the middle of the project implementation leading to continuous improvement. Further, the approach shall enable rapid implementation of the project since process will cycle through planning, execution and evaluation with each iteration going for 1-4 weeks.



### **3.2 Quality Assurance Methodology**

Quality Assurance shall be carried out internally by the consultant and externally by LVCT Health quality assurance team. In this assignment, the consultant will use various quality assurance techniques in order to provide a robust Agile Chatbot. The techniques that shall be used are:

- Audit
- Review
- Design Inspection
- Code Inspection
- Simulation and
- Stress Testing.



### 3.3 Risk Management Methodology

The risks will be captured using the risk assessment template. The risks will then be further analysed using the Risk Severity Grid shown in Figure below. Each risk will be addressed depending on its severity and impact on the project.

Severity Probability	Catastrophic (1)	Critical (2)	Marginal (3)	Negligible (4)
<b>Frequent (A)</b>	<b>High</b>	<b>High</b>	<b>Serious</b>	<b>Medium</b>
<b>Probable (B)</b>	<b>High</b>	<b>High</b>	<b>Serious</b>	<b>Medium</b>
<b>Occasional (C)</b>	<b>High</b>	<b>Serious</b>	<b>Medium</b>	<b>Low</b>
<b>Remote (D)</b>	<b>Serious</b>	<b>Medium</b>	<b>Medium</b>	<b>Low</b>
<b>Improbable (E)</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Low</b>
<b>Eliminated (F)</b>				

### 3.4 Cyber Security and Data Protection

SRCC will implement the following security and data protection protocols:

Security Feature	Our Approach
<b>User authentication</b>	All users of the system need to be registered and verified for them to have access to the system
<b>Database access security</b>	Access control shall be implemented to ensure that different roles and permissions are implemented. Each user will have a defined role on the system, with each role having its defined permissions.
<b>Database Integrity</b>	Users must be able to define multi-level referential integrity, entity integrity and value constraints without programming - The entity relations and nomenclature shall be intuitive and easy to study
<b>User audits</b>	User activity shall be captured for audit purposes
<b>Privacy and data integrity</b>	All exchange of data and communication between the API/clients and API/API shall be conducted over https. All private fields shall be hidden by default and not shared unless required
<b>Penetration Testing</b>	It will be conducted using Kali Linux tools.

### 3.5 Technology Stack

Item	Technologies
Front-end Design	Vue JS, HTML5, CSS (Bootstrap CSS /Tailwind CSS)
Backend design	Laravel (PHP Framework)
Database	MySQL
Modelling/Prototyping Tools	Figma
Penetration Testing Tools	Kali Linux Tools
Network Security	IPSEC, OpenVPN
Project management	MS Project
Code Hosting	Bitbucket
Continuous Integration tools	Kubernetes and Docker
Visualization Tool	Microsoft BI/ Google Data Studio



### 3.6 Engagement Approach

Our engagement strategy is based on an agile active participatory methodology emphasizing on the co-design and co-creation with the stakeholders. The consultant will hold a consultative meeting with the relevant actors at the project initiation stage to discuss the most appropriate strategy for cooperation. The consultant proposes the following strategies of engaging and cooperating with LVCT Health team:

<b>Bi-monthly virtual meetings with LVCT Health team</b>	To revise project activities and milestones, discuss opportunities and challenges, share lessons-learned and identify synergies across work packages. This will ensure alignment and consensus on the activities to be conducted, timing of milestones and expected results.
<b>Weekly update via e-mails</b>	These will allow the consultant to provide project updates via summaries of main achievements and challenges.
<b>Mid-term review of the engagement strategy</b>	This will be aimed at reviewing the efficacy of the information-sharing strategies and to discuss how best to optimise them.
<b>Emergency meetings</b>	To assess and establish mitigation measures to troubleshoot unforeseen challenges.

### 3.7 Chatbot Development Methodology

To implement the project effectively and efficiently, the consultant will breakdown the project into workpackages.

The following broad activities will constitute the key workpackages:

- i.) Project Inception
- ii.) Requirement Gathering, Scoping and Gap Analysis
- iii.) Sprint Based Prototyping, Design and Development
- iv.) System Deployment
- v.) User Acceptance Testing (UAT) and Quality Testing
- vi.) Training and Capacity Development
- vii.) Technical Support, Maintenance and Project Closure

#### 3.7.1 Project Inception

This stage shall entail contract signing, kick-off meetings. The deliverables at this stage shall be:

- **Contract:** Signed by both LVCT Health and Strathmore Research and Consultancy Centre (SRCC).
- **Inception Report:** describing the methodologies to be used; timeline for project execution including dates, resources, and dependencies (in form of a **Gantt Chart.**); and a plan for communications/issue resolution and agreed technical requirements.



### **3.7.2 Requirement Gathering, Scoping and Gap Analysis**

A team of select system developers, UI/UX experts, database administrators, data scientists and a project manager will lead this process. The goal of this stage will be to understand the vision of LVCT Health in this engagement, document and understand functional requirements, and prepare a project plan for the subsequent phases.

The deliverables at this stage shall be:

- **Inception Report:** describing the methodologies to be used; timeline for project execution including dates, resources, and dependencies (in form of a **Gantt Chart.**); and a plan for communications/issue resolution and agreed technical requirements.
- **Requirement Specification Document (RSD):** Providing a detailed description of business processes and functionalities of the Chatbot in line with the broad scope outlined in a consolidated document. The RSD will also include process/data flow diagram.

### **3.7.3 Sprint Based Prototyping, Design and Development**

During this stage, the consultant will work closely with the LVCT team to develop detailed wireframes, UI designs, architecture, database design, test strategy and use cases.

The deliverable for this stage includes:

- **System Design Document (SDD):** Providing a detailed description of the underlying system architecture of the proposed solution including table structure, data dictionary, entity relationship diagram (ERD), object model, wireframes, use cases and object diagrams etc.
- **Beta Versions of the System:** Ready for deployment and UAT and Quality Testing.

### **3.7.4 System Deployment**

Deployment services will be offered for installing the product at the test environment for acceptance testing of beta versions. The services will also include assistance in product launch at beta sites and the production environment. These services will be provided remotely, however, on site assistance may also be offered wherever needed. At this stage, we will also advise LVCT on hosting/infrastructure requirements for the Chatbot - on premise, hosted or on a hybrid platform. At this stage, the consultant will shall hand-over the project source code and documentation to LVCT.

The deliverable for this stage includes:

- **Complete Source Code:** Providing a complete source code and file of the application software and any other related modified application software. The source code will include detailed code documentation.



### **3.7.5 User Acceptance Testing (UAT) and Quality Testing**

At this stage, the intended audience tests the beta versions of the applications in the “real world”. The UAT may also be performed in-house in which either end users, volunteers or test subjects use the product using ready test cases. The key tests that shall be done include:

- Unit tests
- System integration testing
- User acceptance testing

The deliverable for this stage includes:

- **Operational & Acceptance Test Plan:** Providing a narrative of the approach that will be used to obtain user acceptance of the developed systems as well as test scripts that will be used to verify application operation.

### **3.7.6 Training and Capacity Development**

The consultant will develop a training and capacity program including but not limited to the following target audience:

- General users
- Administrators/Technical users
- Training of Trainers

The proposed outputs for this stage include:

- Technical Documentation
- Operating/user manuals
- Training report including training material

The consultant suggests classroom set-up for the training in strict compliance to the MoH Covid-19 protocols. However, this will be agreed upon after consultations with LVCT Health.

### **3.7.7 Technical Support, Maintenance and Project Closure**

This stage will involve technical support, maintenance and handover of the project to the LVCT Health technical team and the closure of the project.

The services at this stage will include user support, problem correction, application enhancement and process and application improvement.

The deliverables include some or all the following:

- **Final Report:** detailing the process with recommendations for next steps, including hardware and network requirements for wider use of the software.
- **Incident Reports:** detailing the issues encountered and the resolutions provided during the warranty, support, maintenance.
- **Acceptance Report/ closure certificate**



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## 4.0 WORK PLAN AND IMPLEMENTATION PLAN

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### 4.1 Work Plan

SRCC's proposed work plan, with projections of duration of execution for key project deliverables is as shown below. The project is expected to run for a period of approximately 1 working month (30 calendar days). Further, the consultant proposes 6 months a technical support and maintenance.

Phase	Activity	Expected Output	Responsibility	Duration
Phase 1	<b>Project Inception</b>	<ul style="list-style-type: none"><li>• Signed contract</li><li>• Inception Report</li></ul>	@iLabAfrica and LVCT	1 day
Phase 2	<b>Requirements Gathering and GAP Analysis</b>	<ul style="list-style-type: none"><li>• Requirement Specification Document (SRS)</li></ul>	@iLabAfrica and LVCT	3 days
Phase 3	<b>Sprint Based Prototyping, Design and Development</b>	<ul style="list-style-type: none"><li>• Beta versions of the system</li></ul>	@iLabAfrica and LVCT	20 days
Phase 4	<b>User Acceptance and Quality Testing</b>	<ul style="list-style-type: none"><li>• Operational &amp; Acceptance Test Plan</li></ul>	@iLabAfrica and LVCT	2 days
Phase 5	<b>System Deployment</b>	<ul style="list-style-type: none"><li>• Complete Source Code</li></ul>	@iLabAfrica and LVCT	1 day
Phase 6	<b>Training and Capacity Development</b>	<ul style="list-style-type: none"><li>• Technical Documentation</li><li>• Operating/user manuals</li><li>• Training report including training material</li></ul>	@iLabAfrica and LVCT	3 days
Phase 7	<b>Technical Support, Maintenance and Project Closure</b>	<ul style="list-style-type: none"><li>• Final report</li><li>• Incident reports</li><li>• Acceptance Report/ closure certificate</li></ul>	@iLabAfrica	TBA



#### 4.2 Implementation Plan

The Gantt below illustrates the consultant's proposed implementation plan.

**Table 2: Implementation Gantt Chart**

Sr.	Implementation Steps	Duration in Months/Weeks
1	Project Inception	1 day
2	Requirements Gathering and GAP Analysis	3 days
3	Sprint Based Prototyping, Design and Development	20 days
4	User Acceptance Testing	2 days
5	System Deployment	1 day
6	Training and Capacity Development	3 days
7	Technical Support, Maintenance and Project Closure	TBA



## 5.0 PROJECT TEAM

@iLabAfrica has a dynamic team of 72 people. The technical team proposed for this project and their level of involvement are as tabulated below.

Name	Proposed Positions	Involvement (Days)
Dr. Joseph Sevilla	Team Leader	20%
Emmanuel Kweyu	Project Manager/Trainer	100%
<b>Technical Staff</b>		
Pius Mathii	Senior Software Developer/Trainer	100%
Benjamin Owenda	Senior Software Developer/Trainer	100%
Kenneth Mutuma	Senior Software Developer/Trainer	100%
Ann Chemutai	Senior Software Developer/Trainer	100%
Anthony Ereng	Senior Software Developer/Trainer	100%
George Muchiri	Senior Software Developer/Trainer	100%
Gertrude Gichuhi	Senior Software Developer/Trainer	100%
Eunice Maingi	System Security Expert/Trainer	100%

The CVs of the proposed team are attached as **Annex 1**.

## 6.0 BUDGET ESTIMATE

Item	Amount Kshs
<b>Project Inception</b>	35,000
<b>Requirements Gathering &amp; GAP Analysis</b>	60,000
<b>Sprint Based Prototyping, Design &amp; Development</b>	130,000
<b>User Acceptance and Quality Testing</b>	20,000
<b>System Deployment</b>	76,000
<b>Training and Capacity Development</b>	30,000
<b>Technical Support, Maintenance &amp; Project Closure</b>	72,180
<b>Third Party Applications</b>	50,000
<b>Total</b>	<b>473,180</b>
<b>VAT @16%</b>	75,709
<b>Grant Total</b>	<b>548,889</b>



## 7.0 ANNEXURES

### Annex 1: Curriculum Vitae (CV)

<b>Name of candidate:</b> Dr Joseph Sevilla (PhD)		
Candidate information	<b>Position:</b> Project Team Leader	
	<b>Professional qualifications</b>	
	<ul style="list-style-type: none"> <li>Ph.D. Bioinformatics, TECNUN, University of Navarre, 2005;</li> <li>M.Sc. Computer Science, University College London, London University, 1995;</li> <li>MSc. Industrial Engineering (Hons.), ESII, Universidad del País Vasco, 1980;</li> </ul>	
<b>Present employment</b>		
	<b>Name of Employer:</b> Strathmore University, @iLabAfrica	
	<b>Address of Employer</b>	P.O. Box 59857-00200, Keri Road, Madaraka Estate
	<b>Telephone:</b> 0703034496	<b>Contact (manager / personnel officer):</b> Prof. Izael da Silva
	<b>Fax:</b> N/A	Email: joe@strathmore.edu
	<b>Job title of candidate:</b> Director	<b>Years with present Employer:</b> 11 years
<b>Professional Experience</b>		
<b>From</b>	<b>To</b>	<b>Company/Project/ Position/Relevant technical and management experience</b>
Oct 2020 (Phase 2)	Apr 2021 (Phase 2)	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> World Bank / WHO/ Ministry of Health of Kenya <b>Project:</b> Kenya Health and Research Observatory – KHRO Portal. <b>Position:</b> Team Leader
May 2019 (Phase 1)	Feb 2020 (Phase 1)	<b>Technical and Managerial Experience:</b> Design, development, and post implementation maintenance of KHRO based on active user participation, reviews and analysis employing a variety of quantitative, qualitative, observational and focus group discussion tools and technics.
Ongoing Support		
Oct 2019	To Date	<b>Company/Institutions:</b> County Government of Kirinyaga <b>Position:</b> Team Leader <b>Project:</b> Online Revenue Collection and Management System Project Implementation for Kirinyaga County Government <b>Technical and Managerial Experience:</b> The Supply, Implementation and Commissioning of an online Revenue Collection and Management System Project Implementation for Kirinyaga County Government.
Sep 2018	Jan 2019	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> County Government of Kisumu <b>Project:</b> Automation of E-Revenue Management System.
Ongoing		



	Support	<p><b>Position:</b> Team Leader</p> <p><b>Technical and Managerial Experience:</b> The Supply, Implementation and Commissioning of a Business Intelligence and Analytics System and an Automated Revenue Receipting System. The principal requirements as stated in the RFP including the operations management of the County, workflow automation, SMS/Email gateway integration, all revenue streams as per the County Finance Bill, citizen registration, business intelligence/analytics, third party integration, data migration, and payment solutions including over the counter, POS terminals, and electronic payment solutions for citizens and suppliers.</p>
Feb 2018	Sep 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> County Government of Kilifi <b>Project:</b> Supply of a Revenue Collection System. <b>Position:</b> Team Leader</p> <p><b>Technical and Managerial Experience:</b> The Supply, Implementation and Commissioning of a Business Intelligence and Analytics System and an Automated Revenue Receipting System. The principal requirements as stated in the RFP including the operations management of the County, workflow automation, SMS/Email gateway integration, all revenue streams as per the County Finance Bill, citizen registration, business intelligence/analytics, third party integration, data migration, and payment solutions including over the counter, POS terminals, and electronic payment solutions for citizens and suppliers.</p>
Nov 2017	Dec 2017  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Techbiz Limited for County Government of Mombasa <b>Project:</b> Supply and Implementation of property Rates Module. <b>Position:</b> Team Leader</p> <p><b>Technical and Managerial Experience:</b> The Supply, Implementation and Commissioning of an Automated property Rates Module.</p>
Sep 2015	Apr 2016  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> County Government of Busia <b>Project:</b> Automation of Revenue Collection System <b>Position:</b> Team Leader</p> <p><b>Technical and Managerial Experience:</b> Automation of Busia County Revenue Collection. The principal requirements as stated in the RFP including the revenue collections and management of the County, SMS/Email gateway integration, all revenue streams as per the County Finance Bill, citizen registration, third party integration, and payment solutions including over the counter, POS terminals, and electronic payment solutions for citizens and suppliers.</p>
Jan 2015	July 2015  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> County Government of Taita Taveta <b>Project:</b> Asset Management Collection and Management System <b>Position:</b> Team Leader</p>



		<p><b>Technical and Managerial Experience:</b> Supply, Implementation and Commissioning of a Business Intelligence and Analytics System and an Automated Revenue Receipting System. The principal requirements as stated in the RFP including the operations management of the County, workflow automation, SMS/Email gateway integration, all revenue streams as per the County Finance Bill, citizen registration, business intelligence/analytics, third party integration, data migration, and payment solutions including over the counter, POS terminals, and electronic payment solutions for citizens and suppliers.</p>
Nov 2014	May 2015  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> County Government of Kiambu <b>Project:</b> Asset Management Collection and Management System <b>Position:</b> Team Leader</p> <p><b>Technical and Managerial Experience:</b> Implementation of a holistic e-Governance Integrated System for County Operations Management, Workflow Automation, Document Management, Electronic Citizen Services Delivery, Business Intelligence and Electronic Payment Systems.</p>
Jan 2011	Present	<p><b>Director, iLabAfrica Research Centre, Strathmore University</b></p> <p><b>Technical and Managerial Experience</b> Founded @iLabAfrica as a Research Institute under the Faculty of Information Technology at Strathmore University. The Institute actively promotes Research, Innovation, Product Development and Entrepreneurship; it also provides incubation facilities to local entrepreneurs and is actively involved in ICT Policy. Currently, @iLabAfrica brings together some 40 full-time researchers and its various activities have a wide reach within the East Africa region. Mobile Technologies, Cybersecurity, ICT in Education and Development, Entrepreneurship Researcher and Business Incubators, Managerial Decision Modelling, Internet Governance, eLearning, Bioinformatics and FOSS (Free and Open-Source Software) applications.</p>
Nov 2008	Present	<p><b>Senior Lecturer– Faculty of Information Technology, Strathmore University</b></p> <p><b>Technical and Managerial Experience</b> Actively involved in the promotion of mobile application development and personally mentored a number of promising young local entrepreneurs. Taught a variety of courses while in Strathmore related to ICT and Management such as Web Technologies, IT Network Security and Cryptography, Operations Research and Managerial Decision Analysis as well as directed many research projects both at undergraduate and post-graduate level. Involved in FOSS education since the mid 90's and actively promoted the use of FOSS applications in institutions of Higher Learning. Appointed External Examiner for Undergraduate Courses at the Faculty of Informatics of the University of Nairobi and served as</p>



		External Moderator for MSc Projects at Kenyatta University and Jomo Kenyatta University. Actively involved in the promotion of mobile application development and personally mentored a number of promising young local entrepreneurs
Jan 2008	Nov 2008	Dean – Faculty of Information Technology, Strathmore University
May 2007	Nov 2008	Executive Director, Strathmore Research and Consultancy Services
Jan 2006	Dec 2007	Deputy Vice-Chancellor – Research & Quality Assurance Member of the Governing Council, Management Board and Academic Council, Strathmore University
May 2005	Dec 2005	Senior Lecturer Post-Graduate Program Coordinator IT Steering Committee – Chairman, Strathmore University
July 1997	Oct 2002	Director—Information Technology Centre, Strathmore University
Oct 1995	Oct 2002	Project Manager IT, Strathmore University
Oct 1995	Feb 1997	IMIS GDS Course Director, Strathmore University
Jan 1991	Sep 1995	Director—Information Technology Centre. Lecturer in Computer Programming, Strathmore University
Dec 1983	Oct 2002	Member of the Management Board., Strathmore University
June 1983	Dec 1990	Registrar and Lecturer in Operations Research and Computer Programming, Strathmore University
Oct 1980	June 1983	Assistant Lecturer/Research Assistant Escuela Superior de Ingenieros Industriales Universidad del País Vasco. Bilbao., Strathmore University
Certification:		
I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.		
	Date: 28th February 2022	



Ministry of Education and Science  
University of the Basque Country  
High School of Industrial Engineering  
Bilbao

Personal Academic Certificate  
Academic Year 1982 to 1983  
No. 007690

Mr JOSE MIGUEL EIZAGUIRRE BASTERRECHEA, Academic Registrar of the High School of  
Industrial Engineering of Bilbao.-

THE CONSUL OF THE EMBASSY  
OF SPAIN IN NAIROBI, KENYA,  
CERTIFIES:

That this is a translation of the attached  
document which has been presented in  
this Embassy, and which has been verified  
by him/herself.

Nairobi, 31/05/2016

Teresa Martin  
Consul



CERTIFIES: That Mr Jose Luis F. SEVILLA CAMPO, born in Bilbao, Province of Vizcaya, being  
twenty-four years old, has attended and passed all the subjects that make up the degree of  
Industrial Engineering, according to the nineteen seventy-four Plan of Studies (5-year plan),  
majoring in the Specialisation of Energy Technologies, having obtained the following results:

**First Year (University of San Sebastian)**

	Ordinary Exam	Extraordinary Exam
Linear Algebra	8	
Calculus	6	
Physics	3	5
Chemistry	6.5	
Drawing	6	

**Second Year (76-77) (University of the Basque Country)**

Further Mathematics	4	6.5
Further Physics	4	8
Fundamental Mechanics	6	
Technical Drawing II	4	6
Organic Chemistry	5	31/05/2016 16151020001708
Descriptive Geometry	2	3370.00 KES LNJ
English I	5	

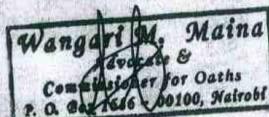
**Third Year (77-78)**

Theoretical and Applied Statistics	9
Elasticity and Resistance of Materials	7
Thermodynamics and Physical Chemistry	9
Fluid Mechanics	6
General Electrical Engineering	6.5
Surveying	5
English II	6
Chemical Technology	8
Kinematics and Dynamics of Machines	7

**Fourth Year (78-79)**

Economics	6.5
-----------	-----

Verified by  
Rocio Vicencio Poveda





General Electronics	7
Industrial Heat and Cold	6
Electrical Machines	5
Electrical Power Lines and Grids	8
General Metallurgy	7
Thermal Engines	6
Hydraulic Machines	7
Nuclear Physics	6
<b>Fifth Year (79-80)</b>	
Projects	7.5
Business Administration	8
Nuclear Technology	7
Hydroelectric Power Plants	9
Thermal Power Plants	7
Operations Research	5.5
Radioisotopes and their Applications	5
Industrial Buildings and Architecture	6
Radioactive Protection	6
New Sources of Energy	7

He undertook the examination for the overall studies on 30<sup>th</sup> September 1980, obtaining the overall mark of 7.67 being number 19 of the 123 Graduation out of 212 students.

He paid for the issuing of his Industrial Engineer Title on 9<sup>th</sup> October 1980.

He was issued the title of Industrial Engineer by his Excellency King Juan Carlos I on 31<sup>st</sup> March 1981.

<b>First Course of Doctorate (80-81)</b>	
Functional Analysis and its Applications	6
Theory of General Relativity	5
Mechanics of Continuous Media	5
Analysis of Vibrations in Mechanical Systems	7

<b>Second Course of Doctorate (81-82)</b>	
Business Structures, Development and Management	7
Linear and Non-Linear Optimisation	9
Energy Saving	6.5

And, by petition of the interested party and so that it may be known, this certification is issued with the approval of the Director of the School and signed in Bilbao, on 21<sup>st</sup> April 1983.

Signed by: Director of the School, Secretary and Registrar.

Wangari Maina



UNIVERSITY OF LONDON

Do not detach this sheet  
from the Notification of  
Results sheet

**MASTERS' EXAMINATIONS FOR INTERNAL AND EXTERNAL STUDENTS**

**PLEASE NOTE: THIS IS AN IMPORTANT NOTICE AND SHOULD BE RETAINED UNTIL SAFE RECEIPT OF YOUR DIPLOMA CERTIFICATE.**

**Notification of Results - Award**

The attached Notification of Results sheet gives details of your marks/grades at the examination you entered this year, and, where appropriate, the overall result at the examination.

The result of each candidate is determined not only on the basis of the marks or grades awarded to the candidate in the individual elements of the examination, but also on the assessment of the examiners of the performance of the candidate in the overall examination taken as a whole. Various factors may be taken into account in arriving at the final result, such as the distribution of the marks awarded to the candidate over the various elements, the strength or weakness shown in certain elements in relation to that in other elements, any special difficulties known to have been experienced by the candidate at the time of the examination (eg illness) etc.

**Despatch of Diplomas**

To candidates awarded the degree a diploma will be despatched after confirmation of the award.

The diploma will be sent to the address you gave at the time of entry to the examination. Any change in this address should be sent in writing to the Diploma Despatch Supervisor, Room 313, Senate House, Malet Street, London WC1E 7HU. Please include the title of the examination you passed, the year in which you took the examination, your full name and whether an Internal or External student. Internal students only: please also state the name of the College at which you studied.

The diplomas will be despatched as soon as possible after receipt of your Notification of Results, but the numbers involved are such that it may be up to 3 MONTHS before you receive your diploma.

**DIPLOMAS WILL NOT BE SENT TO IMPERSONAL ADDRESSES** such as a College, Hospital, Hall of Residence or similar business address. Diplomas are sent by Recorded Delivery to addresses in the UK and by Air Mail to addresses overseas.

**IMPORTANT: IF YOU HAVE NOT RECEIVED YOUR DIPLOMA WITHIN 6 MONTHS AFTER RECEIPT OF YOUR NOTIFICATION OF RESULTS, PLEASE CONTACT THE DIPLOMA PRODUCTION SECTION, SENATE HOUSE, TELEPHONE 0171 636 8000 ext 3012 (Answer phone).**

**FAILURE TO COMPLY WITH THE ABOVE INSTRUCTIONS MAY RESULT IN THE LOSS OF YOUR DIPLOMA.**

**Presentation Ceremonies**

Senate House will arrange the Ceremonies for External Graduates, graduates of the School of Advanced Study (Institutes of Classical Studies, Commonwealth Studies, Germanic Studies, Historical Research, Romance Studies, and United States Studies, Warburg Institute) British Institute in Paris, Courtauld Institute of Art, Institute of Latin American Studies, and SSEES; Associate Institutions (Jews' College, Royal Academy of Music, Royal College of Music, Trinity College of Music); Other Colleges of the University (Royal Postgraduate Medical School and Heythrop College only). Any graduates who have taken degrees at a College not mentioned above should obtain information regarding Presentation Ceremonies from the Registry at their College.

Masters(Award)  
EX311 FORMS October 1995  
NOTES.M6

EUNICE W. IKUBI  
ADVOCATE  
P. O. Box 59857 - 00200  
NAIROBI

*Certified as a true copy*



University College London

Notification of Examination Results - Session 1994 / 95

Programme of Study : M.Sc. COMPUTER SCIENCE

Year 1 Candidate Number :

NAME : SEVILLA, Jose Luis  
PO Box 25095  
Nairobi  
KENYA

Code	Title	Mode	Value	Mark	Grade	Result
Summer 1995 COMPO056	D6: Database Systems.....		0	93	PASS	
Summer 1995 COMPO07	D7: Operating Systems.....		0	92	PASS	
Summer 1995 COMPO08A	DA: Basic Computer Science I.....		0	82	PASS	
Summer 1995 COMPO08B	DB: Basic Computer Science II.....		0	82	PASS	
Summer 1995 COMPOD15	D15: Communications And Networks.....		0	67	PASS	
Summer 1995 COMPOD22	D22: Software Engineering.....		0	65	PASS	
Summer 1995 COMPREP	Project Report.....		0	80	PASS	

Subject to confirmation by the Senate of the University of London, you will be awarded the degree of Master of Science with Distinction. The date of the award of the degree will be 1 November 1995.

Notes : The grades and marks shown on this document are provided for the personal information of the candidate.

NER 94/001999 19-FEB-96 35



EUNICE W. IKUBI  
ADVOCATE  
P. O. Box 59857 - 00200  
NAIROBI

Certified as a true copy



Name of candidate: Mr. Emmanuel Kweyu		
<b>Candidate information</b>	<b>Position:</b> Project Manager/Trainer	
	<b>Professional qualifications</b>	
	<ul style="list-style-type: none"> <li>• PhD. Health Informatics, University of Oslo (2018 - On Going)</li> <li>• MSc. Information systems, University of Nairobi (2004-2007)</li> <li>• BSc. Information systems, Moi University (1997-2001)</li> </ul>	
<b>Present employment</b>		
	<b>Name of Employer:</b> Strathmore University, @iLabAfrica	
	<b>Address of Employer</b>	P.O. Box 59857-00200, Keri Road, Madaraka Estate
	<b>Telephone:</b> 0703034496	<b>Contact (manager / personnel officer):</b> Dr. Joseph Sevilla
	<b>Fax:</b> N/A	<b>Email:</b> <a href="mailto:ekweyu@strathmore.edu">ekweyu@strathmore.edu</a>
	<b>Job title of candidate:</b> Deputy Director	<b>Years with present Employer:</b> 11 years.
<b>Professional Experience</b>		
<b>From</b>	<b>To</b>	<b>Company/Project/ Position/Relevant technical and management experience</b>
Oct 2020 (Phase 2)	Apr 2021 (Phase 2)	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> World Bank / WHO/ Ministry of Health of Kenya <b>Project:</b> Kenya Health and Research Observatory – KHRO Portal. <b>Position:</b> Technical Lead
May 2019 (Phase 1)	Feb 2020 (Phase 1)	<b>Technical and Managerial Experience:</b> Design, development, and post implementation maintenance of KHRO based on active user participation, reviews and analysis employing a variety of quantitative, qualitative, observational and focus group discussion tools and technics.
Oct 2019	To Date	<b>Company/Institutions:</b> County Government of Kirinyaga <b>Position:</b> Technical Lead <b>Project:</b> Online Revenue Collection and Management System Project Implementation for Kirinyaga County Government <b>Technical and Managerial Experience:</b> The Supply, Implementation and Commissioning of an online Revenue Collection and Management System Project Implementation for Kirinyaga County Government.
Sep 2018	Jan 2019 Ongoing Support	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> County Government of Kisumu <b>Project:</b> Automation of E–Revenue Management System. <b>Position:</b> Technical Lead
		<b>Technical and Managerial Experience:</b> The Supply, Implementation and Commissioning of a Business Intelligence and Analytics System and an Automated Revenue Receipting System. The principal requirements as stated in the RFP



		including the operations management of the County, workflow automation, SMS/Email gateway integration, all revenue streams as per the County Finance Bill, citizen registration, business intelligence/analytics, third party integration, data migration, and payment solutions including over the counter, POS terminals, and electronic payment solutions for citizens and suppliers.
Feb 2018	Sep 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> County Government of Kilifi  <b>Project:</b> Supply of a Revenue Collection System.  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b>  The Supply, Implementation and Commissioning of a Business Intelligence and Analytics System and an Automated Revenue Receipting System.</p>
Nov 2017	Dec 2017  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> County Government of Mombasa  <b>Project:</b> Supply and Implementation of property Rates Module.  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b>  The Supply, Implementation and Commissioning of an Automated property Rates Module.</p>
June 2017	Dec 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> Kenya National HIV Reference Laboratory  <b>Project:</b> HIVQA &amp; HIVPT Web-based Tracking and Reporting Systems  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b>  Customization, development and implementation of Laboratory Information Management System (LIMS) for Bungoma and Kapsabet District Hospitals. The system is fully integrated to the hospitals' EMRS automatically receiving lab test requests from clinicians and returning results. The system tracks the movement of specimens providing turn-around-times; is interfaced with laboratory instruments; and provides individual workload monitoring, test reporting and quality control documentation.</p>
June 2017	Dec 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> Association of Public Health Laboratories (APHL), Center for Disease Control (Kenya), Ministry of Health, Kenya, IBM Research Lab  <b>Project:</b> Basic Laboratory Information System (BLIS 3.0).  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• Main System Components design and development.</li> <li>• Front end Web portal development for PT registration, dispatch and submission of test results</li> <li>• Back end development for analysis of submission and communication to PT users of performance.</li> </ul>
Sep 2015	Apr 2016	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> County Government of Busia</p>



	Ongoing Support	<p><b>Project:</b> Automation of Revenue Collection System  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b>  Automation of Busia County Revenue Collection. The principal requirements as stated in the RFP including the revenue collections and management of the County, SMS/Email gateway integration, all revenue streams as per the County Finance Bill, citizen registration, third party integration, and payment solutions including over the counter, POS terminals, and electronic payment solutions for citizens and suppliers.</p>
Jan 2015	July 2015  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> County Government of Taita Taveta  <b>Project:</b> Asset Management Collection and Management System  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b>  Supply, Implementation and Commissioning of a Business Intelligence and Analytics System and an Automated Revenue Receipting System.</p>
Nov 2014	May 2015  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> County Government of Kiambu  <b>Project:</b> Asset Management Collection and Management System  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b>  Implementation of a holistic e-Governance Integrated System for County Operations Management, Workflow Automation, Document Management, Electronic Citizen Services Delivery, Business Intelligence and Electronic Payment Systems.</p>
Dec 2010	Present	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Position – Deputy Director, @iLabAfrica</b>  <b>- eHealth Unit Manager and Project Lead</b></p> <p><b>Projects:</b></p> <ul style="list-style-type: none"> <li>• H2020 TWIGA Research on Geoweather Information in Africa (2018/21)</li> <li>• H2020-WAZIHUB-Use of IoT to support Innovation in Africa (2018/21)</li> <li>• Kenya Health and Research Observatory(KHRO) Project-2019</li> <li>• RTQII and PT Project (HIV Testing Quality Assurance) with the Ministry of Health Kenya (2017-20)</li> <li>• Lead Researcher IBM/APHL CIHMIS implementation Project Africa 2013/14/15, Implementations in Kenya, and Mozambique</li> <li>• Lead Researcher Cervical Cancer Awareness Research-IBM Research Lab-Africa Project 2013/14</li> <li>• Researcher and Grant manager from HP, ISOC and Google in the ICT for Education Research grants</li> <li>• GIZ/Total Solar Lantern Mobile based Sales and Monitoring System</li> <li>• Kenyacic.org website development</li> <li>• ClimatePal cooking stove web and mobile based distribution</li> <li>• Faculty member at the Faculty of IT and Safaricom Academy</li> <li>• Member of Management Team -@iLabAfrica</li> </ul>



		<ul style="list-style-type: none"><li>• Grantee of the IBM Research Lab and the CDC – Atlanta</li></ul> <p><b>Technical and Managerial Experience:</b> Project management and implementation</p>
<b>2003</b>	<b>2010</b>	<p><b>Strathmore University - Assistant Lecturer and Research Assistant.</b></p> <ul style="list-style-type: none"><li>• Management of the HP Research Grants in ICT in Education (<a href="http://www.strathmore.edu/edu">www.strathmore.edu/edu</a>) and <a href="http://isoc.org/wp/community-grants/">http://isoc.org/wp/community-grants/</a>.</li><li>• HP catalyst Initiative 2010 ‘global learning consortium grant. Computer Science/IT Resource person for the Commission of Higher Education(CHE).</li><li>• ICT Innovation projects with industry partnerships: Safaricom Academy, Google, HP and Ericson.</li></ul>
<b>2001</b>	<b>2002</b>	<p><b>Strathmore University-Lecturer and Examiner</b></p> <ul style="list-style-type: none"><li>• Lecturer and Examiner for the Bachelor’s degree in Business Information Technology and Diploma in Business Technology Course.</li><li>• Coordinator of Final year Projects for the 4<sup>th</sup> year students</li></ul>
<p>Certification: I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.</p>		
 <i>Shadrack Kibet</i>	Date: 28th February 2022	



16 0865

## MOI UNIVERSITY

Upon the recommendation of Senate  
and on authority of the Council  
hereby confers upon

Emmanuel Mututa Kweyu

the degree of

Bachelor of Science in Information Sciences

Second Class Honours (Upper Division)

with all the rights and privileges  
thereunto appertaining in witness whereof  
we have hereunto affixed our signatures  
and the seal of the University

on the ..... 6<sup>th</sup> day of December ..... 2001

KENNETH WANJOHI MAINA  
ADVOCATE & COMMISSIONER FOR OATHS  
P.O. BOX 11893 - 00100, NAIROBI  
ADMISSION NO: P/05 / 4907 / 02  
PRACTICE.....

R. Maina

VICE-CHANCELLOR

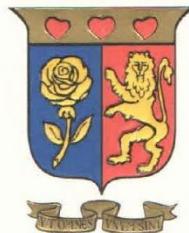
J. S. Samuels



Name of candidate: Pius Mathii		
Candidate information	<b>Position:</b> Senior Software Developer/Trainer	
	Professional qualifications	
	<b>Institution:</b> Strathmore University <b>Year:</b> 2017 – 2020 <b>Course:</b> Msc. Information Systems Security	
	<b>Institution:</b> Strathmore University <b>Year:</b> 2011 - 2014 <b>Course:</b> Bachelor of Business Information Technology	
Present employment		
	<b>Name of Employer:</b> Strathmore University, @iLabAfrica,	
	<b>Address of Employer</b>	P.O. Box 59857-00200. Keri Road, Madaraka Estate
	Telephone: +254703034496	Contact (manager / personnel officer): Immanuel Kweyu
	Fax: N/A	Email: pmuisyo@strathmore.edu
	<b>Job title of candidate:</b> Senior Software Developer	<b>Years with present Employer:</b> 7 years
<b>Professional Experience</b>		
<b>From</b>	<b>To</b>	<b>Company/Project/ Position/Relevant technical and management experience</b>
Oct 2020 (Phase 2)	Apr 2021 (Phase 2)	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> World Bank / WHO/ Ministry of Health of Kenya <b>Project:</b> Kenya Health and Research Observatory – KHRO Portal. <b>Position:</b> Technical Lead
May 2019 (Phase 1)	Feb 2020 (Phase 1)	<b>Technical and Managerial Experience:</b> Design, development, and post implementation maintenance of KHRO based on active user participation, reviews and analysis employing a variety of quantitative, qualitative, observational and focus group discussion tools and technics. Technical Documentation
June 2017	Dec 2018	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Kenya National HIV Reference Laboratory <b>Project:</b> HIVQA & HIVPT Web-based Tracking and Reporting Systems <b>Position:</b> Technical Lead
	Ongoing Support	<b>Technical and Managerial Experience:</b> Customization, development, and implementation of Laboratory Information Management System (LIMS) for Bungoma and Kapsabet District Hospitals. The system is fully integrated to the hospitals' EMRS automatically receiving lab test requests from clinicians and returning results. The system tracks the movement of specimens



		providing turn-around-times; is interfaced with laboratory instruments; and provides individual workload monitoring, test reporting and quality control documentation.
June 2017	Dec 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre</p> <p><b>Client:</b> Association of Public Health Laboratories (APHL), Center for Disease Control (Kenya), Ministry of Health, Kenya, IBM Research Lab</p> <p><b>Project:</b> Basic Laboratory Information System (BLIS 3.0).</p> <p><b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• Main System Components design and development.</li> <li>• Front end Web portal development for PT registration, dispatch and submission of test results</li> <li>• Back-end development for analysis of submission and communication to PT users of performance.</li> <li>• Technical Documentation</li> </ul>
Jan 2016	Dec 2019	<p>Company: @iLab Africa Research Centre</p> <p>Position: Senior Software Developer</p> <p>Project: <b>mHealth4Afrika</b>. A project focused on supporting <b>Sustainable Development Goal 3</b> by co-designing a modular, state-of-the-art health Information System, designed to strengthen primary healthcare delivery in resource constrained environments.</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• System Design</li> <li>• System Development</li> <li>• System Deployment</li> <li>• System Support and maintenance</li> <li>• Technical Documentation</li> </ul>
<p>Certification:</p> <p>I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.</p>		
	Date: 28th February 2022	



Certificate Number  
DEG2014/041

**Strathmore**  
UNIVERSITY

*This is to certify that*

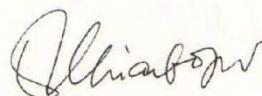
**Mathii Pius Muisyo**

*having fulfilled all the requirements and  
conditions for the award of the degree of*

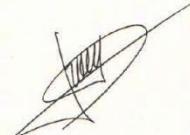
**BACHELOR OF BUSINESS  
INFORMATION TECHNOLOGY  
(Database Administration Option)**

*2nd Class Honours (Upper)*

*was admitted to the degree with all the rights, privileges  
and honours thereto appertaining at a congregation held  
at this University on the Twenty seventh day of  
June in the year Two thousand and fourteen*



Vice Chancellor



Deputy Vice Chancellor  
(Academic & Student Affairs)



00105853-01-24FJ



00000152



EMC Education Services EMC<sup>2</sup>

*This certificate recognizes*

**Pius Mathii**

*has successfully completed the requirements for*

**EMC Academic Associate**

**EMC Academic Associate, Cloud Infrastructure and Services**



**July 13, 2017**

Verification Code: TLMC1BKT11Q4QW9R  
Verify at: [www.certmetrics.com/eme/public/verification.aspx](http://www.certmetrics.com/eme/public/verification.aspx)

EMC Education Services EMC<sup>2</sup>

*This certificate recognizes*

**Pius Mathii**

*has successfully completed the requirements for*

**EMC Academic Associate**

**EMC Academic Associate, Information Storage and Management**



**July 08, 2017**

Verification Code: KG1FPX4TDJE1QKWR  
Verify at: [www.certmetrics.com/eme/public/verification.aspx](http://www.certmetrics.com/eme/public/verification.aspx)



<b>Name of candidate: Benjamin Owenda</b>		
Candidate information	<b>Position:</b> Senior Software Developer/Trainer	
	Professional qualifications	
	<b>Institution:</b> Strathmore University <b>Year:</b> 2016-2018 <b>Course:</b> MSc. Information System Security	
	<b>Institution:</b> Strathmore University <b>Year:</b> 2012-2016 <b>Course:</b> BSc. Business Information Technology	
Present employment		
	<b>Name of Employer:</b> Strathmore University, @iLabAfrica,	
	<b>Address of Employer</b>	P.O. Box 59857-00200. Keri Road, Madaraka Estate
	Telephone: +254703034496	Contact (manager / personnel officer): Immanuel Kweyu
	Fax: N/A	Email: bowenda@strathmore.edu
	<b>Job title of candidate:</b> Senior Software Developer	<b>Years with present Employer:</b> 6 years
<b>Professional Experience</b>		
<b>From</b>	<b>To</b>	<b>Company/Project/ Position/Relevant technical and management experience</b>
Oct 2020 (Phase 2)	Apr 2021 (Phase 2)	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> World Bank / WHO/ Ministry of Health of Kenya <b>Project:</b> Kenya Health and Research Observatory – KHRO Portal. <b>Position:</b> Technical Lead
May 2019 (Phase 1)	Feb 2020 (Phase 1)	<b>Technical and Managerial Experience:</b> Design, development, and post implementation maintenance of KHRO based on active user participation, reviews and analysis employing a variety of quantitative, qualitative, observational and focus group discussion tools and technics. Technical Documentation
June 2017	Dec 2018	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Kenya National HIV Reference Laboratory <b>Project:</b> HIVQA & HIVPT Web-based Tracking and Reporting Systems <b>Position:</b> Technical Lead
	Ongoing Support	<b>Technical and Managerial Experience:</b> Customization, development, and implementation of Laboratory Information Management System (LIMS) for Bungoma and Kapsabet District Hospitals. The system is fully integrated to the hospitals' EMRS automatically receiving lab test requests from clinicians and returning results. The system tracks the movement of specimens



		providing turn-around-times; is interfaced with laboratory instruments; and provides individual workload monitoring, test reporting and quality control documentation.
June 2017	Dec 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre</p> <p><b>Client:</b> Association of Public Health Laboratories (APHL), Center for Disease Control (Kenya), Ministry of Health, Kenya, IBM Research Lab</p> <p><b>Project:</b> Basic Laboratory Information System (BLIS 3.0).</p> <p><b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• Main System Components design and development.</li> <li>• Front end Web portal development for PT registration, dispatch and submission of test results</li> <li>• Back-end development for analysis of submission and communication to PT users of performance.</li> <li>• Technical Documentation</li> </ul>
Jan 2016	Dec 2019	<p>Company: @iLab Africa Research Centre</p> <p>Position: Senior Software Developer</p> <p>Project: <b>mHealth4Afrika</b>. A project focused on supporting <b>Sustainable Development Goal 3</b> by co-designing a modular, state-of-the-art health Information System, designed to strengthen primary healthcare delivery in resource constrained environments.</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• System Design</li> <li>• System Development</li> <li>• System Deployment</li> <li>• System Support and maintenance</li> <li>• Technical Documentation</li> </ul>
<p>Certification:</p> <p>I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.</p>		
		Date: 28th February 2022



Certificate Number  
M2018/066



Strathmore  
UNIVERSITY

*This is to certify that*

**Owenda Benjamin Odonya**

*having fulfilled all the requirements and  
conditions for the award of the degree of*

**MASTER OF SCIENCE  
IN INFORMATION SYSTEMS SECURITY**

*was admitted to the degree with all the rights, privileges  
and honours thereto appertaining at a congregation held  
at this University on the Twenty-ninth day of  
June in the year Two thousand and eighteen*

Vice Chancellor



Deputy Vice Chancellor  
(Academic & Student Affairs)



00115687-01-1B7F



00004980



Certificate Number  
DEG2016/037

**Strathmore**  
UNIVERSITY

*This is to certify that*

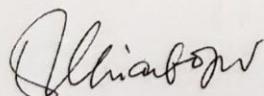
**Owenda Benjamin Odonya**

*having fulfilled all the requirements and  
conditions for the award of the degree of*

**BACHELOR OF BUSINESS  
INFORMATION TECHNOLOGY  
(Database Administration Option)**

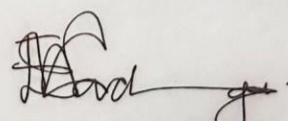
**2nd Class Honours (Upper)**

*was admitted to the degree with all the rights, privileges  
and honours thereto appertaining at a congregation held  
at this University on the Twenty fourth day of  
June in the year Two thousand and sixteen*



Vice Chancellor





Deputy Vice Chancellor  
(Academic & Student Affairs)



00112846-01-BBFL



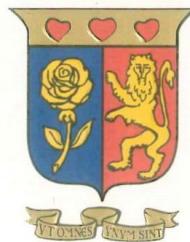
00002060



Name of candidate: Kenneth Mutuma Sila		
Candidate information	<b>Position:</b> Senior Software Developer/Trainer	
	Professional qualifications	
	<b>Institution:</b> Strathmore University <b>Year:</b> 2018-2020 <b>Course:</b> Msc. Information Systems Security	
	<b>Institution:</b> Strathmore University <b>Year:</b> July 2012 to June 2015 <b>Course:</b> M.Sc. Mobile Innovation and Development	
Present employment	<b>Name of Employer:</b> Strathmore University, @iLabAfrica,	
	<b>Address of Employer</b>	P.O. Box 59857-00200. Keri Road, Madaraka Estate
	Telephone: +254703034496	Contact (manager / personnel officer): Immanuel Kweyu
	Fax: N/A	Email: achemutai@strathmore.edu
	<b>Job title of candidate:</b> Senior Software Developer	<b>Years with present Employer:</b> 6 years
<b>Professional Experience</b>		
<b>From</b>	<b>To</b>	<b>Company/Project/ Position/Relevant technical and management experience</b>
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May 2019 (Phase 1)	Feb 2020 (Phase 1)	<b>Technical and Managerial Experience:</b> Design, development, and post implementation maintenance of KHRO based on active user participation, reviews and analysis employing a variety of quantitative, qualitative, observational and focus group discussion tools and technics. Technical Documentation
June 2017	Dec 2018	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Kenya National HIV Reference Laboratory <b>Project:</b> HIVQA & HIVPT Web-based Tracking and Reporting Systems <b>Position:</b> Technical Lead
	Ongoing Support	<b>Technical and Managerial Experience:</b> Customization, development, and implementation of Laboratory Information Management System (LIMS) for Bungoma and Kapsabet District Hospitals. The system is fully integrated to the hospitals' EMRS automatically receiving lab test requests from clinicians and returning results. The system tracks the movement of specimens providing turn-around-times; is interfaced with laboratory instruments;



		and provides individual workload monitoring, test reporting and quality control documentation.
June 2017	Dec 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre</p> <p><b>Client:</b> Association of Public Health Laboratories (APHL), Center for Disease Control (Kenya), Ministry of Health, Kenya, IBM Research Lab</p> <p><b>Project:</b> Basic Laboratory Information System (BLIS 3.0).</p> <p><b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• Main System Components design and development.</li> <li>• Front end Web portal development for PT registration, dispatch and submission of test results</li> <li>• Back-end development for analysis of submission and communication to PT users of performance.</li> </ul>
Jan 2016	Dec 2019	<p>Company: @iLab Africa Research Centre</p> <p>Position: Senior Software Developer</p> <p>Project: <b>mHealth4Afrika.</b> A project focused on supporting <b>Sustainable Development Goal 3</b> by co-designing a modular, state-of-the-art health Information System, designed to strengthen primary healthcare delivery in resource constrained environments.</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• System Design, Development, Deployment, Support and maintenance</li> </ul>
Jan 2015	Dec 2018	<p>Company: @iLab Africa Research Centre</p> <p>Position: Senior Software Developer</p> <p>Project: ERA-Africa (EU/NRF) Grant on eHealth Innovations and Personalized Medicine between Europe and Africa, EU,</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• System Design, Development, Deployment, Support and maintenance</li> </ul>
<p>Certification:</p> <p>I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.</p>		
	Date: 28th February 2022	



Certificate Number  
DEG2016/025

**Strathmore**  
UNIVERSITY

*This is to certify that*

**Mutuma Kenneth Sila**

*having fulfilled all the requirements and  
conditions for the award of the degree of*

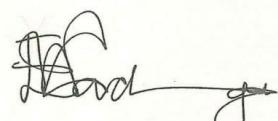
**BACHELOR OF BUSINESS  
INFORMATION TECHNOLOGY  
(Database Administration Option)**

**2nd Class Honours (Upper)**

*was admitted to the degree with all the rights, privileges  
and honours thereto appertaining at a congregation held  
at this University on the Twenty fourth day of  
June in the year Two thousand and sixteen*



Vice Chancellor



Deputy Vice Chancellor  
(Academic & Student Affairs)



00112834-01-6FB6



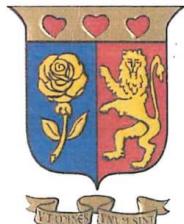
00002048



<b>Name of candidate: Ms. Ann Chemutai</b>		
Candidate information	<b>Position:</b> Senior Software Developer/Trainer	
	Professional qualifications	
	<b>Institution:</b> Strathmore University <b>Year:</b> July 2016 to Date <b>Course:</b> Doctor of Philosophy in IT	
	<b>Institution:</b> Strathmore University <b>Year:</b> July 2012 to June 2015 <b>Course:</b> M.Sc. Mobile Innovation and Development	
Present employment		
	<b>Name of Employer:</b> Strathmore University, @iLabAfrica,	
	<b>Address of Employer</b>	P.O. Box 59857-00200. Keri Road, Madaraka Estate
	Telephone: +254703034496	Contact (manager / personnel officer): Immanuel Kweyu
	Fax: N/A	Email: achemutai@strathmore.edu
	<b>Job title of candidate:</b> Senior Software Developer	<b>Years with present Employer:</b> 5 years
<b>Professional Experience</b>		
<b>From</b>	<b>To</b>	<b>Company/Project/ Position/Relevant technical and management experience</b>
Oct 2020 (Phase 2)	Apr 2021 (Phase 2)	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> World Bank / WHO/ Ministry of Health of Kenya <b>Project:</b> Kenya Health and Research Observatory – KHRO Portal. <b>Position:</b> Technical Lead
May 2019 (Phase 1)	Feb 2020 (Phase 1)	<b>Technical and Managerial Experience:</b> Design, development, and post implementation maintenance of KHRO based on active user participation, reviews and analysis employing a variety of quantitative, qualitative, observational and focus group discussion tools and technics. Technical Documentation
Jan 2020	To Date	<b>Position:</b> IBM Research Fellow <b>Project:</b> IBM Research Africa - Kenya through African Center for Technology Studies, Nairobi (Kenya) <b>Technical and Managerial Experience:</b> I received a research fellow position at African Center for Technology Studies that assigns PhD students to industry partners where the student's research is applied in a technical environment. I'm currently working with IBM's healthcare management unit to conduct my research in Interoperability of Health Information Systems in Low Income Countries



June 2017	Dec 2018 Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> Kenya National HIV Reference Laboratory  <b>Project:</b> HIVQA &amp; HIVPT Web-based Tracking and Reporting Systems  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b>  Customization, development, and implementation of Laboratory Information Management System (LIMS) for Bungoma and Kapsabet District Hospitals. The system is fully integrated to the hospitals' EMRS automatically receiving lab test requests from clinicians and returning results. The system tracks the movement of specimens providing turn-around-times; is interfaced with laboratory instruments; and provides individual workload monitoring, test reporting and quality control documentation.</p>
June 2017	Dec 2018 Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> Association of Public Health Laboratories (APHL), Center for Disease Control (Kenya), Ministry of Health, Kenya, IBM Research Lab  <b>Project:</b> Basic Laboratory Information System (BLIS 3.0).  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• Main System Components design and development.</li> <li>• Front end Web portal development for PT registration, dispatch and submission of test results</li> <li>• Back-end development for analysis of submission and communication to PT users of performance.</li> <li>• Technical Documentation</li> </ul>
Jan 2016	Dec 2019	<p>Company: @iLab Africa Research Centre  Position: Senior Software Developer  Project: <b>mHealth4Afrika</b>. A project focused on supporting <b>Sustainable Development Goal 3</b> by co-designing a modular, state-of-the-art health Information System, designed to strengthen primary healthcare delivery in resource constrained environments.</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• System Design</li> <li>• System Development</li> <li>• System Deployment</li> <li>• System Support and maintenance</li> <li>• Technical Documentation</li> </ul>
<p><b>Certification:</b>  I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.</p>		
	Date: 28th February 2022	



Certificate Number  
M2015/029

**Strathmore**  
UNIVERSITY

*This is to certify that*

**Maritim Chemutai Ann**

*having fulfilled all the requirements and  
conditions for the award of the degree of*

**MASTER OF SCIENCE  
IN MOBILE TELECOMMUNICATIONS AND INNOVATION**

*was admitted to the degree with all the rights, privileges  
and honours thereto appertaining at a congregation held  
at this University on the Twenty sixth day of  
June in the year Two thousand and fifteen*

Vice Chancellor

KENNETH WANJIRI MAINA  
ADVOCATE & COMMISSIONER FOR OATHS  
P.O. BOX 11893 - 00100, NAIROBI  
ADMISSION NO: P105 / 4907 / 02  
PRACTICE

Deputy Vice Chancellor  
(Academic & Student Affairs)



00110467-01-2B4F



00001697



Certificate Number  
DEG 7342



## STRATHMORE UNIVERSITY

This is to certify that  
*Maritim Chemutai Ann*  
having fulfilled all the requirements and  
conditions for the award of the degree of

**BACHELOR OF BUSINESS  
INFORMATION TECHNOLOGY  
(Database Administration Option)**

**2<sup>nd</sup> Class Honours (Upper)**

was admitted to the degree with all the rights, privileges  
and honours thereto appertaining at a congregation held  
at this University on the Twenty Ninth Day of  
June in the year two thousand and twelve.



*Blairson*

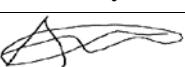
Vice Chancellor

*S. M. Maina*  
Deputy Vice Chancellor  
(Academic Affairs)



Name of candidate: Anthony Ereng		
Candidate information	Position: Senior Software Developer/Trainer	
	Professional qualifications	
	<b>Institution:</b> Makerere University Kampala (M.U.K) <b>Course:</b> Bachelor of Science in Mechanical Engineering	
	<b>Institution:</b> Bishop Cypriano Kihangire S.S Luzira, Uganda <b>Course:</b> Advanced Certificate of Education	
Present employment	<b>Name of Employer:</b> Strathmore University, @iLabAfrica,	
	<b>Address of Employer</b>	P.O. Box 59857-00200. Keri Road, Madaraka Estate
	Telephone: +254703034496	Contact (manager / personnel officer): Immanuel Kweyu
	Fax: N/A	Email: aereng@strathmore.edu
	<b>Job title of candidate:</b> Senior Software Developer	<b>Years with present Employer:</b> 4years
<b>Professional Experience</b>		
From	To	Company/Project/ Position/Relevant technical and management experience
Oct 2020 (Phase 2)	Apr 2021 (Phase 2)	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> World Bank / WHO/ Ministry of Health of Kenya <b>Project:</b> Kenya Health and Research Observatory – KHRO Portal. <b>Position:</b> Technical Lead
May 2019 (Phase 1)	Feb 2020 (Phase 1)	<b>Technical and Managerial Experience:</b> Design, development, and post implementation maintenance of KHRO based on active user participation, reviews and analysis employing a variety of quantitative, qualitative, observational and focus group discussion tools and techniques. Technical Documentation
Jan 2020	To Date	<b>Position:</b> IBM Research Fellow <b>Project:</b> IBM Research Africa - Kenya through African Center for Technology Studies, Nairobi (Kenya) <b>Technical and Managerial Experience:</b> I received a research fellow position at African Center for Technology Studies that assigns PhD students to industry partners where the student's research is applied in a technical environment. I'm currently working with IBM's healthcare management unit to conduct my research in Interoperability of Health Information Systems in Low Income Countries
June 2017	Dec 2018 Ongoing Support	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Kenya National HIV Reference Laboratory <b>Project:</b> HIVQA & HIVPT Web-based Tracking and Reporting Systems <b>Position:</b> Technical Lead
		<b>Technical and Managerial Experience:</b>



		Customization, development, and implementation of Laboratory Information Management System (LIMS) for Bungoma and Kapsabet District Hospitals. The system is fully integrated to the hospitals' EMRS automatically receiving lab test requests from clinicians and returning results. The system tracks the movement of specimens providing turn-around-times; is interfaced with laboratory instruments; and provides individual workload monitoring, test reporting and quality control documentation.
June 2017	Dec 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre</p> <p><b>Client:</b> Association of Public Health Laboratories (APHL), Center for Disease Control (Kenya), Ministry of Health, Kenya, IBM Research Lab</p> <p><b>Project:</b> Basic Laboratory Information System (BLIS 3.0).</p> <p><b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• Main System Components design and development.</li> <li>• Front end Web portal development for PT registration, dispatch and submission of test results</li> <li>• Back-end development for analysis of submission and communication to PT users of performance.</li> <li>• Technical Documentation</li> </ul>
April 2017	Jan 2018	<p>Company: Uganda National Health Laboratory Services</p> <p>Position: Software Developer</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• System Design, Development and Deployment</li> <li>• System Support and maintenance</li> <li>• Technical Documentation</li> </ul>
Feb 2014	March 2016	<p>Company: @iLab Africa Research Centre</p> <p>Position: Senior Software Developer</p> <p>Project: <b>mHealth4Afrika.</b> A project focused on supporting <b>Sustainable Development Goal 3</b> by co-designing a modular, state-of-the-art health Information System, designed to strengthen primary healthcare delivery in resource constrained environments.</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• System Design</li> <li>• System Development</li> <li>• System Deployment</li> <li>• System Support and maintenance</li> <li>• Technical Documentation</li> </ul>
Certification:		I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.
	Date: 28th February 2022	

**Name of candidate: George Muchiri**



Candidate information	<b>Position:</b> Senior Software Developer/Trainer	
	Professional qualifications	
	<b>Institution:</b> Strathmore University <b>Year:</b> 2018-2021 <b>Course:</b> MSc. Information Systems Security	
	<b>Institution:</b> Strathmore University <b>Year:</b> 2014-2017 <b>Course:</b> BSc Business Information Technology	
Present employment		
	<b>Name of Employer:</b> Strathmore University, @iLabAfrica,	
	<b>Address of Employer</b>	P.O. Box 59857-00200. Keri Road, Madaraka Estate
	Telephone: +254703034496	Contact (manager / personnel officer): Immanuel Kweyu
	Fax: N/A	Email: gmuchiri@strathmore.edu
	<b>Job title of candidate:</b> Senior Software Developer	<b>Years with present Employer:</b> 5 years

#### Professional Experience

From	To	Company/Project/ Position/Relevant technical and management experience
Oct 2020 (Phase 2)	Apr 2021 (Phase 2)	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> World Bank / WHO/ Ministry of Health of Kenya <b>Project:</b> Kenya Health and Research Observatory – KHRO Portal. <b>Position:</b> Technical Lead
May 2019 (Phase 1)	Feb 2020 (Phase 1)	<b>Technical and Managerial Experience:</b> Design, development, and post implementation maintenance of KHRO based on active user participation, reviews and analysis employing a variety of quantitative, qualitative, observational and focus group discussion tools and technics. Technical Documentation
Jan 2020	To Date	<b>Position:</b> IBM Research Fellow <b>Project:</b> IBM Research Africa - Kenya through African Center for Technology Studies, Nairobi (Kenya) <b>Technical and Managerial Experience:</b> I received a research fellow position at African Center for Technology Studies that assigns PhD students to industry partners where the student's research is applied in a technical environment. I'm currently working with IBM's healthcare management unit to conduct my research in Interoperability of Health Information Systems in Low Income Countries
June 2017	Dec 2018 Ongoing	<b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Kenya National HIV Reference Laboratory



	Support	<p><b>Project:</b> HIVQA &amp; HIVPT Web-based Tracking and Reporting Systems  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b>  Customization, development, and implementation of Laboratory Information Management System (LIMS) for Bungoma and Kapsabet District Hospitals. The system is fully integrated to the hospitals' EMRS automatically receiving lab test requests from clinicians and returning results. The system tracks the movement of specimens providing turn-around-times; is interfaced with laboratory instruments; and provides individual workload monitoring, test reporting and quality control documentation.</p>
June 2017	Dec 2018  Ongoing Support	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> Association of Public Health Laboratories (APHL), Center for Disease Control (Kenya), Ministry of Health, Kenya, IBM Research Lab  <b>Project:</b> Basic Laboratory Information System (BLIS 3.0).  <b>Position:</b> Technical Lead</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• Main System Components design and development.</li> <li>• Front end Web portal development for PT registration, dispatch and submission of test results</li> <li>• Back-end development for analysis of submission and communication to PT users of performance.</li> <li>• Technical Documentation</li> </ul>
Jan 2016	Dec 2019	<p>Company: @iLab Africa Research Centre  Position: Senior Software Developer  Project: <b>mHealth4Afrika</b>. A project focused on supporting <b>Sustainable Development Goal 3</b> by co-designing a modular, state-of-the-art health Information System, designed to strengthen primary healthcare delivery in resource constrained environments.</p> <p><b>Technical and Managerial Experience:</b></p> <ul style="list-style-type: none"> <li>• System Design</li> <li>• System Development</li> <li>• System Deployment</li> <li>• System Support and maintenance</li> <li>• Technical Documentation</li> </ul>
<p>Certification:  I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.</p>		
	Date: 28th February 2022	



Name of candidate: Eunice M. Maingi		
<b>Candidate information</b>	<b>Position:</b> System Security Expert	
	<b>Professional qualifications</b>	
	<p><b>Professional Qualifications</b></p> <ol style="list-style-type: none"> <li>1. Certified Information Systems auditor (CISA) - June 2009</li> <li>2. Member of ISACA: 2009 -2013</li> <li>3. Conversant with IT Audit standards and tools: COBIT, ISO, CAAT's e.g. AS2</li> <li>4. Member of the Kenya Institute of Internal Auditors (IAA): 2011 – 2013</li> <li>6. Blockchain: IBM Blockchain Essentials and developer foundation badges</li> <li>7. Pursuing CEH &amp; CHFI instructor certification</li> </ol> <p><b>Academic Qualifications</b></p> <ol style="list-style-type: none"> <li>1. Strathmore University: Masters in Information Systems Security (Msc. ISS), Ongoing</li> <li>2. Strathmore University: Bachelor of Business Information Technology (BBIT), 2005-2008 - First class honors</li> <li>3. Certificate Information Systems Auditor (CISA) (2009)</li> </ol>	
<b>Present employment</b>		
	<b>Name of Employer:</b> @iLabAfrica - Strathmore University	
	<b>Address of Employer</b>	P.O Box 59857,00200, Nairobi.
	Telephone: +254 755 650 650	<b>Contact (manager / personnel officer):</b> Immanuel Kweyu
	Fax: N/A	Email: <a href="mailto:EMaingi@strathmore.edu">EMaingi@strathmore.edu</a>
	<b>Job title of candidate:</b> Manager, IT Security Unit	<b>Years with present Employer:</b> 5 years
<b>Professional Experience</b>		
<b>From</b>	<b>To</b>	<b>Company/Project/ Position/Relevant technical and management experience</b>
April 2021	May 2021	<p><b>Company/Institution:</b> @iLabAfrica Research Centre  <b>Client:</b> Stima SACCO  <b>Project:</b> IT Security Audit</p> <p><b>Position:</b> Security Auditor  <b>Technical and Managerial Experience:</b>            Team work, security assessment, setting up testing environments for android applications, android cryptographic APIs, android anti-reversing defenses, code quality and build settings for android applications, tampering and reverse engineering for android applications, and Data storage in android. Report writing and presentation.</p>



Sep 2020	Sep 2020	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Penda Health (K) <b>Project:</b> IT Security Audit</p> <p><b>Position:</b> Security Auditor <b>Technical and Managerial Experience:</b> Review of the security controls on the Health Record management system, Finance system and the HR system.</p>
Jan 2019	Dec 2019	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Strathmore University <b>Project:</b> System Development: Digitizing Academic Certificates using Blockchain technology</p> <p><b>Position:</b> Project Lead <b>Technical and Managerial Experience:</b> Project conceptualization, time plan development, design, sourcing for team members, role allocation and follow-up, timelines management, overall in charge of project delivery, Reporting, Writing research report, presentation in conference and to stakeholders.</p>
Jan 2018	Dec 2018	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Child Online Protection (COP) <b>Project:</b> Research and Training for children and parents</p> <p><b>Position:</b> Project Lead <b>Technical and Managerial Experience:</b> Project Scoping and planning. Role allocation and follow-up. Research on child online activities. Curriculum development and delivery of content.</p>
Jan 2017	Dec 2017	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Local Bank <b>Project:</b> Core Banking System Changeover</p> <p><b>Position:</b> Core Team member <b>Technical and Managerial Experience:</b> Data verification and transfer to new system. Review of new systems security controls. User acceptance testing and training.</p>
Feb 2011	Feb 2013	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Chase Bank Kenya Limited <b>Project:</b> Implementation and post implementation review of Agency banking, Prepaid cards, and Mobile banking systems for a Kenyan bank.</p> <p><b>Position:</b> Senior Officer – IT Audit <b>Technical and Managerial Experience:</b> Performing branch operations and departmental audits: with focus on the Information systems controls and processes. Tasks performed include:</p> <ul style="list-style-type: none"><li>• Continuous assessment of bank-wide IT systems, controls and processes.</li></ul>



		<ul style="list-style-type: none"><li>• Data Verification; to guarantee the accuracy of data transferred from the old system to the new one during the implementation of Flex cube, a new banking system.</li><li>• System implementation review, post implementation and user acceptance and satisfaction reviews.</li><li>• Project implementation review for Agency banking, pre-paid cards,</li><li>• mobile and internet banking.</li><li>• Review of branch and department controls. Preparation and presentation of audit findings.</li><li>• Preparation and quality reviews of audit reports prepared by team members before presenting them to the end users.</li><li>• Facilitation of user training sessions.</li></ul>
Jan 2010	Jan 2011	<p><b>Company/Institution:</b> @iLabAfrica Research Centre <b>Client:</b> Audit Firm <b>Project:</b> Implementation and post implementation review of Agency banking, Prepaid cards, and Mobile banking systems for a Kenyan bank.</p> <p><b>Position:</b> Business Analyst <b>Technical and Managerial Experience:</b> General computer controls review prior to the annual financial audits. This exercise included testing systems to establish accurate execution of transactions, adequate levels of controls and redundancy for business continuity in case of a system failure. Conducting risk assessments for companies in the financial and manufacturing sector. Developing and refining the risk matrix, rating risks and recommending adequate system controls. Technical and financial proposal development bidding for consulting Bids.</p>
Certification: I, the undersigned, certify that this data correctly describes my qualifications, and experience, and confirm my availability for the proposed project should we be awarded the Bid.		
		Date: 28th February 2022



CISA<sup>®</sup>  
Certified Information  
Systems Auditor<sup>®</sup>  
All ISACA Certification

## CERTIFIED INFORMATION SYSTEMS AUDITOR<sup>®</sup>

ISACA hereby certifies that

### Eunice Mwelu Maingi

has successfully met all requirements and is qualified as a Certified Information Systems Auditor; in witness whereof, we have subscribed our signatures to this certificate.

Requirements include prerequisite professional experience; adherence to the ISACA Code of Professional Ethics and the CISA continuing professional education policy; and passage of the CISA exam.

15 June 2012

Date of Certification

Kenneth D. Vandewall

International President of ISACA and ITGI

Chair, CISA Certification Committee

31 January 2016

Expiration Date

12101617

Certificate Number



Trust in, and value from, information systems

ISO/IEC 17024

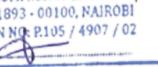




## Annex 2: Statutory Documents

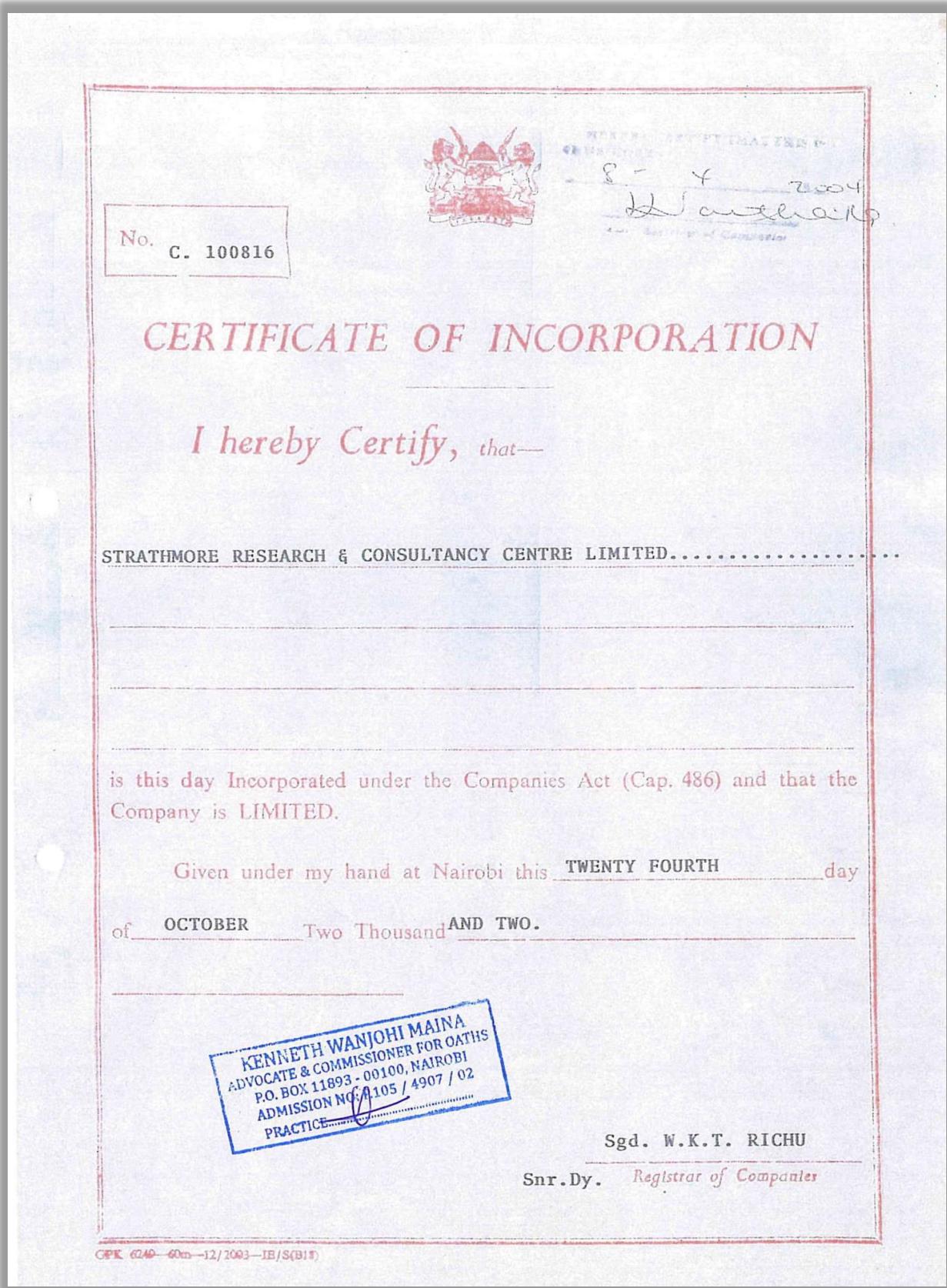
### 1. Valid Tax Compliance Certificate

 KENYA REVENUE AUTHORITY <a href="http://www.kra.go.ke">www.kra.go.ke</a>		<b>Tax Compliance Certificate</b>	
<b>Taxpayer PIN :</b> P051149547H		<b>Certificate Date:</b> 04/02/2022	
<b>Name and Address :</b> STRATHMORE RESEARCH AND CONSULTANCY CENTRE LIMITED STRATHMORE UNIVERSITY, NAIROBI, Langata District, PO Box:59857. Postal Code:00200		<b>Certificate Number:</b> KRASON1259326622 	
<p><b>This is to confirm that STRATHMORE RESEARCH AND CONSULTANCY CENTRE LIMITED, Personal Identification Number P051149547H has filed relevant tax returns and paid taxes due as provided by Law.</b></p>			
<p><b>This Certificate will be valid for twelve (12) months up to 03/02/2023.</b></p>			
<p><b>Caveat</b> This certificate is issued on the basis of information available with the authority as at the certificate date mentioned above. The Authority reserves the right to withdraw the certificate if new evidence materially alters the tax compliance status of the recipient.</p>			
<p><b>Disclaimer :</b> This certificate is system Generated and therefore does not require signature. You may confirm validity of this certificate on the iTax Portal by using the TCC Checker. This certificate confirms your compliance status for a period of five years preceding the date of issue. The certificate may however be withdrawn on grounds of outstanding debt affecting periods prior to this.</p>			

KENNETH WANJUHI MAINA  
ADVOCATE & COMMISSIONER FOR OATHS  
P.O. BOX 11893 - 00100, NAIROBI  
ADMISSION NO: P.105 / 4907 / 02  
PRACTICE 

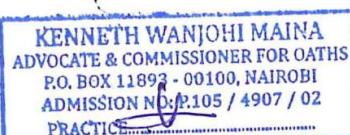


## 2. Certificate of Incorporation



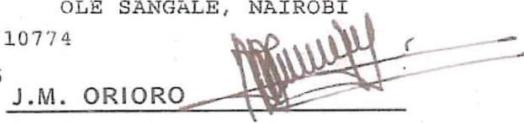
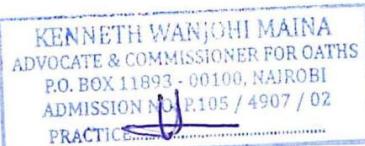


### 3. KRA PIN Certificate

 <b>KENYA REVENUE AUTHORITY</b> <a href="http://www.kra.go.ke">www.kra.go.ke</a>	<b>PIN Certificate</b>	<b>For General Tax Questions</b> Contact KRA Call Centre Tel: +254 (020) 4999 999 Cell: +254(071)0999 999 Email: <a href="mailto:callcentre@kra.go.ke">callcentre@kra.go.ke</a>																				
<b>Certificate Date :</b> 05/11/2013 <b>Personal Identification Number</b> P051149547H 																						
<small>This is to certify that taxpayer shown herein has been registered with Kenya Revenue Authority</small>																						
<b>Taxpayer Information</b>																						
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3	Value Added Tax (VAT)	07/09/2005	N.A.	Active																		
<small>The above PIN must appear on all your tax invoices and correspondences with Kenya Revenue Authority. Your accounting end month is December unless a change has been approved by the Commissioner-Domestic Taxes Department. The status of Tax Obligation(s) with 'Dormant' status will automatically change to 'Active' on date mentioned in "Effective Till Date" or any transaction done during the period. This certificate shall remain in force till further updated.</small>																						
																						
<small><b>Disclaimer :</b> This is a system generated certificate and does not require signature.</small>																						



#### 4. VAT Registration Certificate

		VAT 2
 Kenya Revenue Authority VALUE ADDED TAX DEPARTMENT		
Effective Date of Registration (EDR)	VAT Registration Number	PIN
08/08/2005	0149495Z	P051149547H
<b>VAT - Certificate of Registration</b>		
Issued to:	STRATHMORE RESEARCH & CONSULTANCY CENTRE LTD	
Postal Address:	P.O. BOX 59857, 00200 NAIROBI	
Physical Address: Road/Street:	OLE SANGALE, NAIROBI	
Building/Plot No.:	LR NO 209/10774	
Date of Issue:	08/08/2005 	
For: COMMISSIONER OF VALUE ADDED TAX		
 KENNETH WANJONI MAINA ADVOCATE & COMMISSIONER FOR OATHS P.O. BOX 11893 - 00100, NAIROBI ADMISSION NO. P.105 / 4907 / 02 PRACTICE NO. 105		



## 5. Single Business Permit

1/7/22, 9:29 AM NCCG ePayments Portal

 NAIROBI CITY COUNTY  
SINGLE BUSINESS PERMIT

Effective Date	31st December 2021
Expiry Date	30th December 2022
Duration	12 Months

Nairobi City County grant this Business Permit to

Applicant/Business/Commercial Name <b>STRATHMORE RESEARCH &amp; CONSULTANCY CENTRE LTD</b>	Business ID <b>1317306</b>
KRA Pin	

To engage in the activity/business/profession or Occupation of

Small professional services firm with 1 - 20 employees & or area up to 100sq.m	Activity Code <b>615</b>
CORPORATE TRAINING AND CONSULTANCY	

Having Paid a Business Permit Fee of KES **35,000**

Amount in words    \*\*\* Thirty-five Thousand shillings only \*\*\*

Business under this permit shall be conducted at the address as indicated below

P.O. Box	Plot No:	<b>20/10744</b>
Road Street	<b>OLE SANGALE RD</b>	
Building: -	Floor: -	Door/stall No: 

Date of Issue **2022-01-04 16:22:39**

By order of




Notice: It is an offence to give false information. Granting this permit does not exempt the business identified above from complying and any other relevant laws and regulations as established by the Government of Kenya and Nairobi City County

Powered by 

<https://epayments.nairobi.go.ke/view-sbp-permit/BP22-233880/1317306> 1/1



## 6. Disclosure of Beneficial Ownership (CR12)

 THE REPUBLIC OF KENYA	<b>BUSINESS REGISTRATION SERVICE</b> P. O. BOX 30031 NAIROBI 2 AUG 2021																																																							
<b>TO</b> JAMES NYIHA WANJOHI P.O. Box 28491 00200 - CITY SQUARE																																																								
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 REF NO: OS-3DF7BYGZ																																																								
<small>DISCLAIMER: THIS IS A SYSTEM GENERATED CERTIFICATE AND DOES NOT REQUIRE A SIGNATURE</small>																																																								
																																																								



## 7. ICT Authority Kenya – Certificate of Accreditation

SN: 2157632F08



### Certificate of Accreditation

This is to certify that:

**STRATHMORE RESEARCH AND CONSULTANCY CENTRE LIMITED (C.100816)**

Has demonstrated compliance with the Government IT Governance Standard, Criteria for accreditation of Government ICT Suppliers/Contractors and has been accredited under Category **ICTA 3: SYSTEMS AND APPLICATIONS** for the provision of ICT services in the scope of accreditation commencing from 07-02-2022 to 07-02-2023

Director, Programmes and Standards

Chairman, Accreditation Committee



## 8. Communications Authority of Kenya – Telecommunications Licence

**REPUBLIC OF KENYA**

**COMPLIANCE CERTIFICATE**

*This is to certify that*

**STRATHMORE RESEARCH & CONSULTANCY CENTRE**  
**LIMITED**

*of Post Office Box 59857 Nairobi 00200*  
*has been licensed as a*

**TELECOMMUNICATIONS CONTRACTOR**

*in the Republic of Kenya in accordance with the Kenya Information & Communications Act, the Kenya Information & Communications Regulations and the Terms & Conditions of the referenced license.*

This certificate is valid up to .....30TH JUNE 2022.....after which it MUST be renewed

Signed .....*Monday*.....

For: Director General

Please note that this is not a licence but proof of compliance

**KENNETH WANJIRU MAINA**  
ADVOCATE & COMMISSIONER FOR OATHS  
P.O. BOX 11893 - 00100, NAIROBI  
ADMISSION NO: P.105 / 4907 / 02  
PRACTICE *[Signature]*

Serial No: 07-001263-00-00-00243

Date (day/month/year)

25<sup>TH</sup> OCTOBER / 2021.....



### Annex 3: Recommendation Letters



#### COUNTY GOVERNMENT OF KIAMBU

DEPARTMENT OF YOUTH AFFAIRS, SPORTS, ICT & COMMUNICATION

P.O Box 2344 - 00900 Kiambu, Kenya

Tel: +254 709 877 000

Email: info@Kiambu.go.ke

Website: www.Kiambu.go.ke

Twitter: @KiambuCountyGov

Date: 12<sup>th</sup> August, 2021

To Whom It May Concern.

#### REF: RECOMMENDATION LETTER

This is to confirm that **Strathmore Research and Consultancy Centre** supplied, installed, maintained and supported the County Government of Kiambu with Revenue Management System since November 2014.

We hereby recommend their services to any organization.

Yours Sincerely,





COUNTY GOVERNMENT OF BUSIA  
P.O. BOX PRIVATE BAG – 50400  
BUSIA, KENYA



COUNTY TREASURY

Our Ref: CG/BSA/FIN/REV/VOL.V/008

Date: August 12<sup>th</sup>, 2021

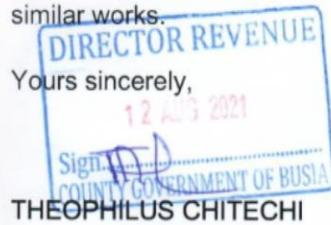
TO WHOM IT MAY CONCERN.

REF: RECOMMENDATION LETTER

We confirm that Strathmore Research and Consultancy Centre have successfully implemented an Automated Revenue collection system at the County Government of Busia.

We have found their services consistent and therefore recommend them for similar works.

Yours sincerely,



AG. DIRECTOR REVENUE-COUNTY GOVERNMENT OF BUSIA



THE COUNTY GOVERNMENT OF KISUMU

*Office of The County Treasury*  
Department of Finance and Economic Planning  
Directorate of Revenue

To Whom It May Concern

REF: RECOMMENDATION LETTER

This is to confirm that Strathmore Research and Consultancy Centre (SRCC) has supplied, installed, maintained, and supported County Government of Kisumu with a Revenue Collection and Management System.

We have found their services satisfactory and professional; therefore we would recommend them for provision of similar services.

Yours Sincerely,

For   
Peter Kayila  
Director Revenue



Prosperity House (Former Nyanza Provincial Headquarters Building) 2<sup>nd</sup> Floor  
P.O. Box 2738-40100 Kisumu City  
E-mail: george.omondi@kisumu.go.ke



## COUNTY GOVERNMENT OF KIRINYAGA



### OFFICE OF THE COUNTY SECRETARY DEPARTMENT OF ICT

Telephone: +254-020-8010181  
FAX: +254-020-2582237  
Email: [info@kirinyaga.go.ke](mailto:info@kirinyaga.go.ke)  
When replying please quote;

County Headquarters  
P.O.BOX, 260-10304  
KUTUS.  
Kirinyaga

3<sup>RD</sup> AUGUST 2021

**REF: ICT/AUGUST21/3**

**TO WHOM IT MAY CONCERN**

**RE: RECOMMENDATION LETTER**

**Strathmore Research and Consultancy Centre Ltd (SRCC)** have been contracted by County Government of Kirinyaga and successfully implemented an Automated Revenue Collection System.

We have found their services professional and therefore recommend them for provision of similar services.

Yours Sincerely,

Francis Kibuchi



Director ICT

County Government of Kirinyaga



## COUNTY GOVERNMENT OF KILIFI



## THE COUNTY TREASURY

TO WHOM IT MAY CONCERN,

### REF: RECOMMENDATION LETTER

Strathmore Research and Consultancy Centre have been contracted by Kilifi County Government to supply, instal, commission and train on Revenue Collection System. They have always responded fast to our needs and requirements and have found them very responsible. Their integrity is unquestionable. We would to confirm their services are excellent to us and we would not hesitate to recommend them for the provision of similar services.

Yours Sincerely,

ALFRED DENA  
DIRECTOR REVENUE MANAGEMENT  
KILIFI COUNTY GOVERNMENT



## KENYA NATIONAL BUREAU OF STATISTICS



P. O. Box 30266  
00100, Nairobi GPO, Kenya  
Telephone: Nairobi 3317586/8, 612/22,  
3317623, 3317651  
Fax: 254-020-3315977  
Email: [directorgeneral@knbs.or.ke](mailto:directorgeneral@knbs.or.ke)  
[info@knbs.or.ke](mailto:info@knbs.or.ke)  
Website: [www.knbs.or.ke](http://www.knbs.or.ke)

Reference No. KNBS ADM 29/1

21<sup>st</sup> May, 2018

### TO WHOM IT MAY CONCERN

#### REF: RECOMMENDATION LETTER

This is to confirm that **Strathmore** was appointed to implement the KNBS County Data Visualization Project.

We confirm we have had a good working relationship with them and their services have been satisfactory.

We wish to recommend them to any organization that would require their services.

Yours Sincerely

Cleophas Kiiro  
For DIRECTOR GENERAL

Kenya National Bureau of Statistics is ISO 9001:2015 Certified





27<sup>th</sup> March 2019

To Whom It May Concern

**Letter of Recommendation For Strathmore University**

I am writing this letter as a recommendation for the services provided by Strathmore University for the implementation of Performance, monitoring, and evaluation system. For the past few years we have worked hand in hand with Strathmore University to assist us with numerous services including:

- Development and implementation of a performance, monitoring and evaluation system
- Development and implementation of a mobile data collection tool for conservancies called WILD

We would like you to consider Strathmore University as a technology partner to help you address your needs. We have had a good experience with them over the past few years for the services they have rendered to us. I therefore strongly recommend their services.

Yours Sincerely,

Patrick Waringa

Chief Operations Officer



29<sup>th</sup> November 2012

Deputy Regional Program Director  
UN Women  
Block M/Ground Floor, UNON Complex Gigiri  
Nairobi Kenya

**REF: STRATHMORE BUSINESS SCHOOL**

This is to confirm that the above named Institution- Strathmore Business School trained our executives in various leadership programs namely Advanced Management Program, Senior Management Leadership Program, Program for Management Development, The Effective Director, Women in Leadership Learning Series, and Developing Leadership Capabilities Program among others.

These programs aim is to equip executives with skills that make them more effective in their roles and prepares them to take more responsibilities in the organization as they lead their organizations to achieve competitive edge.

Do not hesitate to contact us if you require further clarification or information.

Thank you,

Regards  
Peter Njioka  
Senior Manager- Learning & Development

Safaricom House, Waiyaki Way,  
P.O. Box 66827, Westlands 00800, Nairobi.  
(T) +254 722 000 000  
[www.safaricom.co.ke](http://www.safaricom.co.ke)



**Nation Media Group Limited**

Nation Centre  
Kimathi Street  
Post Office Box 49010 G.P.O.  
Nairobi 00100  
Kenya  
Telephone: 3288000/1/2/337710/221222/211448  
Telefax: 2214565/213946/313332/2219882  
E-mail: customercare@nation.co.ke  
Website: <http://www.nationmedia.com>

**Directors**  
W.D. Kiboro, Chairman  
L.W. Gitahi, Group Chief Executive  
D. Aluanga  
R. Dowden (British)  
S. Gitagama  
L. Huebner (American)  
Y. Jetha (British)

S. Kagugube (Uganda)  
O. Mugenda  
Z. Muro (Tanzanian)  
F.O. Okello  
A. Poonawala (Swiss)  
A. Salkeld (British)  
G. M. Wilkinson (Irish)

June 4, 2013

To Whom It May Concern,

**RE: RECOMMENDATION FOR STRATHMORE BUSINESS SCHOOL**

This is to confirm that the above named School trained our managers in various leadership programmes namely Senior Managers Leadership Programme, Programme for Management Development, Editorial Leadership and Management and Business Acumen, among others.

The programmes equip executives with leadership and managerial skills that make them effective in their roles and prepare them to take more responsibilities in the organisations.

I can confirm that our teams benefited immensely from the programmes.

Do not hesitate to contact us if you require further clarification or information.

Yours sincerely,

**David Aduda**  
**Editorial Administration Manager**



**KENYA TEA DEVELOPMENT AGENCY LIMITED**

KTDA FARMERS BUILDING, P.O. Box 30213, GPO 00100 Nairobi  
Tel: +254 020 3227000 -2, 221441/2/3/4, Fax: +254 020 211240  
E-mail: info@ktdateas.com/ Site: www.ktdateas

REF: CONF/GEN/GM-HRA

Date: 23<sup>rd</sup> June 2015

**TO WHOM IT MAY CONCERN**

**RE: STRATHMORE BUSINESS SCHOOL**

This is to confirm that Strathmore Business School has been our preferred training partner on various leadership programs namely: Advanced Management Program, Senior Managers Leadership Program, and The Effective Director Program among other customised programs.

These programs have equipped our executives with skills that make them more effective in their roles and prepared them to take more responsibilities in the organization as they lead the organizations to achieve a competitive edge.

KTDA as a leading industry player in the region works with Strathmore Business School and other likeminded institutions to build a world class Business School in Africa that provides service to society through developing virtuous leaders.

Do not hesitate to contact us should you require any further clarification or information.

Yours sincerely,

**SETH AGALA**

**HEAD OF TRAINING & DEVELOPMENT**

*Directors:*

P.T. Kanyago MBS EBS (Chairman), P. Ng'etich MBS OGW (Vice-Chairman), S. L. Tiampati MBS (Managing), J.M. Wakimani, E.K. Gakuya, F.M. Macharia, J. N. Karua, S. M. Ireri, P.M. Ringera HSC, S.C. Tonui, J.N. Achoki, B. Matonda, J. M. Mukavale, I. N. Gaha (Ms.) B. K. Ngari (Finance & Strategy)



Kenya Re is ISO 9001:2008 Certified

Friday, 04 March 2016

To Whom It May Concern,

**Kenya Reinsurance Corporation Ltd.**

Reinsurance Plaza  
P.O Box 30271- 00100  
Nairobi, Kenya.  
Telephone: +(254 020) 220 2000, 0703083000  
Telefax (254 20) 2223944, 340486, 340967,  
2252106,  
Email:kenyare@kenyare.co.ke  
Website: http://www.kenyare.co.ke

**RE: STRATHMORE BUSINESS SCHOOL**

This is to acknowledge that Strathmore Business School has been our preferred training partner on various leadership programs namely: Advanced Management Program, Senior Managers Leadership Program, and The Effective Director Program among other customised programs.

These programs have equipped our executives with skills that make them more effective in their roles and prepared them to take more responsibilities in the organization as they lead the organizations to achieve a competitive edge.

Kenya Re as a leading industry player in the region works with Strathmore Business School and other likeminded institutions to build a world class Business School in Africa that provides service to society through developing virtuous leaders.

Do not hesitate to contact us should you require any further clarification or information.

Yours sincerely,

**Charles Kariuki**  
**Company Secretary**

**Directors:** David Kemei (Chairman), Jadiyah Mwarania (Managing Director), Henry K. Rotich (CS Treasury), Everest Lenjo, Chiboli Shakaba, Felix Okatch, Dr. Lumbi Wa M'Nabea, Maina Mukoma, Priscilla Kirigua, Jennifer Karina & Felista Ngatuny



Kenya Commercial Bank Limited  
Kencom House  
P.O. Box 48400 - 00100  
Nairobi, Kenya  
Tel: +254 20 3270000/2851000/2852000  
Mobile: +254 711 012000 / 734 108200  
SMS: 22522  
Email: contactus@kcbbankgroup.com  
24h interactive website: kcbbankgroup.co

**Friday, November 21, 2014**

To Whom It May Concern,

**RE: STRATHMORE BUSINESS SCHOOL**

This is to confirm that the above named institution- Strathmore Business School trained our executives in various leadership programs namely Senior Managers Leadership Program, Program for Management Development, Business Acumen, Supervisory skills and Culture Change Programs among others.

These programs have equipped our executives with skills that make them more effective in their roles and prepared them to take more responsibilities in the organization as they lead KCB to achieve a competitive edge.

KCB as a leading industry player in this Region has offered to work with Strathmore Business School and likeminded partners in this noble cause to help develop a world class Business School in Africa.

Do not hesitate to contact us if you require further clarification or information.

Yours sincerely,

Head of Corporate & Regulatory Affairs,

Judith Sidi Odhiambo.



Directors: N. Biwott (Chairman); J.N. Oigara (Chief Executive Officer); H.K. Rotich;  
Mrs. C.A. Kola; Mrs. C.M. Muya-Ngaruia; A.A. Khawaja; Gen. (Rtd.) J.R.E. Kibwana; T.D. Ipomai; J.O.A. Nyerere; Ms. G.M. Malombe



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**Annex 4: SRCC Financial Statements (2018-2020)**

**SRCC FINANCIAL STATEMENTS**

2018

2019

2020