Version 1.0

30TH JULY

LUX GEOSYSTEMS

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Presented by: ESSQ/00325/2017

ESSQ/00318/2017

ESSQ/00333/2017

ESSQ/01435/2017

A business plan proposal submitted in partial fulfillment of the requirements for the award of bachelor of Engineering geospatial engineering degree in the department of Geo-Information And Earth Observation, School Of Surveying And Geospatial Sciences , Technical University Of Kenya

**DECLARATION**

This proposal is our own original and authentic work that has not been presented or submitted anywhere else for the award of a degree in any other university.

Names Sign Date

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This business plan proposal has been submitted for examination with my approval as the university supervisor.

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Sign: ………………………

Date: ……………………….

**ACKNOWLEDGEMENT**We acknowledge God for good health and providence during the time of coming up with the project. We would also like to thank each group member for participation and the effort they put towards the project. To our lecturer, Miss Martha Achieng for teaching us and polishing our skills in the making of the business plan, we are grateful.

**DEDICATION**

With genuine gratitude and warm regard, we dedicate this work to the following people; the group members, who have worked profoundly to ensure that this work is effectively done and meets the required standards. Also, I would dedicate this work our instructor Mrs. Martha Achieng who has continually dedicated her knowledge and time to provide us with critical insights, which formed the foundations and framework of doing this work. Thank you.

**Executive Summary**

This plan is presented for Lux Geosystems, a startup company located at Mombasa Road, Nairobi. Lux Geosystems is a land survey company specialized in land survey equipment manufacture, hiring and sales. Lux survey equipment is designed with scalability in mind, so that whether a land surveyor is a beginner or a professional one, it is the ideal land survey equipment. Sales include both on fixed cash and on hire purchase.

The goal of Lux Geo systems is to improve the perception of surveyors into land surveying by integrating the simplicity of usage with technology. Long term, the company aims to be the leading source of survey equipment within and outside the country.

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# **CHAPTER ONE: BUSINESS DESCRIPTION**

## **Business Sponsor**

Lux is to be founded as a partnership venture. Together with my colleagues and associates, who will all be Geospatial Engineering graduates from the Technical University of Kenya, we will start and manage the business effectively. As graduates, we will be well equipped with all the necessary knowledge and experience to start and run a business venture of this kind. With the geospatial information gained, which will be the main focus of the company’s services and products, and the business management skills acquired, the plan is bound to be successful and compete favorably in the market. Therefore, all the initial funding and capital will be provided by us. In its early stages of development, we are the same ones who will provide most of the required services, especially the managerial positions. We will have to have a special unit experienced in manufacturing the surveying equipment and instruments.

## **Business Name**

Lux is a Latin word meaning “light” or “shine.” Geo system is a combination of two words: geography and systems. Lux seeks to be a market leader in the survey industry by coupling survey hardware products with state-of-the-art technology. “Geo-” refers to “Earth.” It is a common initial used quite a lot in our field, and so, “Geo-consultancy” means we will be associated with all matters related to geospatial engineering, geography, geomatics, geodesy, and other fields. The name will give the company a useful identifier that puts it in league with its competitors and secure its place in the industry.

## **Business Location and Address**

The head office of the business and production plants will be located in Nairobi, along Mombasa Road. Being a mega company that will be involved in various robust engineering activities that require sophisticated technology and extreme precision, the company will have a business park complete with all the amenities and buildings used to provide the services and produce the equipment.

**LUX GEOSYSTEMS**

**GEOLUX BUSINESS PARK,**

**IMARA DAIMA, OFF MOMBASA ROAD**

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**PHONE NO: +254712 345 678.**

**+254787 654 321.**

The major reason for choosing the location of the business is as follows:

1. **Nairobi is the capital of Kenya and provides a ready market.** Being the capital city of Kenya and the center of all the important activities in the country, it provides a ready market. Most surveying and geospatial companies that will need our equipment and services are located in Nairobi, and so, business prosperity is guaranteed by locating the center of our activities there.
2. **The location is easily accessible.** Mombasa Road is easily accessible to everyone and every kind of vehicle. It is not so far from the city center, and with the recently-commissioned Nairobi Expressway, accessibility is even made better, making it the best location for our business.
3. **The security status of the location is excellent.** Ours will not be the only business park along Mombasa Road. There are several other businesses and companies that conduct their activities in the location. Security and all the necessary logistics relating to smooth production and operation of the business are taken care of.
4. **Availability of the factors of production is perfect.** All the factors of production and business requirements like; professional labor, made available by the educated experts from the universities and colleges in Nairobi; financial services from the banks; the raw materials, most of which will be imported through the Nairobi Inland Port; and other factors of production are favorably available in the chosen location.

## **Form of Business Ownership**

The business will be a partnership owned by all of us founders. As a partnership, we will agree to combine resources to form the business and share the risks, profits, and losses. Since we will all be from the same field and profession, we will all be knowledgeable about the company’s operations. Managerial positions and most of the geospatial services will be provided by us while the business is still in its early and preliminary stages. After it has grown, we will be able to hire others who will run it on our behavior.

The advantages of a partnership as a form of business ownership are as follows:

1. **Two heads are better than one.** We will all offer our expertise and all these skills and professional workforce, which will put the business in a better position to succeed. Besides, the decisions will be sound and well-discussed to the best benefit of the company.
2. **Sharing of the start-up costs.** The initial capital needed to start and run the business will be shared among us. No single person will have to single-handedly shoulder the vast financial resources required to start the business.
3. **Sharing of losses and profits.** If any drawbacks or losses are incurred, the effects can be shared among the partners. The same applies to the profits made.
4. **High-caliber employees can be made partners.** Later, when the business is well established and certain employees with great potential to do better as owners, they can be offered a chance to join the partnership. This would mean more benefits and growth for the business.

## **Type of Business**

Lux will be involved in manufacturing and assembling survey equipment and instruments. These would be sold to surveying firms and practitioners or hired out. We will have retail stores in the Nairobi CBD and other towns in the country where there are high chances of sales and need for our products and services. In these, the equipment will be bought or hired. In the main headquarters, we will also set up a showroom where clients can walk in to get the advice and buy some of the products.

## **Products and services**

The company will be involved in the following activities.

1. Selling surveying equipment and products such as Handheld GPS, EDM measuring instruments, GNSS equipment, and heighting and leveling instruments.
2. Software services include designing and maintaining the software platforms used for surveying and performing geospatial tasks.
3. Hiring and renting the various survey instruments to customers and clients who would like to use them for certain periods.
4. Maintenance and repair of the surveying equipment.
5. Offering consultancy services for the best and most appropriate surveying equipment for specific survey needs and tasks to clients and prospective customers.

## **Justification and Business Opportunity**

Surveying equipment are in high demand in the country. Due to the many development projects and activities being carried out in the country, the equipment will be needed by engineers and surveyors involved in these. The universities and colleges that offer surveying and engineering courses will also require the instruments, equipment, and services to offer practical lessons for their students. Upcoming companies and firms in the industry also need these in bulk. Therefore, a company manufacturing these items would be in business at any time. There is a vast business opportunity that is still considered a blue ocean by investors because it is neither fully explored nor exploited.

## **Business Goals**

The business would have goals that it strives to achieve. Some of these would be internal while others external.

### Internal business goals

The business would have internal goals and objectives that it works to achieve within a specific period. These would include the internal business goals related to operation strategies, profits, and growth. The internal goals for the business would be to:

* Be a self-sustaining company and industry that makes steady profits and progress.
* Employ a sizeable number of employees that would make it a source of livelihood for many people.
* Hit certain targets in the number of sales and clients reached.
* Open as many branches and sales points throughout the country as possible to bring the products closer to the existing and prospective customers.
* Export some of the products to the nearby countries.

### External business goals

The business would also have some goals and objectives that do not directly affect it or that it may not have direct control over. These are related to the business macro environment. Some of them include objectives:

* To impact the surveying and geospatial industry by manufacturing the tools and instruments that is indispensable in the industry.
* Invent and manufacture instruments that would reduce the time spent by surveyors in the field.
* Be the leading survey equipment and instrument experts and manufacturers in the industry.
* Limit the number of imports of the similar products that it produces.

## **Entry and Growth Strategy**

How Lux plans to enter the industry and grow is an important step that requires profound strategizing.

### Entry strategy

To start the business, what is first required is the capital. This we will raise by contributing equal amounts of money totaling KSH. 50 million. This would be the initial capital, and besides sourcing it from individual investments, we would acquire loans from financial companies, investments from successful venture capitalists, and family and friends’ contributions, among other possible sources. The business will also require licenses to start and carry out operations. The legal requirements that will be expected to be met before the business is started include:

- Registration of the company.

- Acquiring a permit for business operation.

- Acquiring the fire permit.

- Setting up KRA Accounts and memorandum of understanding.

There is also a need for the acquisition of assets. This is done with the capital raised, from the business park to the relevant equipment machinery required for the factory. Once the business enters the industry, there is need for a growth strategy.

### Growth strategy

A business growth strategy must be implemented for the business to grow and expand into a larger enterprise. This should be centered on the available market, production, competition, among other factors that impact the business directly or indirectly. Furthermore, the business will have to perform a SWOT analysis to identify its strengths and major on them, while improving on the weaknesses. The market plan is very integral for the growth of the business and it is discussed in its own chapter.

# **CHAPTER 2: MARKETING PLAN**

## **2.0 Introduction**

Marketing plan entails all the activities done by a firm to establish its target customers, the geographic location of the customers and their distribution, key competitors in the industry and the methods of advertisement.

## **2.1 Target Customers**

These are entities interested with land survey equipment. They might buy the equipment or hire them. The need for better and modernized equipment by the customers creates a market gap, which ultimately, provides *Lux Geosystems* with an opportunity to iterate.

*Lux Geosystem* customers can be categorized into three: government, individuals or private customers. Government customers include all land-related government institutions such as Ministry of Lands and Urban Planning, National Land Commission and Ministry of Lands at County Government levels. Individuals are land survey graduates who seek to practice in the field. Private entities include registered companies within and outside Kenya who practice surveying.

On our first phase, *Lux Geosystems* will target customers within Kenya. Key prospective private entities include: *Orbital Africa*, *Geodev Kenya*, *Geoid* and *GeoPsy Research.*

## **2.2 Competition Analysis**

Although there exists no registered company manufacturing land survey equipment in Kenya, competition forces from outside the country cannot be under-estimated. In particular, Trimble Inc., the world leading manufacturer of Land Survey equipment, TOPCON, ESRI, Autodesk and Hexagonal Geospatial companies pose a greater hindrance towards market penetration. However, although the threat is huge, there exists great opportunities towards the gap. First, the cost of acquiring the instruments from the companies is always exaggerated due to importation fees. Second, their low supply due to lack of supply chain in Kenya leads to increased cost. Third, their equipment lacks basic modern technology that is vital in the field such as auto-computation and data streaming and transmission. With Lux Geosystems, we seek to minimize the cost of acquiring instruments as well as introduce vital software components that will give us a tract in regard to the competitors.

## **2.3 Methods of Promotion and Sale Advertisement**

### 2.3.1 Methods of Promotion

This will entail all the activities required to create a positive business image. In order to counter competition, the following methods of promotion will be employed:

1. Use of referral programs. Survey companies referring other buyers will get a discounted coupon on the next sale. This discount must, however, be calculated in a way that the projected profit margin will no dwindle.
2. Use of discounts. At particular times over the year, the company will roll out discounted sales to its customers. This, in particular, will aim to clear stock as well as attract more clients.
3. Community service engagement. This will involve participation in community programs such as on-campus presentations and webinars. The company create hackathons that will allow people to integrate their custom products with Lux Geosystems software components.

### 2.3.2 Methods of advertisement

To give accurate, complete and detailed information about what Lux Geosystem provides, we seek to careful choose and determine the best methods to use in advertising. The following methods will be used:

1. Internet advertising. This is the most accurate, yet less costly means of advertising that the company will employ. In internet advertising, our custom adverts will be displayed to selected people from selected region, thus ensuring target advertisement. Our software components will also be used to run internet advertising.
2. Presentation and important events such as ISK events. Every year, institutions such as ISK and Kenya Space Agency hold annual events from where companies can display their products. ISK, being a surveyor’s institution, will be our favorable means of presentation as we will have direct communication with our clients.
3. Flyers and posters. The company will invest in professional flyers and posters that will hang on institutions such as Technical university of Kenya school of surveying, RCMRD and other places such as restaurants, bakeries etc.

# **CHAPTER THREE: ORGANISATION AND MANAGEMENT PLAN**

**3.1 Duties of Managing Director**

The managers will undertake various roles in the organization. The top-level managers will be primary tasked with planning, decision making and directing. Other managers including middle managers and first-line managers would involve staffing and coordination. This would involve ensuring that the employees in different departments have all the quantities required and also the number required is obtained. The organizational Hierarchy would involve:

**3.2 Recruitment, Training and Promotion**

The recruitment paradigms would be undertaken by the Human resource department. The department will involve a group who is responsible for managing the employee life cycle (i.e., recruiting, hiring, onboarding, training, and firing employees) and administering employee benefits. For training purposes, external parties would first be invited to provide in-depth training to the first-time employees. Through knowledge management, the organization would then be able to store and convey both tacit and explicit knowledge to the other employees. Therefore, training would subsequently be tasked to the HR department and the other employees to reduce the costs of training. Various paradigms would be used to ensure robust promotion in the organization. The initial remuneration and incentives would include:

|  |  |  |  |
| --- | --- | --- | --- |
| **Personal** | **Number** | **Salary per month** | **Salary per year** |
| Managing Director | 1 | 80,000 | 960,000 |
| Human Resource Manager | 1 | 65,000 | 780,000 |
| First Line Managers (marketing manager and chief accountant) | 2 | 50,000 | 600,000 |
| Middle line Manger (Supervisor and sales director) | 2 | 50,000 | 12,000,000 |
| Team Leaders | 4 | 40,000 | 1,920,000 |
| Employees | 10 | 30,000 | 3,600,000 |
| Other staff (Cleaners and watch guard) | 3 | 10,000 | 360,000 |

**3.3 Licenses, Permits and By Laws**

For the organization to profoundly operate, it must comply with government regulations and requirements. Therefore, the business will be registered and undertake the following:

**License Act:** This will be taken from the Registrar of companies after payment of the registration fee and proclamation of the business activities.

**Trading permit:** This will allow the business to indulge into trading activities.

**3.4 Support Services**

These are services which are offered by other institutions and are needed by the company to operate the business effectively. The services will involve; banking services, postal services, internet services and insurance services.

# **CHAPTER FOUR: PRODUCTION/OPERATIONAL PLAN**

**4.1 Production/Operational Facilities & Capacity**

The following facilities would be required by the business to facilitate smooth and efficient entry into the market.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item** | **Quantity** | **Capacities** | **Unit Price** | **Total Prices** |
| Premise | 1 | 5 Rooms with 1 being a show and 1 equipment storage |  | 150, 000 rent per month |
| Computer | 3 | 1 TB | 40,000 | 120,000 |
| Furniture | 5 | Pieces | 10000 | 50000 |
| Printer | 1 | 1 | 5000 | 5000 |
| Computer Accessories | 5 | N/A | 60000 | 60000 |
| Additional Equipment and miscellaneous | N/A | N/A | 40000 | 40000 |
| TOTAL |  |  |  | 317,000 |

The business premises will be located at the second floor of Trance Towers, Mombasa Road Nairobi.

**4.2 Production/Operational Strategy**

Production strategy constitutes the value that will be incurred during production of the organization. Having knowledge of this value will be critical as it will allow the organization to know the selling price that they must place to avoid operating at a loss.

The monthly salary will be projected at; 325, 000; therefore, the overhead cost would involve

|  |  |
| --- | --- |
| **Item** | **Amount** |
| Rent | 150,000 |
| Electricity | 10,000 |
| Telephone Bill | 10,000 |
| Transport | 40,000 |
| Marketing | 50,000 |
| Premium Insurance | 15,000 |
| Miscellaneous | 20,000 |
| TOTAL | 295,000 |

Therefore, the total monthly operating cost would be projected to be; 620, 000/ =

**4.3 Production/Operational Process**

1. Service Procedure

The clients will come to the premises and make a selection of any of the product they would want. Also, the client could make orders through the company’s website, make a payment and the product would be delivered to them.

1. Reception

The orders will be taken on the reception. Data of sales would then be keyed into the computer for inventory and information storage.

1. Delivery Services

The company will provide delivery services for any client who will want these services. Nevertheless, a delivery fee would be charged.

1. Payment

Payment would be made during the purchase in the reception. Both cash and banking payment will be allowed. Other forms of payment such as M-pesa would also be allowed.

# **CHAPTER FIVE**

## **PROJECTED START-UP EXPENCES**

|  |  |
| --- | --- |
| **START UP EXPENCES** | **COSTS** |
| **BUILDINGS AND REAL ESTATE** |  |
| land purchase | 20,000,000 |
| land development costs | 5,000,000 |
| engineering and permits | 1,000,000 |
| building construction | 10,000,000 |
| **CAPITAL EQUIPMENT** |  |
| furniture | 300,000 |
| equipment | 100,000 |
| fixtures | 110,000 |
| machinery | 50,000,000 |
| **LEGAL REQUIREMETS** |  |
| business registration | 10,000 |
| trading licenses and permits | 100,000 |
| insurance policies | 2,000,000 |
| **TOTAL** | **88,620,000** |

## **PROPOSED CAPITALIZATION SOURCE**

|  |  |
| --- | --- |
| **PROPOSED CAPITALIZATION** |  |
| **SOURCE** | **AMOUNT** |
| owners investments | 150,000,000 |
| friends and family contribution | 1,000,000 |
| bank loan | 30,000,000 |
| **TOTAL INVESTMENT** | **181,000,000** |