

# Smart Boda GmbH

A business proposal for electromobility services in Nairobi, Kenya

31.01.2019

---

## Project team

Abhijit Singh Sachdeva | Team Leader | 11125584

Burak Dalfidan | 11125576

Djemba Yvann | 11124614

Ibrahim Owusu-Aduomih | 11124568

## Contents

<b>Contents</b>	<b>1</b>
<b>Business overview</b>	<b>3</b>
Smart Boda GmbH: Electric Boda-bodas for Nairobi, Kenya	3
Why Smart Boda GmbH?	3
The Concept	4
Electric motorcycles: Distributorship of Ampersand motorcycles for Kenya	4
Partnership with motorcycle financing institution	6
Battery-swap stations	7
Back office operations	8
Company structure	9
Company targets	10
<b>Market Analysis</b>	<b>11</b>
Demographic	11
Boda Boda	12
Boda-bodas and Nairobi	13
Existing technology in Sector	13
Daily income of Boda-Boda Driver	14
Ecological impact	14
Current Public Transportation in Nairobi	16
Matatus	17
Buses	18
Train	19
Traffic Situation	20
Boda-boda's influence on Kenya's GDP	22
Safety Issues & Uganda Example	23
<b>Traditional vs Electric: A comparison of the Boda-bodas</b>	<b>23</b>
Financial analysis	23
Cost of bike	23
Operational costs	24
Customer benefit	24
Environmental benefits	24
Health and Safety	25
<b>Cost calculation</b>	<b>26</b>
Investments	27

---

Operations Expenditure	27
Labour costs	28
Depreciation costs	29
Bike Leasing and Battery Swap Services	30
Total Investment	32
Financing	33
Cost calculation	33
Financing costs	33
Profitability and cash flow	36
Cash Flow and Taxation	38
<b>Company documents</b>	<b>41</b>
Company registration	41
Employment contracts	41
Health, social-security and unemployment	42
<b>Bibliography</b>	<b>43</b>
<b>Annexure-1</b>	<b>46</b>
Annexure 1.1: Articles of association	46
Annexure 1.2: Employment contract for employees	55

## Business overview

### Smart Boda GmbH: Electric Boda-bodas for Nairobi, Kenya

Smart Boda GmbH is an electromobility services company, promoting electric motorcycles taxis in the City of Nairobi, Kenya. The company aims to enable the usage of electric motorcycles as Boda-bodas (motorcycle taxis) by:

1. Selling electric motorcycles
2. Setting up battery swap stations across the City
3. Set-up of support office for monitoring of motorcycle lease contracts

### Why Smart Boda GmbH?

The founders are Master of Renewable Energy students with an interest in energy sustainability and clean mobility services. Many cities today have high levels of air pollution, largely due to vehicular pollution. In Nairobi, the traditional Boda-bodas are an important source of transportation for many. These motorcycle taxis are generally inefficient, highly polluting and noisy. In addition, as safety guidelines are not consistently followed by drivers, this industry is also notorious because of the health and safety issue in the city.

As most drivers do not have the ability to buy a motorcycle, they are forced to lease them from 'bike-lords'. Due to this, the daily earnings of the drivers is very low as he/she needs to pay the operating fuel charges and the rent for the bike.

Nairobi is today an innovation hub, with many tech startups offering services to the people of the City. The Government also has a roadmap to increase renewable energy share in the country which already has a huge share of geothermal, biomass and hydro energy sources. It is interested to reduce expensive oil imports and find sustainable solutions towards development. Kenya is guided today by its Kenya Vision 2030 which outlines these sustainable growth agenda, encompassing all peoples.

All this serves as motivation for us to change the situation with the knowledge we have gained in our Master's programme. Smart Boda aims to:

- Disrupt the mobility scene in Nairobi with electric Boda-bodas
- Uplift economic condition of drivers
- Improve safety conditions with respect to Boda-boda industry
- Reduce air-pollution levels in Nairobi

We take responsibility towards the environment and well-being of the people. This is very important to us towards creating a positive image for our organization.

## The Concept

The concept entails mainly 4 different operations working in tandem. These are:

1. Electric motorcycles: Distributorship of Ampersand motorcycles for Kenya
2. Partnership with Motorcycle financing institution
3. Battery swap stations
4. Back-office operations

Defining these operations in detail below

### 1. Electric motorcycles: Distributorship of Ampersand motorcycles for Kenya

The Company's interest is not in manufacturing but more in system integration. Our interest is to partner with Ampersand. Ampersand is a company based in Kigali, Rwanda where they are manufacturing electric motorcycles and offering services that Smart Boda GmbH (our Company) is aiming to offer in Nairobi. We would take up the distributorship of Ampersand for the Kenyan market.

The reason we selected Ampersand is mainly for 3 reasons:

- a. Their motorcycles concept (vehicle + operational cost) is cheaper than its petrol counterpart
- b. Their electric motorcycles have been designed and tested for the East African market conditions
- c. Ampersand has a clear interest in the East African market and they would look at us as enablers of their business



*Fig 1. Ampersand's e-Moto electric motorbike (Salens 2018)*

Though we take up distributorship of Ampersand, we will only do so for their vehicles and not for their services. This means that Smart Boda GmbH will build its own support system (embedded control system, payment system and software development). This is to ensure that we have complete control over the operations of our company. This is also to make sure that we insulate ourselves from the company condition of Ampersand. In the worst case, if the partnership is not successful due to any reason, Smart Boda GmbH would have the option of procuring vehicles from another manufacturer.

The motorbike designed by Ampersand can run an average 65KMs per charge. On a normal day, a Boda-boda driver drives upto 188KMs. So typically the driver would consume 3 full batteries per day. The top speed of the motorbike is 80KM/hr. This compares better to the existing petrol driven motorbikes (Salens 2018).

Initially, we would start a showroom in Nairobi to roll-out these bikes to the drivers. The staff and financing company would ensure that only drivers with a legitimate license are able to procure the motorcycles on the leasing mechanism.



*Fig 2. Motorcycle showroom (sample for explanation) (KTM Bikes n.d.)*

## 2. Partnership with motorcycle financing institution

As most drivers do not have the financial ability to purchase motorbikes, they lease them from persons who own multiple bikes. Most of their daily earnings are spent on fuel charges and to pay rent to the motorcycle owner. They are also at the mercy of these owners who take away the bike from them at any moment. The driver never gets to own the motorcycle. At the same time, they are unable to get loans from banks to purchase a bike as they do not have any security to declare to the bank.

This is one of our unique selling points. Our control over the bikes is what we would offer the motorcycle financing institution as security in exchange for them leasing the bikes to the drivers who are unable to purchase the bike all out.

So the driver would walk into the showroom, test ride the motorcycle and if he/she decides to get a motorcycle, would speak with the motorcycle financing representative to lease the bike. The driver would pay a lower down payment and then would have to pay the rest over a 2 year period to the financing institution, then owning the motorcycle. The payment would be done over m-pesa payment mechanism widely followed in Kenya. Smart Boda would have remote control over

the motorcycle to switch off engine in case the driver defaults on the payment. And this would act as security for the financing institution.

We also believe that the driver should easily be able to pay the lease amount as their savings would be higher with much lower expenditure on fuel costs (petrol vs electricity calculation showed in following sections).

Some Boda-boda financing institutions we have identified are DAV Kenya Ltd. (<http://www.davkenyaltd.co.ke/nduthiloan.html>), Angaza Africa (<http://www.angazafrikasacco.co.ke/aa-loans/bodaboda-loan/>) and Bridgewater Capital (<http://bridgewatercapital.co.ke/boda-boda-loans/>). The next step would be to meet the promoters of these financing institutions and look at the most suitable partner to our business model. Some points that we would consider are:

- The outlook of the company (towards innovation)
- Flexibility and team culture
- Openness and trust
- Belief in our idea
- Financial credibility over the years
- Access to funding to be able to dole out loans to the drivers (to meet our sales targets year on year)
- Stability (balance sheet and liquidity)

After selecting the right partner, we would devise a lease agreement which we would be able to offer the motorcycle drivers.

### 3. Battery-swap stations

The battery-swap functionality is one of the game changers in the business model. We would set-up battery swap stations across the city (initially 3 but adding more as our sales increase). These stations would have the infrastructure to charge discharged batteries and have extra charged batteries. Upon discharge of the battery, the motorcycle driver would arrive at the station and exchange the discharged battery for a charged one. We would offer this as a fixed price which would be much lower compared to petrol costs that a traditional Boda-boda would require.

If in one day, the driver drives the motorcycle for 188 KMs (Wessel 2019), 3 full charged batteries would be required per day. With our battery-swap method, the driver need not wait till the discharged battery is charged (which is the case in e-vehicle charging stations). This saves considerable time for the driver which would reflect in higher service time and therefore higher incomes.

The size of these battery swap stations would be about the size of a movable shipping container. The feel for the driver would be similar to that of a standard



petrol station where there would be someone to remove the discharged battery from the bike, replace with a charged one from the battery station and collect money from the driver for the replacement.

The capacity of 1 shipping size container battery station is 200 batteries. If higher traffic is envisaged, we can set-up 2-5 containers to increase the overall capacity. This detailed planning would take place after observing the operations in the initial 1-3 years. At the beginning, we will start with 2 stations to support our sales target of 200 Boda-bodas. These containers could also be easily transported so we could also charge the batteries at one location and may transport the container to another area of the city. This would also give us the possibility of charging with renewable energy in the future.


#### 4. Back office operations

This is the backbone of all our operations. This would start off as a small set-up and then expand as we roll out more vehicle and increase our turnover. We believe in starting small (even if investment is guaranteed) even if it means growing slowly. Growing carefully is important to us so our expenditure and costs don't go out of hand initially, straining our financial resources. Over time (1-3 years), we would grow to have a company structure with the below mentioned departments in the back-office.

##### a. Development team

This team would develop our software platform to

- Enable mobile payments (M-pesa) from the driver to the motorcycle financing institution as per the lease contract. We are keen to develop this platform so at a later stage when the company is well-invested, we could ourselves take a licence to become a financing institution and reduce dependence on an external lessor
- Embedded system configuration: We would need an embedded hardware card to be planted in each bike that we lease. This card would communicate with our servers which would help us track the motorcycles. We would procure these embedded cards from a partner and configure these in-house. A SIM card would be required in each card for VPN connectivity. For this we will use Safaricom's SIM cards
- Track motorcycles in case the driver defaults on payments
- Monitor the status of the battery-swap stations: To check the number of charged and discharged batteries and state of charge
- Future development: Link passengers with Boda-boda drivers through our app



We need a strong development team which is skilled in software development (programming languages; engineering; tools, security systems), embedded systems (IoT), data analytics, and database management (time-series databases; protocols for load management)

This team would start small with the CTO managing the first level development. Overtime, we would require more people for testing and maintaining the software and developing new functionalities.

b. CommOps team

This team is mainly for customer support. The executives would answer calls from drivers/customers; follow-up for lease payments; track motorcycles if necessary; monitor the status of the battery swap stations; resolving issues; and take appropriate actions relating to all field operations.

Based on the number of motorcycles sold, this team size would also get bigger.

c. Marketing & sales

A target oriented marketing and sales team would work towards expanding our market share and creating a positive image for electric motorcycles.

d. HR & recruitment

All human resources related work would be handled by this department.

e. Finance & accounting

This team would keep our financial resources in check- taking care of audits, filing taxes, investment planning, accounting, reimbursements, etc.

f. Legal

For all legal issues

## 5. Company structure

The Company would start off small, with a employment base of 12-16 people at the end of the first year. The second year we would expand to 25 people and then with all our operations in action and with an expansion mindset, we would increase to a size of 60 people.

The diagram below shows the structure of our company at the end of the third year, with our operations running in full scale.



Fig 3: Smart Boda's organizational structure (under full-scale operations)

## 6. Company targets

Table 1: Company targets in terms of Motorcycles sold

Year	Motorcycles sold
1	200
2	500
3	1500
4	3500
5	3500
6	3500

7	3500
8	3500
9	3500
10	3500

## Market Analysis

### Demographic

Nairobi is the capital and the largest city of Kenya. The name comes from the Maasai phrase Enkare Nairobi, which translates to "cool water", a reference to the Nairobi River which flows through the city. The city proper had a population of 3,138,369 in the 2009 census, while the metropolitan area has a population of 6,547,547. The city is popularly referred to as the Green City in the Sun.

The city of Nairobi is growing systematically and presently sprawls over a surface area of 696 kilometers squared (269 sq. miles). This area size - in combination with the full number of residents - brings United States the current population density that is currently about 4,850 residents per sq. metric linear unit. (12,600 individuals living per sq. mile).

The primary languages of Nairobi are Bantoid language and English. The city is that the location of one of the most important slums within the world, and roughly 22% of the city's residents sleep in impoverishment.

Nairobi is a ethnically diverse city, and Kenya's major ethnic groups all reside here, Nilotic, Luhya and Bantu. The population is formed with %20t frin Kikuyu. There also are several Asians, Europeans, and Somalis who call this town home. An oversized range of expatriates live here due to job opportunities, that has led to the city's explosive growth.

(CityPopulation.de 2019)

## Boda Boda



*Fig 4: Boda-bodas and drivers (Nakitendde 2017)*

Motorcycle or bicycle taxis in East Africa are popularly known as Boda-bodas. These could be used as taxis by means of passengers or for transporting items (Oxford University Press, 2006).

Though motorcycle taxis are used all over Africa, the term Boda-bodas is used more in East African nations- Uganda, Kenya and Tanzania (& Rwanda as 'motos') (Wikipedia Contributors 2019). They serve as the favored and rapid mode of transportation in most important East African cities like Kampala, Dar Es Salaam, Nairobi, etc. due to congested roads and dense traffic conditions in such areas. Due to slow growth of employment possibilities in these countries, Boda-bodas have served as a source of employment to thousands and thousands of drivers throughout East Africa. In some markets, they function as phase of an unregulated enterprise whilst in others there have been tries to get them registered. The Boda-bodas have also been closely criticized due to the fact of lower safety levels related with this mode of transportation. The carelessness of drivers in terms of not the usage of helmets, driving rashly has resulted in a massive number of accidents, a lot of them proving deadly (Kasujja, 2016). One of the reasons for their attractiveness to drivers is that these bikes can be leased and don't have to be bought. The other reason is the lack from an efficient public transportation system in these cities (Wikipedia Contributors 2019).

## Boda-bodas and Nairobi

Nairobi's population is 4,385,853 (World Population Review 2018) and the City covers a district of 695 sq.km (CityPopulation.de 2019). There are roughly 600,000 commercial motorcycles in operation in Kenya. In the year 2017, the Boda-boda industry emerged as a major contributor to Kenya's economy. The revenues amounted to \$ 219 billion, \$ 7 billion much more than East Africa's most profitable company- Safaricom. It is also calculable that on the average, a Boda-boda driver earns Ksh 1000 (\$ 10) per day. Also, the number of motorbikes being sold-out within the country-side and increased in numbers compared to the previous year. About ninety eight (50% from China and forty eighth from India) of the motorbikes are foreign in Kenya. A major concern regarding Boda-bodas is that the safety factor. Due to recklessness of the drivers, there are various accidents taking place in Kenya (Njoroge, 2018). In a 2013 study, 480 drivers were randomly chosen in Kenya to fill a form. It was found that 64% of the Boda-boda drivers didn't have a legal driving licence and 61 did not bear any road safety training (Kahuthia-Gathu and Gatebe 2013).

During the research for this report, we couldn't find any sources which calculable the quantity of Boda-boda's in capital of Kenya.

## Existing technology in Sector

**1. Ampersand**, Rwanda (<https://ampersand.solar/>): The commercial enterprise concept in this report is nearly a facsimile of the Ampersand model. Based in Kigali, Rwanda, Ampersand is a producer of inexpensive electric motorbikes and charging systems. Their mission is also to electrify the Boda-boda enterprise and amplify the financial savings of the drivers while reducing down CO2 levels. As the company is simply establishing to roll out its services, it's too early to estimate its success and impact. The organisation also has ambitions of expanding into different East African markets, which includes Kenya (Ampersand, 2018). They are absolutely to be regarded direct competitors. However, there could additionally be a case for collaboration if the solution provider of this commercial enterprise model companions with Ampersand to take up distributorship of their electric powered vehicles in Kenya.

**2. Tugende**, Uganda (<https://www.gotugende.com/our-story>): The corporation started operations in 2009 however formalized operations under the title Tugende in 2013. They provide financing schemes for drivers to rent a motorcycle and transfer possession to the drivers within a period of 20 months. This lets the drivers to save cash (one they own the bike) and make investments it in different growth options. They have leased over 7000 motorbikes so far and have transferred possession of 3250 motorbikes to the drivers.

(Sachdeva 2018)

## Daily income of Boda-Boda Driver

The revenue of the Boda-boda driver is a primary challenge in the Boda-boda sector. Since most of them don't have the monetary sources to buy a motorbike, they lease the motorbikes from informal landlords who charge them a day by day rent. The drivers need to gasoline the bikes themselves and at some point of low business, it could be challenging for the drivers to pay rent and have sufficient for personal needs. A lot of drivers only maintain paying rent however never end up proudly owning a Boda-boda. Boda-boda drivers also declare that every so often they are cheated through dishonest clients who don't cost the pre-negotiated deal while renting the Boda-boda.

Ampersand on their internet site claim that in the case of Rwanda, a Boda-boda driver ends up paying around \$ 11 a day in the direction of gas and rent expenses and saves solely about \$ 1.60

Through this commercial enterprise idea, the driver is likely to save extracash per day (as the electric powered bike would be cheaper than a conventional bike and the driver wouldn't have any gasoline fee but only battery charging costs) and over a length of time, could own the bike and maximize financial savings to invest in other preferences.

At the same time, relying on how the solution provider designs the module, the drivers should be trained to follow safety guidelines to minimize the quantity of Boda-boda accidents, thereby bringing about a advantageous impact on society.


(Sachdeva 2018)

## Ecological impact

The CO<sub>2</sub> and greenhouse gas lifetime emissions and noise ranges would have to be carefully studied in comparison to the typical petrol-based Boda-bodas, to derive the ecological effect of having electric powered Boda-bodas.

Ampersand claims that their electric powered vehicles would produce 75% much less lifecycle greenhouse gas emissions in contrast to petrol motorbikes. And if the electric powered motorbikes are charged with renewable energy then the savings could be to the tune of 98% (Salens 2018).

70% of Kenya's electrical energy supply is powered thru renewable sources (Masyuko, 2017). The Country is aiming to achieve a healthy energy combine of conventional power plants to provide base load electricity and to tap into its prosperous resources of renewable power (geothermal, wind and solar). As the same time, the Country is aiming to minimize dependency on oil imports and be much less susceptible to fluctuations in the oil markets (Sachdeva 2018). These elements may also play a function in favor of electric



powered vehicles. With high renewable energy in the grid, the lifecycle carbon footprint of electric powered motorbikes would also be low.

Air pollution in Nairobi is a primary cause of concern and it is generally attributed to vehicular pollution. The age of cars and terrible maintenance are reasons for excessive emissions including to air pollution levels which are 30 times greater than that of London. Respiratory diseases, cancer and coronary heart problems are some of the outcomes of this. Respiratory illnesses are the leading cause of loss of life in Kenya amongst low income companies and the Health Ministry is searching for solutions to overcome this problem. The electric powered Boda-Bodas should be a welcome move to at least fixing vehicular air pollution from motorcycles (Sachdeva 2018).

Another essential environmental factor associated with electric powered vehicles is the case of battery disposal. During the interview with Mr. Nikhil Nair, we mentioned the case of battery waste (in relation to M-Kopa's illumination systems). Mr. Nair defined that this is a matter of concern. Despite existent recommendations in the Country, enforcement is a principal problem and battery waste management is at the behest of non-public companies who supply batteries along with their products. M-Kopa for instance insist their clients to return defective batteries. After collection, the batteries are shipped to Dubai for recycling. However, the economic burden to collect, ship and recycle batteries is borne through M-Kopa. So, there is no incentive for companies to take care of battery waste and this offers room for misuse or unethical disposal (Sachdeva 2018).

As the commercial enterprise model employs a battery swap model, the batteries would generally remain with the solution provider if they are not being used in the bike. So, there is a opportunity to have manage over the collection of defective/dead batteries and ship them for recycling or for appropriate disposal.



## Current Public Transportation in Nairobi



*Fig 5: Nairobi bus-stand (Jumbonairobi 2018a)*

Getting around in Nairobi is a challenge due to restrictions on the present conveyance system and its infrastructure, and therefore there is chaotic and reckless behaviour of most public transport operators within the city.

The national capital of Kenya's downtown, a neighborhood of a few sq. kilometers, is basically reserved for business activities, whereas a designated Industrial area stretches from the Nairobi railroad terminal in a very southeastern direction, covering a district of about 20 sq. kilometers. Residential areas sprawl round these 2 hubs of activity as far as 25km outward, with a number of the suburbs spilling into the Counties close national capital, i.e. Kiambu, Kajiado and Mavoko. Existing conveyance system in Nairobi covers all these destinations, enabling commuters get to their workplaces within the centre and Industrial area .

Available modes of transport in the city include matatus (shared minibus taxis), buses, trains, boda bodas (motorbikes), Tuk-tuks (three-wheeled taxis) and regular taxis. aside from train services provided by the government-owned Republic of Kenya Railways Corporation, all alternative modes of transport are operated by non-public sector investors (LivingInNairobi 2019).

## Matatus



*Fig 6: Nairobi Matatus (Etemesi 2017)*

Matatus (shared minibus taxis) are the predominant suggests that of getting around capital of Kenya, since they ply routes that cowl nearly all parts of the greater capital of Kenya residential district sprawl. That tiny 14-seater Matatus are simply recognizable from the regulation yellow stripe painted front to back on their sides. These used to be the predominantly mean of getting around capital of Kenya until 2010. Government regulation was enacted at that time to phase then out with larger Matatus with capacity of 22 and above.

Most matatu routes converge at the city centre. because of the sheer volume of matatus providing public transport services within the city, and failure by the capital of Kenya council to supply adequate parking facilities for public transport vehicles, informal matatu stages are to be found on varied streets within the city center.

An unfortunate characteristic of matatus in capital of Kenya is their unruly and chaotic conduct, that is blamed for the high prevalence of road accidents in capital of Kenya. This has posed important challenges for the insurance business for insurers who have provided insurance protecting this cars got a lot of claims. Once a matatu heading in one direction has few passengers and when they spot many people at a bus station awaiting transport within the other way, they'll usually drop you off and make a turnaround. If they learn of an ongoing police operation to arrest traffic offenders on their route, or if they encounter a strangely serious traffic congestion, they'll also drop off the passengers in the

middle of nowhere and make a turnaround. As a commuter, you are not sure of reaching to your destination. They additionally constantly vary their fare, particularly once it rains, once there's a police operation, or during rush hour, departure commuters unsure of what charge to expect.

(Etemesi 2017)

## Buses



*Fig 7: Bus in Nairobi (Alamy 2016)*

A number of bus corporations ply a number of the city routes, other than providing an alternate to the matatus. Bus routes additionally converge at the city centre and the bus corporations are even as unruly and unreliable as matatu, with their crew openly disregarding traffic laws and endangering their passengers, and constantly change their fares. These buses usually have rather overwhelmed up bodies because of frequent accidents. Other discomforts include deafeningly loud music, sermons from preachers, hawkers merchandising stuff, pickpockets, and armed thugs often hijack matatus and buse. Watch out for strangers offering you food and drinks, or reaching across you from the aisle seat to open the window. Such cases usually lead to the unwitting victim getting drugged and robbed (Alamy 2016).

## Train



*Fig 8: Public Train in Nairobi (Nzwili 2017)*

Commuter train service in capital of Kenya was introduced in the 1980's to deal with the uncertainty of traveling by matatus and buses for the urban poor. It is the most cost-efficient transport suggests that within the city, and is accessible on four lines connection at the Nairobi railroad terminal in the downtown, and covering low-income neighborhoods. The trains solely operate on weekdays during rush hours, and might get quite engorged. Recently, the government converted the Syokimau line to focus on middle income passengers, through raised fares and additional comfort while other lines are still priced at a lower level for the low income passengers (Nzwili 2017).

## Traffic Situation



*Fig 9: Traffic jam in Nairobi (Tales 2011)*

The traffic jam in Nairobi roads has been dreadful for quite a few years currently, with typical commute time for people visiting work ranging from 1hr to 2hr for distances of 10-15km. Most people found a solution for this situation by going away their homes as early as 5.30am to avoid the madness. The majority however get wedged in traffic jams a day, leading to loss of man-hours, fuel and pollution that costs our economy an estimated Ksh 37 billion annually (Tales 2011).



Fig 10: Vehicle types on the roads of Kenya (Jumbonairobi 2018c)

A look at the numbers may shed some light on why we are during this difficulty. The population in capital of Kenya has grown from 350,000 in 1963 to regarding 3.3 million. The quantity of vehicles in Nairobi was estimated at over 300,000 in 2008. In the same period, there was restriction to increase because of existing road infrastructure capability (LivingInNairobi 2019)

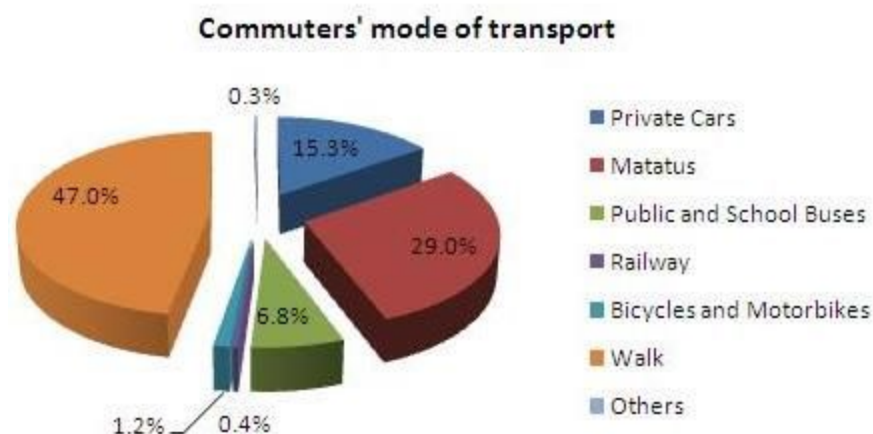


Fig 11: Mode of transportation in Kenya (Jumbonairobi 2018b)

A 2007 report by the Ministry of Roads and public works indicated that though solely 15.3% of commuters in capital of Kenya use personal cars, they account for 36% of vehicles on city roads. Another 29% of commuters use Matatus, that account for 27% of the vehicles on roads, whereas a humongous 47% of the town residents walk to their workplaces, which might be an good issue if distances involved were less than 6 km. This sadly isn't the case, with a major range of the low-income earners staying in Kayole, Dandora, Roysambu and Kawangware areas, all of are over 10 km far from Industrial zone. The charts above show

these statistics of the distribution of transport modes used by commuters, and also the distribution of car varieties on our roads (Jumbonairobi 2018b).

As we look forward to the road infrastructure in capital of Kenya to enhance, try to avoid getting caught and to get some advice from internet to go out of traffic hell. You can also set up your journey to avoid the worst jams by previewing the traffic conditions on various roads within the town before setting off. If you have got a smartphone, you can monitor these traffic cameras as you drive.

## Boda-boda's influence on Kenya's GDP


The boda boda business is rising as one of the most important drivers of the economy, with operators generating Sh219 billion revenue last year. Going by the newest industry figures, it means that the operators of the popular mode of transport put together made more than East Africa's most profitable company, Safaricom, that had total revenues of Sh212 billion within the 2016/17 financial year. According to figures released by the motorbike Assemblers Association of Republic of Kenya (MAAK) yesterday, there are about 600,000 commercial motorcycles on Kenyan roads, with every making, on average, Sh1,000 a day. This interprets to Sh600 million daily and Sh219 billion annually (Daily Reporter 2018).

Almost 4.8 million in total people depended Boda Boda's for his or her daily livelihood said Mr. Kalua the Motorcycle Assemblers Association of Kenya (MAAK) chairman about 4.8 million people "Until there is a solution to mass transport, there shall continue to be a need," said Kalua who additionally doubles up as the chairman of Honda Motorcycles Republic of Kenya Ltd, once the firm brought a new oil from Japan's JXTG in capital of Kenya. Traffic jams in major urban centres such as capital of Kenya and poor infrastructure in rural areas have created motorcycles the popular mode of transport over short distances for many Kenyans.

Besides serving to individuals to beat traffic, motorbikes became important within the delivery of supplies and parcels for both homes and businesses.

This has seen millions of teenagers ditch farming and sell their land and livestock or invest their savings within the boda boda business, giving rise to a thriving business. In 2016, about 146,000 motorcycles worth Sh8.2 billion were imported, down from 182,000 motorcycles worth Sh10.7 billion brought in a year earlier (Omondi 2017)

Virtually, all the motorbikes that get into the country are from China (50 per cent) and Republic of India (48 per cent). But there has been a draw back to the exponential growth of the boda boda business. Besides moving resources from such critical sectors of the economy as agriculture, motorcycles have created a traffic menace, particularly in urban centres. Recently, capital of Kenya Governor Mike Sonko ordered that each boda boda



operators vacate the central business district, with a city hall official describing boda boda operators as 'rogues' who did not respect traffic rules (Omondi 2017).

## Safety Issues & Uganda Example

SafeBoda seeks to offer a safe and secure bike taxi experience in low and middle income countries. we provide something that everybody want: safety, security and a driver they can trust. Through technology, we are building a community of drivers and responsible passengers that may find one another.

SafeBoda launched in November and since it has started to colour the streets orange - They have over 1,000 customers every day and an excellent community of proud SafeBoda drivers.

Uganda road deaths are about twice the average of its African peers that results in losses of 2.9% of its GDP (WHO, 2013).

Boda-boda accidents are a leading cause of injury and death. Less than 1% of boda boda passengers wear a helmet, as result boda boda accidents makeup around 40% of all trauma cases at the city hospitals.

With 80,000 boda boda serving as the main form of transport in Kampala, there is estimated to be at least 800,000 unsafe trips taken daily.

They provide quality bright orange helmets for the passenger and driver - wearing a quality helmet reduces risks of death by 40% and risk of severe injury by 70% (WHO 2013). Drivers receive training in customer service, safety, rules of the road, first-aid in partnership with the Ugandan Red Cross, and boda boda maintenance.

In addition to helping users find our SafeBoda drivers using a mobile application, drivers also wear personalised reflector jackets to provide a safe and friendly customer service (SafeBoda 2019)

## Traditional vs Electric: A comparison of the Boda-bodas

In this section we compare the operational benefits of the electric Boda-boda over the traditional one.

### Financial analysis

#### Cost of bike

The cost of the motorcycle is less compared to the petrol variant. The look and feel of the motorcycle would also be very similar so drivers would adapt to it with ease. The cost is



lower as we wouldn't sell the battery to the drivers but only lease it to them and they exchange batteries at the swap stations.

### Operational costs

On average, a Boda-boda driver drives 188 KMs per day. At the end of each day, the drivers earns about 10€ on average. However, the driver takes home only around 1.6-2€ while the rest is spent on fuel and towards the bike rent. The petrol bikes have a mileage of around 40-45 KMs/liter. And the cost petrol in Nairobi is around 0.97 - 1€. So the driver spends about 4€ per day for petrol. The driver then pays 4€ per day to the bike-lord (Wessel 2019).

In comparison, the electric motorcycle would enable the driver to save an extra 2.5€ per day.

The approximate figures are listed in the table below:

*Table 2. Driver earnings- comparison of the petrol variant and smart boda motorcycle*

	<b>Petrol variant</b>	<b>Smart Boda motorcycle</b>
Total earnings per day	10€	10€
Fuel (petrol expenses)	4€	2€
Motorcycle rent per day	4.5€	4€
<b>Amount drivers take home per day</b>	<b>1.5€</b>	<b>4€</b>


(Wessel 2019)

### Customer benefit

Our customers (motorcycle drivers) have a clear benefit of saving an extra 2.5€ per day as shown above. This translates into an yearly saving of 900€. However, the other major benefit the drivers have is that after repayment of lease amount, within a period of 2 years, they get to own the bike. This increases their incomes even further. So we are bringing about a social change in the lives of our customers and their families.

### Environmental benefits

As per numbers from Ampersand's website, the electric motorcycles have 75% less total lifecycle greenhouse gas emissions compared to petrol motorcycles. This number is valid for Rwanda which has an energy mix (electricity) consisting of nearly an equal share of thermal (coal) and renewables (hydro and solar) (Wessel 2019).



We expect the total lifecycle greenhouse gas emissions to be even lower in Kenya with the electric Boda-boda as Kenya has a much higher share (about 70%) of renewable energy in its electricity generation (Sachdeva 2018).

Nairobi has been reeling under the effects of poor air quality with air pollution levels 30 times higher than that of London. The poor air quality is mainly being attributed to vehicular pollution. Old and inefficient vehicles and poor vehicle maintenance have contributed towards higher emissions. The City has been reporting higher number of cases of respiratory diseases, cancer and heart problems. These motorcycles may serve as a role model for State authorities to promote electromobility to improve air quality in the City (Sachdeva 2018).

Another side effect of having electric motorcycles is reduced noise pollution as electric vehicle produce much less noise compared to internal combustion engines.

Electric vehicles pose an environmental threat due to the issue of battery disposal. As Smart Boda would own maximum batteries of this model, we would have control over collection and recycling of batteries. We would also encourage motorbike owners to bring in damaged batteries in exchange for a discount for a new set. As a responsible company, we would ingrain environmental awareness and protection as part of our company culture. We would want Smart Boda to have the image of contributing towards environment protection. This would also open up possibilities of receiving funding from environmental protection agencies to expand our operations to other cities (Sachdeva 2018).

## Health and Safety

The Boda-bodas are infamous for the health and safety risk they pose. This mode of transport is favoured by people because of their ability to get through narrow lanes and high traffic situations in the cities. However, safety norms are largely overlooked by drivers. In a survey conducted in 2013, 480 drivers were selected at random and asked to fill in a questionnaire. Alarming as it seems, 64% of the drivers were driving without a driver's license and 61% did not go through any road safety training. Driving without a license; without proper documents; reckless driving on behalf of the Boda-boda driver; helmetless driving are some of the major causes of concern as accidents are quite frequent, and fatal in some instances. They pose a risk to the life and health of drivers, passengers, passer-bys, pedestrians and their families (Sachdeva 2018).

We feel we could help reduce this nuisance by taking certain basic precautions. These would include:

- Issuing a motorcycle only if the driver/customer has a valid license
- Conducting basic road safety training for customers
- Promoting usage of helmets and selling them at our showrooms

- Having a speed limit alarm in the controller which notifies our system if the driver crosses a certain upper speed limit
- At a later stage in our operations, we want to link passengers with drivers through a 3rd party application. When we do this, the passengers would be able to rate their rides and provide feedback. This we feel would act as a deterrent to the drivers against rash driving.

Promoting safe riding, by following the mentioned steps, would increase chances of passengers opting for our electric Boda-bodas.

## Cost calculation

The estimated cost of setting up and running the Smart-Boda business depends on the size of the operation we plan to undertake, the business model we plan to follow together with other services we plan to offer our targeted customer description. The business expenditure will be very dynamic from year to year due to the business model. Calculation of expected costs and expenditure for the first ten years will be discussed in this section of the proposal and through that required start-up capital will be determined.

Estimates of the number of Electric-Bodas to be put in operation in the first ten years of the company's existence are shown in Table 3. According to the Kenyan National Bureau of statistics (KNBS 2018), a total of 1.86.434 motor bike were registered in the country in 2017. This represented a 56% increase from the previous year (2016) which saw the registration of 1.19.724 new motor bikes nationwide.

*Table 3. Projected market penetration for smart-bodas*

Year	Market penetration (% of registered motor bikes)	No. of Smart-Bodas added	No. of Smart-Bodas under lease contract
1. Year	0,11%	200	200
2. Year	0,27%	500	700
3. Year	0,80%	1500	2000
4. Year	1,88%	3500	5000
5. Year	1,88%	3500	7000
6. Year	1,88%	3500	7000
7. Year	1,88%	3500	7000
8. Year	1,88%	3500	7000
9. Year	1,88%	3500	7000
10. Year	1,88%	3500	7000

Required investments and cost of operation will now be calculated based on the listed targets.

## Investments

The location of our buildings could play a role in the success of the business. Required buildings include a main office (headquarters & back office), a showroom, a warehouse, a workshop, and battery charging stations. At start-up the buildings will be rented. This will be a more effective option at startup. It will also save a lot of time since we will only need to renovate if necessary and brand the buildings. In order to make battery swapping accessible to our Smart-Boda operators, we plan to locate the first charging station close to or on the periphery of the central business district of Nairobi where majority of the people needing quick transportation and trying to avoid traffic jams travel to and from.

## Operations Expenditure

The annual operational expenses of the business will cover the renting of various buildings and the payments for utilities such as electricity, water, and internet. There will also be expenses on office supplies, fuel for vehicles and housekeeping. Table 4 shows annual rent expenditure for the buildings and Table 5 shows annual operations expenditure.

*Table 4. Annual rent for buildings*

<b>Buildings</b>	
<b>Description</b>	<b>Annual Expenditure (rent)</b>
Main office building	18.000,00 €
Showroom	6.000,00 €
Charging station	12.000,00 €
Workshop	6.000,00 €
Warehouse	2.000,00 €
<b>Total</b>	<b>44.000,00 €</b>

*Table 5. Operations expenditure*

<b>Operations</b>	
<b>Description</b>	<b>Annual Expenditure</b>
Office supplies	600,00 €
Utility	2.400,00 €
Fuel	6.000,00 €

Housekeeping	2.500,00 €
<b>Total</b>	<b>11.500,00 €</b>

## Labour costs

Due to the model of the business plan, being essentially the provision of services, the labour required at any time is partly dependent on the number of bikes in lease. The number of workers in the beginning will therefore be a fraction of what will be needed for full operations and it is projected to grow to maximum in three years as shown in Tables 6 to 8. This will vary the cost of labour for the first three years and then level out for the remainder of the ten years of the calculation.

*Table 6. Labour cost for first year*

<b>Year 1. Labour cost</b>				
	<b>Designational Hierarchy</b>	<b>Headcount</b>	<b>Salary/Year-person</b>	<b>Salary Costs/Year</b>
	CEO	1	18.000,00 €	18.000,00 €
	Department Heads	3	15.000,00 €	45.000,00 €
	Managers	3	12.000,00 €	36.000,00 €
	Senior Associates	4	10.000,00 €	40.000,00 €
	Leads and Associates	1	8.000,00 €	8.000,00 €
	Support	4	5.000,00 €	20.000,00 €
	<b>Sum Totals</b>	<b>16</b>	<b>68.000,00 €</b>	<b>167.000,00 €</b>

*Table 7. Labour cost for second year*

<b>Year 2. Labour cost</b>				
	<b>Designational Hierarchy</b>	<b>Headcount</b>	<b>Salary/Year p person</b>	<b>Salaried Costs/Year</b>

	CEO	1	18.000,00 €	18.000,00 €
	Department Heads	4	15.000,00 €	60.000,00 €
	Managers	4	12.000,00 €	48.000,00 €
	Senior Associates	5	10.000,00 €	50.000,00 €
	Leads and Associates	6	8.000,00 €	48.000,00 €
	Support	10	5.000,00 €	50.000,00 €
	<b>Sum Totals</b>	<b>30</b>	<b>68.000,00 €</b>	<b>274.000,00 €</b>

*Table 8. Labour cost for third year onwards*

Year 3. Labour cost				
	Designational Hierarchy	Headcount	Salary/Year p person	Salaried Costs/Year
	CEO	1	62.500,00 €	62.500,00 €
	Department Heads	6	37.500,00 €	225.000,00 €
	Managers	3	25.000,00 €	75.000,00 €
	Senior Associates	12	17.500,00 €	210.000,00 €
	Leads and Associates	10	10.000,00 €	100.000,00 €
	Support	27	5.000,00 €	135.000,00 €
	<b>Sum Totals</b>	<b>59</b>	<b>157.500,00 €</b>	<b>807.500,00 €</b>

### Depreciation costs

To enable our business operations to be carried out successfully, investment has to be made in tools and equipment needed for both the office and charging stations right from startup. This includes computers and various communication equipment for the offices, furniture, vehicles, an inverter for the charging station, a medium duty trolley for material

handling, and tools for repairs and maintenance. These are basic needs to enable the provision of services to our targeted customers. The depreciation rates of these good are listed in Tables 9 and 10 below.

*Table 9. Depreciation cost for office informatics, furnishing and vehicles*

Office			
Description	Investment Expenditure	Depreciation Rate (%)	Annual Depreciation Cost
Informatics	20.000,00 €	10	2.000,00 €
Furniture	4.000,00 €	10	400,00 €
Vehicles (3)	75.000,00 €	10	7.500,00 €
<b>Total</b>	<b>99.000,00 €</b>		<b>9.900,00 €</b>

*Table 10. Depreciation cost for charging station investments*

Charging Station			
Description	Investment Expenditure	Depreciation Rate (%)	Annual Depreciation Cost
Charging inverter	5.000,00 €	10	500,00 €
Electric Trolley	1.000,00 €	10	100,00 €
Tools	1.000,00 €	10	100,00 €
<b>Total</b>	<b>7.000,00 €</b>		<b>700,00 €</b>

### Bike Leasing and Battery Swap Services

The total cost of acquiring the electric bike in Nairobi has been put at 1.300,00 €. This includes the manufacturer's FOB, the cost of tracking device and the cost of shipping/transporting the electric bike to the storage facility. In addition, each bike will theoretically have an extra one and half battery (3 extra batteries for every 2 bikes) to enable the battery swapping services to be carried out while in operation. The price of the spare batteries has been put at 100,00 € per battery. In the first year, 200 Smart-Bodas will be piloted to test the business model and to enable learning and improvement. Table 11 and 12 show the projected market penetration for each year and the cost of the electric bikes to be added.

Table 11. Annual cost of new bike purchase

Annual addition of Electric Bikes			
	No. of smart-bodas added	No. of smart-bodas operational	Cost of smart-bodas added
1. year	200	200	260.000,00 €
2. year	500	700	650.000,00 €
3. year	1500	2000	1.950.000,00 €
4. year	3500	5000	4.550.000,00 €
5. year	3500	7000	4.550.000,00 €
6. year	3500	7000	4.550.000,00 €
7. year	3500	7000	4.550.000,00 €
8. year	3500	7000	4.550.000,00 €
9. year	3500	7000	4.550.000,00 €
10. year	3500	7000	4.550.000,00 €

Table 12. Annual cost of spare batteries purchase

Spare batteries			
	Qty. added	Qty. in operation	Cost of new purchase
1. year	300	300	30.000,00 €
2. year	750	1050	75.000,00 €
3. year	2250	3300	225.000,00 €
4. year	5250	8250	525.000,00 €
5. year	5250	12750	525.000,00 €
6. year	5250	15750	525.000,00 €
7. year	5250	15750	525.000,00 €
8. year	5250	15750	525.000,00 €
9. year	5250	15750	525.000,00 €
10. year	5250	15750	525.000,00 €



The main consumption for the battery charging station will come in the form of electricity (see Table 13). This will come from the grid in the beginning with plans to switch to an off grid solar photovoltaic system. The current price of electricity of 0,20 € per kilowatt hour was used for the calculation. The e-bikes will be fitted with 1.8 kWh batteries which will cost roughly 0,36 € to fully charge. The bike operators will come around twice a day for battery swap on working days. Twenty working days per month for each bike was used to calculate electricity consumption.

*Table 13. Annual cost of electricity for battery charging*

Electricity consumption for battery charging				
	No. of smart-boda leased	No. of smart-boda in operation	Annual electricity consumption (kWh)	Annual cost of electricity
1. year	200	200	172800	34.560,00 €
2. year	500	700	604800	120.960,00 €
3. year	1500	2200	1900800	380.160,00 €
4. year	3500	5700	4924800	984.960,00 €
5. year	3500	9000	7776000	1.555.200,00 €
6. year	3500	12000	10368000	2.073.600,00 €
7. year	3500	14000	12096000	2.419.200,00 €
8. year	3500	14000	12096000	2.419.200,00 €
9. year	3500	14000	12096000	2.419.200,00 €
10. year	3500	14000	12096000	2.419.200,00 €

## Total Investment

Details of the required seed capital for the business is shown in Table 14. A total of 1.000.000,00 € will be require for startup and depending on the degree of success, other investment phases may come into play.

*Table 14. Computation of startup capital*

Seed Capital			
Good	Investment Expenditures	Depreciation rate (%)	Depreciation cost
Incorporating	500,00 €	0	
Buildings	44.000,00 €	0	
Equipment/charge-station	7.000,00 €	10	700,00 €
Informatics	20.000,00 €	10	2.000,00 €
Furniture	4.000,00 €	10	400,00 €

Vehicles	75.000,00 €	10	7.500,00 €
Operational Expenditure	11.500,00 €	0	
Electric bikes (year 1)	260.000,00 €	0	
Spare batteries (year 1)	30.000,00 €	0	
Electricity cost (c-station) (year 1)	34.560,00 €	0	
Unforeseen costs	150.000,00 €	0	
Circulating capital	363.440,00 €	0	
<b>SUM</b>	<b>1.000.000,00 €</b>		10.600,00 €

## Financing

The initial capital required for startup was calculated to be about €1000,000.00. This will be financed in two forms. A loan of €700,000.00 (70%) will be borrowed from the Kenyan banking sector at the annual interest rate of 13%. The remaining €300,000.00 will be self-financed at no interest. This will come in the form of a personal loan from the e-bike manufacturer as part of an agreement to be a dealership for the product in Kenya with the option to expand to other neighboring countries.

*Table 15. Source of financing*

Start-up Capital		
Total Investment	1.000.000,00 €	100%
Own Capital	300.000,00 €	30%
Outside Financing	700.000,00 €	70%

## Cost calculation

This section presents a detailed cost calculation for the proposed business model including the cost of financing and self-cost for the first ten years of the company's existence.

### Financing costs

The cost of the bank loan is a 13% interest rate annually. This will be paid over the period of the loan of 4 years. Combined interest on the four-year loan sums up to 33% of the borrowed amount. The personal loan for the self-finance portion of investment will also be paid back in a seven-year period to the electric bike manufacturer without interest. This will be part of the dealership agreement to introduce the bikes to the Kenyan market. Tables 16 and 17 below shows the cost of financing and the repayment periods.

Table 16. Cost of borrowing from bank and refund period

Bank Loan				
Year	Balance of Debt	Interest Rate (%)	Cost of Debt	Refunding Loan
starting debt:	700.000,00 €			
1	525.000,00 €	13%	91.000,00 €	175.000,00 €
2	350.000,00 €	13%	68.250,00 €	175.000,00 €
3	175.000,00 €	13%	45.500,00 €	175.000,00 €
4	- €	13%	22.750,00 €	175.000,00 €
<b>SUM</b>			227.500,00	700.000,00 €

Table 17. Refunding of personal loan from Ampersand

Self finance				
Year	Balance of Debt	Interest Rate (%)	Cost of Debt	Refunding Loan
starting debt:	300.000,00 €			
1	257.142,86 €	0%	- €	42.857,14 €
2	214.285,71 €	0%	- €	42.857,14 €
3	171.428,57 €	0%	- €	42.857,14 €
4	128.571,43 €	0%	- €	42.857,14 €
5	85.714,29 €	0%	- €	42.857,14 €
6	42.857,14 €	0%	- €	42.857,14 €
7	0,00 €	0%	- €	42.857,14 €
<b>SUM</b>			- €	300.000,00 €

Tables 18 and 19 below shows elements of the self-cost of the business and its computation over the first ten year. The first couple of years shows a lower total cost but the cost per Smart-Boda in operation is quite high. This will be inverted

after the third year where the total cost of the business will be higher but the cost per Smart-Boda in operation is quite low.

Table 18. Self-cost computation (year 1 to 5)

	1. Year	2. Year	3. Year	4. Year	5. Year
Market penetration (% of registered motor bikes)	0,11%	0,27%	0,80%	1,88%	1,88%
No. of smart-bodas added	200	500	1500	3500	3500
No. of smart-bikes operational	200	700	2000	5000	7000

Costs	Annual Costs	Annual Costs	Annual Costs	Annual Costs	Annual Costs
Depreciation costs	10.600,00 €	10.600,00 €	10.600,00 €	10.600,00 €	10.600,00 €
Financing costs	91.000,00 €	68.250,00 €	45.500,00 €	22.750,00 €	- €
Labour costs	167.000,00 €	274.000,00 €	807.500,00 €	807.500,00 €	807.500,00 €
Operation costs	55.500,00 €	86.500,00 €	213.000,00 €	213.000,00 €	213.000,00 €
<b>SUM OF COSTS</b>	<b>324.100,00 €</b>	<b>439.350,00 €</b>	<b>1.076.600,00 €</b>	<b>1.053.850,00 €</b>	<b>1.031.100,00 €</b>
<b>Costs per Smart-Boda in operation</b>	<b>1.620,50 €</b>	<b>627,64 €</b>	<b>538,30 €</b>	<b>210,77 €</b>	<b>147,30 €</b>

Table 19. Self-cost computation (year 6 to 10)

	6. Year	7. Year	8. Year	9. Year	10. Year
Market penetration (% of registered motor bikes)	1,88%	1,88%	1,88%	1,88%	1,88%
No. of smart-bodas added	3500	3500	3500	3500	3500
No. of smart-bikes operational	7000	7000	7000	7000	7000

Costs	Annual Costs	Annual Costs	Annual Costs	Annual Costs	Annual Costs
Depreciation costs	10.600,00 €	10.600,00 €	10.600,00 €	10.600,00 €	10.600,00 €
Financing costs	- €	- €	- €	- €	- €
Labour costs	807.500,00 €	807.500,00 €	807.500,00 €	807.500,00 €	807.500,00 €
Operation costs	213.000,00 €	213.000,00 €	213.000,00 €	213.000,00 €	213.000,00 €
<b>SUM OF COSTS</b>	<b>1.031.100,00 €</b>	<b>1.031.100,00 €</b>	<b>1.031.100,00 €</b>	<b>1.031.100,00 €</b>	<b>1.031.100,00 €</b>
<b>Costs per Smart-Boda in operation</b>	<b>147,30 €</b>	<b>147,30 €</b>	<b>147,30 €</b>	<b>147,30 €</b>	<b>147,30 €</b>

## Profitability and cash flow

Revenue generation will happen from two main services, the leasing of electric bikes to Boda-Boda operators and the swapping of fully charged batteries for depleted ones during the operational day. The bike is will last for two years after which the ownership of the bike will be transferred to the operator at no extra cost. During the duration of the lease, the operator is expected to make a monthly payment of 100,00 € for using the lease. This sums up to a 1.200,00 €/bike revenue annually and a total of 2.400,00 € for the two years of lease. After this period the bike goes out of operation for the business and the cost of operating and maintaining goes to the new owner. The electric bike is then expected to be active for another two to three years of commercial use. During this period the company will keep providing battery charging/swapping and maintenance services for the operators. For these reasons revenue from leasing runs for two years while battery charging service lasts for four years in revenue calculations as shown in Tables 20 and 21 respectively. Figures 12 and 13 also show the comparison between the revenue from the two services provided.

Table 20. Annual income from leasing smart-bodas

Annual Revenue from Bike Leasing				
Year	Number of Smart-Boda added	Number of Smart-Boda under lease	Cash recovered per Smart-Boda p.a.	Revenue
1	200	200	1.200,00 €	240.000,00 €
2	500	700	1.200,00 €	840.000,00 €
3	1500	2000	1.200,00 €	2.400.000,00 €
4	3500	5000	1.200,00 €	6.000.000,00 €
5	3500	7000	1.200,00 €	8.400.000,00 €
6	3500	7000	1.200,00 €	8.400.000,00 €

7	3500	7000	1.200,00 €	8.400.000,00 €
8	3500	7000	1.200,00 €	8.400.000,00 €
9	3500	7000	1.200,00 €	8.400.000,00 €
10	3500	7000	1.200,00 €	8.400.000,00 €

Swapping a depleted battery for a fully charged one during working hours will save operators a lot of time since it will take a few minutes compared to the hours it takes to charge the batteries. This will feel just like going to a fuel station to fill up but at a cheaper cost. Smart-Boda operators will be charged 0,90 € for a battery swap.

*Table 21. Annual income from battery charging service*

Annual Revenue from Battery Charging Services				
Year	Number of Smart-Boda added	Number of Smart-Boda in operation	Cell-charging fees per Smart-Boda p.a.	Revenue
1	200	200	432,00 €	86.400,00 €
2	500	700	432,00 €	302.400,00 €
3	1500	2200	432,00 €	950.400,00 €
4	3500	5700	432,00 €	2.462.400,00 €
5	3500	9000	432,00 €	3.888.000,00 €
6	3500	12000	432,00 €	5.184.000,00 €
7	3500	14000	432,00 €	6.048.000,00 €
8	3500	14000	432,00 €	6.048.000,00 €
9	3500	14000	432,00 €	6.048.000,00 €
10	3500	14000	432,00 €	6.048.000,00 €

*Table 22. Total annual revenue from bike lease and battery swapping*

Total Annual Revenue			
Year	Revenue from bike lease	Revenue from battery charging	Total Revenue
1	240.000,00 €	86.400,00 €	326.400,00 €
2	840.000,00 €	302.400,00 €	1.142.400,00 €
3	2.400.000,00 €	950.400,00 €	3.350.400,00 €
4	6.000.000,00 €	2.462.400,00 €	8.462.400,00 €
5	8.400.000,00 €	3.888.000,00 €	12.288.000,00 €
6	8.400.000,00 €	5.184.000,00 €	13.584.000,00 €
7	8.400.000,00 €	6.048.000,00 €	14.448.000,00 €
8	8.400.000,00 €	6.048.000,00 €	14.448.000,00 €
9	8.400.000,00 €	6.048.000,00 €	14.448.000,00 €

10	8.400.000,00 €	6.048.000,00 €	14.448.000,00 €
----	----------------	----------------	-----------------

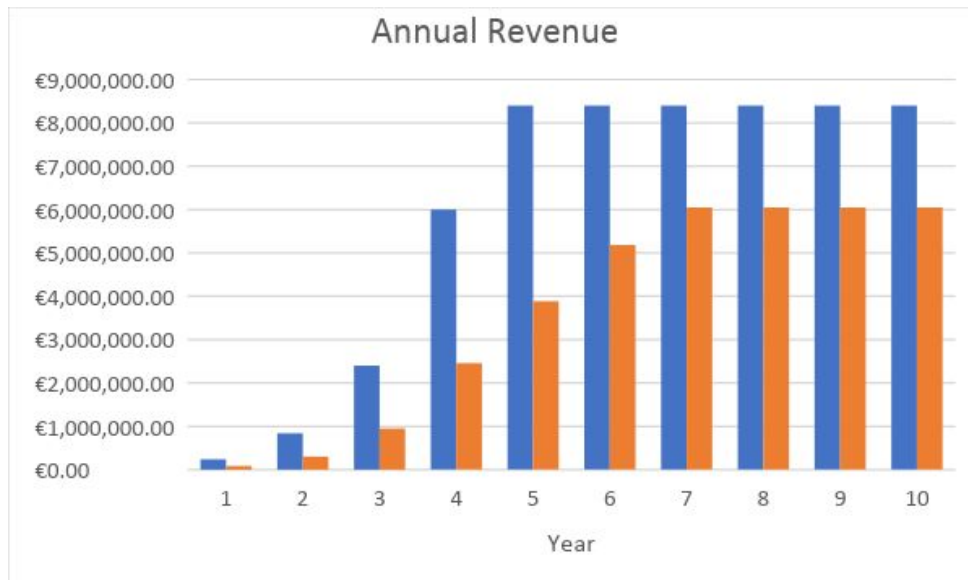


Figure 12. Annual revenue inflow

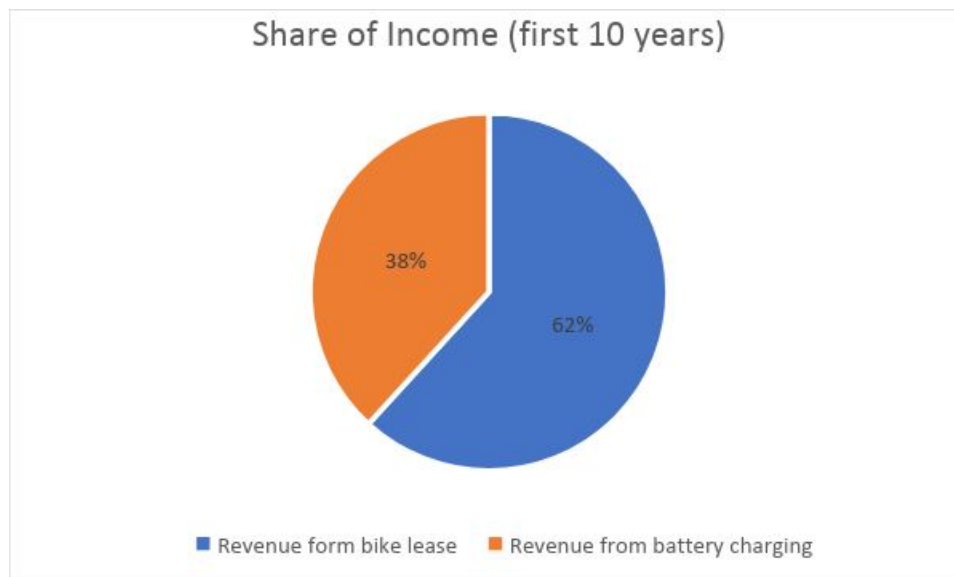


Figure 13. Share of 10-year accumulated revenue

Cash Flow and Taxation

Cash flow computation for the first ten years of the company's existence is shown in Tables 23 and 24. Corporate tax for resident companies in Kenya is 30%, and it is 37% for non-resident companies (Profile 2019). Figure 14 shows the trend of the company's annual incomes in relation to the taxes paid and dividend.

Table 23. Cash flow computation (year 1 to 10)

	1. Year	2. Year	3. Year	4. Year	5. Year
Revenue	326.400,00 €	1.142.400,00 €	3.350.400,00 €	8.462.400,00 €	12.288.000,00 €
Depreciation costs	10.600,00 €	10.600,00 €	10.600,00 €	10.600,00 €	10.600,00 €
Labour costs	167.000,00 €	274.000,00 €	807.500,00 €	807.500,00 €	807.500,00 €
Operating (Consumption) costs	55.500,00 €	86.500,00 €	213.000,00 €	213.000,00 €	213.000,00 €
Financing costs	91.000,00 €	68.250,00 €	45.500,00 €	22.750,00 €	- €
<b>Product</b>					
Cost of Smart-Bodas	260.000,00 €	650.000,00 €	1.950.000,00 €	4.550.000,00 €	4.550.000,00 €
Cost of spare batteries	30.000,00 €	75.000,00 €	225.000,00 €	525.000,00 €	525.000,00 €
Electricity cost (charging station)	34.560,00 €	120.960,00 €	380.160,00 €	984.960,00 €	1.555.200,00 €
Loss carried forward		-322.260,00 €	-465.170,00 €	-746.530,00 €	- €
Profit before tax	- 322.260,00 €	-465.170,00 €	-746.530,00 €	602.060,00 €	4.626.700,00 €
Taxes (30%)	- €	- €	- €	180.618,00 €	1.388.010,00 €
Profit after taxes	- 322.260,00 €	- 465.170,00 €	- 746.530,00 €	421.442,00 €	3.238.690,00 €
Cash flow (net profit + deduction)	- 311.660,00 €	-454.570,00 €	-735.930,00 €	432.042,00 €	3.249.290,00 €
Repayment credit	217.857,14 €	217.857,14 €	217.857,14 €	217.857,14 €	42.857,14 €
Re-investing?					
Dividend	- 540.117,14 €	- 683.027,14 €	- 964.387,14 €	384.202,86 €	4.583.842,86 €

Table 24. Cash flow computation (year 6 to 10)

	6. Year	7. Year	8. Year	9. Year	10. Year
Revenue	13.584.000,00 €	14.448.000,00 €	14.448.000,00 €	14.448.000,00 €	14.448.000,00 €
Depreciation costs	10.600,00 €	10.600,00 €	10.600,00 €	10.600,00 €	10.600,00 €
Labour costs	807.500,00 €	807.500,00 €	807.500,00 €	807.500,00 €	807.500,00 €



Operating (Consumption) costs	213.000,00 €	213.000,00 €	213.000,00 €	213.000,00 €	213.000,00 €
Financing costs	- €	- €	- €	- €	- €
<b>Product</b>					
Cost of Smart-Bodas	4.550.000,00 €	4.550.000,00 €	4.550.000,00 €	4.550.000,00 €	4.550.000,00 €
Cost of spare batteries	525.000,00 €	525.000,00 €	525.000,00 €	525.000,00 €	525.000,00 €
Electricity cost (charging station)	2.073.600,00 €	2.419.200,00 €	2.419.200,00 €	2.419.200,00 €	2.419.200,00 €
Loss carried forward	- €	- €	- €	- €	- €
Profit before tax	5.404.300,00 €	5.922.700,00 €	5.922.700,00 €	5.922.700,00 €	5.922.700,00 €
Taxes (30%)	1.621.290,00 €	1.776.810,00 €	1.776.810,00 €	1.776.810,00 €	1.776.810,00 €
Profit after taxes	3.783.010,00 €	4.145.890,00 €	4.145.890,00 €	4.145.890,00 €	4.145.890,00 €
Cash flow (net profit + deduction)	3.793.610,00 €	4.156.490,00 €	4.156.490,00 €	4.156.490,00 €	4.156.490,00 €
Repayment credit	42.857,14 €	42.857,14 €	- €	- €	- €
Re-investing?					
Dividend	5.361.442,86 €	5.879.842,86 €	5.922.700,00 €	5.922.700,00 €	5.922.700,00 €

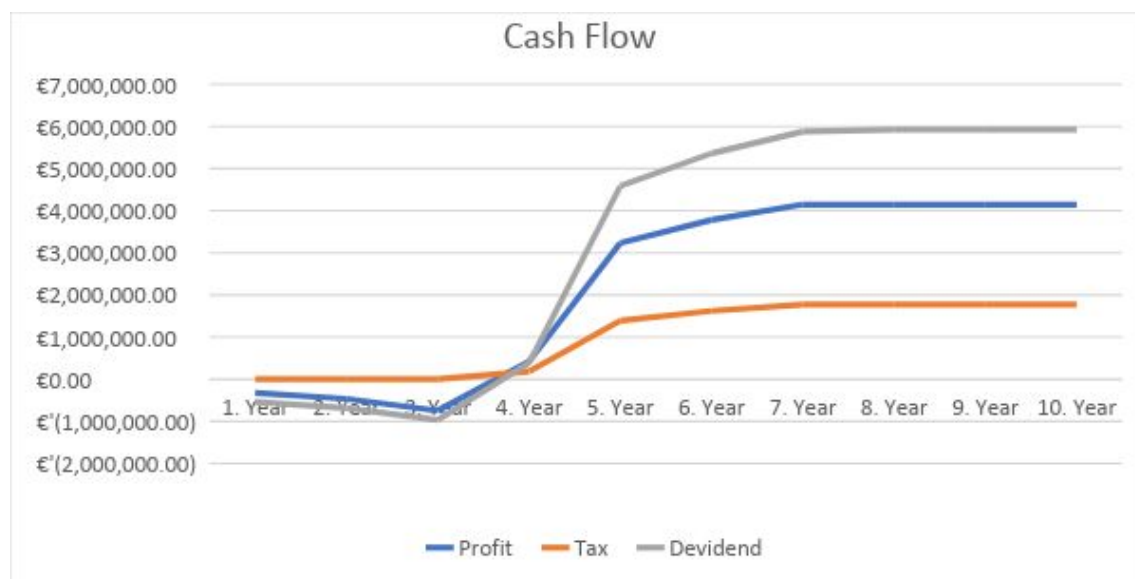


Figure 14. Projected cash flow for the first 10 years

## Company documents

### Company registration

Smart Boda is registered as a German Limited Liability Company (GmbH). The Company has four main shareholders at the moment. Together with our lender bank, the initial share capital is 1.000.000,00 €, with a debt equity ratio of 70:30. The four main shareholders will collectively invest 300.000,00 € and borrow a sum of 700.000,00 € from our partner Bank. The Company has Managing Director who is also the Chief Executive Officer (CEO) of the company. The Managing Director is the major shareholder, with the remaining three shareholders taking active role in the company operations. They take up the role of the Chief Technology Officer (CTO), Chief Financial Officer (CFO) and Chief Operations Officer (COO). These roles could be comparable to that of a Vice-President in any business organization.


Initially, as the Company is incorporated, the 4 main shareholders (CEO, CFO, CTO and COO) would also take up the role of the Supervisory Board. This Board will evolve as the Company grows bigger. However, for the first 4 years, the Supervisory Board will remain the same, unless any member of the Board becomes unable to carry his/her duties, in which case the remaining members would take a call on rearrangement of the Board.

The Articles of Association (also known as Articles of Incorporation) for Smart Boda GmbH are furnished in Annexure 1.1.

### Employment contracts

All employees of the company will go through an interview process and this process will be managed by the HR Department of the company. The HR Department will receive applications from interested applications; get required documents for the candidate (CV, Certificates, etc.); verify candidate details and set-up the interview with one/two representatives from the concerned team (operations; sales & marketing; software development etc.).

If the candidate is not selected by the concerned department then the HR department will gracefully inform the candidate about rejection of application. In case of selection, the HR Department will inform the candidate and will issue an offer letter mentioning important details like salary; duration of contract; working hours; employee benefits; etc. If the candidate confirms then the HR Department will set a joining date (after consultation with the concerned team) and sign an employment contract with the new employee. The



employment contract would mention the details furnished in the offer letter and any other information deemed necessary.

A sample employment contract is furnished in Appendix 1.2 for reference.

## Health, social-security and unemployment

Taking care of our employees is important to us and so we will make sure they are signed up for the health insurance offered by the partner insurance company. This health insurance would cover the employee and his/her immediate family as per the standards available in Kenya. Based on market feedback and customer service, some insurance partners we have identified are Jubilee Insurance, Resolution Insurance and Madison Insurance. We shall carefully select one to make sure they offer the best services while our employees are in health distress (Resolution Insurance 2019).

There are some public-run social security and pension schemes available in Kenya. However, as a norm, private firms don't offer these services to the employees but the employees are encouraged to invest in these schemes themselves. At a later stage, if the company is generating enough profits, we would surely enter these schemes and make it mandatory for all employees. One such scheme is the National Social Security Fund (NSSF). It is a Provident Fund that provides retirement savings to formal sector employees (Getting the deal through 2019). The benefit to our employees would be that the Company would pay half of their contribution per month. The amount would be a small percentage of their salaries.

As there is not unemployment insurance offered by private entities to their employees in Kenya, we would also not enter into any such schemes.

## Bibliography

Alamy 2016. Nairobi-Mombasa-Genesis Bus auf Kenia Mombasa Road Stockfoto, Bild: 125034386 - Alamy [Online]. Available at: <https://www.alamy.de/stockfoto-nairobi-mombasa-genesis-bus-auf-kenia-mombasa-road-125034386.html> [Accessed: 31 January 2019].

CityPopulation.de 2019. Nairobi (County, Kenya) - Population Statistics, Charts, Map and Location [Online]. Available at: <https://www.citypopulation.de/php/kenya-admin.php?adm2id=47> [Accessed: 31 January 2019].

Daily Reporter 2018. Battle to control motorcycle taxi service commonly known as boda boda goes hi-tech as competitors develop apps | Daily Reporter [Online]. Available at: <http://www.reporter.co.ke/2018/03/22/battle-to-control-motorcycle-taxi-service-commonly-known-as-boda-boda-goes-hi-tech-as-competitors-develop-apps/> [Accessed: 31 January 2019].

Daldrup, U. 2019. Employment Contract.

Etemesi, P. 2017. 22 Photos That Show How Kenya's Matatus Are So Much Cooler Than Nigeria's Danfos [Online]. Available at: <https://omgvoice.com/entertainment/photos-kenya-matatus-nigerias-danfos/> [Accessed: 31 January 2019].

Getting the deal through 2019. Kenya Pensions & Retirement Plans – Getting The Deal Through – GTDT [Online]. Available at: [https://gettingthedealthrough.com/area/57/jurisdiction/44/pensions-retirement-plans-kenya/%20\(Accessed:%2027%20January%202019\).](https://gettingthedealthrough.com/area/57/jurisdiction/44/pensions-retirement-plans-kenya/%20(Accessed:%2027%20January%202019).) [Accessed: 30 January 2019].

GmbH, V. 2019. ARTICLES OF ASSOCIATION.

Jumbonairobi 2018a. Central-Bus-Station1.jpg (640×480) [Online]. Available at: <http://www.jambonairobi.co.ke/wp-content/uploads/2011/01/Central-Bus-Station1.jpg> [Accessed: 31 January 2019].

Jumbonairobi 2018b. Nairobi-traffic-Commuters.jpg (439×238) [Online]. Available at: <http://www.jambonairobi.co.ke/wp-content/uploads/2011/01/Nairobi-traffic-Commuters.jpg> [Accessed: 31 January 2019].

Jumbonairobi 2018c. Nairobi-traffic-Vehicle-types-.jpg (432×235) [Online]. Available at: <http://www.jambonairobi.co.ke/wp-content/uploads/2011/01/Nairobi-traffic-Vehicle-types-.jpg> [Accessed: 31 January 2019].

Kahuthia-Gathu, R. and Gatebe, E. 2013. IMPACT OF TRAINING BODA BODA OPERATORS AND SAFETY STATUS IN. *Research Gate*.

KNBS 2018. Leading Economic Indicator September 2018 - Kenya National Bureau of

Statistics [Online]. Available at:  
<https://www.knbs.or.ke/download/leading-economic-indicator-september-2018/> [Accessed: 30 January 2019].

KTM Bikes New KTM Street/Road Motorcycle Showroom NOW OPEN [Online]. Available at:  
<https://www.tripledmotosport.co.uk/news/new-ktm-street-road-motorcycle-showroom-now-open> [Accessed: 15 January 2019].

LivingInNairobi 2019. LivingInNairobi, Author at Jambonairobi [Online]. Available at:  
<https://jambonairobi.co.ke/author/nairobi-guide/> [Accessed: 31 January 2019].

Nakitendde, H. 2017. Boda Bodas cite KCCA as their main trouble-causer – Sunrise [Online]. Available at:  
<http://www.sunrise.ug/news/201706/boda-bodas-cite-kcca-main-trouble-causer.html> [Accessed: 31 January 2019].

Nzwili, F. 2017. Commuting to Nairobi, the train becomes a church - Religion News Service [Online]. Available at:  
<https://religionnews.com/2017/10/02/commuting-to-nairobi-the-train-becomes-a-church/> [Accessed: 31 January 2019].

Omondi, D. 2017. Boda boda men pocket Sh219 billion in a year : The Standard [Online]. Available at:  
[https://www.standardmedia.co.ke/business/article/2001269527/earnings-from-boda-boda-sector-surpasses-safaricom-s-2017-revenue-by-sh7b?TB\\_iframe=true&width=370.8&height=658.8](https://www.standardmedia.co.ke/business/article/2001269527/earnings-from-boda-boda-sector-surpasses-safaricom-s-2017-revenue-by-sh7b?TB_iframe=true&width=370.8&height=658.8) [Accessed: 31 January 2019].

Profile, E. 2019. KenyaDoing Business 2019 [Online]. Available at:  
<https://www.bdo-ea.com/en-gb/microsites/doing-business-and-investing-in-kenya/tax/page-elements/taxation-in-kenya/corporate-tax> [Accessed: 12 January 2019].

Resolution Insurance 2019. Resolution Insurance Kenya | Protecting What You Value [Online]. Available at: <https://www.resolution.co.ke/> [Accessed: 23 January 2019].

Sachdeva, A.S. 2018. Term paper: Abhijit Singh Sachdeva | Matriculation Nr. 11125584.


SafeBoda 2019. Home | SafeBoda [Online]. Available at: <https://www.safeboda.com/home> [Accessed: 31 January 2019].

Salens, G. 2018. Ampersand begins e-mobility trial in Rwanda | electricmotorcycles.news | It's time. [Online]. Available at:  
<https://electricmotorcycles.news/ampersand-begins-e-mobility-trial-in-rwanda/> [Accessed: 15 January 2019].

Tales, L. 2011. Nairobi Traffic Jams : 10 Things | MMIMMC [Online]. Available at:  
<http://hack21stcenturylife.com/2011/01/nairobi-traffic-jams-10-things/> [Accessed: 31 January 2019].

Wessel, L. 2019. Ampersand. *Marketing health services*.

Wikipedia Contributors 2019. Boda boda - Wikipedia [Online]. Available at:



[https://en.wikipedia.org/wiki/Boda\\_boda](https://en.wikipedia.org/wiki/Boda_boda) [Accessed: 31 January 2019].

World Population Review 2018. Nairobi Population 2019 (Demographics, Maps, Graphs) [Online]. Available at: <http://worldpopulationreview.com/world-cities/nairobi-population/> [Accessed: 31 January 2019].

## Annexure-1

Annexure 1.1: Articles of association

# Articles of Association

Of

# Smart Boda GmbH



## § 1

### **Company name, Registered Offices**

The name of the company is

#### **Smart Boda GmbH**

It has its registered offices in Cologne, with operations in Nairobi.

## § 2

### **Object of the Company**

1. The Company is a Holding which operates in all areas of electromobility services. The object of the Company is in particular the:

(1) The company purpose is to promote 'Electric Boda-bodas' and set-up the enabling infrastructure to support adoption in the city of Nairobi.

(2) The business would entail:

1. Set up showroom for leasing out or selling of Boda-bodas; driver training,
2. Cheap and durable motorbike with battery swap functionality
3. Integrated control system for remote shut-down/unlock feature

2. The Company is entitled to pursue all business and carry out all measures which appear to serve its object. It may establish branches or subsidiaries abroad or participate in other utilities. The Company is entitled to transfer or relinquish its business fully or partially to other companies, to conclude company agreements and enter into co-operations.

## § 3

### **Business year; Duration of the Company**



1. The business year is the calendar year.
2. The Company is founded for an indefinite period.

#### **§ 4**

### **Share capital; Shares**

The share capital of the Company amounts to 1.000.000 Euro. It is divided into 1.000.000 shares.

#### **§ 5**

### **Management Board**

1. The management board shall comprise a minimum of two members who shall be appointed and removed by the supervisory board. The exact number is to be determined by the supervisory board.
2. The supervisory board may appoint a chairman and a vice-chairman of the management board.


#### **§ 6**

### **Representation**

The Company is to be represented legally by two members of the management board or by a member of the management board together with a "Prokurist" (company officer with registered signing authority). The Supervisory Board can, on a general basis or for a particular case, free all or individual members of the Management Board from the prohibition to represent more than one party pursuant to Sec. 181 alt. 2 BGB; this can also cover the approval of past transactions carried out in the name of company; Sec. 112 AktG remains unaffected.

#### **§ 7**

### **Number and Composition of the Supervisory Board Members; Term of Office**

- 
1. The supervisory board consists of the four chief stakeholders of the company, who have invested in the initial share capital.
  2. The members of the supervisory board are selected for the period up until the closing of the shareholders' meeting which resolves upon approval of the actions of the supervisory board for the fourth business year following commencement of the term in office. The business year in which the term begins shall not be included. The shareholders' meeting may determine a shorter term in office for the members of the supervisory board at the time of voting.
  3. Re-election is permissible.
  4. Up to 2 substitutes may be selected for the supervisory board members elected by the shareholders' meeting. These substitutes shall, in an order determined at the time of election, replace a member who terminates his/her period in office prematurely. The term in office of such substitute shall finish on expiry of the term in office corresponding to that of the departing member. Should a member of the supervisory board elected by the shareholders' meeting depart prematurely and no substitute member has been elected, measures to complete the supervisory board are to be taken without delay.
  5. Each member of the supervisory board may resign from office by way of written declaration addressed to the chairman of the supervisory board or management board observing a four-week notice period.

## **§ 8**

### **Chairman of the Supervisory Board, Vice-Chairman**

1. The Chairman of the Supervisory Board is the Managing Director of the company and the Vice Chairman is the Chief Financial Officer (CFO). The vice-chairman shall have the rights and duties of the chairman only if he should be indisposed.
2. Should the chairman or the vice-chairman depart from office, the supervisory board shall elect a replacement without delay for the remainder of the term.
3. Declarations of intent made by the supervisory board or its committee are to be submitted in the name of the chairman or, in his absence, that of the vice- chairman.

## **§ 9**

## **Internal Procedure of the Supervisory Board, Voting**

1. The supervisory board shall be convened by the chairman, or in cases of his indisposition, by the vice-chairman observing a notice period of two weeks. Details of the venue, time and agenda of the meeting are to be given. The meeting is to be called in writing, by telegram or in electronic form (§ 126a BGB - German Civil Code). The notice period commences as of the date upon which the invitation is posted. Meetings are to be held a minimum of twice every half year of the calendar.
2. In urgent cases, supervisory board meetings may be called without observation of the notice period stipulated in subsection 1.
3. The supervisory board is quorate when all members duly called and a minimum of 3 members participate or are represented in the voting. Absent members of the supervisory board may be represented by other members via proxy or may participate in the adoption of resolution through postal voting.
4. The chairman may postpone the voting on individual or all items on the agenda for a maximum period of one month if unequal numbers of shareholders' representatives and employees representatives were to participate, or if another material ground for the postponement of the voting were to exist. The chairman is not authorised to extend postponement.
5. The chairman or in cases of his indisposition, the vice-chairman determines the course of the proceedings, the order in which the items on the agenda are to be dealt with, the order, nature and form of the voting and determines the result of voting. If need should arise, he may consult experts with regard to individual items on the agenda. Adequate minutes are to be kept pursuant to § 107 (2) AktG (Stock Corporation Act) detailing the action and resolutions of the supervisory board, which are to be signed by the chairman.
6. The members of the supervisory board are entitled to submit to the chairman written propositions for the amendment or supplementation of the agenda, in addition to requests with regard to voting on the individual points of the agenda up to a minimum of one week prior to the date upon which the meeting is scheduled. Grounds for such requests are to be given. The chairman is to inform in writing the other supervisory board members with

respect to founded requests which have been made within the prescribed period. Those requests which are not made in due time, or for which the grounds are not provided in due time, are to be dealt with in the next supervisory board meeting unless no member objects to addressing such items in the current meeting.

7. Resolutions of the supervisory board are adopted by simple majority insofar as other provisions are not given under the law, in particular §§ 27, 29, 31 and 32 of the Codetermination Act 1976. In the event of a tie, the chairman has the casting vote in the second round of voting.

8. The Supervisory Board normally resolves in meetings or may, if needed, resolve outside of meetings by way of writing, telefax or e-mail. It is also possible to resolve by way of a combination of votes cast in a meeting and votes cast outside a meeting. In these cases the Chairman immediately determines the result of the vote in writing and sends it to the other members of the Supervisory Board within two weeks following its determination.

## **§ 10**

### **Duties and Rights of the Supervisory Board, Committees**

1. The rights and responsibilities of the supervisory board shall be governed by the relevant statutory regulations stipulated in § 25 Codetermination Act in connection with relevant provisions of German Act on Corporations, in particular §§ 111, 112 and 117 Act on Corporations. § 90 paragraph 1, paragraph 2 and paragraph 5, sentence 3 German Stock Corporation Act are applicable correspondingly.

2. By way of the conditions included under the rules of internal procedure for the management board, or through resolution, the supervisory board may, in individual cases, determine which nature of business requires its approval.

3. The supervisory board is authorised to amend the statutes only to the extent that this affects the wording.

4. In as far as is legally permissible, the supervisory board may form committees from amongst its members and regulate their duties and authority.

## **§ 11**

### **Remuneration of Supervisory Board Members**

1. As the supervisory board members are also employed at the company, they shall receive no extra compensation for their services on the supervisory board. Their salaries include their time and effort spent in the supervisory board meetings and decisions. However, if future supervisory board members are not employees of the company then they would be compensated and the amount would be decided by the existing board members.
2. Further to this, the supervisory board members shall be reimbursed for their expenses. This includes the VAT chargeable on the remuneration and reimbursement of expenses, if not already reimbursed as part of their internal company roles .

## **§ 12**

### **Convening and Course of Shareholders' Meeting**

1. The shareholders' meeting shall take place at the registered offices of the Company.
2. The shareholders' meeting is convened by the management board and in those cases provided for by law, the supervisory board.
3. The official rules and regulations shall apply to the form and time of convening the general meeting.

## **§ 13**

### **Participation in shareholders' meetings**

The shareholders are entitled to taking part in the shareholders' meeting and to exercise the voting rights.

## **§ 14**

## **Chair**

1. The Chairman of the shareholders' meeting shall be elected by the shareholders meeting.
2. The Chairman of the General Meeting shall appoint in particular the order of the proceedings, as well as the manner, form and order of voting.

## **§ 15**


### **Adoption of Resolutions**

1. Each shareholder may be represented by a proxy appointed in writing.
2. Each share is entitled one vote at the shareholders' meeting.
3. Resolutions are adopted by the shareholders' meeting on attainment of a simple majority of the votes cast unless otherwise provided for by law or in the statutes.
4. If a simple majority is not attained in the first round of voting, a second ballot shall take place amongst those individuals to whom the two highest number of votes have accrued.

## **§ 16**

### **Annual Financial Statements and Appropriation of Profits**

1. The directors shall submit the financial statements and management report immediately upon preparation to the shareholders for the purpose of determining the annual financial statements. If the financial statements are to be audited by an auditor, the directors shall submit the financial statements together with the management report and the audit report of the auditor immediately upon receipt of the audit report. If the company has a supervisory board, the latter's report on the results of his examination is also to be submitted immediately.



2. The shareholders have to decide by the end of the first eight months of the fiscal year on the determination of the annual financial statements and the appropriation of the net result.

3. The annual shareholders' meeting to be held within the statutory time-limit of eight months for the purpose of receipt of the adopted financial statements, shall also vote on the approval of the management board and supervisory board's actions and the appointment of the auditor (ordinary shareholders' meeting).

## **§ 17**

### **Announcements**

Announcements are to be made exclusively in the Electronic Federal Gazette, unless other organs mandatory are provided for by law.

\* \* \* \* \*

(GmbH 2019)

## Annexure 1.2: Employment contract for employees

### Employment Agreement

THIS AGREEMENT made as of the 15 of January 2019, between Smart Boda GmbH- a corporation incorporated under the laws of the Province of Nairobi, and having its principal place of business at Livingston street, Nairobi; and Karl Muller, of the City of Naivasha of Nakuru County

WHEREAS the Employer desires to obtain the benefit of the services of the Employee, and the Employee desires to render such services on the terms and conditions set forth.

IN CONSIDERATION of the promises and other good and valuable consideration (the sufficiency and receipt of which are hereby acknowledged) the parties agree as follows:

#### 1. Employment

The Employee agrees that he will at all times faithfully, industriously, and to the best of his skill, ability, experience and talents, perform all of the duties required of his position. In carrying out these duties and responsibilities, the Employee shall comply with all Employer policies, procedures, rules and regulations, both written and oral, as are announced by the Employer from time to time. It is also understood and agreed to by the Employee that his assignment, duties and responsibilities and reporting arrangements may be changed by the Employer in its sole discretion without causing termination of this agreement.

#### 2. Position Title

As a Software Developer, the Employee is required to perform the following duties and undertake the following responsibilities in a professional manner.

- (a) Configuration and testing of control cards
- (b) Development of new functionality to improve operations
- (c) Upgradation of software system
- (d) Resolving issues with respect to customer complaints
- (e) Other duties as may arise from time to time and as may be assigned to the employee.

#### 3. Compensation



(a) As full compensation for all services provided the employee shall be paid at the rate of 17.500,00 €/year all inclusive (gross salary). Such payments shall be subject to normal statutory deductions by the Employer.

(b) Bonus salary based on performance of employee and financial condition of the Company

(c) The salary mentioned in paragraph (3)(a) shall be reviewed on an annual basis.

(d) All reasonable expenses arising out of employment shall be reimbursed assuming same have been authorized prior to being incurred and with the provision of appropriate receipts.

#### 4. Vacation

The Employee shall be entitled to vacations amounting to ten working days per annum.

#### 5. Benefits

The Employer shall provide the Employee with the Health Plan offered to all employees as company standard. The premium for this plan (insurance) will be deducted from the employee's salary on a monthly basis.

#### 6. Probation Period

It is understood and agreed that the first ninety days of employment shall constitute a probationary period during which period the Employer may, in its absolute discretion, terminate the Employee's employment, for any reason without notice or cause.

#### 7. Performance Reviews

The Employee will be provided with a written performance appraisal at least once per year and said appraisal will be reviewed at which time all aspects of the assessment can be fully discussed.

#### 8. Termination

(a) The Employee may at any time terminate this agreement and his employment by giving not less than two months written notice to the Employer.

(b) The Employer may terminate this Agreement and the Employee's employment at any time, without notice or payment in lieu of notice, for sufficient cause.

(c) The Employer may terminate the employment of the Employee at any time without the requirement to show sufficient cause pursuant to (b) above, provided the Employer pays to the Employee an amount as required by the Employment Standards Act 2000 or other such legislation as may be in effect at the time of termination. This payment shall constitute the employee's entire entitlement arising from said termination.

(d) The employee agrees to return any property of Smart Boda GmbH at the time of termination.

## 9. Non- Competition

(1) It is further acknowledged and agreed that following termination of the employee's employment for any reason, the employee shall not hire or attempt to hire any current employees of Smart Boda GmbH for at least a period of 12 months

(2) It is further acknowledged and agreed that following termination of the employee's employment with Smart Boda GmbH for any reason the employee shall not solicit business from current clients or clients who have retained Business with Smart Boda GmbH in the 6-month period immediately preceding the employee's termination.

## 10. Laws

This agreement shall be governed by the laws of the Province of Nairobi

## 11. Independent Legal Advice

The Employee acknowledges that the Employer has provided the Employee with a reasonable opportunity to obtain independent legal advice with respect to this agreement, and that either:

- (a) The Employee has had such independent legal advice prior to executing this agreement.
- (b) The Employee has willingly chosen not to obtain such advice and to execute this agreement without having obtained such advice.

## 12. Entire Agreement

This agreement contains the entire agreement between the parties, superseding in all respects any and all prior oral or written agreements or understandings pertaining to the employment of the Employee by the Employer and shall be amended or modified only by written instrument signed by both of the parties hereto.

[Name of employee]

[Signature of Employee]

(Daldrup 2019)