Commercialization of Rahber (Powered Wheelchair) of a Start-up Sahara iO

[MBA 2K15] FINAL YEAR PROJECT – Final Report

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Executive Summary

Keeping in view the current situation of Pakistan, there are about 1 million people suffering from some kind of paralysis, as per the official statistics, even though it must be kept in mind that there is even higher number of unreported cases in the country as well. Moreover, from the past two decades Pakistan as a nation has faced a lot of calamities be it the war on terror where numerous soldiers and civilians lost their lives and many were left with distorted body parts or be it the earthquake of October 2005, where so many people in the Northern areas lost their lives, homes and became crippled or be it the floods of 2010.

If we try to analyze the situation and assess the need we clearly see that there are people living whose life could have been so much better if they get less dependent on their family and are able to work their way on their own. In such scenarios Sahara iO comes into play providing people ***Rahber*** (Powered Wheel Chair) at very low prices than the market.

This report will discuss how the company is working, the market analysis, promotional activities and more importantly the financial aspect of the product. This report elaborates how to gain more customers, how Rahber can provide a phenomenal change in many disabled or '*differently abled*' people's lives and families. In the end, recommendations have been made for Sahara iO to further develop and expand their outreach.

Problem Identification

According to the helping Hands for Relief and Development, it is quoted that there are around 1 Million and above people alone in Pakistan suffering from some kind of paralysis. When this alarming figure is compared with the global proportion, at least 0.47 Million people are currently suffering from lower body paralysis, which means that they are unable to walk and do any lower body functions. Talking particularly about Pakistan, as the record keeping is not up to date the figure could be around 20% higher than the reported. Talking globally, this figure touches around 100 Million alone in the developing countries and this is the major focus of Sahara iO after it has done expanding in Pakistan.

Now taking Pakistani market in the view point, powered wheel chairs are not accessible to all. There are numerous reasons for this and the most highlighted one is that majority of the people can't afford the powered wheel chair which is being imported in Pakistan. Especially the conditions for the breadwinners are worsened as they are unable to fulfill the needs of their dependents owing to their disability. Due to this gap in our market and no direct player currently operating Sahara iO decided to tap this market gap and provide people with affordable rates of powered wheelchair.

Moreover, another reason to enter this untouched market is that even the NGOs and other government agencies are getting the wheel chairs readily made from foreign countries, there is no such retailer present to provide these wheel chairs in a massive number and at a lower cost to these organizations. So, Sahara iO will be acting as a provider to many organizations which spends a lot of budget to purchase these from other foreign parties, in this way they will get the same product at a very reasonable price and they will be able to sell it at lower price than the market currently.

Areas of Interest

Marketing and Commercialization

Scope of Business

Initially with the collaboration with Ghulam Ishaq Khan Institute of Engineering Sciences and Technology (GIK Institute), the powered wheel chairs were being developed. Currently Sahara iO is importing the parts and assembling them at their Lahore Facility. At this point in time the powered wheel chairs which are being imported to Pakistan have a high price tag. These wheel chairs are then sold from a price range of PKR 150,000 to PKR 300,000. Apart from that those wheel chairs which have been already in use and refurbished are sold at PKR 80,000 and onwards. Those wheel chairs which Sahara iO is currently working on will be sold at a maximum price of PKR 85,000 to the end consumer, comparing these prices there is a huge price gap through which the consumer can benefit.

Currently it is difficult to accurately size the market for powered wheelchairs. For having a close estimate of the current market, Tribune quotes, “According to Trademap.org, Pakistan imported around $175,000 worth of motorized wheelchairs in 2010. The chairperson for the Custom Agents Association Saif Khan estimates the number about 200 for the entire country.”

The figures stated are only for the powered wheel chairs. Through the market research we conducted it was estimated that for every new motorized wheel chair sold there are at least 20 used wheel chairs which are refurbished are sold. From these statistics, we can easily conclude that the market for wheel chairs is 20 times more than it is currently estimated.

These wheel chairs are provided with no after sales services in Pakistan, and this can be considered as one of the important reason that why people are reluctant to use them and buy them. When the same wheel chair will be built by Sahara iO they will make sure that the customer can get every help possible and with this it is evident that those people who are using manual wheel chairs can get benefit out of the powered wheel chairs.

Working of Rahber

The wheel chair which Sahara iO has named as Rahber can attain the maximum speed of 6km/hr. and with this it can also work for straight 18km with just a single charge. Rahber does have all the standard features a wheel chair should incorporate which are 4 directional control, braking and speed adjustment.

There are various parts which are imported from China and then they are assembled here in Pakistan, in this way it gets easier for the team of Rahber to provide after sale services to the customers. This helps gauging the customer and their trust. There are around 22 components for Rahber and the most basic ones are motor, gear box, leg support, controller Arduino etc.

Market Research

For market research, we used both secondary and primary methods as discussed below

Secondary Research

For the accuracy of secondary research, we tried to gather different public statements made at various public platforms, this helps in getting a broader view of the situation.

- "In Pakistan, in the absence of regular Census, approximate or projected numbers estimate that, total population of people with disability (PWDs) is 5.035 million, more than the population of Norway, New Zealand, Lebanon or Kuwait. Current annual growth rate of disabilities is at 2.65 % per annum more than the annual growth rate (2.03%) of total population of Pakistan. Only 14 percent of persons with disabilities are in work, rest are reliant on family members for financial support."
- "Disability Day: '10% of Pakistan's population is disabled"
- "Total population of PWDs (5.035 million) in Pakistan, is astonishingly more than the population of any of the individual countries population of Norway, New Zealand, Lebanon or Kuwait. From within Pakistan, PWDs population is more than the combined population of three cities i.e. Multan, Hyderabad and Peshawar."
- "Current annual growth rate of disabilities is going unchecked - at 2.65 % per annum as compared to the annual growth rate (2.03%) of total population of Pakistan. There is a need to commission research on this higher growth rate in the population of PWDs and draw policies and implementation strategies to alleviate the miseries of PWDs."
- "Assuming that one PWD affects one household, the total population affected by PWDs comes to around 29.2 million at national level. Government as well as civil society need to take steps to address the specific requirements of such districts, cities and villages with higher ratio of PWDs with a view to share the burden of such families, particularly when such families fall in low income group."
- "By type of disability, crippled population constitutes 19.2 % of total PWDs, multiple disabilities 8.3 %, blind 8.2 %, mentally retarded 7.6 %, deaf 7.5 % and insane 6.4%. Thus,

> the number of crippled populations (964,000) is more than the total population of Bhutan (738,000 in 2011)"

The last four statements were deducted from "PERSONS WITH DISABILITIES (PWDs) STATISTICS IN PAKISTAN 2012." The report was then compiled by Helping Hand for Relief and Development.

The statements written above are the indicator of how well and extensively the secondary research has been conducted. The following results are concluded from the research that there are 1.09 million people with physical paralysis and around 0.472 Million people are suffering from lower body paralysis.

Primary Research

The results and statistics posted above were confirmed from various authentic resources, Armed Forces Institute of Rehabilitative Medicine (Rawalpindi), Women Institute of Rehabilitation Science (Abbottabad), Ayub Medical Complex (Abbottabad) and Pak Irish Rehabilitation Centre (Abbottabad).

Personal Interviews

For further research and conclusive results, interviews were being held with those retailers who were selling both manual and powered wheel chairs. It was found out that the majority of the distributors selling different kind of wheel chairs sit in Hospital Road, Saddar, Rawalpindi. The questions asked from the retailers were

- How many people come asking for powered wheel chairs?
- How many wheelchairs get sold?
- What do you think is the primary reason for such low sales?
- What kind of wheel chairs do people mostly prefer and why?

The findings from these interviews suggest that people do come asking for the powered wheel chair but the only hindrance towards the selling of this product is the cost affiliated with it, the shop keepers told that they sell powered wheel chairs for PKR 150,000 to PKR 250,000 and this is the starting price as the specifications keep on increasing the price also increase. Moreover, when people see the price tag they tend to shift towards the manual wheel chairs which have been refurbished and they are sold at the price of PKR 80,000. This suggests that the cost is the main element and the deciding factor for customers whether to buy powered or manual wheel chair.

Literature Review

When we observe the elements that add to the quality of life we see a blend of at least; independence, recreation and ability. These three need to be present and together to create a sense of stability. Being able to move about, explore and take care of your self is the fundamental part of living. Restricted mobility ranges from a single limb to full body immobility and it needs to be treated as a functional limitation rather than a condition, "Wheelchairs seem to be the basic equipment for older and weak or disabled people. It fulfills two main tasks (depending on health status of the user):

− provides independent mobility, usually as primary means of mobility,

− provides required trunk/body support

This way wheelchair gives a chance to independent life" (Holt & H. Lorna Brand)

Wheelchairs and other mobility equipment are not paid their due attention, especially in countries like Pakistan where such equipment is imported from other countries and has little to low no after sales service it is a blessing that people have access to such equipment. "During the first year of a monthly wheelchair clinic, 29 out of 34 chairs supplied were found to be unsatisfactory. There seems to be a disadvantage and a wider dispersal of knowledge about the types of wheelchairs for the disabled people." (Holt & H. Lorna Brand)

Continued ignorance for the required needs of the handicapped has left us unaware of the various requirements that occur with time. It's not a one-time buy that will last a life time or for a specific time period but rather needs to be altered with the needs of the body and there need to be service centers and service providers available that can assist the customers. "The need for well-planned and correctly adjusted modifications of postural support as growth occurs is frequently forgotten or ignored due to the lack of support and distance from the manufacturers." (Holt & H. Lorna Brand)

Similar to other health related equipment, wheelchair purchasing decision needs to be based upon the demands and requirements of the body and not based on which one is affordable or available, like it happens in our country, it is not only a bad investment but also unhealthy and

harmful to the health of the person in case the decision is not made in compliance with their requirements and needs. As improper selection of wheelchair can reduce effectively of rehabilitation, and patient's abilities and can also cause severe secondary changes like decubitus ulcers. Periodic assessment is crucial, lack of which may result in number of problems like putting on weight. And in most cases this was reduced by slight changes in wheelchair adjustment. Any problem in adjustment of three basic parameters mentioned before can result in unfavorable changes such as pain in spine and hips, deformities in body, risk of decubitus ulcers etc. The duration of rehabilitation and efficacy can highly have influenced by these. And hence an aggravation of disease causes a reluctance in people to choose wheelchairs and also impact their life quality. (Mikolajewska, 2012)

While manually operated wheelchairs, carts and other such substitutes are easily available, they have many downsides, the most important one being the need for manual support and force. This creates an extra pressure on an already enduring body. In most cases it's not a very vital issue but occasionally it causes other body parts to have issues as well. The stress on joints and moments are also related to shoulder pathology measures. The upper limb integrity can be preserved by reducing the force required in propelling wheelchairs. Changes in setting up of wheelchairs, trainings, and finding alternative movement means can be the potential interventions. (Mercer & Boninger, 2008)

Independence of movement is just as important as growth and education, it is essential to life and mental stability of the person. Children having muscular dystrophy or cerebral palsy require support from early age. Otherwise children can become passive and get used to being dependent on others instead of developing their own potential." Independence in movement is not just important for the newbies but also for the elderly that wish to not be a burden on anyone and live their life with some pride and modesty. Assistance from equipment has proven to be more effective as compared to assistance from people, as it maintenance a feeling of self-sufficiency. (Verbrugge et al. 1997)

Another important factor that plays a part in the adaptation to these devices is the factors that provide ease to transfer to these; it's not just the need of the person but also how well the

surrounding can work with the vehicle to bring ease to the users, as more and more institutes are creating wheelchair friendly structures, more and more people are purchasing them as now they seem to be a good investment that can actually be used. Increase of need also increases the adaptation on support, according to past researches. (Gitlin et al. 1996; Hartke, Prohaska, and Furner 1998; Zimmer and Chappell 1994)

Independent mobility like using powered wheelchairs, scooters, walkers etc. positively impacts children and adult both and benefit considerable. It also increases the opportunities to access education, and reduces dependence on others. The automatic wheelchair is extensively used for peple with spinal cord injury (SCI) or other mobility impairments for assistance. Wheelchairs have been linked as a critical factor in several studies to be an influential factor in independence, daily activities, and community participation level of individuals. Similar to many other devices, there occur cons side by side the pros, several users feel that their wheelchair poses a greater barrier to involvement than their actual mobility impairment; this is especially in cases where the equipment is not rightly matched with the specific activity needs and requirements as well as the surroundings.

Rigid wheelchairs as well as folding wheelchairs with similar specifications are the typical facility available to the people with disabilities that are active members of the community and require manual wheelchairs. In a survey it was found that more than 95% of active veterans who use wheelchairs use manual wheelchairs.

A study including individuals with SCI from six SCI centers in the US found that more than 80% of the users were users of manual wheelchairs. The evaluations among distinct patterns of use by specific subject groupings are described. In addition, it was suggested that the individuals would prefer wheelchairs with seat and back adjustment features. (Mattie, 2017)

The study of movement has been the field of interest for many years as a means to relate health and movement outcomes. The studies relating to disabilities and mobility equipment among them has gained much interest with respect to health and community participation. Decreased movement independence can impact health and has been connected with issues of obesity and diabetes.

One of the factors in the study is the distance that individuals have travelled every day; guidelines based on research conducted create goals and metrics. It was found that adults walked less than the 10,000 steps in United States. Authors have also collected and reported analogous data related to manual wheelchairs use including the distance covered in a day and average speed. It was resulted that daily distance covered is almost the same in diverse groups, having an exception for athletes and similar.

Some other researches have been conducted on the type of movements instead of distance travelled. Walking patterns are describes by steps covered in short periods of times, in ambulation studies. It was indicated that walk in short bursts is more common, 97% of bouts of ambulation lasted under 200 seconds and 90% under 100 steps as per Levine and Orendurff et al.

When bouts of powered wheelchair mobility were measured for their users, the bouts reflected volitional transitions and were defined by velocity and distance travelled. The data was found similar to ambulation data as most bouts were of smaller duration and short in distance. 69% of bouts were in distance traveled under 7.6m and duration of less than 30 seconds. Stakeholders like clinicians and users of wheelchairs can benefit from these studies in selection of wheelchairs. Similarly the manufacturers can modify their products, tailor designs and based on this information can improve what they offer. Wheelchair usage varying through environmental and demographic factors is also reported which helps the users.

Movement of wheelchair users using manual wheelchairs and evaluation of bouts in mobility has been discussed. (Sonenblum & Sprigle, 2012)

Mobility is an essential aspect of health status, quality of life (QOL), activity, and participation. Health indicators such as increased obesity have been associated with decreased mobility. On the other hand, increased mobility function and independence have been tied to improve overall QOL, particularly in spinal cord injury (SCI) populations.

Disability and Health: Most studies of mobility relate the amount of physical activity to the prevention and treatment of disease. Typically, research into mobility reports, such as the covered distance and time spent moving in a day, independent of environment. Indeed, the

average daily distance walked or number of steps taken has been measured in many populations with and without functional limitations. However, this approach provides limited insight into the relationships between mobility and daily activities.

The study of mobility is further complicated by the context in which the mobility takes place. A recent study identified personal, health, and environmental factors that affected the physical activity of manual wheelchair users. Pearson et al also found that personal and environmental factors influence people's activity and community participation.

A few studies of ambulation have used metrics in addition to total distance to highlight the complexity of mobility. One research group distinguished between continuous walking periods that were meant to encompass all "substantial spatial translations" and shorter bouts of movement ("discontinuous walking periods") believed to represent transitions between spaces. Busse et al measured peak and sustained activity levels and durations of inactivity. In a study on mobility of older adults, Cavanaugh et al reported total distance and time of activity as well as total number of activity bouts, variability, and randomness.

A study comparing the same devices showed that the power-assist wheelchairs improved the ability of the users to propel uphill and over uneven surfaces. It is helpful to think broadly about the functions wheelchairs serve in everyday activities and how they might be measured.

Wheelchair usage may be important for the following activities. One, wheelchairs can be used as a stationary means of support while engaged in other activities (eg, sitting at a desk or dining table). This could be reflected by the occupancy time (ie, the amount of time a wheelchair is occupied). Two, wheelchair mobility may be the activity itself (eg, recreational wheeling in the park or playing basketball). Distance wheeled in conjunction with the environment in which the wheeling took place may provide a good representation of mobility as its own activity. Three, wheelchairs may provide transition between stationary activities, as in going from meal preparation in the kitchen to the computer in the office. Mobility bouts form the basis for describing wheelchair use as a transition. The number of bouts provides important insight into the number of activities performed in different locations. These activity categories and modes of

measurement may reflect the different purposes of wheelchair use. We know of no studies that have examined these 3 aspects of wheelchair usage.

This study aimed to characterize the use of power wheelchairs. A goal of the project was to measure mobility and occupancy descriptors to determine if jointly they might provide a more comprehensive picture of wheelchair usage and daily activity in full-time power wheelchair users. Three hypotheses were tested: (1) wheelchair usage varies across environments, (2) measures of wheelchair usage are not normally distributed, and (3) distance wheeled alone does not sufficiently predict the number of bouts wheeled or time spent wheeling. (Sonenblum & Sprigle, 2010)

With the initiation of war in terrorism, the cases of Lower limb amputation from injuries has significantly increased in the US. Atleast 1200 cases in the military service members have been reported through operations carried out in Asia in countries of Iraq and Afghanistan.

Department of Defence provides care to these members who are still serving the military. Veterans Health Administration (VHA) also has a dedicated team and advanced aids like myoelectric prosthetic arms and limbs etc. Dillingham et al. found an inverse relationship between level of disability and use of prosthesis. The study showed that more that 90 percent of participants used aids regularly. Bilodeau et al. listed the factors which impact level of satisfaction which included level of disability, gender, age etc.

Gauthier-Gagnon et al. reported that predisposing factors for use of prosthesis include physical health and demographic characteristics. Non-use of prosthesis also result in elevation of amputation level.

According to Legro et al. the ability to take part in activities, maintaining standing balance, affected the use of prosthesis.

Dillingham et al., reported that even having low satisfaction, almost 95% of population still used prosthesis regularly. Pezzin et al. afound out the similar result as well. The low satisfaction was linked to the fact that there was a lack of comfort and long fitting time.

A study was carried out to understand the health factors, demographics and prescription pattern with the use of prosthesis and the ultimate satisfaction. (Karmarkar & Collins, 2009)

The survivors of Strokes despite having a number of losses, feel the loss of mobility as a high factor. (Mumma, 2000; Secrest & Thomas, 1999) The usage of aids providing mobility to stroke survivors boosts their strengths.

In addition to physical movement, emotional satisfaction leading to increase in esteem is a considerable component. (Gitlin, 1998; Spencer, 1998).

A study of literature indicates a significant lack of understanding and knowledge regarding adaption and comfort level of aids and psychological improvements related to usage. A study examined how wheelchairs changed and improved the physical and emotional being of stroke survivors and what it actually means to them. (Barker, 2001). Various aspects of usage were studied and community participation was also considered (Barker, Reid, & Cott, in press). In one of the only studies that addresses acceptance of mobility devices and stroke survivors, Gitlin, Luborsky, and Schemm (1998) concluded that stroke patients felt pressure in personal identity establishment and social acceptance and usage of devices which reduced dependency on others helped them in their overall feel of independence. Also, some might feel a prejudice when beginning to use an aid, (Bates, Spencer, Young, & Rintala, 1993), stigmas of society and attitudes of community towards them (Cott & Gignac, 1999; Rush & Ouellet, 1997).

Actual acceptance happens once the device is tested and its benefits are experienced also whem personal independence is regained which maintains self-identity. (Cott & Gignac, 1999; Pippen & Fernie, 1997; Rush & Ouellet, 1997).

Stroke survivors seem to be most acceptable in taking a device; some might take even years to accept the new body image (Bates et al., 1993). The use of mobility devices has been found to alter self-identity in many cases (Bates et al.; Lupton & Seymour, 2000; Rush & Ouellet, 1997), and also maintains self-identity (Cott & Gignac, 1999; Rush & Ouellet). Lupton and Seymour identified the positive and negative aspects associated with wheelchair use such as increase in mobility and social interaction and wheelchair highlighting the disability, and gathering attention respectively.

"Biographical disruption" is a concept that explains how lives of stroke survivors change due to the chronic illness. It was first introduced by Bury (1982) in his study of people with rheumatoid arthritis but further developed by others (Charmaz, 1987, 1995; Corbin & Strauss, 1987; Williams, 2000).

Studies have established that a stroke brings various changes in a person's life, altering the normal pattern of lifestyle, disrupting day to day activities, abilities, and independence (Becker 1993; Kaufman, 1988; Mumma, 2000; Secrest & Thomas, 1999). Self-identity and self-concept is altered due to these losses (Becker; Ellis-Hill & Horn, 2000), depression (Singh et al., 2000), decreased subjective well-being (Wyller, Holmen, Laake, & Laake, 1998), and decrease in overall QOL (quality of life) (Astrom, Asplund, & Astrom, 1992; King, 1996). Pound,

Gompertz, and Ebrahim (1998) redefined the concept of biographical disruption that stroke was did not tremendously disrupt the QOL of terminally ill, elderly, and socially disadvantaged, but definitely affected the continuity of life. The theory of continuity was developed on aging to explain the common research findings that older adults, even though have considerable reduction in functioning and physical activity, are consistent in their living arrangements, type of thinking and personal relationships. (Atchley, 1989). Becker (1993) resulted that people considered stroke as a intense disruption to their lives. The next year after a stroke becomes a time for life reorganization.

Even though focusing on daily life and little routine tasks significantly helped the survivors in maintaining their identity and feeling less disrupted. But those who weren't able to resume their daily life activities due to severe strokes were found to be the most emotionally damaged Gitlin et al. (1998) reported that use of assistive device helped survivors in continuing their lives to some extent, but devices also in some cases further contributed in emotional and physical disruptions.

The personal life, and social relationships are altered in the survivors and also family members feel stressed (Jongbloed, 1994). Similarly professional and business connection and activities are effected (Burton, 2000). Time is needed to recover both emotionally and physically after facing an incident. (Buscherhof, 1998). Till now, there has been no quality research which investigates

specifically the impact of wheelchair usage on the biographical disruption of those with chronic illnesses and the effect on continuity of life on acceptance of wheelchair usage.

There are not many researches on the lives of elderly who survived and use wheelchairs after being discharged from hospitals. The perception of loss and acceptance of aids, change in self-identity is all effected by the right prescription of equipment and its suitability to the specific need and concern of users. (Barker & Reid, 2017)

Market Plan

Competition

The key players operating in the electric wheelchair market are Invacare Corporation, Sunrise Medical, Karman Healthcare, Dane Technologies Inc., Pride Mobility Products Corp, Drive Medical Ltd., Otto Bock, GF Healthcare Products, Inc., Drive Medicals Ltd., and Hoveround Corp.

The key suppliers to Pakistan right now are companies from Thailand, Taiwan and mostly China since most of the market cannot afford to buy products of the established big brands and are willing to buy something that is less costly. Sahara iO is in competition with the Manual-propelled and Powered wheelchairs, Mobility scooters, ankle and leg exoskeletons, Single-arm drive, standing, sports, Self-balancing wheelchairs and many more. This is a growing industry with newer and better products continuously flowing in.

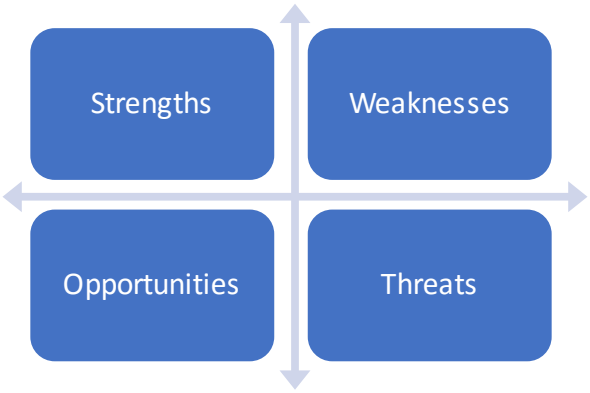
The starting prices of some of the products in this category, in Pakistan, are;

- Manual Wheelchair: starting from PKR3,000
- Automated Wheelchair: starting from PKR 80,000
- Mobility Scooters: starting from PKR 190,000

Here we have to keep in mind that these starting prices are for the products available to the average Pakistani customer and regardless of a brand name.

The basic importers of these products to the Pakistani market are PAKSURGICAL and Nisa Impex.

SWOT Analysis



Strengths:

- Low cost, easy and reliable alternative
- Assembled in-house so there should be no after sales concern or spare parts availability issue
- Low maintenance cost

Weaknesses:

- No previous market experience
- Low financial backing
- Lack of awareness and infrastructure
- Portability issues

Threats:

- Increasing interest in developing countries could attract the big players
- Lack of awareness could affect sales
- Since the parts aren't produced in-house, there could be a shortage leading to a halt in production
- With unstable Government in the country, changes in regulations or policies could affect the industry

Opportunities:

- The Pakistani market isn't brand conscious in this regard so no backlash expected
- Low-cost labor is easily available

- Could spread awareness through hospitals and clinics and create a name for itself
- It's a growing market, an expected increase of 6% in the next 4 years

Market Trends

The data of 2012 shows drastic increase in wheelchair market. The owner for Rolls Royce Surgical in Saddar, Shuja Awan has quoted that from 2010 to 2012 the motorized wheelchair demand is accelerating whereas the demand for manual wheelchairs is shrinking.

According to Trademap.org, Pakistan has imported around $175,000 worth of motorized wheelchairs back in 2010. The chairperson for the Custom Agents Association Saif Khan who is the Chairperson for Custom Agents Associations quoted importing 200 wheelchairs for the entire country while the usual import for a motorized wheelchair was only 20 a year. The top importers are from Thailand, Taiwan and China, and the most popular type is the rear-wheel drive. The Japanese powered wheelchairs five times costlier than the ones imported from China.

Pros of Imported Wheelchairs

- It could be navigated around with a joy stick
- It helps to erect itself thus making the person on wheelchair to stand.

Cons of Imported Wheelchairs

- Initial cost may or may not be high but the maintenance cost is a lot and too much to bear with.
- Portability issues because it is an 80-kilogram wheelchair
- No technical warranty
- Battery duration is for a year
- No local production so no technical assistance is offered locally
- Joystick alone costs PKR 20000; Battery costs PKR 45000 for replacement so it is a pricey affair.

Market Substitutes

Crutches

Crutches are the widely used movement aid in Pakistan but they work only in the active age and for partially disabled people and not so well for the old age people. They are made in plastic and wood and recommended by orthopedics. Cost of crutches is normally PKR 500 to PKR 2,000.

Tricycles

Tricycles are also in Pakistani Market and they are maneuvered by hand. They cost around PKR 8,000- PKR 12,000. It is not a commonly used mode because people find it suitable only for short distances. They are not so commonly manufactured.

Handmade Carts

Handmade carts are used by those who cannot afford wheel chairs. They aren't sold over the net or in shops. Special artisans manufacture them with wooden plates attached to metal cogs. They cost roughly PKR 1000. The wheels need oiling and they run for years.

Governmental Role

Dr. Muhammad Sarwat Mirza who is the Chief Health and Research Executive Public Health Specialist, gave his word that inclusive development is a newly introduced term which ensures equal access to resources and opportunities without any discrimination to the disabled people. Mr. Imran Nazir the executive director Livelihood Centre for Disability & Development Program (**LCDDP**) is highly inclined towards bringing better opportunities to the disabled people for earning them and their families a respectable living. But so far as of the budget of 2017 no significant relief other than inclusion of 2% disabled people in public and private listed company, has been given in terms of medical assistance.

Segmentation

An estimated 0.472 million people in Pakistan are affected by lower body paralysis. Using the 2013-2014 data, if an average adult with a monthly income of Rs. 3030 is considered on poverty line, we have an estimated 29.5% of the population below the poverty line.

Segmentation by Type

- Crutches
- Hand-made carts/ tricycle
- Manually-propelled wheelchair
- Powered wheelchair
- Standing
- Mobility scooters
- Ankle and leg exoskeletons

Segmentation by monthly income:

Quintiles					
	1st	2nd	3rd	4th	5th
Avg. Monthly Income Per Household	**15,697.58**	**19,424.98**	**23,144.89**	**29,120.15**	**54,579.75**

We would be targeting the lower-middle and middle class segments, quintile 2nd and 3rd, since they are the ones who would be able to afford something with the price range that we're offering. It is to be kept in mind that a lower income bracket would not be able to buy the product even with a whole year of saving and would opt for substitutes such as crutches, tricycles or maybe a hand-propelled wheelchair. And the upper income bracket would be less price sensitive and opt for the best available technology product no matter what the price and that could possibly include the standing/balancing wheelchairs as well as the mobility scooters.

Quintiles					
	1st	2nd	3rd	4th	5th
Avg. Monthly Saving Capacity Per Household	**1,895.54**	**1,386.59**	**3,074.5**	**1,786.65**	**2,353.5**

Positioning

Positioning Strategy

Positioning strategy is all about trying to inculcate a brand image of your product or service in the mind of your customer based on your offering. Since Rahber is a powered wheel chair which stands in competition to the other motorized wheelchairs hence Sahara iO is trying to position itself as the low-cost providers. The value lies in the price that the company offers and the sort/versatility of features that it comes with. It is not to be confused as a cheap low-quality version but rather positioned as low cost high quality product that caters to the need of millions around Pakistan

Motive for positioning the company as the low-cost providers is because of

- The proposed target market which is middle and upper middle class that would be drawn towards the low-cost incentive
- The competition we have in market with other imported powered wheelchairs. They are high cost so they become beyond the reach of people in middle, upper middle and lower middle class
- Quality and after sale services that we provide with this price is unmatched. Sahara iO provides after sale services and maintenance offers within the mentioned price range locally. Other companies do not have technical support locally but Sahara iO does and that is how it intends to bury the company in the minds of the customers

Financial Aspect:

Sahara iO's financial analysis was conducted and was broken down into the following areas;

- Monthly marketing budget
- The overall production cost
- Forecasted Cost
- 36 Monthly income Statement
- 36 Monthly Cash Flow
- Forecasted Income Statement for 1 – 5 years
- Forecasted Cash flow for 1 – 5 years
- Forecasted balance Sheet 1 – 5 years
- Breakeven Analysis
- Payback

Monthly Marketing Budget

	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	Total
Marketing Expense													
Standees	20,000	0	0	20,000	0	0	20,000	0	0	20,000	0	0	80,000
Brochure	100,000	0	0	0	0	100,000	0	0	0	0	0	0	200,000
Literature Book	20,000	0	0	0	0	0	0	0	0	0	0	0	20,000
Facebook Promotion	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	24,000
Google Ads	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	36,000
Google Ads Sense	5,000	5,000	`	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	55,000
Search Engine Optimization	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	5,000	60,000
YouTube	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	30,000
	157,500	**17,500**	**12,500**	**37,500**	**17,500**	**117,500**	**37,500**	**17,500**	**17,500**	**37,500**	**17,500**	**17,500**	**505,000**

Marketing Expense	**PKR**
Standees	80,000
Brochure	200,000
Literature Book	20,000
Facebook Promotion	24,000
Google Ads	36,000
Google Ads Sense	55,000
Search Engine Optimization	60,000
YouTube	30,000
Total	**505,000**

Overall Production Cost

Sr. No.	Description	WheelChair Kit
1	Cost of wheel chair	5,000
2	Motors+wheels (24V 250watts) SET	11,393
3	Motor Driver+controller	6,878
4	Battery 12v24AH, charger and battery housing set	4,914
5	Shipping to Gaungzhou	3,990
6	Fisxtures and Misc	5,000
7	Shipping from china and duties	21,780
	Total	**58,954**

Pricing Strategy:

Cost based Pricing: a method that sets the price by adding the overheads, labor cost, direct and indirect cost. Wheelchairs total parts and shipments cost is around Rs 59,000.

Sahara iO is currently charging Rs 85,000 per wheel chair. The pricing has been done keeping in mind the cost which we are bearing on the overall cost of the wheel chair. We have employed cost based pricing strategy.

Forecasted Cost or Assumption Sheet:

Following is the assumption sheet that highlights the entire factors which could contribute or may present in the five years' time period. Those factors include

- Marketing Expenses
- Deprecation Cost
- Human Resources
- Investment and Stocks
- Volatile factor for example the inflation rate or the interest rate

Description	UoM	Year 1	Year 2	Year 3	Year 4	Year 5	Remarks
Capital Expenditure							
Wheelchair	PKR	300,000		300,000			
Machinery - Production							
Lab Equipment	PKR	100,000		500,000			
Office Equipment	PKR	200,000		500,000			
R&D							
Wheelchair	PKR	300,000					
R&D Expenditure	PKR	300,000	-	-	-	-	
Sales							
Wheelchair	Units	270	600	900	1,200	1,800	
Wheelchair	PKR/Unit	85,000	90,000	95,000	100,000	105,000	
Commission per unit	PKR/Unit	1,000	1,050	1,103	1,158	1,216	
Operational Cost							
Cost of Good Sold - Wheelchair	**PKR/Unit**	**58,954**	**64,849**	**71,334**	**78,468**	**86,315**	
Operational Overheads							
Rent - Office & Workshop	PKR/Yr	300,000	315,000	330,750	347,288	364,652	@25,0000 per month
Utilities	PKR/Yr	180,000	189,000	198,450	208,373	218,791	@10,000 Electricity & 5,000 Other per month
Consumables	PKR/Yr	60,000	63,000	66,150	69,458	72,930	@5,0000 per month
Maintenance and repairs	PKR/Yr	60,000	63,000	66,150	69,458	72,930	@5,000 per month
Marketing & Selling Expenses							
Marketing & Promotional Material	PKR/Yr	505,000	530,250	556,763	584,601	613,831	
Travelling Expenditure	PKR/Yr	240,000	252,000	264,600	277,830	291,722	@20,0000 per month
Deprecation							
Lab Equipment - Asset Value	PKR/Yr	100,000	80,000	564,000	451,200	360,960	
Lab Equipment - Deprecation	PKR/Yr	20,000	16,000	112,800	90,240	72,192	
Office Equipment - Asset Value	PKR/Yr	200,000	160,000	628,000	502,400	401,920	
Office Equipment - Deprecation	PKR/Yr	40,000	32,000	125,600	100,480	80,384	
Total - Deprecation	PKR/Yr	60,000	48,000	238,400	190,720	152,576	
Human Resource							
BOD - Salaries	PKR/Yr	3,360,000	3,696,000	4,065,600	4,472,160	4,919,376	@70,000 per person per month
Wheel Chair							
Technical Team	Nos	-	-	2	2	2	
Technical Team	PKR/Yr/per person	35,000	38,500	42,350	46,585	51,244	@35,000 per person per month
Technical Team	PKR/Yr	-	-	1,016,400	1,118,040	1,229,844	
Management Staff	Nos	-	-	-	-	-	
Management Staff	PKR/Yr/per person	35,000	38,500	42,350	46,585	51,244	@35,000 per person per month
Management Staff	PKR/Yr	-	-	-	-	-	
Sales Staff	Nos	2	2	4	6	8	
Sales Staff	PKR/Yr/per person	35,000	38,500	42,350	46,585	51,244	@35,000 per person per month
Sales Staff	PKR/Yr	840,000	924,000	2,032,800	3,354,120	4,919,376	
Total Wheel Chair		840,000	924,000	3,049,200	4,472,160	6,149,220	

Total Human Resource		4,200,000	4,620,000	7,114,800	8,944,320	11,068,596	

Investment & Stocks							
Investment	PKR	2,000,000					
Stock - Raw Material - Wheelchair	PKR	1,591,758	3,890,964	6,420,091	9,416,133	15,536,619	
Factors							
Inflation Rate	%		5%	5%	5%	5%	
Increment Rate	%		10%	10%	10%	10%	
Deprecation Rate	%	20%	20%	20%	20%	20%	
Asset Standard Useful Life	Yrs.	10	10	10	10	10	
Interest Rate	%	9.44%	9.61%	9.73%	9.73%	9.73%	KIBPR +3% for Borrowing Rate
Tax Rate	%	31%	31%	31%	31%	31%	

12 Month Income Statement*

24 month income statement has been attached in the appendix section found at the end of the document.

	Year 1 - M1	Year 1 - M2	Year 1 - M3	Year 1 - M4	Year 1 - M5	Year 1 - M6	Year 1 - M7	Year 1 - M8	Year 1 - M9	Year 1 - M10	Year 1 - M11	Year 1 - M12
Revenue												
Units Sold: Wheelchair				30	30	30	30	30	30	30	30	30
Sales: Wheelchair	-	-	-	2,550,000	2,550,000	2,550,000	2,550,000	2,550,000	2,550,000	2,550,000	2,550,000	2,550,000
Less Sales Commission: Wheelchair	-	-	-	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Net Sales: Wheelchair	-	-	-	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000
Net Sales:	-	-	-	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000
Operational Cost:												
Production Cost - Wheelchair	-	-	-	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620
	-	-	-	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620
Gross Profit	-	-	-	751,380	751,380	751,380	751,380	751,380	751,380	751,380	751,380	751,380
Operational Cost:												
Operational Overheads	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Marketing & Selling Expenses	-	-	74,500	74,500	74,500	74,500	74,500	74,500	74,500	74,500	74,500	74,500
Salaries	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000
Deprecation												60,000
	400,000	400,000	474,500	474,500	474,500	474,500	474,500	474,500	474,500	474,500	474,500	534,500
Net Profit Before Taxes	(400,000)	(400,000)	(474,500)	276,880	276,880	276,880	276,880	276,880	276,880	276,880	276,880	216,880
Taxes												358,800
Net Profit/(Loss)	(400,000)	(400,000)	(474,500)	276,880	276,880	276,880	276,880	276,880	276,880	276,880	276,880	(141,920)

12 Month Cash flow

	Pre-Startup EST	Year 1 - M1	Year 1 - M2	Year 1 - M3	Year 1 - M4	Year 1 - M5	Year 1 - M6	Year 1 - M7	Year 1 - M8	Year 1 - M9	Year 1 - M10	Year 1 - M11	Year 1 - M12
Cash on Hand (beginning of month)	2,000,000	1,700,000	1,300,000	900,000	425,500	702,380	979,260	1,256,140	1,533,020	1,809,900	2,086,780	2,363,660	2,640,540
CASH RECEIPTS													
Cash Sales		-	-	-	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000
Cash Injection													
TOTAL CASH RECEIPTS	-	-	-	-	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000	2,520,000
Total Cash Available (before cash out)	2,000,000	1,700,000	1,300,000	900,000	2,945,500	3,222,380	3,499,260	3,776,140	4,053,020	4,329,900	4,606,780	4,883,660	5,160,540
CASH PAID OUT													
Machinery - Production	-	-	-	-	-	-	-	-	-	-	-	-	-
Lab Equipment	100,000	-	-	-	-	-	-	-	-	-	-	-	-
Office Equipment	200,000	-	-	-	-	-	-	-	-	-	-	-	-
Production Cost		-	-	-	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620	1,768,620
Operational Overheads		50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Marketing & Selling Expenses		-	-	74,500	74,500	74,500	74,500	74,500	74,500	74,500	74,500	74,500	74,500
Salaries		350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000
Adjustments													
Increase in Accounts Receivable													2,268,000
Increase in Inventory													1,591,758
Increase in Accounts Payable													(1,591,758)
SUBTOTAL	300,000	400,000	400,000	474,500	2,243,120	2,243,120	2,243,120	2,243,120	2,243,120	2,243,120	2,243,120	2,243,120	4,511,120
Taxes	-	-	-	-	-	-	-	-	-	-	-	-	358,800
TOTAL CASH PAID OUT	300,000	400,000	400,000	474,500	2,243,120	2,243,120	2,243,120	2,243,120	2,243,120	2,243,120	2,243,120	2,243,120	4,869,920
Cash Position (end of month)	1,700,000	1,300,000	900,000	425,500	702,380	979,260	1,256,140	1,533,020	1,809,900	2,086,780	2,363,660	2,640,540	290,620

Forecasted Income Statement Year 1 – 5

Forecasted Income Statements **Period : Year 1 - 5** PKR(000)					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Wheelchair	270	600	900	1,200	1,800
Revenue:					
Sales: Wheelchair	22,950	54,000	85,500	120,000	189,000
Less Sales Commission: Wheelchair	(270)	(630)	(992)	(1,389)	(2,188)
Net Sales	22,680	53,370	84,508	118,611	186,812
Operational Cost:					
Production Cost	15,918	38,910	64,201	94,161	155,366
	15,918	38,910	64,201	94,161	155,366
Gross Profit	6,762	14,460	20,307	24,450	31,446
Overheads					
Operational Overheads	600	630	662	695	729
Marketing & Selling Expenses	745	782	821	862	906
Salaries	4,200	4,620	7,115	8,944	11,069
Deprecation	60	48	238	191	153
	5,605	6,080	8,836	10,692	12,856
Net Profit Before Taxes	1,157	8,380	11,471	13,757	18,590
Taxes	359	2,598	3,556	4,265	5,763
Net Profit/(Loss)	799	5,782	7,915	9,493	12,827

Forecasted Cash Flow for Year 1 – 5

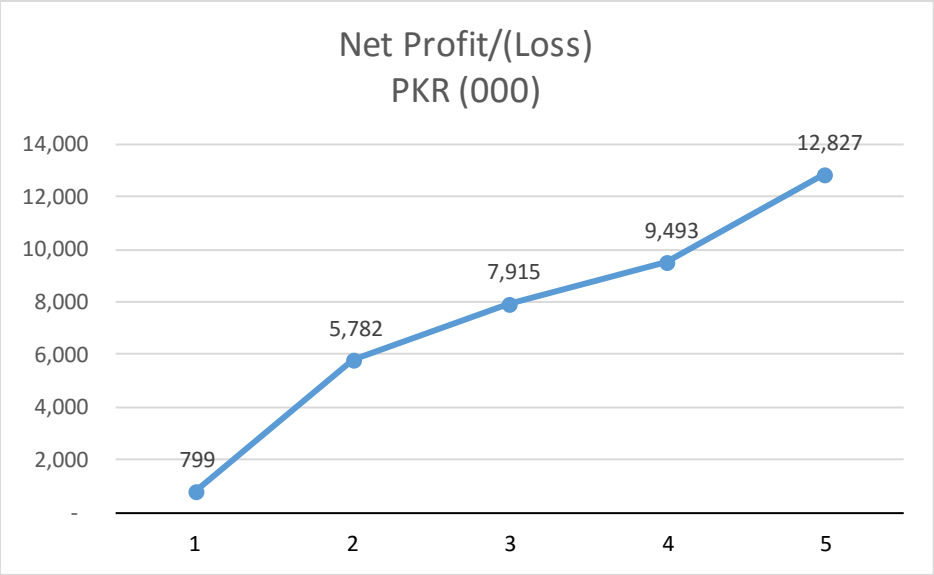
Forecasted Cash Flow Statements					
Period : Year 1 - 5					
PKR(000)					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Cash Flow from Operations					
Net Earnings	799	5,782	7,915	9,493	12,827
Additions to Cash					
Deprecation	60	48	238	191	153
Increase in Accounts Payable	1,592	2,299	2,529	2,996	6,120
Subtractions to Cash					
Increase in Accounts Receivable	2,268	3,069	3,114	3,410	6,820
Increase in Inventory	1,592	2,299	2,529	2,996	6,120
Net Cash Flow from Operating Activities	(1,409)	2,761	5,039	6,273	6,159
Cash Flow from Investing					
Machinery - Production	-	-	-	-	-
Lab Equipment	100	-	500	-	-
Office Equipment	200	-	500	-	-
Net Cash Flow (used) in Investing Activities	(300)	-	(1,000)	-	-
Cash Flow from Financing					
Shares Issued	2,000	-	-	-	-
Net Cash Flow provided (used) from Financing Activities	2,000	-	-	-	-
Beginning Cash Balance	-	291	3,052	7,091	13,364
Ending Cash Balance	291	3,052	7,091	13,364	19,524

Forecasted Balance Sheet for Year 1 – 5

Forecasted Balance Sheet					
Period : Year 1 - 5					
PKR(000)					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Assets:					
Fixed Assets					
Lab Equipment	80	64	451	361	289
Office Equipment	160	128	502	402	322
	240	192	954	763	610
Current Assets					
Cash	291	3,052	7,091	13,364	19,524
Accounts Receivable	2,268	5,337	8,451	11,861	18,681
Stock - Raw Material	1,592	3,891	6,420	9,416	15,537
	4,150	12,280	21,962	34,642	53,742
Liabilities:					
Current Liabilities					
Accounts Payable	1,592	3,891	6,420	9,416	15,537
	1,592	3,891	6,420	9,416	15,537
Assets & Liabilities	2,799	8,581	16,496	25,988	38,815
Shareholders' Equity					
Capital Stock	2,000	2,000	2,000	2,000	2,000
Retained Earnings	799	6,581	14,496	23,988	36,815
	2,799	8,581	16,496	25,988	38,815

Breakeven Analysis

Description	UoM	
Break-even years	Years	1.75



Payback

Company Value	10,000,000
Amount Invested	2,000,000
Equity Offered	20%
Founders	80%

	Year 1	Year 2	Year 3	Year 4	Year 5
Net Profits	798,620	5,782,276	7,914,839	9,492,658	12,827,009
Returns	159,724	1,156,455	1,582,968	1,898,532	2,565,402
Amount Remaining	1,840,276	683,821	(899,147)	(2,797,679)	(5,363,080)
	1.00	1.00	0.43	-	-
Investor Payback Period	2.43				

Marketing and Commercialization

Promotional Plan

The promotional plan is covered in the following points.

1. **Promotional Standees Placement at Hospitals and Rehab Centers:**

   Standees and other promotional material will be made available in major rehabilitation centers and orthopedic departments of hospitals. This will serve the purpose to make the end customer inquire about a new solution and they can ask the concerned doctor in the same facility about it. Brochures were designed to be spread around in the communities we aimed at targeting. With the help of a few contacts we were able to place those flyers around some clinics and hospitals. These flyers had the basic features of our product and highlighted the low-cost aspect which acted as the USP for us. The brochures were distributed in not just the military institutes but in doctor's clinics, medical institutes and in hospitals since they formed the larger segment of our target audience.

2. **Go to the Source**

   Since our target market is the disabled people, the integral part of marketing is to include such people into our marketing team. Before you demarcate your territory and market a segment, you must understand your customer first. People with disabilities would better know what they want and what their fellows would like. We were constantly in touch with people who either had some sort of disability or were close to someone who had it.

3. **Training Manuals/Booklets:**

   We will be sending manuals and booklets with our products which will also serve the purpose as marketing material

4. **Awareness Sessions/News Letters**

   These sessions will be arranged for doctors and concerned specialists in which briefing about the new solution will be provided.

5. **Online Presence Sahara iO**

   It will have a strong and professional online presence. Ground work for this is already in place. Online presence will ensure two things. One – any patient or patient's loved one can contact us through the online mediums to get guidance on orthopedic issues in which

Sahara iO can be of assistance. Second this will serve to highlight a positive image of Pakistan in the international community. We want the world to know that Pakistan also has in house expertise in latest technological devices in healthcare.

Today the buzz marketing is quite a thing. People are into social media and they listen to what is happening. Buzz marketing is something going viral on the social media and catching people's attention like a wild fire. What we did on personal level was to initiate social media awareness in this regard. Each member was responsible to spread the e-brochures in their circle to generate awareness. Social media voice turned out to be effective as our product was sold through it as well.

6. **Digital/Print Media Coverage**

   Highlighting the social impact of the start-up Sahara iO will try as much as possible to get featured in print and digital media to highlight the importance of the company and to make the public aware of the new solutions that Sahara iO is brining.

7. **Engage with the Local NGOs**

   After having done our homework on our own we then took the aid of locally operating NGOs. They were helpful in understanding our point of view and what we intended to sell. This was a step closer towards networking which not only helped to increase our reach in the market but made sure that we commercialize on a greater level. Some of the NGOs that worked on regional level in assistance of the disabled communities were a great help to voice our products louder in the market as their reach was even in the farthest corner. At the current our target was to be heard in the farthest of the corner and NGO's helped us in bridging the gap.

8. **Word of Mouth**

   According to a research by Nielson 92% people trust recommendations that come from friends and family more than the other forms of marketing that are practiced. What turned out to be the path altering experience was the word of mouth marketing. We spread the word in our circle. The commercialization phase was made successful partially due to the recommendations in favor of the motorized wheelchairs.

Pilot Testing in Different Hospitals

To promote the product the first thing devised was to form a brochure and a standee which can be used as a promotional material and increase customer traction. The brochure used is attached in Appendix A. We placed standees in Shifa International and Shahida Islam Medical and Dental College, Lodhran, as a pilot testing. Unfortunately, the response was not as what we had expected since Shifa International isn't providing customers with wheel chairs and other similar aids.

Similarly, military hospitals despite being wide market due to recent war on terror and having numerous veterans who require products offered by Sahara iO, already has funds and are more inclined towards the established companies offering these products.

NGO's

So instead of targeting hospitals and the government bodies we tried maintaining our focus on NGOs and providing them with Rahber. We have been successful in this regard that we were able to sell six wheel chairs to a woman who has her own NGO in Abbottabad; the customer profile will be discussed in the next part.

Customer Profiling

We have been successful in selling 8 wheelchairs for Sahara iO so far. Among these, six have been sold in Abbottabad region through collaboration with a local NGO that operates there, and 2 have been sold directly.

One wheelchair was also donated through the company donation Fund.

Following are the customer profiles of these two customers who have received the wheelchairs directly from us.

Profile Name M Sadiq

Part 1: Demographics

1. What is the typical age range of this customer?50 plus
2. What is their gender? male
3. What is their level of education? None
4. What is their occupation? sells balloons
5. Where do they live? Lahore
6. What social class do they belong to? Lower Income Group

Part 2: Psychographics

1. What are the concerns or anxieties the customer may have about your product?
   - Functioning of the wheelchair
   - Speed
   - Maintenance concerns
2. What would make this customer recommend your business to a friend?
   - experience with the handling
3. How much are they willing to spend on your type of product?
   - The disposable income is quite low and it is beyond their reach

Part 3: Actionable Insight

1. What are the best ways to reach this customer?
   - Advertisements
   - Out of home marketing
   - Billboards
   - standees

Profile Name Muhammad Anwar

Part 1: Demographics

1. What is the typical age range of this customer? 50 plus
2. What is their gender? male
3. What is their level of education? Bachelors
4. What is their occupation? Retired Government Employee
5. Where do they live? Rawalpindi
6. What social class do they belong to? Upper Middle Class

Part 2: Psychographics

1. What are the concerns or anxieties the customer may have about your product?

- After sale services and maintenance

2. What would make this customer recommend your business to a friend?

- Low cost
- Easy handling

3. How much are they willing to spend on your type of product?

- Around PKR60 – 80K

Part 3: Actionable Insight

1 What are the best ways to reach this customer?

- Word of mouth
- Newspapers/ magazines
- Television advertisements
- Mobile marketing

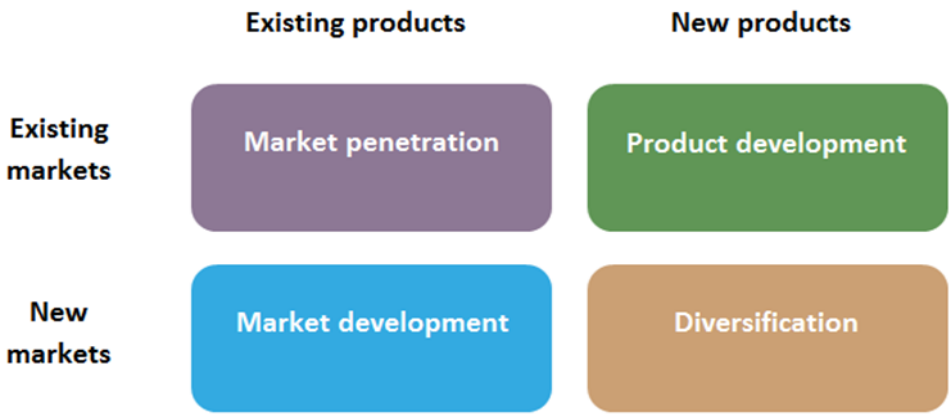
Market Expansion

After moving into our targeted market we do consider expansion. Now that we have commercialized we will also consider what expansion strategies we could employ.

We will take into consideration the following aspects.

- The markets we are currently reaching
- What possible markets are there for our product
- Are there any potential markets that could be easily reached?
- What sales and growth opportunities are present for our product in other market
- The current resources we have
- Are we profitable enough to expand
- What method of expansion is most suitable for our product

After having looked at each topic categorically we will then consider the method of expansion



Product/market matrix by Igor Ansoff

We can turn to Market penetration and market development expansion strategy with our powered wheelchairs.

Market Penetration Strategy

- Increase the market share of current products with promotions, advertising and better sales effort from company's end.
- Carve out our niche and see which segment is the healthiest in providing most profit or business to us and then target entirely on that market and strengthen the growth process and secure dominance.
- Drive the competitors out of a frame through aggressive marketing strategies with heavy price cuts, promotional offers and better tactics.
- Introducing loyalty schemes for the existing customers and announcing special offers to retain them because our goal is also customer retention.

Market Development strategy

- We can turn our focus to untapped geographical areas. At the moment Islamabad and Lahore are our main focus. After considerable and mentionable success, we can turn to other cities.

Recommendations and Future Orientation

Sahara iO aims to be a sustainable business that actually creates a difference at a larger scale in order to bring a considerable change in the long run. In order to achieve its objectives Sahara iO should have a long-term approach, for which some recommendations have been made:

Partnerships with Armed Forces

Keeping in view the law and order situation of Pakistan, armed forces can be a high potential market for Sahara iO. If a long-term agreement is done with Pakistan Army, Pakistan Airforce, Pakistan Navy, Police and all other relevant agencies then it can be very lucrative for Sahara iO. It will help them generate more revenue and grow in the long run.

Partnerships with Hospitals/Clinics

All-important hospitals and clinics should be targeted across the country to access the right target market. By taking on board big hospitals of the country would give an access to Sahara iO to a huge potential market. Hospitals and doctors can recommend Sahara iO's wheelchair to their patients and in return Sahara iO can give good commissions and deals to the hospital. It is important to note Sahara iO can afford to give good commissions to hospitals and doctors as they are giving very low priced wheelchairs and it is impossible for competitors to match their price.

Focusing on Export

In the long run different geographical areas can be targeted. The market for powered wheelchairs is much bigger than we can think. Sahara iO must target markets outside Pakistan. For instance Afghanistan can be a high potential market for Sahara iO's powered wheelchair. We all know the law and order situation of Afghanistan is poor and a lot of terrorist activities are being carried out over last two decades causing a lot of deaths and injuries. Hence Sahara iO can provide 'Rahber' at an affordable price to the ones who are injured and need wheelchairs.

With the fast development of China-Pakistan Economic Corridor (CPEC) Sahara io can take benefit from this project. As explained above that the machinery is being imported from China to make Rahber electronically controlled hence with the development of CPEC we can expect quicker deliveries from China at lower cost which can further strengthen our competitive advantage that

is low cost. CPEC will surely make the infrastructure of Pakistan much better which will help Sahara iO to expand locally and internationally using better facilities, road infrastructure and transfer of technology.

Donor Agencies

As Sahara iO aims to grow and expand its operations across the globe it will be needing a lot of funding. To generate funding it will be important to take onboard different (International and national donor agencies) like World Health Organization, United Nations Development Program, Asian Development Bank etc. These agencies are usually interested in investing money into projects like Sahara iO to improve socio-economic condition of developing and under developed economies. This will help Sahara iO to expand its business operations and match extensive demand in the local market as well as International market.

Corporate Social Responsibility

Every business aims to be a profit oriented but in changing times organizations need to realize their Corporate Social Responsibility. Sahara iO top management strongly believes in giving something back to the society. Once the business will grow Sahara iO aims to provide underprivileged people with free powered wheelchairs by taking out 10 percent of their profit for this noble cause. Not only this but a special team would be formulated that would analyze deserving patients bio data and after verifying their information(financial and medical) they would give away powered wheel chairs at cost price to the deserving patients at different occasions under their CSR program.

Branding

Although the company has its own logo and is recognized by that but once the product propels in the market and the sales boom, the product could become a flanker brand and a new logo could be designed just for that. We recommend that in order for company and the product to reach the farthest of corners for better customer awareness and retention, logo of the company has to be placed on the merchandize for example the stationary, shirts and bags. This could be done in association with another NGO. The NGOs merchandize could be used for that purpose. The

volunteers working for the company and social welfare could wear those shirts and propagate the message.

Diverse task force

In order to increase funding and workforce, run drives in schools and colleges. The volunteers could be assembled from around the nation for this greater noble cause of charity. Nationwide drives in schools and colleges to expand the operations of the business and not to limit the functions to few major cities.

Packaging

A change in packaging could be considered which then makes it easier for customers or even the end users to assemble or disassemble on their own. The portability and foldability factors could be incorporated in such a way as to ease the disability of the differently abled people. At the moment the problem could be faced for its assembling but we would suggest a packaging that could be done by the person using it under any situations without them seeking an instruction manual or anyone's support.

Websites

Form a company's website since the virtual presence means larger audience and greater pie. A user friendly website has to be there explaining the working of the wheelchairs and online support forum and discussion with the consultant could be arranged over the internet. Make sure the website is updated regularly so that customers do not face any difficulty with either the product or the technical support.

Conclusion

We come across disabled people every day. The number is on the rise but the technical support in Pakistan is almost negligible. Startups like Sahara iO are invested into helping those troubled souls to find solace in their everyday routine. Powered wheelchairs are an initiative in that direction. No matter how small, but the impact of this could be larger in the coming years. Need of the hour is to help and reach out to those who are differently abled and make them feel alike.

"Enable the Disabled; Translate Disability into Ability; Capability, a winning Opportunity-Indeed a Reality" - Dr Veena Kumari

Appendix

Appendix A

SAHARA™

Changing Lives Across Globe

Under Development

Vision

Sahara iO

- - - - X

Sahara iO is working to provide healthcare devices to the physically disabled, to help them be a part of the community again. We look for people who appear to be paralyzed but are fully functioning human beings capable of thinking. We empower them with tools with which they can live better lives.

We Will Make You Fly

- - - - X

We have been working for you for the past two years tirelessly, we understand your pain. How hard it is to wear a shoe, how torturous it is when the public bathrooms with disabled signs don't work. We can see that the paralyzed person's ramp in the speedo buses in Lahore never opens. We can see all of it. We are here to help you give wings.

Mr. Ishaq is a 54 year old machinist who lost his leg and two fingers to gangrene. Because of his doctor's negligence, he cannot wear a prosthetic limb. He is my father's brother so it is quite natural for me feel his pain. We donated the first wheelchair we made at our little workshop to him.

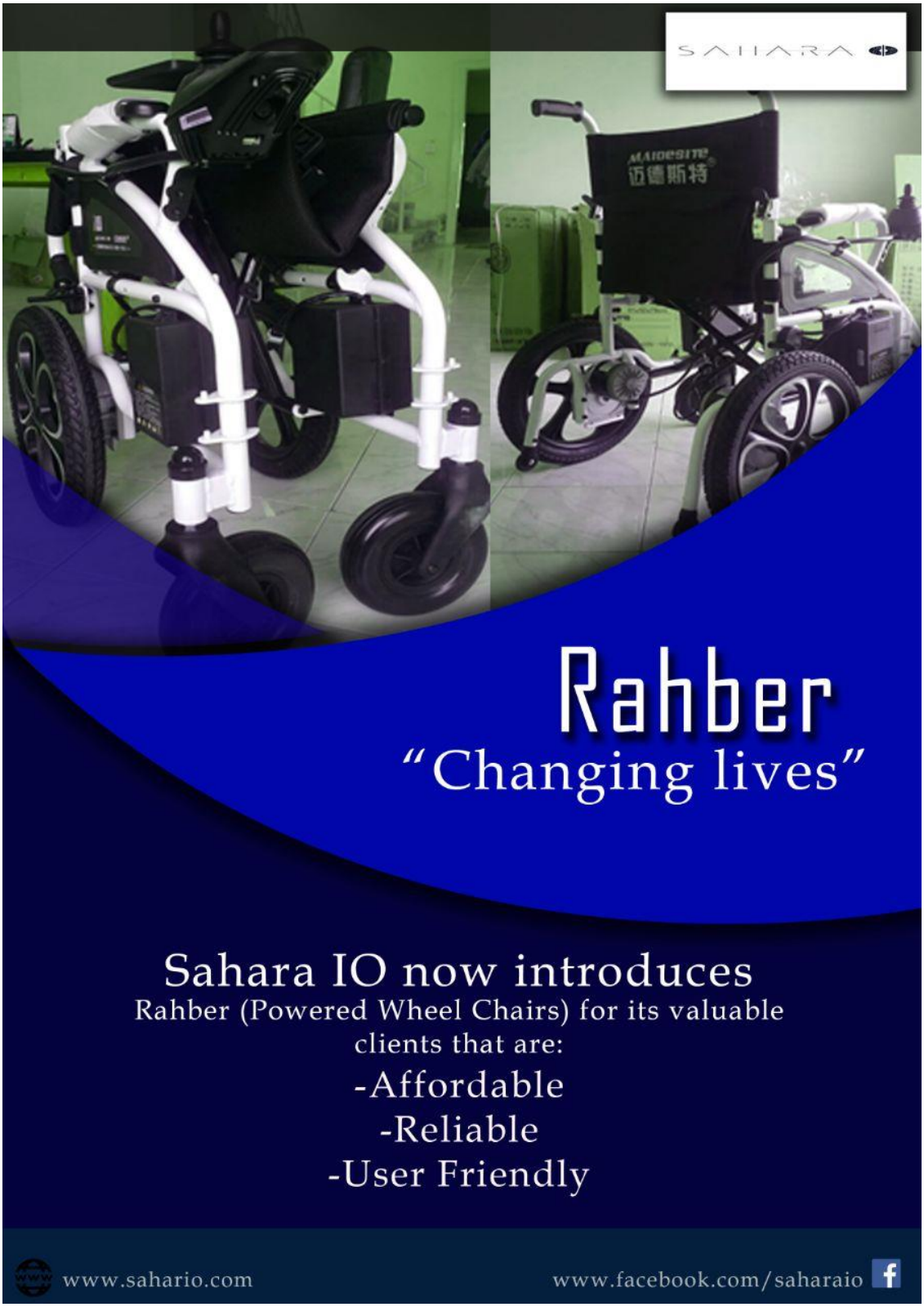
Third Party Product Line Available in Store for Sale

Maidesite 6009	Maidesite 6012
Price PKR 85,000	Price PKR 98,000
Technical Specifications (Usman Add)	Technical Specifications

Both Wheelchairs come under a 1 year parts and 5-year frame warranty

If you know someone who needs a wheelchair and cannot afford it please connect the person to Sahara iO.

Appendix B


SAHARA
Rahber
"Changing lives"
Sahara IO now introduces
Rahber (Powered Wheel Chairs) for its valuable clients that are:
-Affordable
-Reliable
-User Friendly
www.sahario.com
www.facebook.com/saharaio

Appendix C

(The remaining years)

Sahara iO

36-Month Income Statement

	Year 2 - M1	Year 2 - M2	Year 2 - M3	Year 2 - M4	Year 2 - M5	Year 2 - M6	Year 2 - M7	Year 2 - M8	Year 2 - M9	Year 2 - M10	Year 2 - M11	Year 2 - M12
Revenue												
Units Sold: Wheelchair	50	50	50	50	50	50	50	50	50	50	50	50
Sales: Wheelchair	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000
Less Sales Commission: Wheelchair	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500
Net Sales: Wheelchair	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500
Net Sales:	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500
Operational Cost:												
Production Cost - Wheelchair	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470
	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470
Gross Profit	1,205,030	1,205,030	1,205,030	1,205,030	1,205,030	1,205,030	1,205,030	1,205,030	1,205,030	1,205,030	1,205,030	1,205,030
Operational Cost:												
Operational Overheads	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500
Marketing & Selling Expenses	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188
Salaries	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000
Deprecation												48,000
	502,688	502,688	502,688	502,688	502,688	502,688	502,688	502,688	502,688	502,688	502,688	550,688
Net Profit Before Taxes	702,343	702,343	702,343	702,343	702,343	702,343	702,343	702,343	702,343	702,343	702,343	654,343
Taxes												2,597,834
Net Profit/(Loss)	702,343	702,343	702,343	702,343	702,343	702,343	702,343	702,343	702,343	702,343	702,343	(1,943,492)

Appendix D

36-Month Income Statement

	Year 3 - M1	Year 3 - M2	Year 3 - M3	Year 3 - M4	Year 3 - M5	Year 3 - M6	Year 3 - M7	Year 3 - M8	Year 3 - M9	Year 3 - M10	Year 3 - M11	Year 3 - M12
Revenue												
Units Sold: Wheelchair	75	75	75	75	75	75	75	75	75	75	75	75
Sales: Wheelchair	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000	7,125,000
Less Sales Commission: Wheelchair	82,688	82,688	82,688	82,688	82,688	82,688	82,688	82,688	82,688	82,688	82,688	82,688
Net Sales: Wheelchair	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313
Net Sales:	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313
Operational Cost:												
Production Cost - Wheelchair	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076
	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076
Gross Profit	1,692,237	1,692,237	1,692,237	1,692,237	1,692,237	1,692,237	1,692,237	1,692,237	1,692,237	1,692,237	1,692,237	1,692,237
Operational Cost:												
Operational Overheads	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125
Marketing & Selling Expenses	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447
Salaries	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900
Deprecation												238,400
	716,472	716,472	716,472	716,472	716,472	716,472	716,472	716,472	716,472	716,472	716,472	954,872
Net Profit Before Taxes	975,765	975,765	975,765	975,765	975,765	975,765	975,765	975,765	975,765	975,765	975,765	737,365
Taxes												3,555,942
Net Profit/(Loss)	975,765	975,765	975,765	975,765	975,765	975,765	975,765	975,765	975,765	975,765	975,765	(2,818,577)

Appendix E

36-Month Cash Flow

	Pre-Startup EST	Year 2 - M1	Year 2 - M2	Year 2 - M3	Year 2 - M4	Year 2 - M5	Year 2 - M6	Year 2 - M7	Year 2 - M8	Year 2 - M9	Year 2 - M10	Year 2 - M11	Year 2 - M12
Cash on Hand (beginning of month)	2,000,000	290,620	992,962	1,695,305	2,397,647	3,099,990	3,802,332	4,504,675	5,207,017	5,909,360	6,611,702	7,314,045	8,016,387
CASH RECEIPTS													
Cash Sales		4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500
Cash Injection													
TOTAL CASH RECEIPTS	-	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500	4,447,500
Total Cash Available (before cash out)	2,000,000	4,738,120	5,440,462	6,142,805	6,845,147	7,547,490	8,249,832	8,952,175	9,654,517	10,356,860	11,059,202	11,761,545	12,463,887
CASH PAID OUT													
Machinery - Production	-	-	-	-	-	-	-	-	-	-	-	-	-
Lab Equipment	100,000	-	-	-	-	-	-	-	-	-	-	-	-
Office Equipment	200,000	-	-	-	-	-	-	-	-	-	-	-	-
Production Cost		3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470	3,242,470
Operational Overheads		52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500	52,500
Marketing & Selling Expenses		65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188	65,188
Salaries		385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000	385,000
Adjustments													
Increase in Accounts Receivable													3,069,000
Increase in Inventory													2,299,206
Increase in Accounts Payable													(2,299,206)
SUBTOTAL	300,000	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	6,814,158
Taxes	-	-	-	-	-	-	-	-	-	-	-	-	2,597,834
TOTAL CASH PAID OUT	300,000	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	3,745,158	9,411,992
Cash Position (end of month)	1,700,000	992,962	1,695,305	2,397,647	3,099,990	3,802,332	4,504,675	5,207,017	5,909,360	6,611,702	7,314,045	8,016,387	3,051,896

Appendix F

36-Month Cash Flow

	Pre-Startup EST	Year 3 - M1	Year 3 - M2	Year 3 - M3	Year 3 - M4	Year 3 - M5	Year 3 - M6	Year 3 - M7	Year 3 - M8	Year 3 - M9	Year 3 - M10	Year 3 - M11	Year 3 - M12
Cash on Hand (beginning of month)	2,000,000	3,051,896	4,027,661	5,003,426	5,979,191	6,954,956	7,930,721	8,906,486	9,882,252	10,858,017	11,833,782	12,809,547	13,785,312
CASH RECEIPTS													
Cash Sales		7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313
Cash Injection													
TOTAL CASH RECEIPTS	-	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313	7,042,313
Total Cash Available (before cash out)	2,000,000	10,094,208	11,069,973	12,045,738	13,021,504	13,997,269	14,973,034	15,948,799	16,924,564	17,900,329	18,876,094	19,851,859	20,827,625
CASH PAID OUT													
Machinery - Production	-	-	-	-	-	-	-	-	-	-	-	-	-
Lab Equipment	100,000	-	-	-	-	-	-	-	-	-	-	-	500,000
Office Equipment	200,000	-	-	-	-	-	-	-	-	-	-	-	500,000
Production Cost		5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076	5,350,076
Operational Overheads		55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125	55,125
Marketing & Selling Expenses		68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447	68,447
Salaries		592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900	592,900
Adjustments													
Increase in Accounts Receivable													3,113,775
Increase in Inventory													2,529,127
Increase in Accounts Payable													(2,529,127)
SUBTOTAL	300,000	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	10,180,322
Taxes	-												3,555,942
TOTAL CASH PAID OUT	300,000	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	6,066,547	13,736,265
Cash Position (end of month)	1,700,000	4,027,661	5,003,426	5,979,191	6,954,956	7,930,721	8,906,486	9,882,252	10,858,017	11,833,782	12,809,547	13,785,312	7,091,360

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