

LILYPADS

Global Enterprise Experience 2014



*“Enhancing the lives
of young girls”*



TEAM 60

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Executive Summary

Imagine trying to attend school while you have your menstrual period, imagine your menstrual period is extremely painful. Imagine your reusable pad is soaked through but there is no running water to clean it. Imagine not actually being able to afford a pad, so instead you improvise using rags, newspaper, leaves and dung. Don't forget this happens every month. Currently, the vast majority of young girls in Uganda are facing the critical need of hygiene, especially as they enter into adulthood. Deprived of the money to afford pads, girls are often left with no choice but to miss school during their period. Uganda has reportedly the highest drop out rate in East Africa resulting in 94% of girls experiencing issues with their period, due to poor management of the monthly menstruation cycle.



LilyPads aim to provide affordable, highly absorbent, biodegradable sanitary pads as an alternative to current reusable and commercialized western pads, utilizing water hyacinth, and agricultural waste to fulfill the demand of this target market. LilyPads will establish a factory in Jinja a village in close proximity to Lake Victoria, where 50 local women will be recruited and trained on how to produce sanitary pads. The pads will then be marketed and sold to local health care provincial's entities within, Uganda's health and education ministry, and variety of national and global non-for-profit organizations. LilyPads is expected to make a profit of US \$75,112 with 50% community ownership within a four-year period.

Problem

The lack of affordable sanitary products for young girls has become an increasingly detrimental problem in third world countries, more predominately in Uganda, Kenya and Rwanda. According to UNICEF, one out of ten young girls living in Uganda drop out of school due to having limited access to the appropriate resources to manage their menstrual cycle, while 61% miss school during their cycle. Many resort to using other substitutes including newspaper, rags, leaves and dung, which provide no or limited absorption, while are unhygienic and provide much discomfort. Young girls are disadvantaged in terms of education, preventing their mobility and productivity as they mature. This undoubtedly leads to the continuity of the poverty cycle and the unfairness between genders in education chances. The inconvenience and taboo, creates social marginalisation and low self-esteem resulting due to lack of awareness around menstrual health, raising awareness and education to eliminate the stigma of menstruation is important in providing a means of solution.



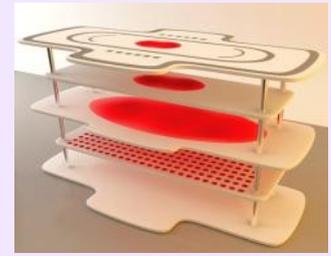
Water Hyacinth itself creates a secondary problem, especially in regards to villages surrounded by Lake Victoria. This plant threatens biodiversity and destroys native plants, fish and other species by depleting natural nutrients and deoxygenating the water. Water hyacinth speeds water evaporation, therefore shrinking sources of fresh water at an incredibly rapid rate. This results in water contamination, and infectious diseases occurring in local residents. UNESCO reports that the majority of young girls are unable to afford basic sanitary care due to products costing above US \$2, more than an average family lives on daily. Westernised commercial sanitary pads are not only unaffordable, but a costly threat to the environment. To protect the lives of these young girls, Uganda must urgently address this problem by finding an alternative.

Business Concept

The extent, in which young girls are living without basic sanitation care, raised the idea of making LilyPads: a social enterprise, which produces biodegradable sanitary pads out of water hyacinth, and agricultural waste. LilyPads aim to provide affordable, biodegradable sanitary pads as an alternative to western culture pads, which are merely increasing waste and overconsumption within Uganda; this is neither sustainable nor desirable. LilyPads will be an alternative to reusable pads, which often become prime breeding grounds for infectious diseases. Initially its focus will primarily be on Uganda, more specifically focusing on the disadvantaged backgrounds located predominately in the following rural areas: Lira, Jinja, and Mbarara. Jinja being the closest city to Lake Victoria, which holds the biggest infestation of Water Hyacinth, makes it a suitable market for the production of LilyPads. LilyPads aims to not only provide affordable sanitary care for girls in need, and jobs for local women in Jinja, but also empower these young girls and women to foster sustainable practices, while also removing the barriers to education caused by this issue to enhance the lives of future generations.

The Product:

LilyPads will be produced using the Water Hyacinth plant, as its primary resource, a free-floating perennial aquatic plant, which stems from the lily family. Our retrieval of this material would be easily accessible due to its abundance and quick invasion in Lake Victoria. Through taking advantage of the profusion of this plant we will be able to efficiently acquire our raw materials, while also reducing costs. Our secondary resource being agricultural waste consisting of straw, wood, and bamboo all locally sourced resources. Water Hyacinth is considered the most productive plant on earth as it yields more than 200 tons of dry matter per hectare per year under normal conditions, meaning we will have increasing access.



The production process will begin by workers pulling the plant from Lake Victoria, then soaking the water hyacinth leaves and fibers overnight in a sterilization formula to remove unwanted bacteria. Next the agricultural waste must be converted into a pulp by disintegrating the fibers. Once strained, water and bamboo powder are added, to achieve a lumpy pulp type substance. The same process will be conducted with the hyacinth leaves and fibers, creating two separate pulp mixtures. The mixture is then placed onto a dripping frame and exposed to the sun to increase absorbency.

Through using the process of solar energy, operational costs will be reduced, while promoting an eco-friendly aspect to the production. Once dried, the absorbent sheets are run through a softening machine manually until a soft texture occurs. The absorbent is taken to the sizing stage and cut into 20x5 cm, before sealing. Two different pads will be designed, one being a liner and one a winged pad. These will be cut using an industrial paper cutter machine (US\$2700). Two water hyacinth layers, 2 agricultural waste layers and a sheet of cotton will be assembled together and trimmed into shape of either liners, or winged pads. Lastly adhesive glue will stick each layer together, including a strip on the bottom of the pad. LilyPads will be packed in pieces of 10, and then sealed. A key feature of LilyPads is that through using three different product layers, this increases the absorbency and thickness of the pad, which enables girls to use them for a 7-9 hour period before changing.

Goal/Objectives

- LilyPads will guarantee youth participation in school and prevent hygiene diseases caused by lack of resources. We aim to reduce the amount of girls dropping out of school by 15% within 5 years.
- Empower women with leadership and self-ownership. Women will work for women, enabling them to take a shot at entrepreneurship. Enhancing the importance of girls within their society, and future generations.
- Provide an alternative for women's basic necessities. Women will now have the opportunity to obtain a low cost pad with reliable materials that have much less environmental impact than traditional pads.
- Provide a solution for water life being affected by the complete invasion of the water hyacinth. Removal of this plant to be used in Lily Pad production will enable oxygen in these waters and make life possible again.

Value Proposition

Social Value: Community empowerment is one of the main values in our project. Through this industrialized process employment will be created and education maximized for women involved. Rather than having donations provided, women will have the ability to earn themselves shares in the company, provided with a proportion of profit from LilyPads. This enables them to achieve financial independence and benefit from an increased acquisition of practical and vocational skills to promote a feeling of self-worth. LilyPads will guide economic developing creating an environment for new projects to arise, which later on will become solutions for community issues.

Environmental Value: The reutilization of materials is a key success factor of our product, not only are we taking advantage of materials with no other positive use but we are using material that will not deteriorate the environment and instead benefit youth. Water hyacinth is a devastating plant for aquatic life, through removing it we will allow aquatic life to continue, and reduce the impending issues the weed inhibits including; disease, infestation and its interference with water irrigation. This will result in aquatic commercial activities resuming.

Economic Value: Economically, the most important benefit is education. The learning and training process achieved through this cycle will enable young women to be economically independent, enabling them to develop their own production cycle with their own ideas. These new independent projects will generate an increase of income for the sector, while providing larger developments within the rural areas of Uganda. Through having 50% of the company owned by women of these villages within a 4-year period, this financial venture will increase Uganda's gross national income, aiding in the reduction of poverty.

Market Analysis

Demand for biodegradable, affordable sanitary pads

29.7% of the adolescent girls within East Africa miss a minimum of four school days per menstrual cycle. As a result not only do they find themselves deprived of adequate education but they also risk falling pregnant or contracting HIV/AIDS. The average household makes at most \$300 (US) per month, while sanitary pads cost roughly \$2.25 (US) a pack, the equivalent to a bag of sugar and maize. Girls resort to bunking school, while making use of leaves, rags, tissue or newspaper to make their own pads, due to not having the financial means to purchase sanitary products on the market. 24.3% feel stigmatised whenever they soil their uniforms therefore; they opt to stay at home until after their period. The situation is no different at home, they are pressurised to keep the tiny rags they use to pad themselves out of sight from their family members. Girls often hide these in dark places, resulting in many not being fully dried before reusing. Exposing themselves to bacterial-infested cloths in their genital region imposes risks of infection, candida and other hygiene-related illnesses, which might cause reproductive issues in the future, and possibly infertility. The core problem is young girls need sanitary towels when on their menstrual cycle, increasing the need for an, affordable, biodegradable and durable padding solution. This possesses an opportunity for LilyPads, as there is evidently a consumer demand.



Target Market

There is an impending need for an alternative to westernised sanitary products, and those, which our competitors produce in different markets. LilyPads is able to satisfy this need, through recognising the importance in targeting girls from the ages of 11-18, who live in households where basic hygiene needs are disregarded in favour of basic household items for survival. This therefore presents a vast consumer demand in Lira, Jinja and Mbarara those of which are predominately more disadvantaged than other areas in rural Uganda. From there LilyPads will enter the second phase and distribute to the next group of neglected cities until the demand is satisfied within Uganda, before moving onto neighbouring countries. LilyPads will target; local schools, health care clinics, worldwide organisations, and retailers, encouraging them to promote the sale of LilyPads as an alternative to similar products on the market.

Impact of Biodegradable/Affordable sanitary pads in Uganda

The production of a locally made pad provides young women/girls a low cost, biodegradable product that sustains income-generating jobs. It provides girls with access to necessary personal hygiene products, with the goal of breaking the stigma around menstruation. Using the Water Hyacinth reduces its rapid growth in the various lakes in Uganda where it breeds and contaminates the water. The presence of LilyPads in the market will restore confidence in the girls, increasing class attendance, as they will be able to go about their day without discomfort.

LilyPads will also stir the locals and associated taboos providing solutions for menstrual bleeding, through the presence of local curiosity. LilyPads will provide educational discussions on the importance of the female menstrual cycle, teaching locals how effectively approach the topic. This will tackle the issue of embarrassment, reassuring them that there is no shame in asking questions, also teaching them how to dispose of their pads publicly without having to secretly hide them. It is necessary for the world to make sound decisions at present, in order to avoid limiting the choices of generations to come.

Within the community LilyPads will be contributing to the local economy by creating jobs for women through LilyPads, thus empowering previously disadvantaged women as well. They will be taught how to harvest the Water Hyacinth, and operate the machine that creates the fibre for our pads. Furthermore, these women will learn the importance of using biodegradable products to preserve their environment for current and future generations.

Competitors

Currently the market of young girls in Kampala, capital of Uganda is being served by Afripads, MakaPads, and BanaPads. Although these companies have already entered the market for pads, few are addressing the needs of the neighbouring villages.

BanaPads are LilyPads largest competitors, as they to provide a similar objective to westernised sanitary pads, their aim “to reduce absenteeism of schoolgirls in rural and poor communities while creating employment opportunities for women in rural areas.” BanaPads are produced locally using readily available banana pseudostem wastes, resulting in low production costs. BanaPads not only are 100% biodegradable but also follow international standards, while creating employment opportunities for young rural women in Uganda. Furthermore, BanaPads uses a door-to-door distribution model and employs young female entrepreneurs known as “Champions” to provide them with a complete start-up kit of inventory, training and marketing support necessary to run the business. BanaPads pose a threat to LilyPads due to their current experience hold in this industry, while also providing intensive door-to-door sales distribution schemes, while providing a similar price and product objective. However, using banana fibres creates a problem in the absorbency stage and do not adequately contain leakage, thus can only be used for a 4-6 hour period. LilyPads however provide 7-9 hours of protection, due to the thickness of the water hyacinth fibres creating greater absorbency. LilyPads will also target markets, which BanaPads have not yet entered.

Future Orientation

After the successful adoption of LilyPads in Lira, Jinja, and Mbarara, our future plans envision LilyPads seeing 100% attendance from these young girls along with significantly reduced pregnancy and HIV/AIDS infection rates. The pads will be reaching additional villages within Uganda, once those villages are adequately supplied, we will venture into the neighbouring countries and restart the process that commenced in Uganda. Its success in Uganda will give the reassurance for it to be further produced in countries like Rwanda, Kenya, and Tanzania. Young girls in these developing countries will be spared the misery of missing school as the product will have been tried and tested by this stage.

An increasing consumer demand for affordable, biodegradable products sees an opportunity to use these pads, in relation to other current issues. These include many young girls living without basic underwear. LilyPads would produce a sanitary belt made, for those who are unable to afford basic underwear; here they could purchase a pack (including 10 pads with hooks to clip onto the sanitary belt) for less than half the price of those on the market.

Risk/Barriers

The biggest challenges this project will face includes the following:

- To convince the people of Jinja to work, they may have become complaisant with their situations. We need to demonstrate to them that their assistance to us is beneficial to them and their families as it is a means for extra income. We will target mothers and aunts of the girls affected by the lack of sanitary towels. Through building a strong relationship, and incorporating cultural norms into the workplace we can ensure these women.
- There is the risk of malfunctions and defects with the pads since we are using a plant based fibre. To face this problem we will have to be very meticulous in testing our product and speedily responding to any defects. Failure to do so will be the death of our venture. Another risk is that the water hyacinth is also susceptible to weather, especially at colder temperatures. To avoid this occurring weather forecasts will need to be observed on a regular basis, so as shortage in supply does not impact upon the production process.
- Lastly, Taboo in many African cultures provides a risk to LilyPads. In rural areas in East Africa young girls, worry about how to dispose of their pads in privacy, thus are carefully hidden for fear that other young girls may use them in black magic to cause infertility. Social myths around menstruation cause a high magnitude of distress within young girls, who become afraid of discussing this topic with others. In order to jump over this hurdle if it where to arise, LilyPads will provide female only private discussion groups lead by local provincial nurses discussing the menstrual cycle, and importance on adhering to safe sanitary practices

Business Strategy

Growth Strategy

After the successful implementation of this business venture, LilyPads proposes to expand its operations to other remote parts of Uganda, and neighbouring countries including Tanzania. Each of these areas provides evidence of decreasing educational attendance, and poor sanitation practices. These geographical locations provide prevalent demand for sanitary products, due to markets, which have not yet been entered into. We would have to make further investments targeted towards setting up two more factories, one in Majanji (Uganda) and another in Mwanza (Tanzania). Our aim is not to stop here, but to develop our pads further, while establishing an education programme for girls aged 12-13 promoting a supportive environment for discussing periods and how to manage them, while also providing girls with tips on how to create re-usable pads out of cotton. These sessions will be led by local rural nurses, and will occur once a month. We also aim to provide robust financial planning of developing micro-loan systems for young women in the rural areas in order to help them start up entrepreneurial activities.

Marketing Strategy

As “LilyPads” stands to be a new product, a product development approach should be used to introduce the new product. Then, as “LilyPads” become more visible in the industry, we should shift to a combination of push and pull strategies in order to increase consumer demand, while enlarging market share.

A “push” promotional strategy makes use of a company's trade promotion activities to create consumer demand for a product. This will be done through: Educational outreach sessions provided in schools, and local events to tackle the stigma surround female youth and menstruation. Local healthcare clinics will provide seminars to young girls explaining the dos and don'ts in regards to hygienic practices and appropriate products to use (LilyPads will use this as a form of distribution/advertising). They will therefore go on to promote the use of LilyPads throughout their operations, establishing their key advantage to other brands. LilyPads will also create incentive schemes for retailers and wholesalers on the benefits of supplying LilyPads compared to others.

A “pull” strategy is one that requires advertising and consumer promotion to build up consumer demand for a product. By raising the awareness of the environmental and health damage water hyacinth creates, we can promote that LilyPads removes these problems within society. Advertising will focus on the danger of this species, which contaminates local waters, reduces wildlife, and creates infectious diseases due to the water hyacinth absorbing all the oxygen. This will motivate consumers to purchase LilyPads as it removes two problematic issues in their society. Next LilyPads will create a “self-awareness week”, in which the community, both the male and female gender are encouraged to attend discussion sessions, and craft sessions where they will be taught how to make reusable pads using from materials at home. Once these pads are made young girls, can trade these for a pack of LilyPads.

Alliances and Partnerships

Partnerships with non-governmental organizations would be beneficial for both parties as, whilst promoting LilyPad products, they will be encouraging sustainable behaviour, working towards diminishing poor educational attendance, and improving hygienic sanitation. LilyPads would seek sponsorship through UNICEF and Build Africa in order to help build credibility and reputation not only in Uganda, but also neighbouring countries. Having a business proposal based on implementing changes based around detrimental issues young children face, makes Save the Children a viable candidate to form an alliance with also.



Procter & Gamble, provide LilyPads with the opportunity to sell their products to this corporation, including them in their Protecting Futures campaign, providing an additional sales/distribution source for LilyPads, whilst enabling Procter & Gamble to enter into new markets. LilyPads also has the ability to enter into joint venture opportunities with MakaPads and Afripads. The Ministry of Health Uganda would be the foremost alliance in which LilyPads would seek. Through their constant mission to provide the highest possible level of health services to all people in Uganda, healthcare is their upmost concern, through purchasing and distributing our products both parties are able to profit from this relationship; via increasing hygienic sanitation issues in girls, and providing LilyPads with financial sustainability.

Financial Analysis

We aim to offer the lowest price possible to our consumers without compromising the quality of our products. The financial sustainability of this venture is optimistic but realistic, given the large the market and demand. The following financial analysis is based on the following assumptions:



- LilyPads has decided to charge 2500USh (\$US 1) per pack- half the price average price of our competitors. LilyPads are expected to generate increasing sales from an initial base of \$112,500 in the first year.
- The initial capital expenditure is estimated at \$40,000, without machinery, which is estimated at \$15,000, increasing by \$100 for every additional 5,000 units produced. A starting loan of \$170,000 from the Bank of Uganda (TBU) will finance the venture, to be paid back over 15years, at a 20% interest rate (the minimum rate TBU)
- Operating costs are initially estimated at \$40,000, increasing by \$1000 for each additional 5,000 units
- Subordinate workers would be paid \$120 a year and managers \$160. Total cost \$6,800 for the first year. As the company expands, economies of scale will allow greater efficiency, with only five more subordinate workers being hired for every 5,000 additional units produced, with one manager overseeing an average of 10 subordinates.
- As the water hyacinth is considered an agricultural pest and costly to remove, our company may be able to expand the business vertically into the supply chain by venturing into plant removal and collection. This would allow the company to reduce the cost of raw materials and thus increase its profit margin.

4-year Forecast Budget and Revenue from 2014

Unit: 10 pads all values are listed, as USD but operations will be conducted in Ugandan Shilling

Table 1	2015			2016			2017			2018		
COSTS	Unit Price	Qty	Total	Unit Price	Qty	Total	Unit Price	Qty	Total	Unit Price	Qty	Total
Raw Materials	0.5	45000	22500	0.5	60000	30000	0.5	80000	40000	0.5	120000	60000
Operating			40000			43000			47000			55000
Loan Repayment			38988			38988			38988			38988
Factory lease			40000			40600			41400			38200
Capital expenditure			40000									
Machinery			15000			15300			15700			16500
Distribution	0.01	45000	450	0.01	60000	600	0.01	80000	800	0.01	120000	1200
Wages- workers	120	50	6000	120	65	7800	120	85	10200	120	125	15000
Wages- management	160	5	800	160	3	480	160	5	800	160	12	1920
Total Expenses			202938			176288			194088			224888

Table 2	2015			2016			2017			2018		
Revenue	2.5	45000	112500	2.5	60000	150000	2.5	80000	200000	2.5	200000	300000
Expenses			202938			176288			194088			224888
Profit/Loss			-90438			-26288			5912			75112
Community Shares			10%			25%			35%			50%

Loan repayment

Principal amount	\$170,000
Interest rate per annum	20.00%
Loan Period	15 years
Total annual repayments	\$35,832

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