

VIRIKA PHARMACUETICALS PROJECT

VPS Intravenous Project

Business Plan

1.0	Background Information	1
1.1	The Concern	1
1.2	The Project.....	1
1.3	Key Project Goals.....	2
1.4	Start-up Management.....	2
1.5	Personnel Requirement	3
2.0	Production.....	5
2.1	Production Department	5
2.2	The Products.....	5
2.3	Product Quality	5
2.4	Licensing and Regulatory Requirements.....	6
2.5	Production Capacity.....	7
2.6	Production Materials.....	7
2.7	Production Budget.....	8
3.0	Marketing and Sales.....	9
3.1	Target Market.....	9
3.2	Market Size.....	9
3.3	Expected Sales.....	9
3.4	Marketing Strategy	10
3.5	Product Pricing.....	11
3.6	Marketing Budget	11
4.0	Financial Plan	13
4.1	Total Investment Cost	13
4.2	Asset Structure	14
4.3	Capital and Liability Structure.....	14
4.4	Annual Income Forecast	14
4.5	Annual Cost of Production	15
4.6	Net Surplus	16
4.7	Business Valuation.....	16
Annexes.....		17
	Income Statement	17
	Balance Sheet.....	18
	Cash Flow Statement.....	19
	Internal Rate of Return.....	20

Net Present Value 21

1.0 Background Information

1.1 The Concern

Tuberculosis, HIV/AIDS, and Malaria are the leading causes of death, high economic losses, and devastating social shocks in East and Central Africa. As part of the millennium development goals (MDGs), governments in the region have developed strategies directed at reducing the negative impact of these diseases on the society by 2015. The strategies include halting and reversing the spread of HIV/AIDS, reducing the level of malaria infection, and reducing prevalence and death rates associated with tuberculosis.

Like other countries in the tropics, Uganda has felt the negative impact of these diseases. The burden is felt throughout the health care system where almost 90% of the outpatient visits to healthcare facilities result from these diseases. Over 50% of these patients are children who are under the age of five years. It is estimated that a single case resulting from the diseases in Uganda costs the economy an equivalent of ten working days, in addition to resulting to more illnesses and deaths. Roughly, 90% of the 29.4 million people in the country are exposed to medium or high levels of transmission of at least malaria. This results mainly from the temperature and rainfall that create favourable breeding conditions for the mosquitoes¹.

Severe malaria results into high fever, which requires the use of Intravenous Fluids as the first line of treatment. However, due to limited local production and supply, the fluids are comparatively expensive compared to other developed world where they are affordable and readily available. In Uganda, local monopolies and distributors that sell the fluids very costly import 98% of the IV Fluids.

Faced with the current factual situation, VPS as a Church-based, service-oriented organisation planned to establish Intravenous Project to locally produce and supply this very essential product to the healthcare sector as a noble contribution in improving healthcare services. The Establishment in VPS Intravenous Project will be based on the premise that local production and supply of well research products will enhance supply of quality and affordable fluids, capable of making a positive contribution in terms of enhancing ready availability within the local market. The project expects to promote the common good in the Western Region, to reduce the current high level of deaths from 9-14% of in-patient visits in hospitals and health facilities. The current death cases do not include significant deaths that occur at home, refugee camps, and not reported at necessary agencies resulting from lack of financial resources.

1.2 The Project

VPS Intravenous Project is a not for profit making Unit that will manufacture Intravenous Fluids (IVFs) for use in the healthcare sector in Uganda. The project is a community church based not-for-profit establishment that operates as a self-sustaining entity. It is an initiative of the Fort Portal diocese of the Catholic Church and is being run by both the diocese and the congregation of the daughters of St. Therese.

The operations of the project are based in Fort Portal region of Western Uganda. Fort Portal is the administrative centre of Kabarole District, which is home to bishops of both Catholic Church and Anglican Church of Uganda. The region is well served with essential infrastructure

¹ Malaria Operational Plan (2008) “President’s Malaria Initiative Uganda”

including banking, power, water, telephone, hospitals, and road network.

The production function of the project will continue to be in Plot 8, Kaija Rd. about 1 km from Fort Portal town. This is a residential location characterised with low aerial pollution and less dust. The manufacturing plant is adjacent to an existing accommodation block for the staff of the VPS IV Fluids Production Stores, one of the promoters of the project. The project has acquired the neighbouring premises and a plot to facilitate future expansion. The premises are currently used to provide accommodation for project personnel and advisors.

VPS Intravenous Project will be a division of Virika Pharmaceuticals Limited (VPL) and will share established admin facilities with Virika Pharmaceuticals Store (VPS), a sister division, to minimise operating costs and maximise on efficiency.

1.3 Key Project Goals

The key goals of VPS Intravenous Project include to:

1. Enhance availability of quality and affordable IV Fluids to hospitals and other healthcare providers in Uganda.
2. Work in partnership with the Ministry of Health to support the healthcare providers in addressing healthcare issues in Uganda.
3. Operate on sustainable basis but not for profit.
4. Use the surplus generated from the business to subsidise healthcare services for the needy members of the community.

1.4 Start-up Management

VPS Intravenous Project will be a division of Virika Pharmaceuticals Limited (VPL). The Managing Director of VPL, **Fr. Albert Byaruhanga**, who has been very instrumental in establishing the project will hold the position of the Managing Director in the project. Fr. BYARUHANGA has created strong networks among church groups, government agencies, and NGO's in the country.

Dr. Sr. Rovina Turyazayo will be the Clinical Pharmacist of the project. She holds a doctorate degree in Clinical Pharmacology from Creighton University in Nebraska, USA. She has managed Virika Pharmaceuticals Store since its inception in 2000. Additionally, she teaches pharmacology at the Fort Portal Medical Clinical Officers' School in Fort Portal Municipality and is the Regional Pharmacist for Long-Distance Education in pharmaceutical issues. When the IV Fluids unit is in operation, she will manage the pharmaceutical and compliance issues.

Sr. Rose Kanturegye will be the Quality Control Chemist responsible for the supervision of production and quality assurance at the production unit. Sr. Rose completed her training from Ukraine in July 2008. Initially, she will work under the supervision of Sr. Rovina when she takes up duties in the production unit. The project plans to attract temporarily an experienced Production Pharmacist to assist with start-up and training, seconded either by an international project or on a volunteer basis.

Sr. Maria Goretti Kabakaali who finished her University studies in Business Administration in August 2008 will be Administration Manager of the project.

1.5 Personnel Requirement

The bulk of the activities at VPS Intravenous Project will fall under the Production, Supply, Sales and Marketing departments. These departments will form the focus for setting-up operations of the project due to the very nature of the business. The project will ensure adequate staffing, reviewing as required with the anticipated expansion in operation in both production and geographic reach in the country. The following table summarises the project's human resource requirement.

Table 1: Personnel Requirement and Benefits

Position	Staff required	Starting Monthly	Year 1	Year 2	Year 3	Year 4	Year 5
Managing Director	1	1,500	18,000	19,800	21,780	23,958	26,354
Administrator/ Accountant	1	1,000	12,000	13,200	14,520	15,972	17,569
Production Pharmacist	1	1,000	12,000	13,200	14,520	15,972	17,569
Maintenance Engineer	1	1,000	12,000	13,200	14,520	15,972	17,569
Quality Control Chemist	1	850	10,200	11,220	12,342	13,576	14,934
Electrician/ Engineer	1	650	7,800	8,580	9,438	10,382	11,420
Production Technicians	2	550	13,200	14,520	15,972	17,569	19,326
Sales Representative	2	550	13,200	14,520	15,972	17,569	19,326
Secretary/ Receptionist	1	500	6,000	6,600	7,260	7,986	8,785
Cashier	1	350	4,200	4,620	5,082	5,590	6,149
Stores Clerk	1	300	3,610	3,971	4,368	4,804	5,285
Watchman	1	300	3,600	3,960	4,356	4,792	5,271
Cleaners	2	320	7,680	8,448	9,293	10,222	11,244
Total Staff	16	8,870	123,490	135,839	149,423	164,364	180,801

The project has two trained pharmacy technicians at the Moshi unit to be responsible for production. And will further train to meet the new demands when necessary. One of them will double up as part-time mechanical technician to maintain the equipment. The additional employees to be recruited include a qualified engineer to operate and maintain the equipment, chemist for the laboratory quality control procedures, and sales representatives for promotional purposes. The employees will receive monthly salaries and other necessary allowances and benefits.

To execute the intended expansion programme effectively, the project will review and enhance its human resource by introducing new structures whenever necessary. In line with this, the project will endeavour to:

- evaluate its human resource requirement with the aim of developing its staff;
- enhance productivity by recruiting qualified and experience staff;
- implement effective performance management system;
- adopt competitive performance-based remuneration and incentives
- communicate openly and transparently with internal and external stakeholders; and
- maintain preventative health and safety structures for all employees

The project will hire additional staff to facilitate adequate production as well as aggressive sales and marketing. These staff will receive adequate training to enable them produce quality products, offer desirable customer services, and ensure timely product delivery.

As the face of the project, the sales representatives will be required to adhere to clearly developed relationship standards with our clients maintaining a good attitude and an articulate understanding of the service in demand and the products offered by the project. Additionally, the project will adopt and encourage the tenets of a flat personnel structure to achieve sustainability and encouraging responsibility among project employees by allowing everyone to be responsible to achieve organisational goals.

2.0 Production

VPS Intravenous Project appointed a professional architectural firm, PLANTEK of Kampala, to draw up specifications and Tender/Contract Documents for the construction of the production buildings. The project also appointed Mech & Elec Services as the project manager to oversee the construction work. The construction work was awarded in Aug 2006 to HONEST CONTRACTORS of Kampala, a reputable and experienced firm. The project manager appointed a full-time clerk of works to oversee the construction.

2.1 Production Department

The project will have an independent production department that will be responsible for the smooth and efficient running of the day-to-day activities of the manufacturing plant. The Production Pharmacist will head the department assisted by the Quality Control Chemist. The pharmacist will be responsible for the supervision, control, and management of the production process to ensuring sufficient and efficient production process. The manager will create an appropriate a recruitment policy to guarantee adequate staffing in the production department to meet anticipated growth in production and satisfy the particular needs in the department. The manager will also ensure sufficient supply of the inputs facilitate the smooth production process.

The manager will develop and enforce desirable production policies, co-ordinate the production process, prepare work plans, prepare departmental budgets, and together with the pharmacist develop the necessary product testing and valuation systems. The manager will also ensure efficient utilisation of the plant and machinery.

2.2 The Products

VPS Intravenous Project will manufacture Intravenous Fluids (IVFs) for use in intravenous therapy in hospitals and other health facilities in Uganda. IV Fluids are sterilized pyrogen free solutions used as a first line of treatment for patients with high fevers and dehydration. IVFs are also used in combating the effects of AIDS-related diseases, and complications of childbirth. The IV fluids reduce dehydration, enable patients improve blood circulation, and help in maintaining body weight. They contain various electrolytes such as sodium, potassium, calcium, chloride, and dextrose among others, to enhance body immunity.

The project will initially focus on producing 5% Dextrose and 0.9% Sodium Chloride Injection B.P, and 0.9% Sodium Chloride Injection B.P. (Normal Saline). The production process will include micro filtration, filling, sealing, sterilisation, quarantine, visual inspection, and packaging. The project intends to equip the manufacturing plant with adequate equipment and competent personnel to ensure efficient and adequate production. It will invest significantly on research and development to ensure constant improvement in the manufacturing process.

2.3 Product Quality

VPS Intravenous Project will treat the quality of products and services offered as a critical issue the project will face in venturing into the healthcare industry. In order to ensure output of high quality final products as required, the project will closely monitor the quality of raw materials used in the production as well as the quality of the final products to ensure integrity, and safety

of the products offered into the market.

To maintain consistency and traceability of its products against set standards, the project is preparing a written manual for approval by the National Drug Authority. The manual will provide guidelines for quality assurance and standard operational procedures followed in the manufacturing plant. Dr. Sr. Rovina, the Supervising Pharmacist, is responsible for developing the document. The document will also outline testing parameters, set quality control standards, draw product specifications, and provide product stability tests.

The project will develop and adopt rigid quality controls for the production process to ensure error-free output and reflect the stated needs and demands of the customers. To comply with the testing procedures, part of the building of the project will be a well-equipped quality control laboratory for the testing of final products. The production plant currently under construction will be of seismic-resistant design that will maintain positive pressure in the production area to avoid contamination during the production process.

The project is working out a technical assistance plan from Rommelag to support its production processes. The use of BFS technology and continuing support from Rommelag Co and other suppliers will ensure achievement and maintenance of the quality standards set by the National Drug Authority. The project also has the advantage resulting from the association with Virika Pharmaceutical Stores who have seven years experience of achieving and maintaining competitive levels of service.

2.4 Licensing and Regulatory Requirements

Before starting full-scale production, VPS Intravenous Project has ensured full compliance with the licensing, and regulatory matters as required by the government. During the first phase, the project obtained all necessary permissions to develop the proposed site. The permissions include:

- The National Environment Management Authority approval of the environmental aspects of the project obtained on the 9th of May 2005, and the planning permission granted by Fort Portal Municipal Council Engineer on the 12th of May 2005. The project has also received support from the Mayor of Fort Portal and the Municipal Council who have provided an access road to the site.
- The National Drug Authority will have to offer an approval to proceed according to the plans, which will be submitted to them. The Authority will approve the production and process equipment specified and documentation.

The project will also ensure that construction materials used in constructing the plant will comply with all applicable standards and regulations. The site procurement officer ensures that the materials supplied for construction meet desirable quality before accepting them for use on site. The construction and the finishing of the production area are subject to close monitoring to avoid the risk resulting from internally generated dust from walls or floors which may impair the protection of the air quality afforded by the positive air pressure.

The project is currently seeking necessary permits required to import production equipment from government agencies in Kampala. The promoters are confident that the 12-month period projected from start of equipment procurement to delivery is sufficient to ensure that the necessary permits and import duty waivers are obtained in good time. The estimated transport and clearance costs are included in the Rommelag equipment quotation.

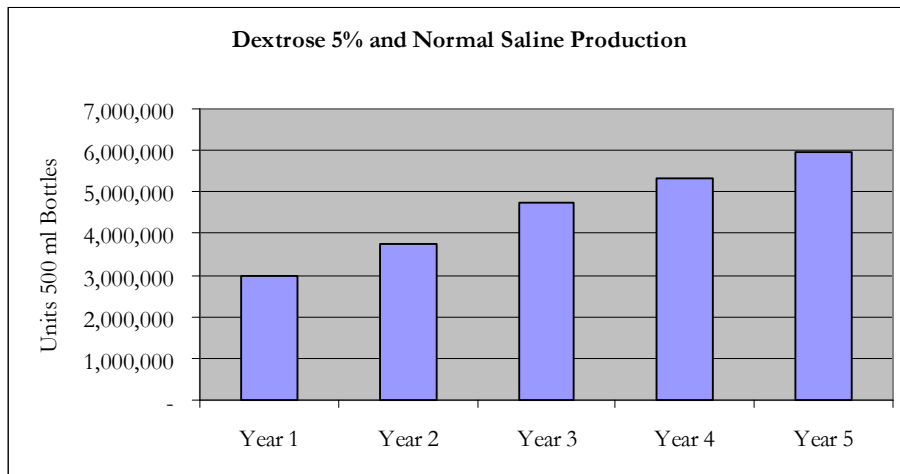
The plant and equipment will be subjected to inspection by both the municipal building

inspector and by the National Drug Authority for compliance with regulations governing production facilities for pharmaceutical products. The project will also seek inspection and certification of all aspects of the construction, including the electrical installations and the fuel storage for the generator.

2.5 Production Capacity

The main production line will comprise a mix of intravenous fluids mainly Sodium chloride 0.45 and 0.9%, Dextrose 5%, and Ringer's Lactate solutions packed in 500ml bottles. The project will later on introduce other products packed in 100ml and 10ml bottles respectively.

VPS Intravenous Project intends to install a technical designed capacity to produce approximately 12,000,000 500ml bottles per year. The project expects to start with a production of 3,000,000 bottles in the first year, which will increase gradually to 6,000,000 by the fifth year. The expected production will represent 25% of the production capacity in first year, and 50% by the fifth year. During the planning period, the production dextrose and saline will be on a 50:50 basis. The graph below summarises total expected production during the planning period.



Based on the market size of about 10,000,000 bottles of 500ml per annum, plant capacity allows the project to quickly scale up and produce a greater percentage of the required number. It also allows the project to supply required units to near-by regions. The plant will manufacture these products on a batch production basis influenced by the forecast demand, and necessary level of inventory of finished products to ensure constant supply. The projects the ensure local production and adequate stocking to permit rapid response to regular surge in demand resulting from increased cases of infections from various tropical diseases. This will obviate the shortages and price increases which are the norm today and which put treatment beyond the reach of many patients.

2.6 Production Materials

The core material required in producing IV fluids is rainwater, which is readily available in the area. The area records an average rainfall 1,000mm per annum with two monsoon seasons of October to December and March to May each year. The project intends to construct facility capable of storing 800,000 litres per month, which will guarantee constant supply to the production unit. In case of shortage, the project will resort to tap water.

The project plans to establish partnership with the suppliers of the other raw materials in order to support the production process. The other raw materials include sodium, potassium, calcium, chloride, and dextrose. The bulk of the raw materials will be imported through Rommelag Co. of Germany and its business associate in India. Through these suppliers, the project will focus on sourcing high quality raw materials at desirable process to ensure good quality in the market.

2.7 Production Budget

VPS Intravenous Project budget will include capital expenditure for acquiring production equipment, purchase of production materials, and salaries and wages for production department. The table below summarises the production budget during the planning period.

Table 2: Production Budget

	US\$	Base	Year 1	Year 2	Year 3	Year 4	Year 5
Production Equipment	2,400,000	-	-	-	-	-	-
Raw Materials	-	391,500	489,375	618,374	694,559	777,082	
Salaries and wages	-	55,200	60,720	66,792	73,471	80,818	
Production budget	2,400,000	446,700	550,095	685,166	768,030	857,900	

3.0 Marketing and Sales

3.1 Target Market

VPS Intravenous Project's first tier target market will be western region districts of Kabarole, Kyenjojo, Kamwenge, Kasese, Bundibugyo, in the Uganda highlands. The project will extend further to the South west into the districts of Bushenyi, Mbarara, Kabale, Kisoro, Ibanda, and Rukungiri. The target districts have continued to record high cases of infection from malaria and tropical diseases by recording either very high or high moderate cases of malaria infection.

As long-term objective, the project is expected to expand to other near-by communities in need. The project expects 40% of the current target market in the first year whose monthly demand of stands at 200,000 bottles. The share in this market will rise 70% by the fifth year. The project will seek letters commitment from key players in the health sector in the region including Buhinga Hospital, Kabarole Hospital, and the Fort Portal Diocese health service providers located in Kabarole district, and Kilembe and Kagando hospitals in Kasese district to source the IV Fluids from the project.

3.2 Market Size

The number of cases of in-patients in hospitals and other health facilities will influence the demand for VPS Intravenous Project's IV fluids. Based on the National Malaria Control Program (NMCP) in Uganda estimates, the total number of fever cases for all ages was approximately 60 million in 2005. Based on epidemiological estimates, children under five years suffer from three episodes of malaria per year, and older children and adults suffer from two episodes per year. Of these cases, approximately 12 million were treated in the public and not-for-profit sector. Using the above assumptions, the expected total demand for IV Fluids in the target region is as below.

Table 3: Uganda's Market Size and VPS Intravenous Projects Market Share

500 ml Bottles	Year 1	Year2	Year 3	Year 4	Year 5
Dextrose 5%	6,279,000	6,486,500	6,701,000	6,922,500	7,151,000
Normal Saline	6,279,000	6,486,500	6,701,000	6,922,500	7,151,000
Total Demand	12,558,000	12,973,000	13,402,000	13,845,000	14,302,000
Value (US\$)	4,759,000	4,917,000	5,079,000	5,247,000	5,420,000
VPS Market Share	24%	29%	35%	38%	42%

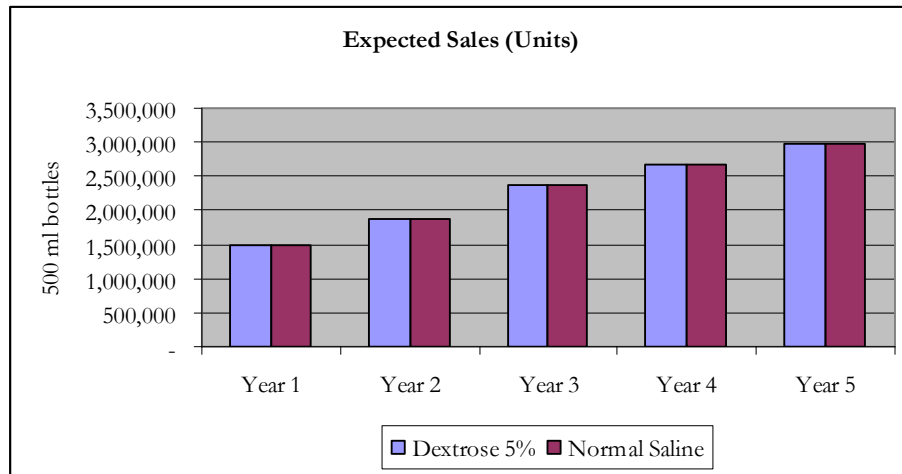
The estimates above are based on the in-patients for malaria only as indicated by the National Malaria Control Program with a growth of 3.3% per annum. The principal customers purchasing the IV fluids will be hospitals and health centres in Uganda. These facilities currently rely heavily on imported fluids that are beyond the reach for many poor people in the country.

For Kabarole District see appendix 1

3.3 Expected Sales

VPS Intravenous Project intends to establish its position to supply target clients with high quality

of product and services. The project intends to contribute approximately 24% of the share of the country's IV Fluids market in the first year, which will rise gradually to at least 42% by the end of fifth year. The graph below summarises the unit sales of project during the planning period.



We have assumed that the project will supply the two products on equal basis. In line with achieving the above target sales, the project will strive to address such issues as availability of raw materials, product quality standards, and networking with the hospitals and health centres in the target regions. It will remain a priority to the project to enhance its presence in the local market, and capitalise on the increasing demand in other regions.

Based on a recent market research, there is a high degree of confidence in the estimated figures for market size and value. In addition, demand is clearly growing due to factors such as population growth, increasing government spending on health services, increasing incidence of malaria, etc. **See Appendix 2 Population Kabarole. Market Research Appendix 3**

3.4 Marketing Strategy

VPS Intravenous Project appreciates the need for effective marketing strategy in order to penetrate into the IV Fluids market, and strategically position itself in the health sector. To reach various hospitals and health centres, the project will employ sales representatives that will market the products in the target region. The project also intends to develop an elaborate sales and distribution structures to ensure that products reach the target health units on timely basis.

The core element of the project's marketing strategy will be that of differentiating the IV Fluids locally manufactured and supplied by VPS Intravenous Project from those imported into the country by various monopolistic companies. An added advantage will also be the readily availability of these products for smaller clinics to obviate shortages and price surges that occur in times of disease outbreak. The project will also draw on the presence of its supporters in the region to guarantee the delivery of the products when required.

Aware of the existing market structure, VPS Intravenous Project intends to ensure that its marketing strategies consider the fit between the benefits of its products, and development of a strong and sustainable competitive position in the market. The strategy will include to:

- Develop regional presence in western and southwestern regions of Uganda.
- Employ and empower sales representatives to market the products.

- Offer affordable price and margins on its products.

VPS Intravenous Project intends to implement a niche marketing strategy that will focus on IV Fluids. The project appreciates that entering into this industry and market will be challenging, hence intends to implement Promotion strategy supported by other functions of the project including Client support supervision. The sales team will identify the needs within the health sector, analyse the consumption of IV Fluids, and ensure timely delivery of orders to customers.

3.5 Product Pricing

Currently demand fluctuations highly influence the prices charged by current suppliers of IV Fluids in Uganda. To avoid these pitfalls, the project will adopt a competitive pricing strategy to attract and keep the target market. Prices of VPS Intravenous Project's products will be comparatively cheaper than imported products. The project expects to rely on the availability of reasonable labour as well as identify cheaper source of quality raw materials to support the current sources in order to maintain the long-term competitiveness of the products.

Although the venture is intended as a “not-for-profit”, the project will charge appropriate prices to cover its operating expenses, and accommodate mark-ups as they prevail in the industry in order to enhance financial sustainability. However, in the initial stage, the project will align its prices to those prevailing in the IV Fluid market. VPS Intravenous Project will continue to evaluate and review the sensitivity of its prices in order to maintain desirable market penetration and remain competitive. The table below summarises the expected production cost per unit and the proposed selling price per unit for the various products.

Table 4: Production Costs and Selling Price

	US\$	Proposed Prices
Production Cost Per Unit		
Dextrose 5%		0.159
Normal Saline		0.102
Selling Price per Unit		
Dextrose 5%		0.379
Normal Saline		0.325

While existing suppliers are expected to use price as a defensive tool, it is anticipated that the advantages of local and reliable availability, affordable price of the product will be sufficient to enable the VPS Intravenous Project to sell at a reasonable price should existing suppliers drop prices in an attempt to maintain market share. The project intends to give 10% of its production to poorer locations at discounted prices or free of charge to the neediest. However, the margins generated from the normal operations will determine the proportion of production offered under subsidies.

VPS Intravenous Project will on request consider credit facility of 3-4 months to Government and Missionally health facilities. However, the health facilities will be expected to give commitment to purchase the fluids from the project and must be rated as good customers on basis of quantity purchased and timely payments.

3.6 Marketing Budget

Since the company will be introducing its products into the target market, the sales and

promotional expenses will not be too significant as indicated below. This will be due to cost of generating customer attention, building brand identity, and creating knowledge of the products offered by the project. The expected budget for sales and marketing is summarised in the table below.

Table 5: Marketing Budget

	US\$	Year 1	Year 2	Year 3	Year 4	Year 5
Sales Team (Salaries and wages)		13,200	14,520	15,972	17,569	19,326
Marketing		2,400	2,640	2,904	3,194	3,514
Transport and accommodation		4,800	5,280	5,808	6,389	7,028
Total Budget		20,400	22,440	24,684	27,152	29,868

4.0 Financial Plan

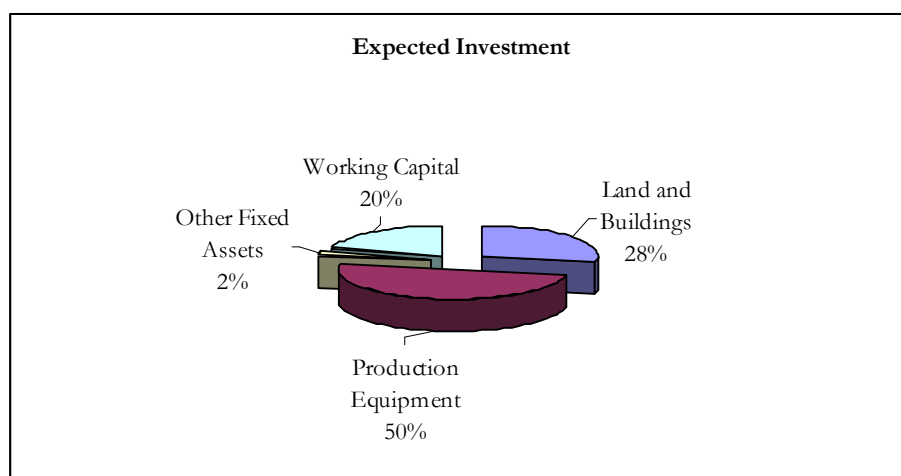
The financial plan offers the projected financial overview of VPS Intravenous Project over a period of five years. The plan provides a consolidated view of the operations of the project and measures the financial performance using projected income and expenditure. The financial plan also provides an indication of the direction the business and the resources required to ensure that its performance leads to long-term financial sustainability.

The plan builds on researched facts to highlight initial funding requirement, and forecasting future income and expenditure. **See Market survey Appendix 4**

4.1 Total Investment Cost

The project will incur capital expenditure to complete the construction of the factory premises. Additionally, the project will invest in purchasing of the production equipments before commencing the manufacturing process. The project has identified Rommelag Co. from Germany and its business associates from India to supply the manufacturing equipment. The equipment will depreciate at rates of 10.0% per annum giving an anticipated trouble free operating period in excess of 10 years.

The project will also incur capital expenditure in purchasing other fixed assets, which will include office equipment, motor vehicles, and furniture and fittings. The plant will also require a stand-by generator to provide back-up power, as electricity supplies generally are quite unreliable. The project also expects to incur some expenditure in developing product concept, research and development, legal and professional fees, and initial marketing and networking. The project currently requires an investment of US\$4.4 million to start its operations. The investments will be distributed as per the following pie chart.



VPS Intravenous Project will require significant funds to finance the working capital requirements of the project. The project will use the funds to finance purchase of raw materials and packaging materials in the first year, and meet other day-to-day activities. The need for working capital will mainly result from delayed payment from some customers. The project intends to start building a strong working capital using positive cash flows from operations to cover any shortfall.

4.2 Asset Structure

The asset portfolio of the project will include both fixed assets and current assets. The fixed assets will include land and buildings, plant and machinery, furniture and fittings, office equipment and motor vehicle. The current assets will include inventory, trade receivables, and cash and bank balances. The fixed assets will account for 78.5% of total assets in the first year and 52.8% in the fifth year. The table below summarises the assets structure of the project during the planning period.

Table 6: Asset Structure

	KShs	Year 1	Year 2	Year 3	Year 4	Year 5
Fixed Assets						
Land and Buildings		1,706,866	1,621,523	1,540,447	1,463,424	1,390,253
Plant and equipment		2,160,000	1,944,000	1,749,600	1,574,640	1,417,176
Other fixed assets		80,500	61,775	47,451	36,484	28,080
Total fixed assets		3,947,366	3,627,298	3,337,498	3,074,549	2,835,509
<i>% of total assets</i>		<i>88.0%</i>	<i>77.0%</i>	<i>65.3%</i>	<i>55.3%</i>	<i>46.4%</i>
Current Assets						
Inventory		450,000	562,500	710,775	798,343	893,197
Cash and bank balance		940	413,357	921,358	1,535,585	2,210,919
Trade receivables		88,000	110,000	138,996	156,120	174,670
Total current assets		538,940	1,085,857	1,771,129	2,490,048	3,278,786
<i>% of total assets</i>		<i>12.0%</i>	<i>23.0%</i>	<i>34.7%</i>	<i>44.7%</i>	<i>53.6%</i>

The project will maintain reasonable level of stock to meet its orders. The project will also experience some delays from some customers in receiving payments for goods delivered in addition to giving credit of three to four months to Government and Missionary healthcare facilities.

4.3 Capital and Liability Structure

VPS Intravenous Project will finance its assets mainly through operating surpluses, grants, and possibly term loans. The project will strategically spread its sources of funds as part of its capital structure strategy. The table below summarises the project's sources of funds.

Table 7: Capital and Liability Structure

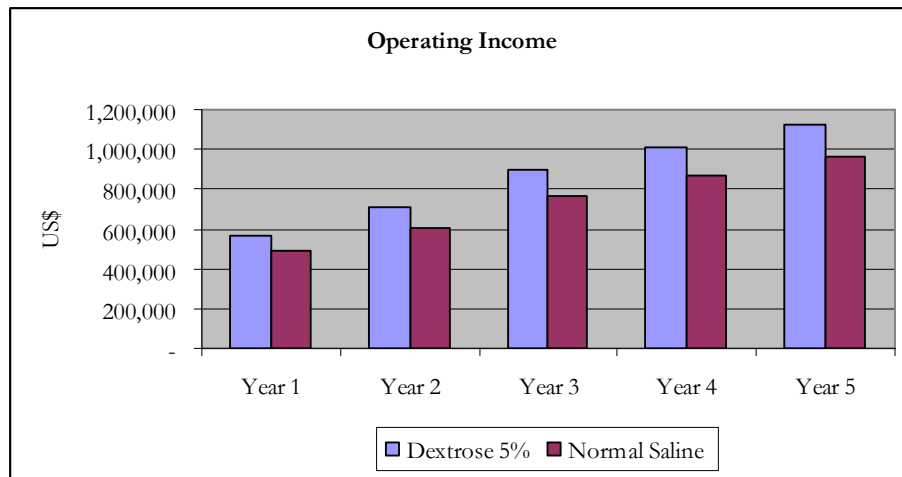
	US\$	Base Year	%	Year 1	Year 2	Year 3	Year 4	Year 5
Grants		4,412,800	100.0%	4,412,800	4,412,800	4,412,800	4,412,800	4,412,800
Revenue Reserves		-	-	51,454	225,685	554,784	972,693	1,482,854
Current Liabilities		-	-	22,052	74,670	141,043	179,104	218,640
Total		4,412,800	100.0%	4,486,306	4,713,155	5,108,627	5,564,597	6,114,294

The main element of the equity of the project in the first year will be grants. The proportion of capital will start to rise from the first year when the project starts to generate surplus revenues.

4.4 Annual Income Forecast

VPS Intravenous Project expects to enhance its income generation through an expansion on the operating activities of producing IV Fluids. The project also intends to adopt an appropriate marketing program to enable more effectively penetration into the IV Fluids market industry. The initial target regions include western and south western districts of Uganda. The project will

also coordinate the marketing function cost-effectively in order to achieve the planned sales. The project expects to generate US\$ 1.1 million in income during the first year, which will rise to about US\$ 2.1 million by the fifth year. The bar chart below summarised the distribution of the income during the starting period.



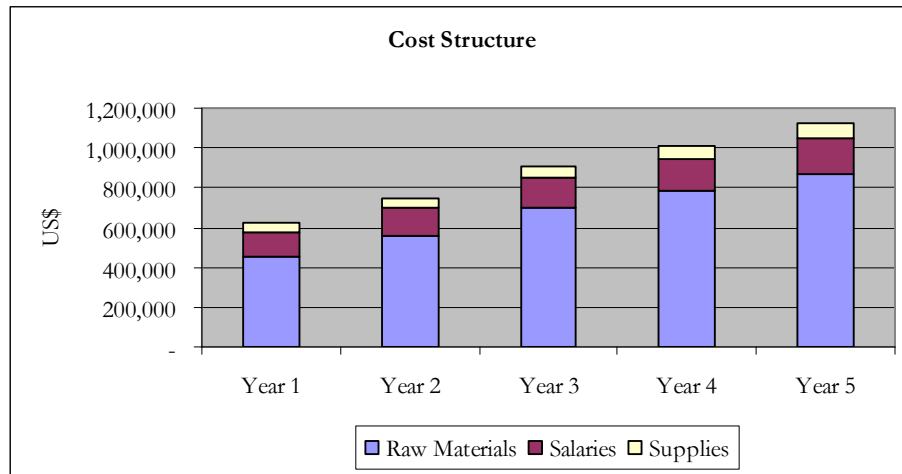
The project will initially focus on producing two types of infusions i.e. Dextrose 5% and Normal Saline. The bulk of these products will be sold to hospitals and health centres in western and southwestern Uganda. The project has set aside an adequate budget to finance the cost of the sales and promotion activities. We expect the income to increase steadily during the starting period driven by the number of units produced and sold.

4.5 Annual Cost of Production

VPS Intravenous Project expects to incur both cost of production and operating costs. The cost of production will mainly be the purchasing of the raw materials, payment for packaging materials, and the repair and maintenance of the production equipment. Among the raw materials required in the production process are sodium, potassium, calcium, chloride, and dextrose. These costs will vary directly with the units produced and sold. The project expects to incur about US\$456,000 in first year as production costs, which will increase gradually to US\$871,000 by the fifth year.

The operating expenses will include personnel expenses and administrative expenses. The personnel expenses will include salaries, wages, and any other costs and benefits associated with the employees. The project intends to recruit a number of key professionals who will include Managing Director, technicians, Production Pharmacist, Accountant, and Quality Control Chemist among others to oversee the operations of the project. The project will also employ production staff, sales executives, and engineers among other staff. The project will incur US\$124,000 in personnel expenses in the first year, which will rise to US\$181,000 by the fifth year.

The administrative expenses will be the costs associated with the general management of the project. These costs will include payments for office supplies, telephone, marketing, transport, accommodation, and insurance among others. The administrative expenses will increase from US\$48,000 in the first year to US\$76,000 in the fifth year. The bar chart below summarises the cost structure of the project during the starting period.



4.6 Net Surplus

The growth of cost of goods sold i.e. purchase of raw materials, payment for packaging materials, and repair and maintenance of the production equipment will be proportional to the units produced and sold. However, the project will strive to control the growth of its operating costs in order to enhance the overall profitability of the project. The table below summarises the performance of the project during the starting period.

Table 8: Summary of Financial Performance

	US\$	Year 1	Year 2	Year 3	Year 4	Year 5
Operating income		1,056,000	1,320,000	1,667,952	1,873,445	2,096,036
Cost of production		456,026	560,353	696,450	780,442	871,553
Operating expenses		172,133	190,678	211,560	233,041	256,642
Net income after tax		51,454	174,231	329,099	417,909	510,161

The project will record low net profit during the first year due to low sales compared to the high production and operating expenses. However, the performance will improve gradually starting from the second year.

4.7 Business Valuation

The section focuses on valuing the project mainly using the Internal Rate of Return (IRR) and Net Present Value (NPV). The valuation has its basis on future earnings potential, which will increase with the growth of income and controlled costs. In the valuation, we have used EBITDA to calculate the enterprise value of the project using both IRR and NPV valuation methods.

The outcome indicates that investing in VPS Intravenous Project remains a viable project that will provide positive returns for sustainability and offer to the neediest locations. We believe that the projects on growth are conservative and attainable. In calculating the IRR of the project, we identified appropriate multiples in order to arrive at the enterprise value of the project. **See annexes IV and V**

Annexes

Income Statement

VPS INTRAVENOUS PROJECT

Annex I

SUMMARY OF INCOME STATEMENT

US\$	Base	Year 1	Year 2	Year 3	Year 4	Year 5
Operating income						
Dextrose 5% in Normal Saline 500ml B.P	-	568,500	710,625	897,946	1,008,574	1,128,406
0.9% Sodium Chloride Injection (Normal Saline)	-	487,500	609,375	770,006	864,872	967,630
<i>Total operating income</i>	-	1,056,000	1,320,000	1,667,952	1,873,445	2,096,036
Less: Cost of Goods Sold						
Cost of raw material	-	391,500	489,375	618,374	694,559	777,082
Repair and maintenance expenses	-	64,526	70,978	78,076	85,883	94,472
<i>Total cost of goods</i>	-	456,026	560,353	696,450	780,442	871,553
Gross Profit	-	599,974	759,647	971,502	1,093,003	1,224,483
Operating expenses						
Personnel expenses (gross pay)	-	123,490	135,839	149,422	164,365	180,801
Printing and stationery	-	3,000	3,300	3,630	3,993	4,392
Legal and professional fees	-	8,800	11,000	13,900	15,612	17,467
Sales and marketing	-	2,400	2,640	2,904	3,194	3,514
Office utilities	-	1,800	1,980	2,178	2,396	2,635
Telephone and postage	-	5,400	5,940	6,534	7,187	7,906
Insurance and security	-	21,509	23,659	26,025	28,628	31,491
Transport and accommodation	-	4,800	5,280	5,808	6,389	7,028
Miscellaneous expenses	-	935	1,040	1,159	1,277	1,408
<i>Total operating expenses</i>	-	172,133	190,678	211,560	233,041	256,642
EBITDA	-	427,841	568,969	759,942	859,962	967,841
Depreciation and amortisation						
Depreciation	-	354,335	320,068	289,800	262,949	239,040
<i>Total depreciation and amortisation</i>	-	354,335	320,068	289,800	262,949	239,040
Earnings Before Interest and Taxes	-	73,506	248,901	470,142	597,013	728,802
Interest expenses	-	-	-	-	-	-
Pre-tax income	-	73,506	248,901	470,142	597,013	728,802
Taxes	-	22,052	74,670	141,043	179,104	218,640
Net income/(loss)	-	51,454	174,231	329,099	417,909	510,161

Balance Sheet

VPS INTRAVENOUS PROJECT

Annex II

SUMMARY OF BALANCE SHEET

US\$	Base	Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
Non-current assets						
Buildings	1,796,701	1,706,866	1,621,523	1,540,447	1,463,424	1,390,253
Plant and equipment	2,400,000	2,160,000	1,944,000	1,749,600	1,574,640	1,417,176
Furniture and fittings	35,000	28,000	22,400	17,920	14,336	11,469
Computers	25,000	18,750	14,063	10,547	7,910	5,933
Vehicles	45,000	33,750	25,313	18,984	14,238	10,679
<i>Total non-current assets</i>	4,301,701	3,947,366	3,627,298	3,337,498	3,074,549	2,835,509
Current Assets						
Inventories	-	450,000	562,500	710,775	798,343	893,197
Trade receivables	-	88,000	110,000	138,996	156,120	174,670
Cash and bank balance	111,099	940	413,357	921,358	1,535,585	2,210,919
<i>Total current assets</i>	111,099	538,940	1,085,857	1,771,129	2,490,048	3,278,786
Total Assets	4,412,800	4,486,306	4,713,155	5,108,627	5,564,597	6,114,295
Equity and Liabilities						
Capital and reserves						
Grants	4,412,800	4,412,800	4,412,800	4,412,800	4,412,800	4,412,800
Retained earnings	-	51,454	225,685	554,784	972,693	1,482,854
<i>Total capital and reserves</i>	4,412,800	4,464,254	4,638,485	4,967,584	5,385,493	5,895,654
Liabilities						
Tax payable	-	22,052	74,670	141,043	179,104	218,640
<i>Total current liabilities</i>	-	22,052	74,670	141,043	179,104	218,640
Total Liabilities and Equity	4,412,800	4,486,306	4,713,155	5,108,627	5,564,597	6,114,295

Cash Flow Statement

VPS INTRAVENOUS PROJECT

Annex III

SUMMARY CASH FLOW STATEMENT

US\$	Base	Year 1	Year 2	Year 3	Year 4	Year 5
OPERATING ACTIVITIES						
Operating surplus/(deficit)	-	73,506	248,901	470,142	597,013	728,802
Adjustments: non-cash transactions						
Depreciation	-	354,335	320,068	289,800	262,949	239,040
Preferred dividend	-	-	-	-	-	-
Interest expense	-	-	-	-	-	-
<i>Operating surplus/(deficit) before working capital changes</i>	-	427,841	568,969	759,942	859,962	967,841
(Increase)/decrease in inventories	-	450,000	- 112,500	- 148,275	- 87,568	- 94,854
(Increase)/decrease in receivables	-	88,000	- 22,000	- 28,996	- 17,124	- 18,549
<i>Cash generated from operations</i>	-	110,159	434,469	582,671	755,269	854,438
Tax paid	-	-	22,052	- 74,670	- 141,043	- 179,104
Interest paid	-	-	-	-	-	-
Net cash from operations	-	110,159	412,417	508,001	614,227	675,334
INVESTING ACTIVITIES						
Purchase of fixed assets	-	3,888,901	-	-	-	-
Net cash used in investing activities	-	3,888,901	-	-	-	-
FINANCING ACTIVITIES						
Grants	4,000,000	-	-	-	-	-
Net Cash used in financing activities	4,000,000	-	-	-	-	-
INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENT	111,099	-	110,159	412,417	508,001	614,227
CASH AND CASH EQUIVALENT AT BEGINNING OF YEAR	-	111,099	940	413,357	921,358	1,535,585
CASH AND CASH EQUIVALENT AT END OF YEAR	111,099	940	413,357	921,358	1,535,585	2,210,919

Internal Rate of Return

VPS INTRAVENOUS PROJECT Internal Rate of Return

Annex IV

IRR - Year 3

Multiple (x)	EBITDA	Enterprise Value	Equity Value	Grants	Year 1	Year 2	Year 3	Year 4	Year 5	IRR	Return Multiple	Investment Gain
6	759,942	4,559,651	4,559,651	(4,412,800)	100%	-	4,559,651	-	-	1%	1.03 x	146,851
7	759,942	5,319,592	5,319,592	(4,412,800)	-	-	5,319,592	-	-	6%	1.21 x	906,792
8	759,942	6,079,534	6,079,534	(4,412,800)	-	-	6,079,534	-	-	11%	1.38 x	1,666,734

IRR - Year 4

Multiple (x)	EBITDA	Enterprise Value	Equity Value	Grants	Year 1	Year 2	Year 3	Year 4	Year 5	IRR	Return Multiple	Investment Gain
6	859,962	5,159,772	5,159,772	(4,412,800)	-	-	-	5,159,772	-	4%	1.17 x	746,972
7	859,962	6,019,734	6,019,734	(4,412,800)	-	-	-	6,019,734	-	8%	1.36 x	1,606,934
8	859,962	6,879,696	6,879,696	(4,412,800)	-	-	-	6,879,696	-	12%	1.56 x	2,466,896

IRR - Year 5

Multiple (x)	EBITDA	Enterprise Value	Equity Value	Grants	Year 1	Year 2	Year 3	Year 4	Year 5	IRR	Return Multiple	Investment Gain
6	967,841	5,807,047	5,807,047	(4,412,800)	-	-	-	-	5,807,047	6%	1.32 x	1,394,247
7	967,841	6,774,888	6,774,888	(4,412,800)	-	-	-	-	6,774,888	9%	1.54 x	2,362,088
8	967,841	7,742,729	7,742,729	(4,412,800)	-	-	-	-	7,742,729	12%	1.75 x	3,329,929

Net Present Value

VPS INTRAVENOUS PROJECT Net Present Value

Annex V

	US\$	Base Year	Year 1	Year 2	Year 3	Year 4	Year 5
Discount Rate			50%	40%	35%	30%	25%
Terminal Value Multiplier			-	-	6	6	6
Free Cash Flow from Operations (EBITDA)			427,841	568,969	759,942	859,962	967,841
Terminal Value		-	-	-	4,559,651	5,159,772	5,807,047
Free Cash Flow (FV)							
Year 3		6,316,403	427,841	568,969	5,319,592	-	-
Year 4		7,776,486	427,841	568,969	759,942	6,019,734	-
Year 5		9,391,602	427,841	568,969	759,942	859,962	6,774,888
Present Value							
Year 3		2,737,624	285,227	290,290	2,162,106	-	-
Year 4		2,992,066	285,227	290,290	308,872	2,107,676	-
Year 5		3,405,482	285,227	290,290	308,872	301,097	2,219,995
Initial Investment							
Equity Investment		4,412,800			-263%	-311%	-438%
Net Present Value							
					(1,675,176)	(1,420,734)	(1,007,318)