

Draft: 9 August 2007

Business Description

Fresh fruit juice business

Proponent

Arnold Tshwaranang Moleofi is a young motivated entrepreneur who is interested in running a fresh fruit juice business. He has done a Business Studies course and has started a Car Wash financed through own resources, which is run by family members. He does not have a bank account but is considering opening one. Mr Moleofi has no experience with formal loans but is well acquainted with cost calculations and marketing since this was part of his professional training.

Location

The fresh fruit juice business is mobile and can be located at shopping malls, bus ranks, train stations, public and sporting events and other locations where there is a likely market for selling fresh fruit juice.

Business Factors

In Botswana there are a great number of street hawkers operational, which are informal businesses selling a range of goods from sunglasses, hot lunches, soft drinks to ice cream. However, fresh fruit juice can only be obtained in up-market restaurants. A hawker's license is required to operate in public places, which can be obtained from City and Town Councils.

The proposed fresh fruit juice business will sell a range of juices and non-alcoholic cocktails that are prepared on the spot using an electric juicer or blender. Bottled water, lime, milk or cream can be added depending on taste.

Cooling of the drink is achieved by adding ice cubes or shaved ice from a cooler box. There is no provision for electrical cooling. Also, ice cream is not sold since there is already a lot of competition for this product.

The mobile unit will be similar as shown in the pictures. The electric juicer operates from a battery and inverter that are located at the bottom of the container. There will be a 10W light provided so that the unit also can operate in the evening. The battery is charged through a 50Wp solar panel. In the container is also a 20 litre water bottle with a small pump providing clean water. Fresh fruits, disposable cups, straws, ingredients and a cooler box are also stored in the unit.

Examples of Juices and Cocktails

Orange, Guava, Granadilla, Apricot, Peach, Mango, Peach and Orange, Mango and Orange, Papaya, Tropical Punch, Pineapple, Strawberry, Water Melon, Apple, Grape, Paw-Paw, Banana, Lime, Tomato, Litchi, Carrot



Pre-Assessment

The general feasibility of the business idea is established in a pre-feasibility assessment. An estimation is given of business requirements and costs.

Equipment:

- Inventory: P1,600 Stall on wheels, chair, umbrella, stand, water containers, wash basin, radio with loudspeaker
- Equipment: P500 Juicer, small pump
- Solar system: P3,200 50Wp solar panel, battery, regulator, inverter
- Advertising: P1,200 Advertising displays, price list, business cards

Total equipment cost is P6,500. Furthermore disposable items such as cups, drinking straws, etc are required during production.

Production:

A quick estimation of the required production is based on the following parameters.

Operator income	1,000	P/month
Payback	600	P/month
Income to be generated	1,600	P/month
Days working per month	25	days/month
Profit to be made per day	64	P/day
Selling price per glass	4	P/glass
Expense per glass	3	P/glass
Profit per glass	1	P
Glasses of juice per day to sell	64	glasses/day

The highlighted parameters are variables. The expense per glass is an estimate. Based on the above figures, the operator has to sell 64 glasses of fresh juice per day (300 days per year) to cover expenses and pay back the investment.

Operational expenses:

- Disposables that are accounted for in the unit cost.
- Storage space is rented for the equipment. Estimated costs P50/month.
- The salary of the operator is P1000/month.

Investment live span is taken as 5 years. The solar panels have an estimated life span of 20 years but there is a risk that they may get stolen.

Table1 (pre-assessment) contains all above data. Sensitivity analysis with Table 1 shows the impact of the various cost factors. Most sensitive elements are price per unit and cost per unit. A sensitivity analysis has been carried out using the goal seek function in excel. When selling 65 glasses of fresh fruit per day, the payback period is 1 year with ROI of 80%, whereas selling 87 glasses per day gives a payback period of ½ year and ROI of 180%. It can be concluded that the proposed business has the potential of being profitable.

Market Assessment

There are currently no mobile fresh fruit juice vendors operating in the country. The only places where fresh fruit juice may be obtained are up-market restaurants. It is believed that with the increased awareness of fitness and health there is a market for fresh juice.

Fresh fruits can be obtained from a number of supermarket outlets such as Fruit and Veg City, Payless, Choppies, and others. When purchased fresh, fruits will hold for a number of days. Table 2 shows a comparison between the fresh fruit juice business using a RE system and the same business recharging the battery from grid electricity through a commercial operator. The cost of charging the battery, including transportation is estimated at P10 per charge. The comparison shows that it is more cost effective to charge the battery with solar energy.

Operational Plan

The business strategy relies on the special appeal of fresh fruit consumption to the customers, as a healthy product. It is important to generate a brand for the fresh fruit business. The business should be run in a professional manner in order to succeed. The operator should wear a uniform and cleanliness of the stall and personal hygiene would be critical.

Table 3 gives the cash flow during the first three years of operation. The cash flow analysis indicates clearly, how much financing would be required. Under the prevalent conditions, capital infusion of P6500 would be sufficient. The graphs visualize this business development for the first year, and for three years, respectively.

Finally, Table 4 gives the profitability forecast and balance for the business start-up.

From the Sensitivity Analysis below it becomes clear that the selling cost of a glass of juice as well as the variable cost -being the cost of ingredients- are two critical success/failure factors. Since the maximum selling price is determined by competing soft drinks, it is of essence to control the costs of the ingredients to make the business a success.

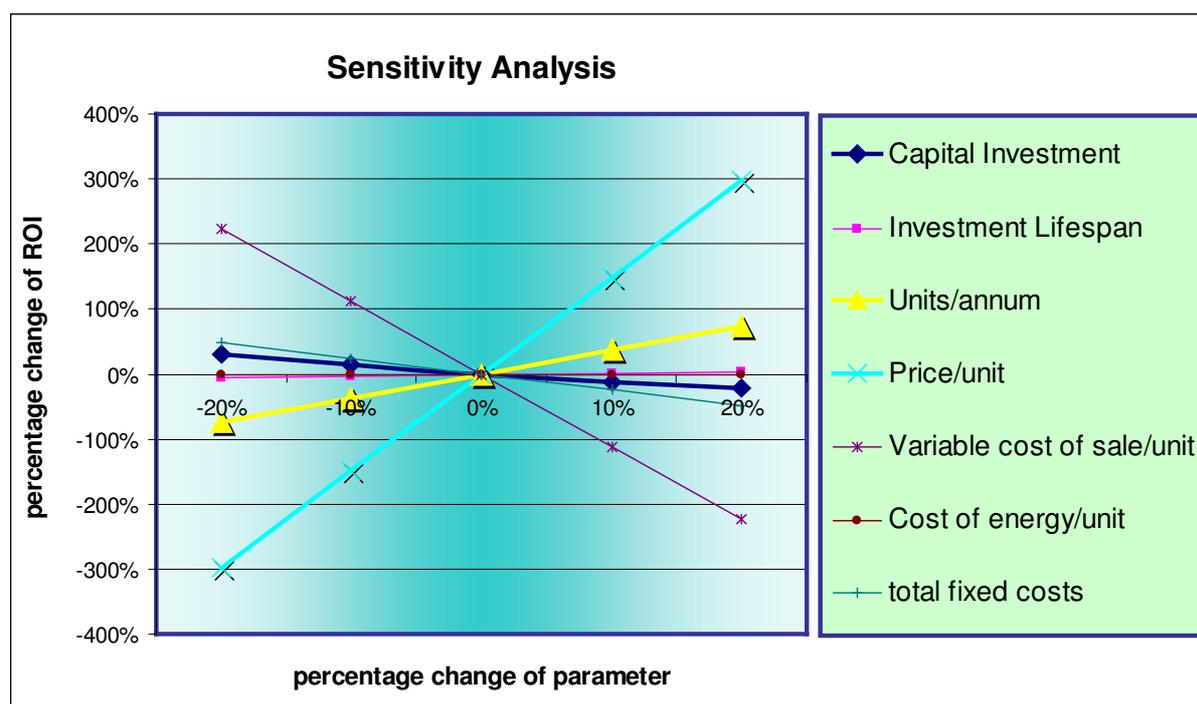


Table 1: Pre-Assessment of the fresh fruit juice business described above

INSABA Preassessment of Project Proposals

Country:	Botswana
Pilot Region:	Gaborone / Main Mall
RE Technology:	Solar PV Electricity
Business Idea:	Fresh Fruit Juice Stall using PV Solar Electricity

Proponent name, contact	Mr. Arnold Tshwaranang Moleofi	
Years of experience as owner of business		1
Number of employees w/contract		1
Proponent uses bank account	(yes=5, No=0)	0
Experience with formal loan	(received=5, applied=3, no=0)	0
Experience in cost calculations, business	(no=0, several=5)	5
Practice in maintaining/operating equipment (RET)	(none yet=0, regularly=5)	3
Total		10

Calculation of ROI

	Fresh Fruit Juice	Determination of parameters	Definitions
Investment Capital	1,600	Inventory	Stall on wheels, chair, umbrella, stand, water containers, wash basin, radio with loudspeaker
Investment Capital	500	Equipment	Blender, small pump
Investment Capital	3,200	PV solar system	50Wp solar panel, battery, regulator, inverter
Investment Capital	1,200	Advertising	Advertising displays, price list, business cards
Investment Capital	6,500	Total of shop, inventory, equipment and PV	Total cost of investment
Investment Lifespan	5	Conservative average life	Life of the investment - i.e. period before it must be replaced
Production	65	Glasses sold per day	
Production	19500	Glasses sold per year	300 days per year
Price/unit	4.00	Average sales price per glass	
Revenue	78,000	BWP	This is net revenue
Variable cost/unit	3.00	Average cost per glass	Cost of fruit, ice, disposable cups, straw, etc.
Cost of energy/unit	0	No other energy	Costs of power, fuel added to variable cost
Fixed cost	600	Rent for storage space to store equipment	Rent per year
Fixed cost	100	Hawker license	
Fixed cost	250	Replacement of the battery	3 yrs of battery lifetime
Fixed cost	12,000	Annual salary for operator	Wages
Fixed cost	0	Salary for owner	Wages
Total fixed costs	12,950		Annual indirect costs such as rent, telephones, salaries
Amortization/unit:	0.07	1,300	Amount needed per unit to cover investment in lifetime
Direct costs per unit:	3.07	59,800	Variable costs plus amortization plus cost of energy
Gross Margin/unit	0.93		Sales price per unit less the direct costs per unit
Fixed costs/unit	0.66		Total fixed costs divided by the number of units produced
Total costs	3.73	72,750	Direct costs plus fixed costs
Net Margin	0.27	5,250	Revenue less total costs
ROI	81%		Return on Investment = net margin divided by capital investment
Payback period years	0.99		Capital investment divided by cash flow until initial expenses are compensated by the net margin

Table 2: Competitive Analysis: Comparison between the fresh fruit juice business using solar PV electricity and the same business recharging the battery grid electricity

INSABA Verification & Market-Assessment of Project Proposals

Country:	Botswana
Pilot Region:	Gaborone
RE Technology:	Solar PV Electricity
Business Idea:	Fresh Fruit Juice Stall using PV Solar Electricity

Market Context : describe

Market Size & Potential	Presently there are no mobile fresh fruit juice vendors operating. The only places where fresh fruit juice may be obtained are up-market restaurants. It is believed that with the increased awareness of fitness and health there is a market for fresh juice. Probably little to no market available in villages. The same business model is replicable for different parts of the country.
Market Need, Risk	The idea of buying a fresh and healthy drink may not catch on. Many people see a can still as a fashionable drink.
Competitor	See above
Competing Technology	Charging the battery with grid electricity. Hand press for orange juice.
Appropriateness of RET	Using RE a radio can be operated attracting customers and light, so that working hours are extended.
Market Segment	Using RE creates a business opportunity that previously did not exist.
Main Differentiator	Fresh fruit juice is healthier and more tasteful than juice from cans.
Sustainable Production	Battery needs recycling but this also applies to system that does not use RE

Fresh Fruit Stall with solar PV electricity Compared to battery charged from grid

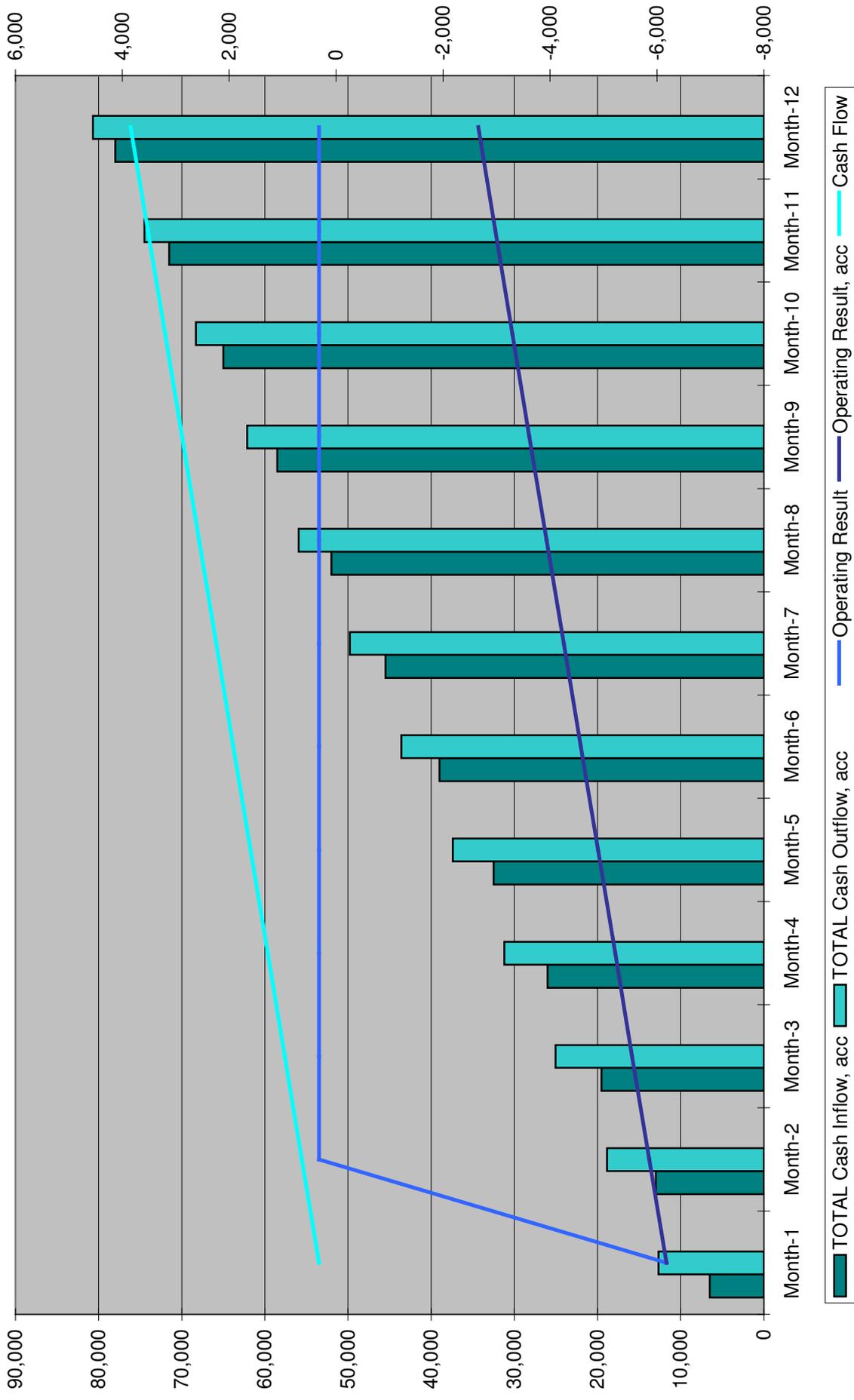
Calculation of Competitiveness

	Solar Pv		Grid electricity		Description of Alternative
Investment Capital	6,500		3,900		Battery charged with grid electricity instead of solar PV electricity
Investment Lifespan	5		5		Equipment lifetime
Production	19,500		19,500		Energy source does not effect turnover
Price/unit	4.00		4.00		Energy source does not effect sales price
Revenue	78,000		78,000		BWP
Variable cost/unit	3.00		3.00		
Cost of energy/unit	0		0.1538		Battery is charged at a commercial charging centre once every day at a cost of P10 per charge including transport
Fixed costs	12,950		12,950		Fixed costs are not effected by how the battery is charged
Total fixed costs	12,950		12,950		Total fixed costs
Amortization/unit:	0.07	1,300	0.04	780	
Direct costs per unit:	3.07	59,800	3.19	62,280	
Gross Margin/unit	0.93		0.81		
Fixed costs/unit	0.66		0.66		
Total costs	3.73	72,750	3.86	75,230	
Net Margin	0.27	5,250	0.14	2,770	
ROI	81%		71%		
Payback period years	0.99		1.10		

Table 3: Cash Flow Analysis

Products	Sales											
	Month-1 Year 1	Month-2 Year 1	Month-3 Year 1	Month-4 Year 1	Month-5 Year 1	Month-6 Year 1	Month-7 Year 1	Month-8 Year 1	Month-9 Year 1	Month-10 Year 1	Month-11 Year 1	Month-12 Year 1
Fresh Fruit Juice	1,625	1,625	1,625	1,625	1,625	1,625	1,625	1,625	1,625	1,625	1,625	1,625
Product 2	0	0	0	0	0	0	0	0	0	0	0	0
Product 3	0	0	0	0	0	0	0	0	0	0	0	0
Cash Inflow												
Turnover												
Fresh Fruit Juice	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500
Product 2	0	0	0	0	0	0	0	0	0	0	0	0
Product 3	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL Turnover	6,500	6,500	6,500									
TOTAL Cash Inflow	6,500	6,500	6,500									
Cash Outflow												
Material												
Fresh Fruit Juice	4,875	4,875	4,875	4,875	4,875	4,875	4,875	4,875	4,875	4,875	4,875	4,875
Product 2	0	0	0	0	0	0	0	0	0	0	0	0
Product 3	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL Material	4,875	4,875	4,875									
Overhead Cost												
Staff A share	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Staff B share	0	0	0	0	0	0	0	0	0	0	0	0
Storage rent	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
Hawker License	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33
Repairs&replacement	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83	20.83
Vehicle	0	0	0	0	0	0	0	0	0	0	0	0
Marketing	0	0	0	0	0	0	0	0	0	0	0	0
Investment	6,500											
Investment Lifespan	5											
TOTAL Overhead	7,579	1,079	1,079	1,079								
Capital cost												
interest, redemption	226	226	226	226	226	226	226	226	226	226	226	226
TOTAL capital	226	226	226									
TOTAL Cash Outflow	12,680	6,180	6,180	6,180								
Operating Result	-6,180	320	320	320								
accumulated	-6,180	-5,859	-5,539	-5,219	-4,898	-4,578	-4,258	-3,937	-3,617	-3,297	-2,976	-2,656
Capital input	6,500											
Cash Flow	320	641	961	1,281	1,602	1,922	2,242	2,563	2,883	3,203	3,524	3,844

Cash Flow Analysis: First Year



Cash Flow Analysis: 1st - 3rd Year

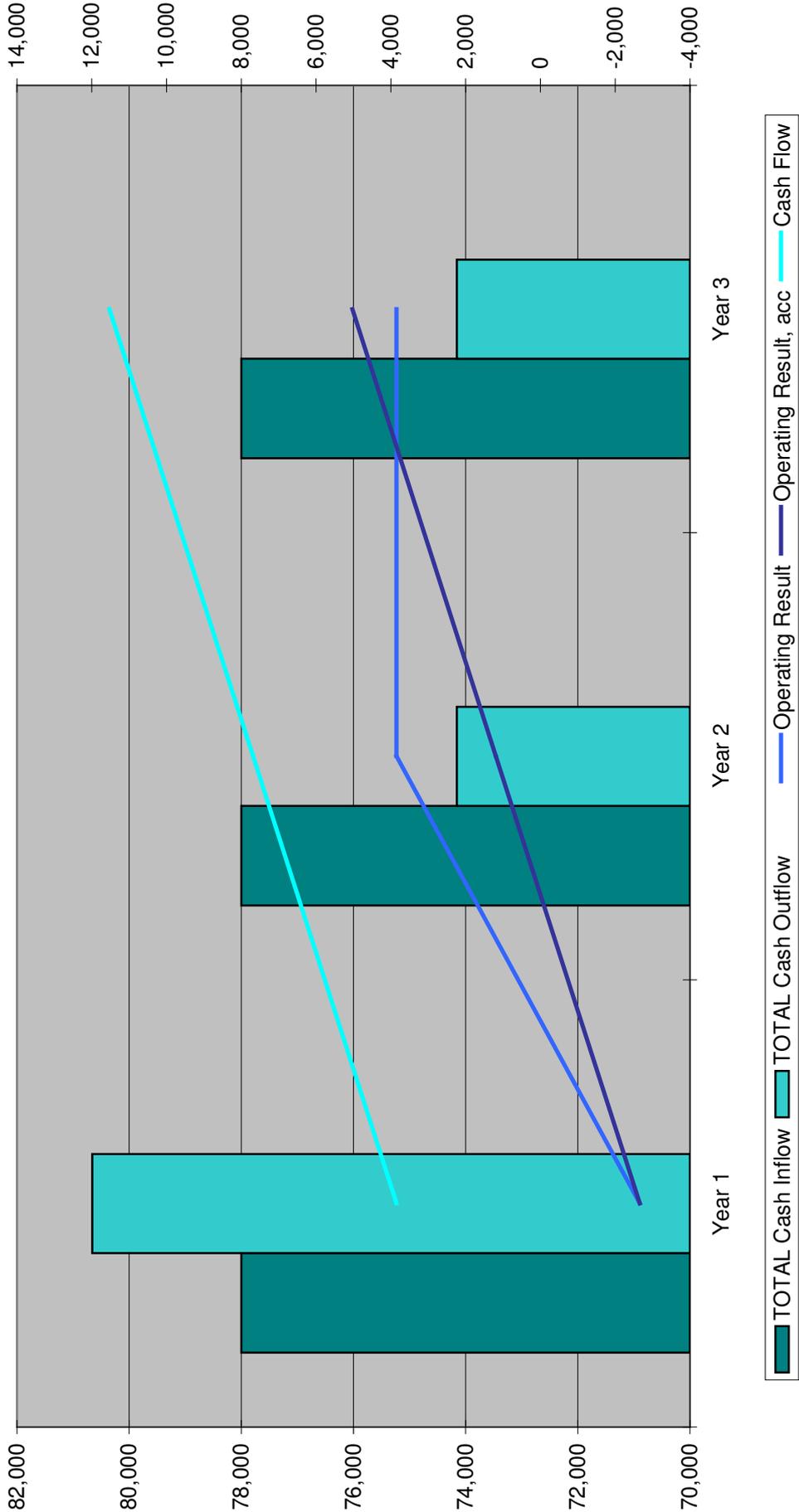


Table 4: Profitability and Balance Forecast

Profitability Preview

	Year 1	Year 2	Year 3
Sales	78,000	78,000	78,000
Cost of Sales	58,500	58,500	58,500
Gross profit	19,500	19,500	19,500
other operating income	0	0	0
personnel costs	12,000	12,000	12,000
hire charges	0	0	0
communication	250	250	250
vehicle	0	0	0
marketing	0	0	0
office	600	600	600
interest	539	539	539
depreciation	1,300	1,300	1,300
other expenses	0	0	0
TOTAL Expenses	14,689	14,689	14,689
annual surplus/deficit	4,811	4,811	4,811
/accumulated	4810.50	9621.00	14431.50

Balance

Year 1		Year 2		Year 3	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
fixed assets	5,200	shareholders equity	4,811		
current assets	3,844	liabilities	4,333		
S	9,044	S	9,144		
Year 2					
fixed assets	3,900	shareholders equity	9,621		
current assets	7,688	liabilities	2,167		
S	11,588	S	11,788		
Year 3					
fixed assets	2,600	shareholders equity	14,432		
current assets	11,532	liabilities	0		
S	14,132	S	14,432		