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BEIRUT, LEBANON

APPROVAL OF RESEARCH TOPIC

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DEGREE : MASTER OF SCIENCE IN BUSINESS ADVISOR : DR C. BLOOM

TITLE OF RESEARCH TOPIC: NORTHERN SAUDI ARABIA

SOFT DRINKS PROJECT

The following professor nominated to serve as the advisor of the above candidate has approved this research topic.

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NORTHERN SAUDI ARABIA SOFT DRINKS PROJECT

A Research Topic

Presented to Business Division

Beirut University College

In Partial Fulfillment

of the Requirements for the Degree

Master Of Science in Business

Management

By

Philippe Hadji-Georgiou

August 1983

T A B L E O F C O N T E N T S

TABLE OF EXHIBITS & TABLES

INTRODUCTION: THE PRODUCTION OF SOFT DRINKS

INGREDIENTS

A typical carbonated soft drink contains treated water, sugar, carbon dioxide, acidulant, flavoring ingredients and sometimes colors and preservatives.

The first stage in the manufacture is to produce a bottling syrup, from the concentrate sent by the franchising company.

SYRUP MANUFACTURE(See Exhibit 1)

The formula quantity of sugar is added to a tank which contains treated water. This is heated to 75°C with activated carbon which has the effect to remove any color from the sugar. The temperature is held for twenty minutes and this sterilizes the sugar. After this period of time, the dissolved sugar is pumped through a filter to remove the carbon and then it is passed through a Plate Heat Exchanger which cools the sugar down to 20°C. The sugar is then pumped into a finished simple syrup mixing tank.

When all of the syrup is in this tank, it is stirred while the other ingredients are added to the syrup as specified in the preparation formula. After mixing, a sample of syrup is analized in the laboratory and, if found satisfactory, it is passed for bottling.

FINISHED BEVERAGE PRODUCTION

Treated water and syrup are pumped to the Proportioner and Carbonator. The treated water is de-aerated by vacuum and then cooled. It is then injected with carbon dioxide which results in carbonated water. The carbonated water is then mixed with the bottling syrup through proportioning pumps. A typical ratio is 1 part syrup to 4 parts water. The two parts are mixed and this results in the finished beverage, which is passed to the bottle filling machine.

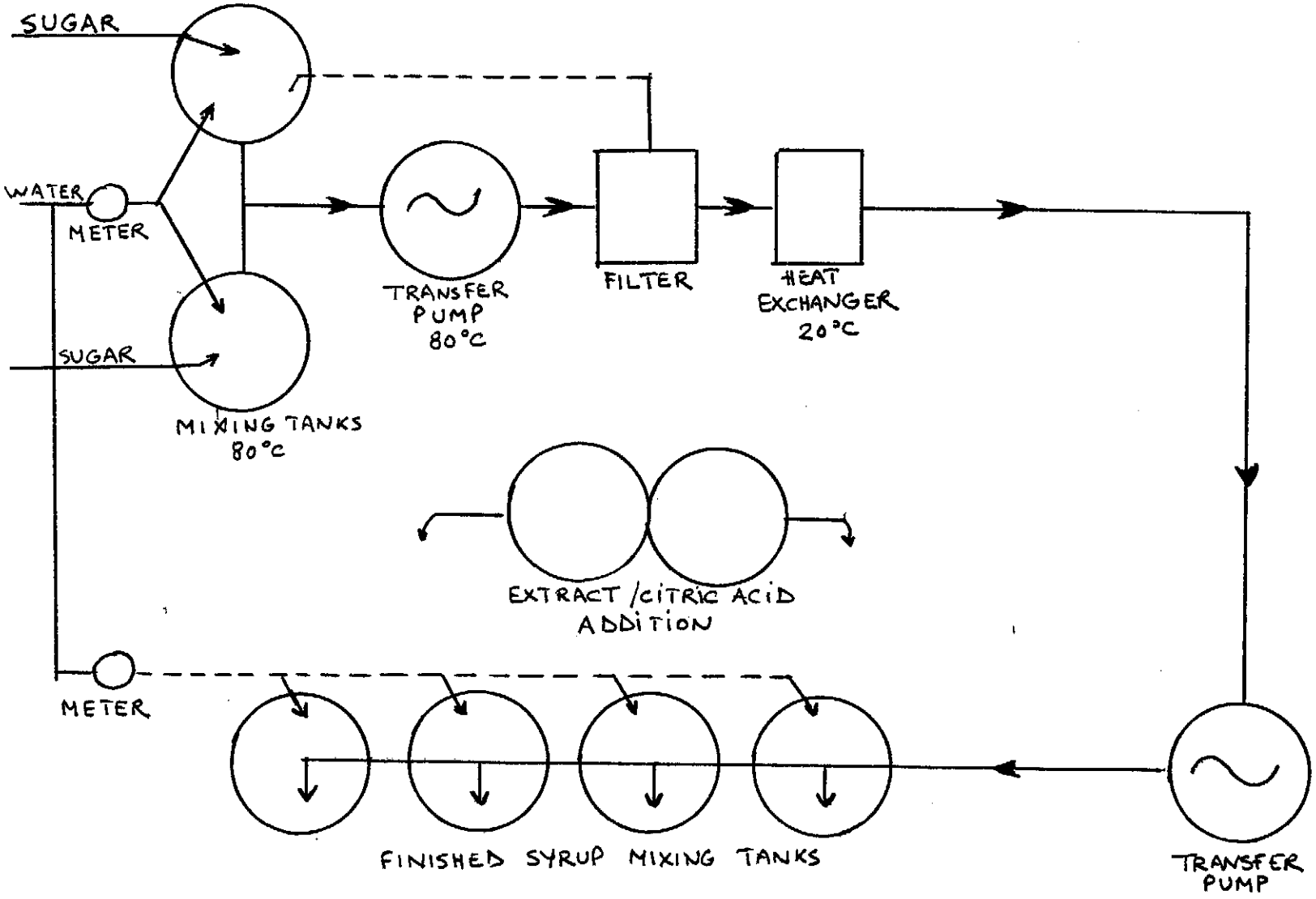

EXHIBIT 1 SYRUP MANUFACTURE

TYPICAL BOTTLING LINE (See Exhibit 2)

Pallets containing cases of empty bottles or cans are transported to the end of the bottling line with fork lift trucks. The cases are manually placed onto the crate conveyor. The bottles are then removed from the crates, either manually or by a de-crating machine and they pass down the bottle conveyor into the bottle washer. In the case of cans, the cans are fed into a can rinser. It takes approximately 15 minutes for the bottles or cans to pass through the washer or rinser. During this period, the bottles are washed inside and out with caustic soda solution at 80°C and then finally with water again. When the bottles leave the washer, they are clean, bright and sterile. The cans are rinsed and ready for filling. These bottles then pass in front of sighting screens where they are visually inspected to ensure that they are not chipped etc... The bottles or cans then pass to the filler, where they are filled with beverages from the Carbonator, the Proportioner and they are then crowned. The cans go through the seamer where the closure lid is seamed onto the filled can. After crowning, the bottles are visually inspected again to ensure that none are under filled. The cans are inspected electronically. They are then passed back into crates either manually or by a re-crating machine. The cans are either packed into carton cases or shrink-wrapped with plastic foil. Finally, the crates full of bottles or cans are stacked on pallets and moved with fork lift trucks into the warehouse ready for distribution.

Samples are taken throughout the process to ensure that the product is meeting precise standards for flavor, odor, appearance, sugar content, carbonation, acidity level, etc...

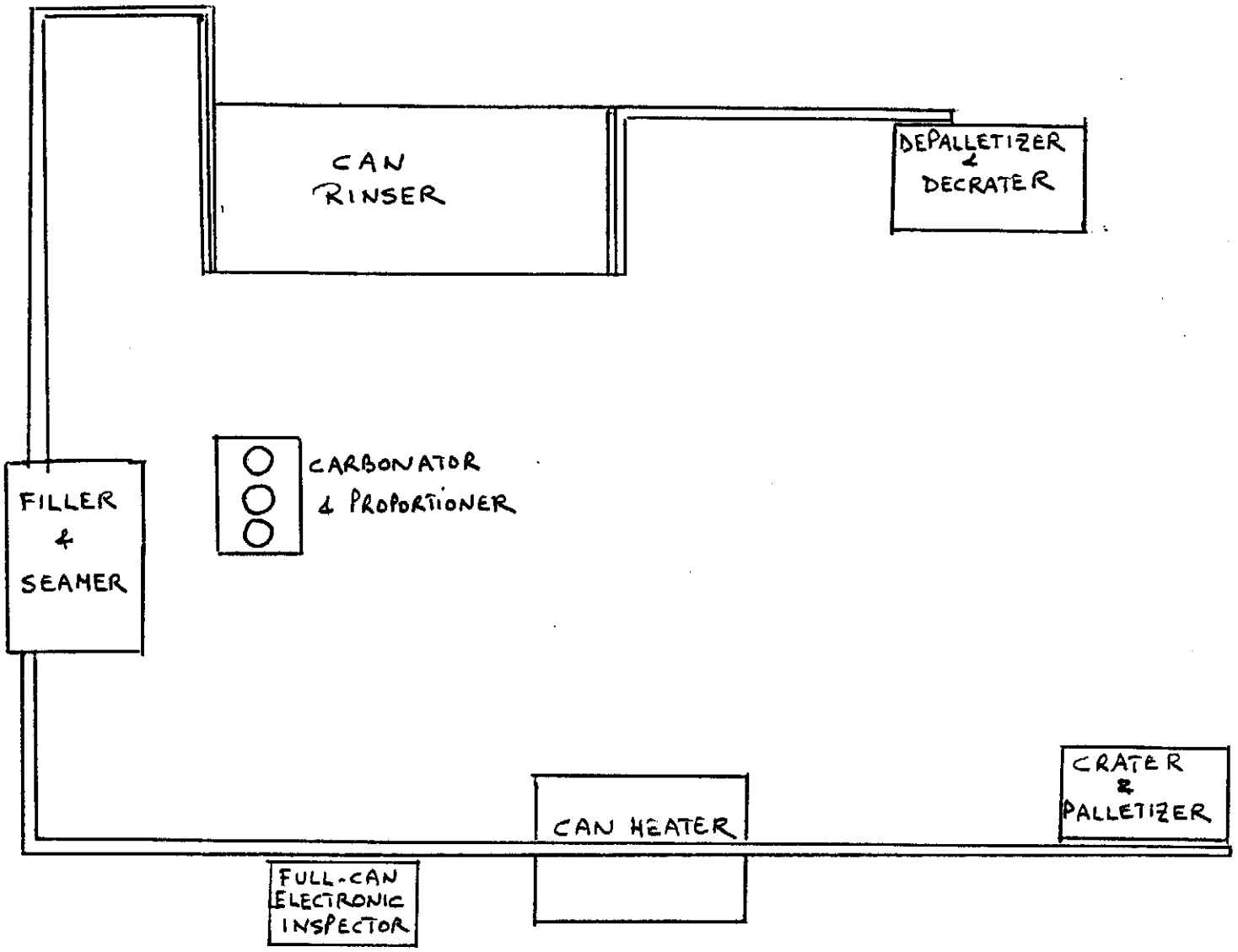

EXHIBIT 2 - TYPICAL CANNING LINE

TREATED WATER

In order to produce high quality soft drinks, it is essential to use trated water. Raw water is taken either from a well or the mains supply and various chemicals are added to it to reduce its hardness. At the same time, 6 or 8 parts per million Chlorine is added to sterilize the water. After the water has been held in contact with the Chlorine for two hours, it passes through a sand filter which removes any particles from it and then through a carbon filter which removes the Chlorine. The resulting water is odorless, colorless, flavorless, and has a maximum total alkalinity of 50 p.p.m.

I - THE SOFT DRINK INDUSTRY IN SAUDI ARABIA

Saudi Arabia has an area of about 2.4 million square Kms. It is a hot climate country whereby the weather is arid. Day temperatures rise to 45-50°C.

Many controversies surround the exact estimate of the population in Saudi Arabia.

Birks and Sinclair in the Arab Manpower have dwelled deep into the various sources of statistics and came to the conclusion that the population of Saudi Arabia in 1975 is as follows:

	Number	Percent	Rate of Growth
Saudi Arabian nationals	4,592,540	74.6	3.0%
Non-nationals	1,562,400	25.4	?
Total	6,154,940	100.0	?

Taking 3.0% rate of growth, the Saudi Nationals become 5.82 million in 1982. Non-nationals, estimated at 30% become 2.5 million and the total 8.32 million. This figure implicitly excludes visitors and pilgrims who are estimated at several million men-week. Expatriates come from diverse origins: Yemenis, Jordanians (and Palestinians), Egyptians, Lebanese, Pakistanis, Indians, other Asians and Westerners.

Other demographic records are the following, for 1979:

- Urban population 21%
- Population under 15 years 45%
- Population over 65 years 3%
- Illiteracy rate of the population aged above 10 years
  - male 52%
  - female 81%

economically active population as a percentage of total population 29%

- Per capita income (1981) U.S. $ 18,500
- Major income base oil
- Major towns (pop.)

Jeddah	(1.1 million)
Riyadh	(1.0 million)
Dammam/Dhahran/Al-Khobar	(600,000)
Mecca	(400,000)
Taif	(250,000)
Medina	(250,000)

- Major language Arabic
- Religion Islam
- Exchange rate (1982 av.): U.S. $ 1 = S.R. 3.42

Inflation dropped from 32% in 1976 to 3% in 1981 and almost 0 in 1982.

Saudi Arabia has witnessed a rapid urban growth, a shortage (and rising cost) of labor, land, and material, and lack of institutions dealing with planning, financing and housing construction. Today, the level of growth is more manageable. Imports of consumer goods remain high and the trend is toward increased local production.

Beverage consumption will exceed a value of $ 500 million in 1982 with an average growth of 33% per year over the past 7 years. Share of carbonated drinks is about 63% of value, and its growth by volume exceeded an average of 38% since 1975. The average consumption per capita (66.5 liters) is still below many other neighboring countries (81 l in Kuwait, 65 l in the U.A.E., 92 l in Bahrain, 72 l in Qatar) and far less than that of the U.S.A. (150 l).

Other countries data are Egypt (10.1 l), North Yemen (15 l), Oman (56 l), Jordan (33 l), Canada (84 l), Mexico (91 l), Argentina (47 l), Brazil (35 l), Venezuela (91 l), South Africa (27 l), Nigeria (56 l), Australia (65 l), Belgium (63 l), France (22 l), Italy (24 l), Netherlands (60 l), Spain (48 l), U.K. (36 l), and West Germany (70 l).

Carbonated drinks represent 60% of total beverage consumption by volume in Saudi Arabia versus 29% in the USA. However, this could be explained by the banning of alcoholic drinks in Saudi Arabia. If taken into account, the equivalent figure in the USA becomes 50%.

Table 1 and 2 show beverage sales trend during the past 7 years. Principal highlights of recent developments in this market are:

- the phenomenal growth in popularity of canned carbonates which represents now about 70% of the market;

- the steady decline in sales of returnable bottles which are loosing market share to one-way packages, cans or non-returnable bottles;

- the increase in local production of cans which started in 1979 and now meets 80% of the demand;

- substantial growth in fruit juice products with local production satisfying only 40% of the demand.

A detailed summary of existing soft drinks factories in Saudi Arabia is given on the following page :
(NR = non-returnable bottles)
(R = returnable bottle
(Yearly capacity is based on 8 hrs production per day, 250 days/year, 24 bottles or cans per case, and 8 oz per bottle or can)

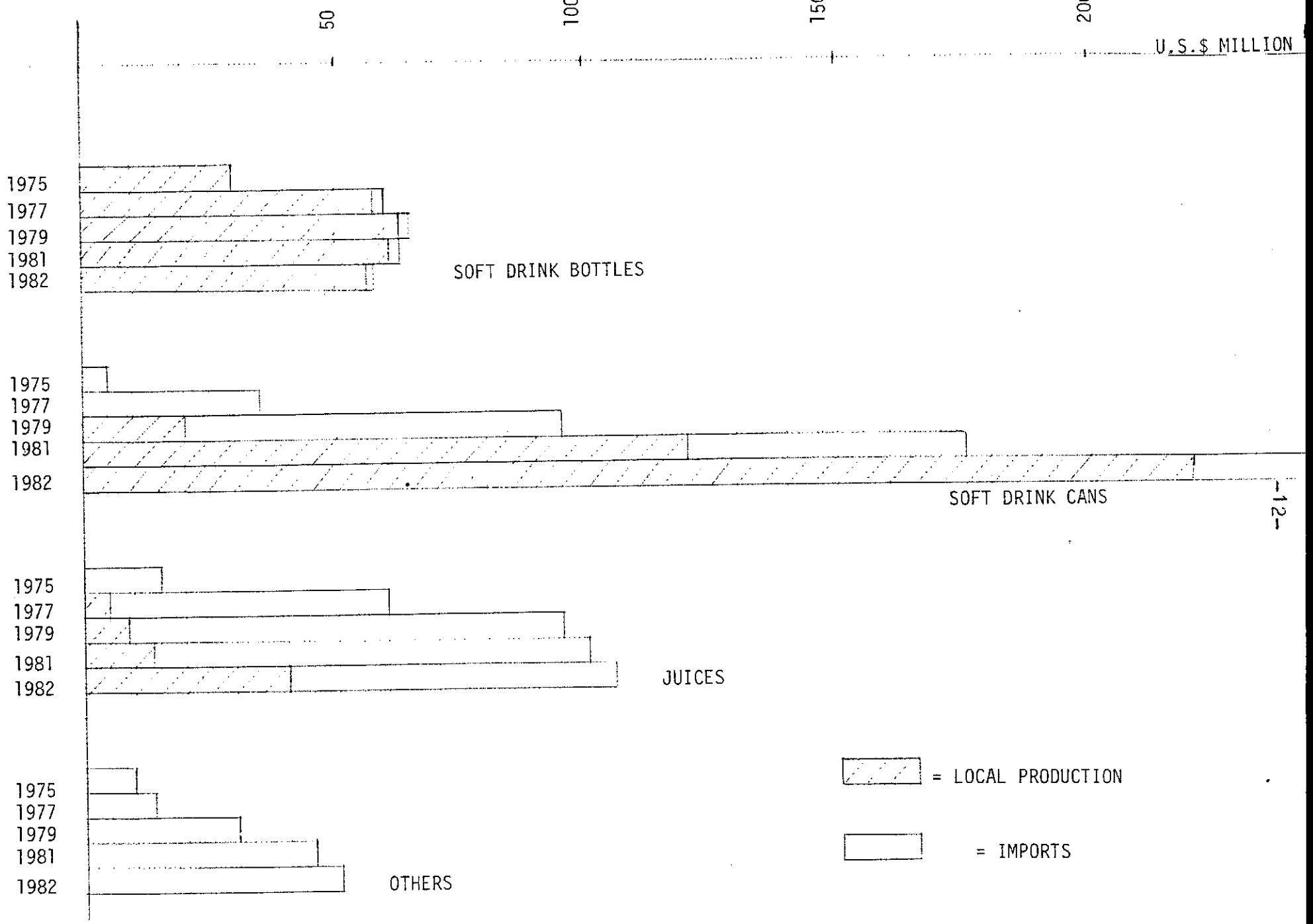
50
100
150
200
U.S.$ MILLION
1975
1977
1979
1981
1982
SOFT DRINK BOTTLES
1975
1977
1979
1981
1982
SOFT DRINK CANS
1975
1977
1979
1981
1982
JUICES
1975
1977
1979
1981
1982
OTHERS
= LOCAL PRODUCTION
= IMPORTS

TABLE 1

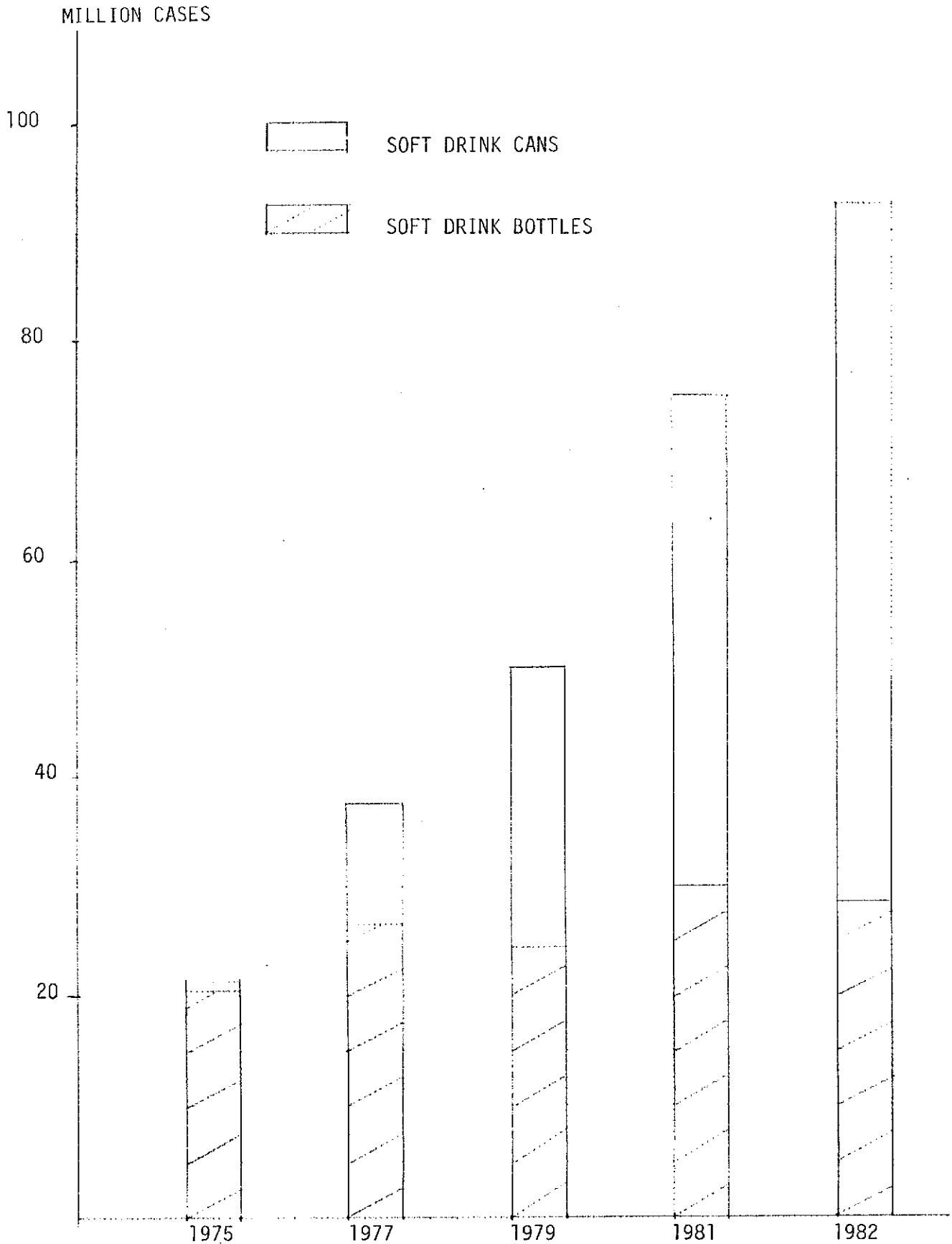
MILLION CASES
100
80
60
40
20
SOFT DRINK CANS
SOFT DRINK BOTTLES
1975
1977
1979
1981
1982

TABLE 2

Franchise	Location	Yearly capacity (million cases) (% utilization)		
		NR	R	CANS
Pepsi-Cola	Al-Khobar	-	5.0 (90%)	10.0 (100%+)(2)
Canada Dry	Dammam		2.5 (40%)	5.5 (10%)(2)
Coka-K	Dammam	1.5 (100%)	2.5 (10%)	-
RC Cola	Dammam	-	-	5.0 (100%+)
Afri-Cola	Hofuf	-	2.0 (25%)	2.0 (25%)
Pepsi-Cola	Riyadh	-	5.0 (90%)	5.0 (100%+)
Coka-K	Riyadh	1.5 (3)or	2.5	-
Pepsi-Cola	Buraidah	-	-	5.0 (100%+)
Pepsi-Cola	Jeddah	-	4.5 (100%+)	10.0 (100%+)(2)
Canada Dry	Jeddah	-	2.5 (75%)	2.5 (10%)
Coka-K	Jeddah	1.5 (40%)	2.5 (10%)	-
7 - UP	Jeddah	-	2.0 (30%)	-
RC Cola	Jeddah	1.5 (-)(3)	2.5(3)(35%)	-
Pepsi-Cola	Abha	-	2.5(3)	2.5
RC Cola	Khamis Musheit	-	2.0 (10%)(2)	-
TOTAL		7.0 (30%)	38.0 (51%)	47.5 (76%+)

During the month of pilgrimage, several million visitors come to Saudi Arabia and many factories operate 2 or even 3 shifts to meet increased demand.

Many factories are underutilized because of technical problems and/or management/marketing problems.

Cans and NR bottles sell at twice or three times the price of returnable bottles. They have gained bigger market share because of the high purchasing power of consumers in Saudi Arabia and because of convenience in distribution to remote areas.

We note that total market share compared with the USA and the world is shown in the following exhibit while Table 3 shows estimated market share by flavor and package.

By contrast, Table 4 shows market share of major fruit juice brands, by type/flavor.

Table 5 summarizes a form of traditional channels of distribution.

(2) Started late 1982
(3) Scheduled start-up in 1983

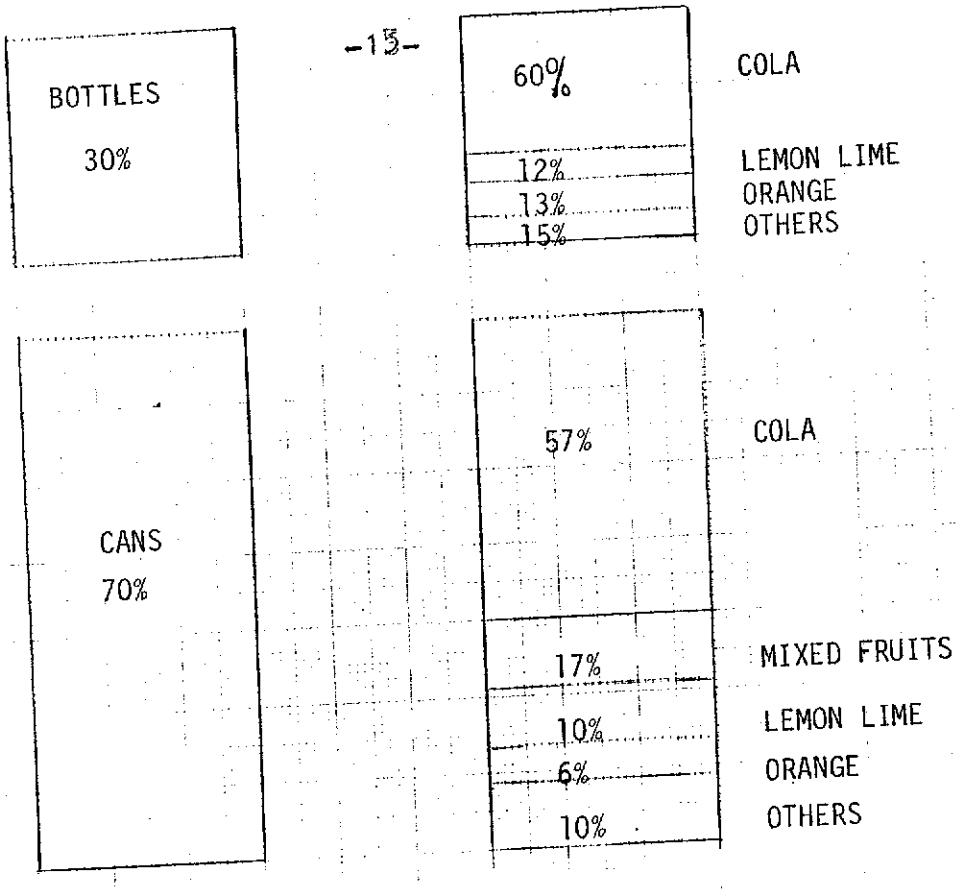

TABLE 3

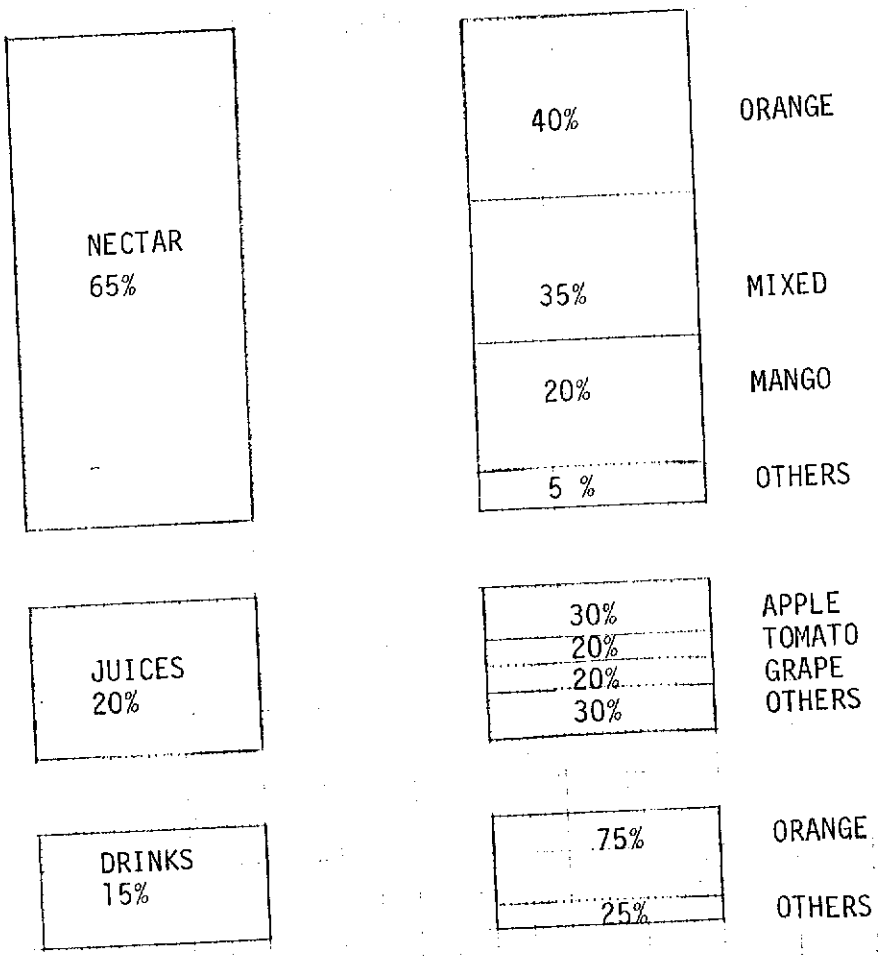

TABLE 4

CHANNELS OF DISTRIBUTION

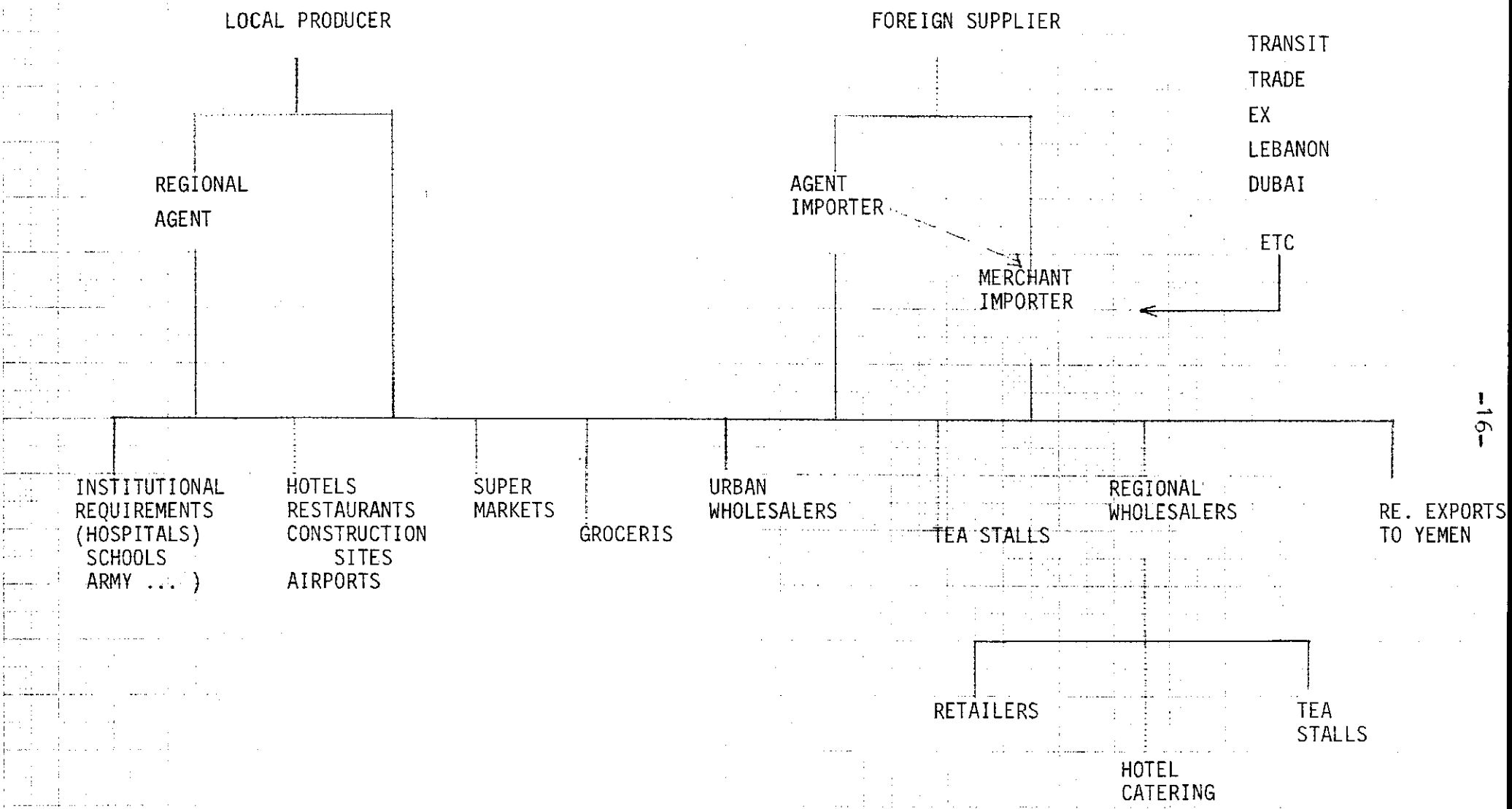

TABLE 5

	World Average	Saudi Arabia	U.S.A.
Cola	54%	58%	63%
Mixed Fruits	NA	12%	1%
Lemon-Lime	15%	10%	12%
Orange	10%	8%	7%
Others	21%	12%	17%
TOTAL	100%	100%	100%

Local producers generally deliver direct to all outlets in the same city (in 300 case trucks), but use regional agents for supplies to local rural areas (2,000 cases +).

Significantly, at least 50% of total soft drinks sales are by the case (that is, take-home trade). The number of outlets in Saudi Arabia are estimated to be 14,000 as follows:

- Western Province: 6,500 of which 3,500 are in Jeddah
- Central Province: 4,500 of which 2,500 are in Riyadh
- Eastern Province: 3,000 in total.

Average sales per outlet is typically 10 cases per day.

Percent sales per outlet type is as follows:

Supermarkets	10%
Self-service groceries	10%
Other groceries	35%
Tea Stalls	30%
Catering/institutional	15%
TOTAL	100%

Sales breakdown by region is as follows:

- Western Province: (Jeddah, Mecca, Medina, Taif, Jizzan, etc.)	50%
- Central Province: (Riyadh, etc.)	30%
- Eastern Province: (Dammam, dhahran, Al-Khobar, etc.)	20%
TOTAL	100%

II POTENTIALS AND OPPORTUNITIES IN SAUDI ARABIA

Going back to Table 1, we note that local production of soft drinks have increased tremendously since 1975, particularly in canning whereas it averages about 200% a year since 1979. However, most large scale factories were established in the 3 main cities. There remains considerable interest in the likely viability of smaller scale operations in the smaller towns far from the cities. As a matter of fact, the most recent operations were established in Buraidah, Hofuf, Khamis Musheit and Abha.

Northern Saudi Arabia remains open for a new entrepreneur. Tabuk is about 900 Kms from Buraidah and 1,000 Kms from Jeddah, the closest sof drinks production centers. It is about 180 Kms far from Aqaba on the Jordanian borders. Within a radius of 500 Kms, we can count more than 25 towns with a population exceeding 1.0 million, and an expected growth rate of 9% per year due to the rapid industrialization process in particular the giant Yanbu project (which has a total cost of S.R. 12 billion so far), and Tabuk military base.

Sales of soft drinks within the territory under study reached 4.6 million cases of cans and 1.4 million cases of bottles in 1982. This gives an average consumption of 42 liters per capita, i.e. 63% of the national average.

Consequently, growth in demand can be divided into 2 main categories:

a. Growth due to the natural increase in the population, equal to 6% per year;

b. Growth due to increased consumption per capita, equal to another 6% per year.

We thus can speak in terms of a 12% growth, at least for the first five years.

A more elaborate method for demand projections would be to identify all independent variables that affect sales, e;g; temperature, income level, price, per capita consumption, age structure, occupation, distribution, advertising, substitutes, etc... Then we have to use regression analysis to derive a demand equation using data from similar areas in Saudi Arabia or elsewhere. However, this complex study is beyond the scope of this research topic. It is moreover expected that using conservative growth estimates will not alter the overall picture of our investment analysis.

The number of outlets are estimated as follows:

- Tabuk (excluding military base)	410
- Yanbu (excluding industrial city)	200
- Medina	1,000
- Others	350
TOTAL	1,960

It should be noted that the Pepsi Cola franchisees in Saudi Arabia have more than 70% share of the market, but the Northern territory is still neglected by Pepsi Cola. Buraidah and Jeddah are covering this area without attempting to build a solid long-term market. This attitude has encouraged two competitors, Royal Crown / Vimto and Royal Crown from Dammam and Jeddah respectively, to exploit this situation and they managed to reduce the Pepsi share in this territory to less than 60%.

Another factor in this market is the fact that large amounts of soft drinks are smuggled into Jordan, Syria, Iraq, Sinai. However, no reliable statistics are available.

Finally, the Northern area is a transit point for pilgrims, travellers and all kinds of merchandise including oil pipelines.

III MISSION & OBJECTIVES OF THE PROJECT

Mr. D. is a successful Saudi entrepreneur and businessman who, like many other Saudis, has taken full advantage of the economic boom in Saudi Arabia as a result of the world oil crisis and extraordinary income of the OPEC countries.

Mr. D. is the owner of an iron factory and several other businesses including a contracting firm. He also runs two large greenhouses and recently started an additional project with a total financing cost of 23 million riyals.

In 1980, Mr D. obtained a licence for "Northern Fruit Juice Factory", with a total capacity of 9,000 tons or 30 million cans a year. One year later, he undertook a trip to the U.S.A. to contact suppliers and consultants to build up his factory. In the U.S.A., he realized there was more fame profitability and sophistication in the soft drinks business and, upon his return to Saudi Arabia, he acquired a licence for "Northern Soft Drink Plant", with a capacity of about 3 million cases of cans. The juice project was frozen until expansion plans came up.

The purpose of Mr D. is to develop a local industry which could be run gradually by using mostly local labor and services. On a purely individual basis, he wants to have a product that can possibly enter every home and boost his reputation as a successful industrialist in the area. His trip to the U.S.A. convinced him that the entertainment business goes along with the soft drinks one. It is for this reason that Coca-Cola have recently acquired Columbia Pictures, and Pepsico went into the light food and spirits business (e.g. "Pizza Hut, Smirnoff and Frito-Lay").

Mr D.'s long term objective is to have an independent and self-supporting operation with a good return on equity. He expects to reach a 50% market share within 5 years, assuming the government will not grant a second soft drink licence in that territory. And this seems to be a likely assumption.

IV - BUSINESS STRATEGY AND SALES PROJECTIONS

To attain his ambitious goals, Mr. D. knows that, ideally, he must obtain the Pepsi franchise which was still available for that area except for Medina which was covered from the Jeddah plant. However, and since some time, the Jeddah franchisee has shown interest in obtaining a franchise for the Northern area and is willing to put up a completely independent plant in Tabuk, Yanbu or Medina, though he has no roots in the city.

If the Pepsi franchise proves difficult to obtain, the second choice for Mr. D. is to have other strong brands like Canada Dry, Seven Up or RC Cola which are negotiable but encounter obstacles similar to the Pepsi case.

The third alternative is to introduce a relatively new brand like Dr Pepper, Sinalco, Sunkist... But in such a case, he cannot hope to achieve more than 10-20% of the market during the first year, with an average growth in market share of 20-25% and the following years as shown below (typical examples are RC Cola in Jeddah, Coka-K in Dammam, RC/Crush/Vimto in Dammam, Afri-Cola in Hofuf...):

	1982	1983	1984	1985	1986	1987
Demand (million cases)	4.6	5.2	5.8	6.5	7.2	8.1
Sales (million cases)	-	-	1.1	1.5	2.0	2.8
Market share (cans)	-	-	19.0%	23.0%	28.0%	35.0%
Capacity Utilization	-	-	37.0%	50.0%	67.0%	93.0%

	1988	1989	1990	1991	1992	1993
Demand (million cases)	8.4	8.8	9.1	9.5	9.9	10.3
Sales (million cases)	3.6	4.3	4.5	4.7	5.0	5.2
Market share (cans)	43.0%	49.0%	49.0%	50.0%	51.0%	51.0%
Capacity Utilization	100%+	100%+	100%+	100%+	100%+	100%+

It should be noted that, during peak season, some factories run 2 or even 3 shifts per day and thus the total yearly output can easily reach 200% of the rated capacity.

The above sales projections are based on the following strategic planning:

1. Offer at least 3 good flavors the first two years: Cola, mixed fruits and orange. Afterwards, he can add strawberry, apple and lemon-lime (but the hope of grabbing more than 10% of this market from Seven-Up is weak);

2. Go into direct distribution to cut middlemen cost and transportation costs. Typically his competitors will spend between 6-18% on transportation while he can save about half that amount within more than 50% of his territory;

3. Establish two large warehouses in Yanbu and Medina and two small ones in Hail and Jauf;

4. For the first half million cases for a trade offer to the dealers, offering a free case for every purchase of 10 cases;

5. Offer 30 day credit terms during the whole first year of operation;

6. Direct sales and promotional efforts toward small groceries, tea stalls, schools, etc...

7. Recruit qualified salesmen/drivers who know that area and compensate them by giving them 50% base salary and 50% commission. Training on sales techniques, merchandising and truck maintenance should be organized regularly;

8. Allocate the following budget for advertising and promotion (billboards, stands, signs, coolers, give-aways,..)

	1984	1985	1986	1987	1988
marketing budget* (million S.R.)	1.0	1.1	1.3	1.5	1.9
% of sales	5.6%	4.1%	3.6%	3.0%	2.9%

	1989	1990	1991	1992	1993
marketing budget* (million S.R.)	2.3	2.4	2.5	2.7	2.8
% of sales	3.0%	3.0%	3.0%	3.0%	3.0%

(* Assuming 1983 constant prices)

9. Introduce the 250 milliliters 2-piece aluminum can, in shrink-wrapped trays of 30 cans, each, and price it at wholesale price equivalent to the Pepsi tray of 24 cans of 296 milliliters each. This means a wholesale price cut of 10 to 15%. Consequently, the retailer will increase his profit margin by at least S.R. 6.- per case.

The competitive reaction is expected to be weak. Pepsi have remained market leaders in Saudi Arabia since many years. During this time, many new local factories entered the market, but they have taken market share more from imports than from Pepsi. Pepsi has not reacted in many occasions, the only reaction having been trade allowances of 11 cases for 10, especially when it introduced new brands like Shani and Teem. Any price cut by Pepsi would be extremely costly because it would mean a lost revenue of S.R. 40 million/year for each 5% discount. Otherwise, it would go against the national unified wholesale price. Another possibility for Pepsi is to increase the marketing budget and direct distribution networks. But here again, it will run into management problems and control problems inherent to extra-large organizations, thus reducing efficiency and productivity.

Another difficulty for Pepsi is the relation between price structure and the can size. Pepsi Int'l did not authorize the 250 cc can so far because they anticipate a decrease in sales volume.

Therefore we do not expect any decrease in sales projection due to the counterattacks from the competition.

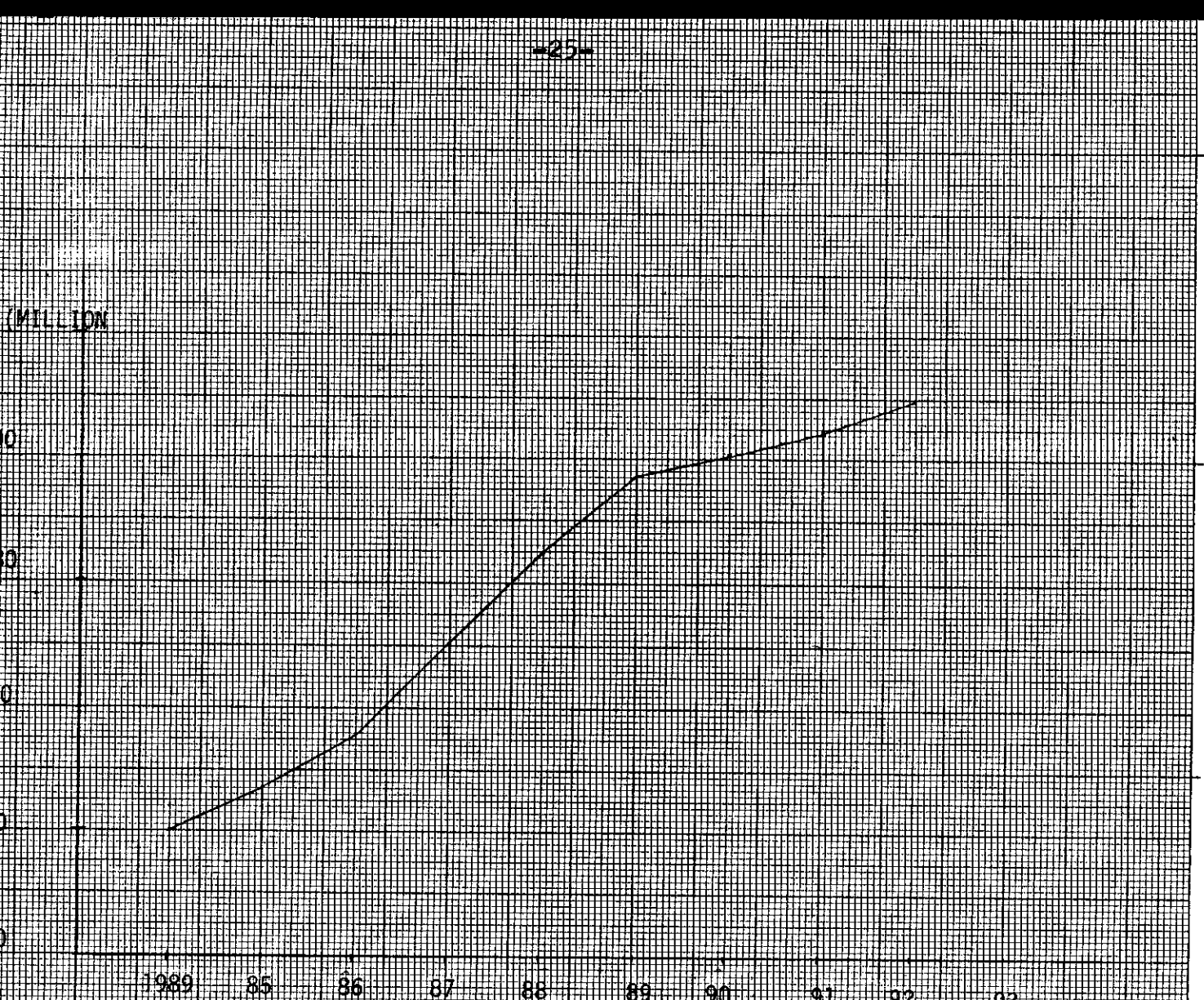

EXHIBIT 3 : SALES

EXHIBIT 4 : ADVERTISING EXPENSES

V - CAPITAL AND HUMAN RESOURCES REQUIREMENTS

Following is a summary of capital investment as per the international standards' specifications and the major beverages' policies and regulations. All prices are current 1983 prices:

1. Building

The building will consist of a 60 x 90 = 5,400 m^2, steel structure, including concrete slabs, insulation, lighting, sky-lights, drainage, partitions, air-conditioning, false ceiling, tiling, windows, doors, utilities, ... S.R. 9,000,000

2. Civil work

Road drainage, road foundations, fence & brickwall, porter building, water well drilling, water storage tank, water (waste) tank, road pavements, car shop, outside illumination, etc... S.R. 750,000

3. Machinery

Can filling line as per exhibit 2, including depalletizer, case conveyors, rinser, can filler, can seamer, can conveyors, warmer, shrink wrapper and palletizer; all auxiliaries: syrup room (exhibit 2) water treatment, boiler, air compressor, CO_2 plant, electric generator, power station, forklifts, spare parts, laboratory equipment, etc... S.R. 8,600,000

4. Furnitures

Includes office equipment, computer, telephones, telex, and all related equipment... S.R. 675,000

5. Trucks

10 trucks at	S.R. 80,000/pc	S.R.	800,000
2 trailers at	S.R. 120,000/pc	S.R.	240,000
12 cars at	S.R. 25,000/pc	S.R.	300,000

6. Pallets		
500 at S.R. 600/pc	S.R.	300,000
7. Materials		
Two month supply of cans lids, plastic film, glue, carton, grease, detergents, chemicals, extracts, sugar, ...	S.R.	5,000,000
8. Salaries		
For 73 salaried employees, 3 month provision, including accomodation for expatriates	S.R.	620,000
9. Operating funds		
Water, power, light, gasoline, (two months, plus uniforms, insurance and registration of vehicles, etc...	S.R.	60,000
10. Warehouses	S.R.	500,000
11. Marketing budget		
At 50%, assuming franchising Company will pick up other 50%, which is the usual case	S.R.	500,000
Total Capital Requirement		27,345,000

It should be noted that, in the case of Tabuk, the land will be granted by the government free of charge, as part of the encouragement scheme of the Saudi government for the rural areas.

It is expected that during the first 2-3 years, most of the skilled labor and employees will be expatriates, particularly the technicians and line operators.

VI - COST ANALYSIS AND BREAK-EVEN POINT

To reach the break-even point, an analysis of variable and fixed costs will be effected, as follows:

1. Variable cost (per one tray of 30 cans)

A. Ingredients *	S.R.	1.60
B. Sugar *	S.R.	0.70
C. Cans and lids**	S.R.	11.22
D. Carton, shrink film, glue...	S.R.	0.65
E. Electricity	S.R.	0.07
F. Water	S.R.	0.03
Total Variable Costs	S.R.	14.27

2. Fixed Costs per year

A. Factory general expenses:		
- salaries and wages	S.R.	1,100,000
- depreciation:		
building at 5%	S.R.	450,000
equipment at 10%	S.R.	890,000
- maintenance	S.R.	610,000
- miscellaneous	S.R.	36,000
Total factory expenses	S.R.	3,086,000

* Based on average price for Pepsi, 7 Up, RC, Sunkist, and Dr Pepper/Canada Dry

** Imported from Japan and Europe, but expected to be produced locally by 1986-1987

B. Selling and distribution expenses		
- salaries & wages	S.R.	1,380,000
- depreciation		
trucks at 20%	S.R.	268,000
others	S.R.	130,000
- maintenance	S.R.	105,000
- operations	S.R.	120,000
- administrative expenses	S.R.	94,000
- marketing expenses (1984)	S.R.	500,000
Total selling expenses	S.R.	2,597,000
Total annual fixed costs (A + B):	S.R.	5,683,000

The wholesale price per carton of 30 cans is S.R. 18.-.

The break-even point will be* :

$$\frac{5,683,000}{18 - 14.27} = 1,523,592 \text{ cases}$$

Exhibit 5 shows diagramatically the break-even point at the intersection of variable costs and revenues.

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* Ignoring trade allowances (11 cases for the price of 10)

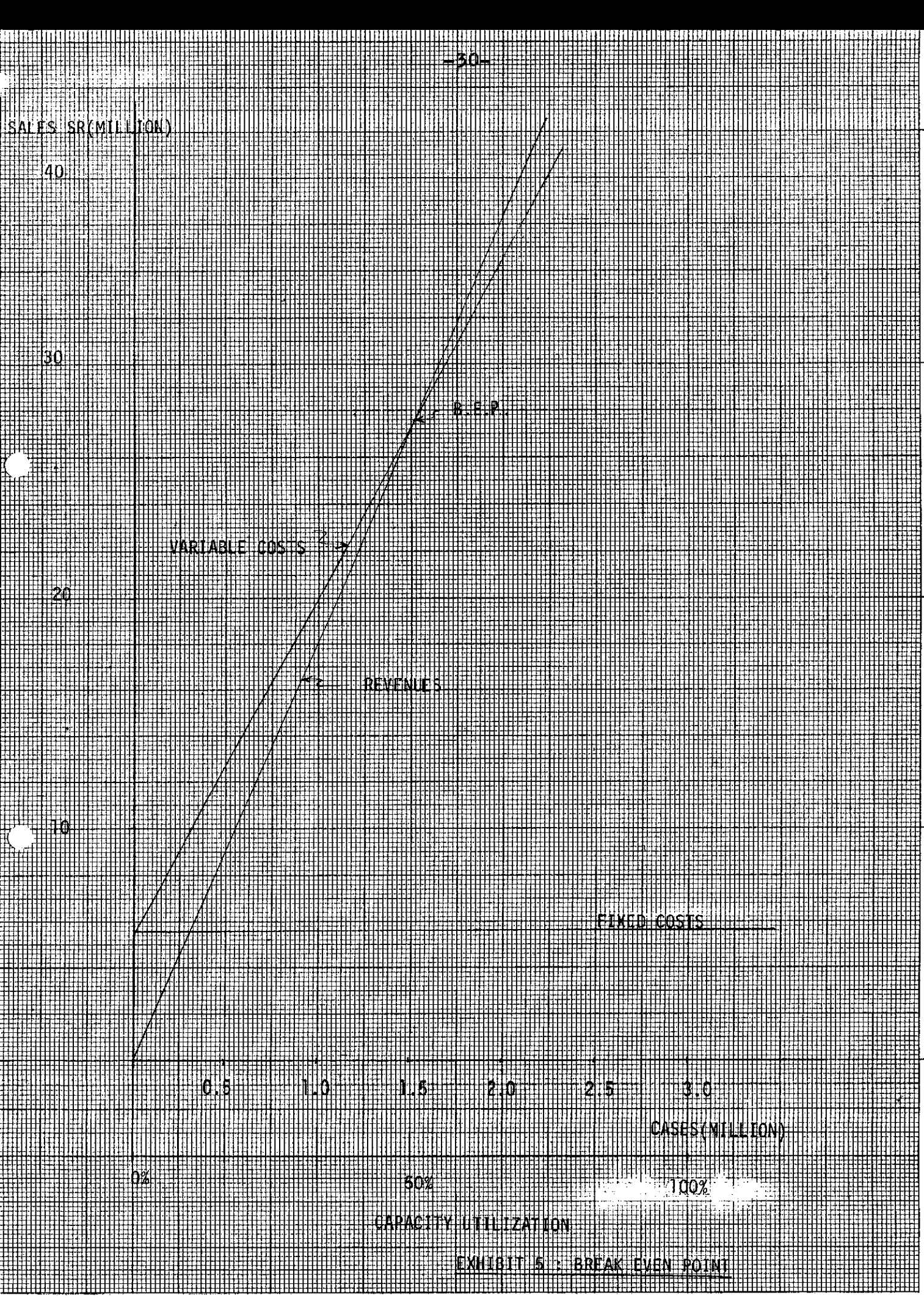

EXHIBIT 5 : BREAK EVEN POINT

VII - PROFORMA CASH BUDGETS

Following are cash inflows and outflows for a period of 11 years, from 1983 to 1993. The first cash income comes from the Saudi Industrial Development Fund (S.I.D.F.) which grants loans on a long term basis of 50% capital less 2.5% charges and payable 5 to 7 years.

The average inflation is considered at 2.7% (average of past 7 years).

It is to be noted that taxes are almost non-existent in Saudi Arabia, especially concerning industrial projects which are partly financed by the S.I.D.F.

Cash inflows	1983	1984	1985	1986
Sales revenue		19,410,300	28,477,683	38,995,441
Rebate on adv.		513,500	580,101	704,084
S.I.D.F. loan	13,672,500			
Total	13,672,500	19,923,800	29,057,784	39,699,525
Cash outflows				
Cost of production		16,120,819	22,576,474	30,914,719
Factory expenses		1,793,142	1,841,557	1,891,279
Selling expenses		1,744,873	1,791,985	1,840,368
Advertising expenses		1,027,000	1,160,202	1,408,169
New capital expend.	27,345,000	166,860	338,225	514,217
Loan repayment - charges	341,813			
Total	27,686,813	20,852,694	27,708,442	36,568,752
Net cash flow	(14,014,313)	(928,894)	1,349,342	3,130,773
Cumulative NCF	(14,014,313)	(14,943,207)	(13,593,865)	(10,463,092)

Cash inflows	1987	1988	1989	1990
Sales revenue	56,067,644	74,033,320	90,816,262	97,606,362
Rebate on adv	834,340	1,085,365	1,349,337	1,446,020
Total	56,901,984	75,118,685	92,165,599	99,052,382
Cash outflows				
Cost of product.	44,449,183	58,691,971	71,997,114	77,380,154
Factory expenses	1,942,343	2,451,782	2,517,981	2,585,966
Selling expenses	1,890,058	2,885,928	2,963,849	3,043,872
Advertising exp.	1,668,680	2,170,730	2,698,674	2,892,040
New capital exp.	694,961	5,162,869	1,504,563	1,779,546
Loan repayment charges			3,000,000	3,000,000
Total	50,645,225	71,363,280	84,682,181	90,681,578
Net Cash Flow	6,256,759	3,755,405	7,483,418	8,370,804
Cumulative NCF	(4,206,333)	(450,928)	7,032,490	15,403,294

Cash inflows	1991	1992	1993
Sales revenue	104,696,921	114,386,956	122,174,420
Rebate on adv.	1,546,940	1,715,804	1,827,395
Total	106,243,862	116,102,760	124,001,815
Cash outflows			
Cost of production	83,001,393	90,683,437	96,857,165
Factory expenses	2,655,787	2,727,493	2,801,136
Selling expenses	3,126,057	3,210,461	3,297,143
Advertising exp.	3,093,881	3,431,609	3,654,790
New capital exp.	2,061,954	2,351,986	2,649,850
Loan repayment charges	3,000,000	3,000,000	1,672,500
Total	96,939,072	105,404,986	110,932,584
Net Cash Flow	9,304,790	10,697,774	13,069,231
Cumulative NCF	24,708,084	35,405,858	48,475,089

Notes:

1. Average inflation is assumed to be 2.7%, which is the average for the past years.
2. The Saudi Industrial Development Fund (S.I.D.F.) grants long term loans representing 50% of capital less 2.5% charges and payable after a period of 5 to 7 years.
3. Taxes are almost non-existent in Saudi Arabia
4. Seasonal cash balances are ignored in order to simplify the analysis.

VIII - ORGANIZATION STRUCTURE AND CONTROL

The organizational structure of the project is simple and traditional. Solid lines show lines of intensive authority while dotted lines show lines of intensive communications.

It is to be noted that the Quality Control Manager is at the same level as the Production Manager in order to have strict reporting in case products are below standards which is extremely important in the case of soft drinks.

The plant manager plans production and inventory levels according to the sales department forecast and requirements. He then communicates the production levels to the production manager who plans his daily production accordingly.

The financial manager is expected to have a computerized accounting system to handle payroll, sales accounts, purchase accounts and financial planning.

The general manager is supposed to hold regular monthly meetings with his top 5 managers, during which past res ults can be reviewed, key issues identified, strategies and future performance outlined, etc...

Table 6 shows the detailed Organization Chart with the General Manager at the top, his top 5 managers reporting directly to him and the four second-line managers reporting to the Plant Manager.

IX - PROJECT DURATION: CRITICAL PATH METHOD

For an analysis of the project duration, we shall use the Critical Path Method (CPM) which is mostly applicable in complex and large projects, but which is very interesting in this relatively simple application.

The three steps involved are:

1. To identify and list all project activities;

2. To prepare the project graphic model (or arrow diagram)

3. To estimate the activity durations and the CPM determination

On the following page, a detailed summary and sequence of activities in the project are listed down:

Activity	Description	Estimated duration (weeks)
9 - 15	Erection of CO_2 plant & electric power station	6
8 - 16	Order of advertising materials	12
11 - 16	Secure orders and sales contracts	4
15 - 16	Production start-up	2
16	Sales	

As can be seen from the graphical model shown in Exhibit 6, our critical path lies on the following set of activities:

1-3-4-5-6-12-13-14-15-16, and the minimum project duration is 66 weeks.

The next critical path is:

1-3-4-14-15-16 and has a slack of 4 weeks.

The third critical set of activities is:

1-3-4-8-14-15-16 and has a slack of 10 weeks.

We could go further and examine optimistic and pessimistic durations in addition to the most likely duration. Then, we could obtain an average expected time as well as a standard deviation for each activity.

To do so, let us define the following:

a: optimistic time, the shortest expected time, if everything happens in a favorable way.

b: pessimistic time, the maximum time an activity may take if everything happens in an unfavorable way.

m: most likely time or the normal time an activity will take.

t_e: average expected time.

σ: standard deviation of an activity.

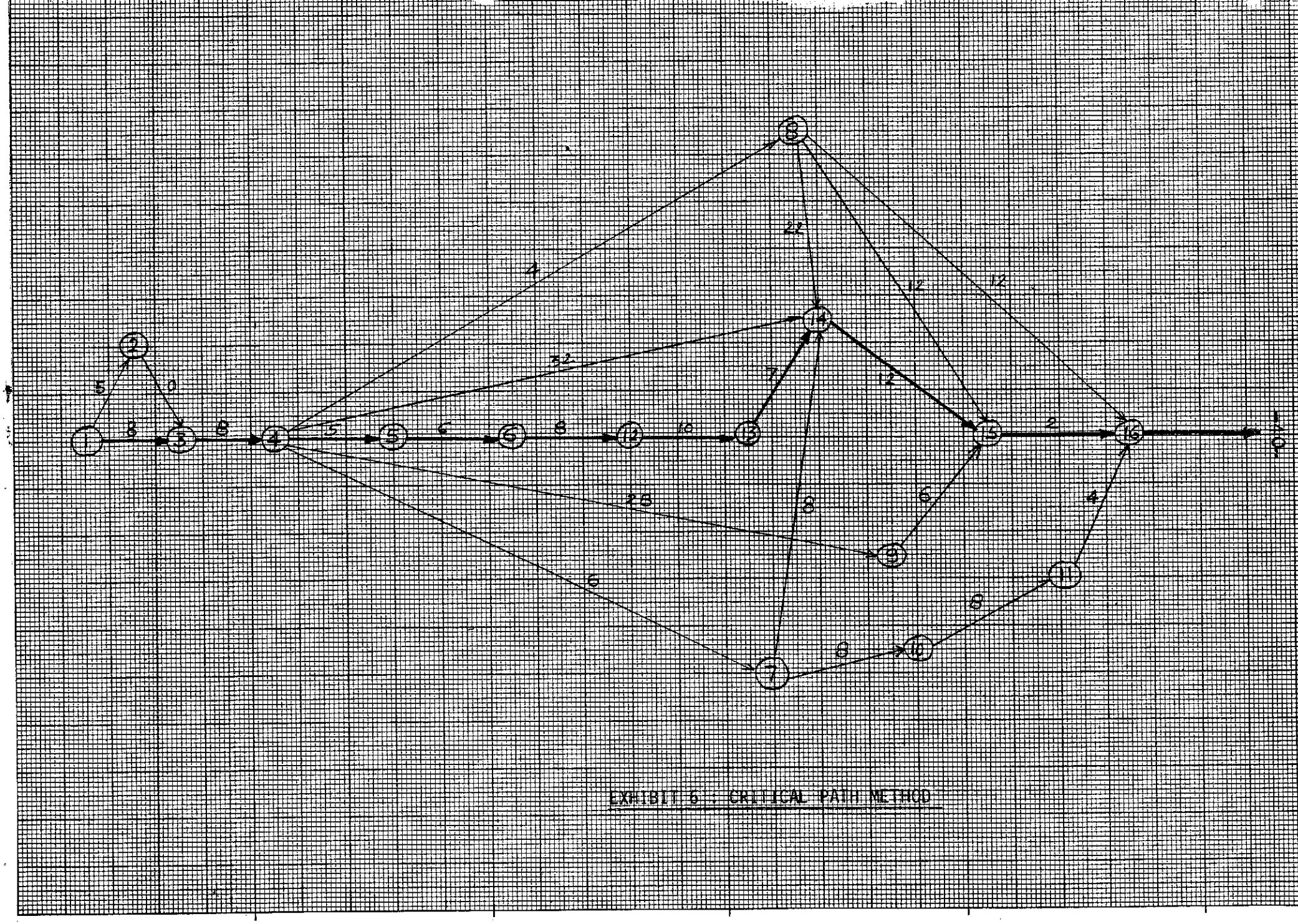

EXHIBIT 6 : CRITICAL PATH METHOD

Then we will apply the following formulae:

$$t_e = \frac{a + 4m + b}{6}$$

$$\sigma = \frac{b - a}{6}$$

Applying these formulae to our critical path, we obtain:

	Estimated Duration (Weeks)				
Activity	a	b	m	t_e	σ^2
1 - 3	4	10	8	7.7	1.0
3 - 4	5	12	8	8.2	1.4
4 - 5	4	7	5	5.2	0.3
5 - 6	4	8	6	6.0	0.4
6 - 12	6	12	8	8.3	1.0
12 - 13	8	14	10	10.3	1.0
13 - 14	5	12	7	7.5	1.4
14 - 15	6	14	12	11.3	1.8
15 - 16	1	3	2	2.0	0.1
Total	43	92	66	66.5	8.4

Probabilities could be obtained by calculating the Z factor from the standard deviations but this goes beyond the scope of this paper.

Since most activities will be undertaken by subcontractors, on a turnkey basis, we can safely assume that the cost of delay will be equivalent to the loss of sales corresponding to the delay period under consideration.

X - PROJECT APPRAISAL & RECOMMENDATIONS

Saudi Arabia is a rapidly developing country with a great deal of undiscovered potentials. Existing statistics about the country and its specific markets are still incomplete and many figures are questionable. However, evidence shows great opportunities in the soft drink market industry with rewarding compensation into the juice industry.

A new firm with modern management and marketing approach has a pretty good chance to succeed in the soft drink business. All market studies carried out in Saudi Arabia tend to show that the average Saudi still does not have a brand loyalty. Thus, taking market share from competition as well as attempting to increase generic demand are not difficult.

As can be seen from the financial data of this project, the whole project is largely a function of economies of scale. Therefore, it is recommended to utilize fully all of the Co.'s future assets, including its management its premises, sales and distribution network, to expand in neighboring fields in the beverages industry.

This can be carried out in the following manner, as of 1988:

- Purchase a new production facility with a yearly capacity of 5 million cases, which can give the required output with one shift until 1992, canning the same flavors as the previous line (plus any additional one if need be)
- Convert the old production line to fill various kinds of juices and nectars in cans: orange, apple, grapefruit, banana, mongo, mixed, etc...

It is expected that such a move will improve the overall profitability of the project. A 28.9 IRR is acceptable by Saudi standards of today, even if the average has been much higher previously, but that was during the "golden years", and that was at a time when inflation was running as high as 30% a year. During the 70s, typical rates of return in Saudi Arabia were well above 50%. Today, the soft drink industry considers an IRR of 20% as fairly acceptable but a payback period of 5 years is good.

It is noted that the wholesale price of soft drinks in Saudi Arabia is depressed by international standards. This is mainly due to the very tough competition of very cheap imports from the Far East, the U.S.A. and Europe. Import taxes being very low in Saudi Arabia, a large number of beverage exporters from all of Europe, all of South East Asia and the U.S.A. have poured huge quantities of all sorts of beverages onto the Saudi market.

Furthermore, Pepsi Cola, the market leader, have opted for very efficient and high capacity production lines, and they keep the prices low in order to increase their market share at the expense of both the local producers and the importers by decreasing their profit margin.

Once demand becomes fully satisfied and the market shares stabilize among local producers, it is expected that the wholesale prices will gradually rise by 25% in a few years while retail prices could rise by 25 to 50%. This becomes inevitable and imperative if the government yields to the local producers' pressure and imposes duties on imports of carbonated drinks.

Another positive factor is the reliance on local production of some of the raw materials presently imported. Now, the 3-piece steel can, plastic film and carton trays are being manufactured locally. Local expertise and labor could also help to reduce drastically total costs and inventory costs. All above positive signs promise high future profitability of the soft drink industry for those who are willing to carry out projects like the one analysed in this paper.

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Special Acknowledgements

Special thanks to the following for their important contribution:

- Dr C. Bloom, Business Division, B.U.C.
- Canada Dry Worldwide, Middle East Office, Beirut
- Canada Dry Int. Inc., Europe office, London
- Seitz-Enzingen-Noll Maschinenbau AG, Minden, West Germany

- Ortmann & Herbst Maschinenfabrik, GMBH, Hamburg, West Germany
- Mr. G. Kattouah of Intertec Consultants, Beirut
- Canada Dry Alesayi Corp. , Jeddah, Saudi Arabia
- Mr Tony Bangs, Legal Dept., Dr Pepper Co., Dallas, Texas
- Several soft drink factories in Lebanon and Saudi Arabia and suppliers to the industry.