



**Pre-feasibility Study**

# **HARD CANDY MANUFACTURING**

**May 2019**

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**Small and Medium Enterprises Development Authority**  
Ministry of Industries and Production  
Government of Pakistan

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## DOCUMENT CONTROL

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## 1. PROJECT PROFILE

### 1.1 Opportunity Rationale

Hard Candy manufacturing business is an economically viable and financially profitable business. Candy is a marketable product and its demand is directly linked with the increase in population and export volume. Population demographic analysis indicate that 43.40% of total population of Pakistan falls under the age of 15 years, who are, luckily, the target consumer group of confectionery products. Considering the current population which is estimated around 207.772 million, population growth rate and percentage of less than 15 age group, increase in per capita income, reduction in poverty rate etc., provide opportunity for the confectionery products and its demand appears to be attractive and growing<sup>1</sup>.

During discussions with market experts, it was found that Hard Candy enjoys around 30% to 40% share of the combined production of candies, toffees, bubble gums, chocolates and others that is mostly consumed by local consumer<sup>2</sup>.

### 1.2 Project Brief

Hard Candy is a traditional type of candy which is made by cooking sugar and glucose syrup to the hard-crack stage. The recipe includes 95% sugar and glucose & 5% food, color, flavor and citric acid. Due to 95% sugar content, it is generally termed as hard boiled sugar candy. Under Hard Candy, product range covers lollipops, lemon drops, peppermint drops, Fanta, coca drops and like products. Hard Candy is the part of confectionery industry which is defined as food rich in sugar. The confectionery industry also covers other food items like chocolate, bubble gum, sweets, etc.

Confectionery has been a traditional industry and technological advancement, like in other industries, has also changed the overall scenario of the industry; gradually hand made machines and recipes have replaced with more advanced technology of local and imported machinery from Europe and China.

Expansion in export market and availability of imported confectionery triggered the technology and quality improvement of the industry - traditional terms like 'Meethi Goli' has been replaced by toffee and candy.

Pakistan is currently exporting confectionery products amounting 27,207 million USD and importing 7,494 million USD as per the data available for the year 2018 (HS Code 170490). Pakistan's share in world exports to world has experienced a sharp decline up to -56 % in year 2017-18, which is an alarming situation for the industry to compete in the international market. Pakistan's share in total export market is very low, which reflects untapped potential for export to the world in confectionery Industry<sup>3</sup>.

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<sup>1</sup> Population census 2017

<sup>2</sup> Based on the estimates of market experts

<sup>3</sup> Sources: ITC calculations based on UN COMTRADE statistics (Provisional data).

**TOP-10 COUNTRIES FOR SUGAR CONFECTIONERY PRODUCTS IMPORTED BY PAKISTAN**

Unit : US Dollar thousand

Country	2014		2015		2016		2017		2018	
	Imported quantity, Tons	Imported value \$	Imported quantity, Tons	Imported value \$	Imported quantity, Tons	Imported value \$	Imported quantity, Tons	Imported value \$	Imported quantity, Tons	Imported value \$
World	4166	6494	5763	8376	7430	8857	6961	9357	5418	7494
China	2202	2982	3421	4632	4265	4899	3963	5195	2534	3297
Turkey	228	369	285	471	494	689	875	1245	841	1385
Indonesia	387	675	382	668	626	715	420	588	573	726
Oman	433	679	521	651	581	699	404	495	246	310
United Arab Emirates	217	338	265	367	316	316	291	357	211	309
India	63	161	140	246	215	269	230	357	209	268
United Kingdom	134	216	88	147	195	268	177	229	192	266
United States of America	26	44	40	62	55	69	81	109	86	146
Thailand	23	49	38	62	95	121	91	113	68	103
Malaysia	15	24	38	79	35	47	43	73	57	83

Sources: ITC calculations based on UN COMTRADE statistics.

**TOP-10 COUNTRIES FOR SUGAR CONFECTIONERY PRODUCTS EXPORTED BY PAKISTAN**

Unit : US Dollar thousand

Importers	2014		2015		2016		2017		2018	
	Exported quantity, Tons	Exported value in \$	Exported quantity, Tons	Exported value in \$	Exported quantity, Tons	Exported value in \$	Exported quantity, Tons	Exported value in \$	Exported quantity, Tons	Exported value in \$
World	20046	48611	13152	31800	15544	38953	20538	61780	10753	27207
Afghanistan	10962	26410	6099	13970	8488	21285	14283	44345	4276	11089
United Kingdom	317	1037	531	1574	540	1744	544	1768	548	1530
United States of America	221	799	158	615	307	1066	333	1188	467	1490
United Arab Emirates	579	1446	374	980	550	1397	378	1029	480	1224
Turkey	663	1817	583	1692	519	1335	347	1042	437	1072
South Africa	1010	1855	553	1288	434	920	699	1876	485	1068
Iraq	24	91	144	402	448	1116	312	783	415	995
Yemen	505	1368	558	1490	728	1892	395	1112	359	849
Australia	395	916	415	871	363	794	354	907	302	739
Kenya	76	203	190	402	232	506	84	212	221	485

Sources: ITC calculations based on UN COMTRADE statistics.

**1.3 Key Success Factors**

Hard Candy business largely depends on the effectiveness of distribution network; however, during the discussions with the industrial stake holders following factors are found to be of imperial implications for the success of business.

- 1.3.1 Distribution Network
- 1.3.2 Advertisement /Promotional Activities and Demand Creation
- 1.3.3 Product Mix and Innovation parameters
- 1.3.4 Product Life Cycle
- 1.3.5 Market Entry Timing
- 1.3.6 Existing Competition

### 1.3.1 Distribution Network

Distribution network has a major role in capturing market for any confectionery item. The fact that most of the items are of very small retail price and the average inventory that a retailer keeps on shop does not exceeds four to five hundred rupees, implies that effectiveness of distribution coverage and practice is of paramount importance in achieving the desired sales.

Toffees and candies are consumed both in rural and urban areas without any exception. It was found during the discussions with confectionery business experts (distributors, retailers and manufacturers) that an average consumer when buying a confectionery product does give only 5% consideration to choose a specific brand; he does *impulse-buying*. **95% (very high) of the time, and choose something which is visibly available and prominently placed.**

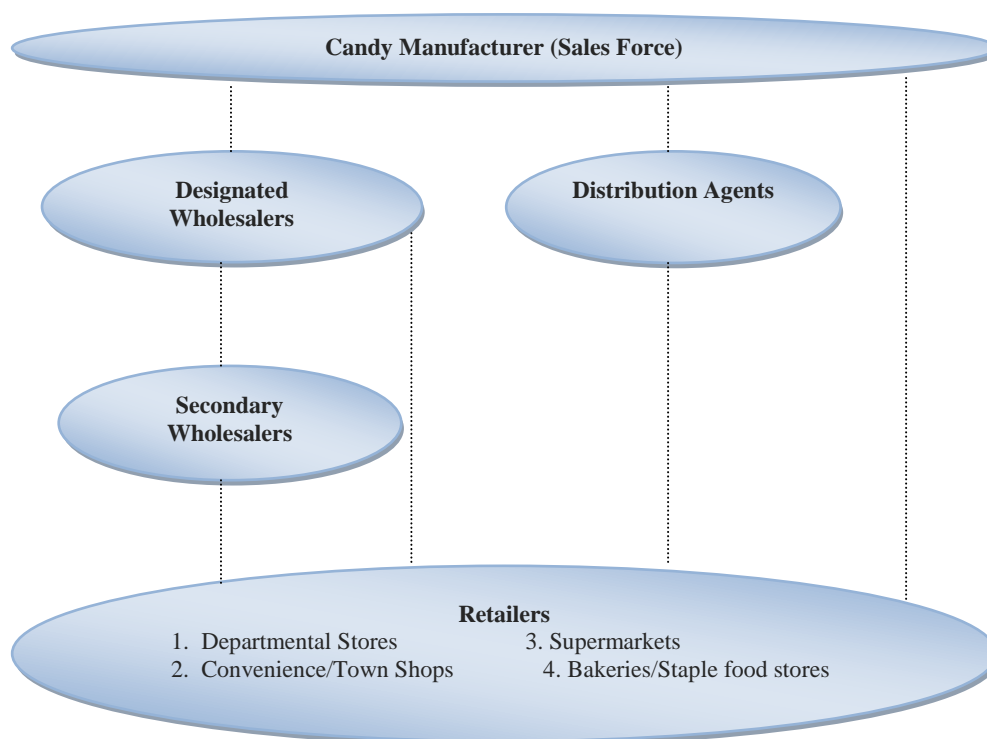
As in case of other consumer goods, the effectiveness of distribution network for confectionery items is a functional of similar parameters, i.e. distribution margins, frequency of distribution and product penetration. However, in this industry the distribution margins are relatively higher (around 12 to 15%) than other consumer goods due to low retail price and little interest of the consumer to select any specific brand.

Potential customer belongs to the age group of 5 to 15 years who uses his/her pocket money on a day to day basis to buy toffee or candy. This fact coupled with the small volume that a retailer keeps on shop, translates into a requirement of a higher frequency of visits of distributor to the retail outlets.

All the above factors reflect upon the importance of distribution and marketing network as well as its high cost implications. Moreover during the discussions with industry experts it was also found that most of the existing operators in this business have a dedicated market follow up team, who frequently visits the retail outlets and ensure permanent and prominent availability of the product on the shelf.

#### 1.3.1.1 Hard Candy Distribution

A domestic producer is generally able to handle distribution within his home city and surrounding areas. Most manufacturers, using their own sales force, distribute directly to local retailers, concentrating on the large department stores, food stores and supermarket chains (falling under the A, B or C category of retailers). During the discussions with the market experts it was observed that in the Pakistani local market around 99% of (candy) distribution is being done through informal networks. Commonly observed candy distribution practices is elaborated in the following flowchart:



When a confectionery manufacturer expands his market to another city (or one outside his local distribution capability) he normally signs up a distribution agent to cover the entire city market. A *distribution agent* is a privately-controlled company whose main job is to sell, distribute and sometimes market the manufacturer's products within the retail (and occasionally wholesale) market of one city or region. Most distribution companies require exclusivity for the area they cover. Distribution agents generally work to target the city market and cover the full spectrum of retailers.

Most agents are themselves food retailers or have a retail subsidiary. They own or have access to warehouse facilities and keep a rolling stock of their main products. They own their own vehicles and deliver directly to the retailers. Depending on the product's performance and popularity, distributors may pay up-front for stock or may only accept a product on consignment. Sometimes regional agents go on to sign up separate city sub-agencies that operate in the exact same manner as described above. Large volumes of confectionery products still move through the traditional wholesale markets, heading mainly to the smaller towns and the rural countryside.

A *designated wholesaler* is generally a private company such as a large successful wholesaler, whose main job is to sell and promote the manufacturer's product at one wholesale market. Manufacturers generally appoint a designated (or primary) wholesaler, either one per city, if the city is a bigger one and its markets cater to different non-overlapping localities, or one per wholesale market. Smaller cities move all of their consumer goods through a single major wholesale market. The designated wholesaler gets preferential discounts and money incentives based on performance, has limited storage facilities, and rarely owns any delivery vehicles. Sometimes manufacturers rent or buy a stand in the major wholesale markets of their home city and act as their own primary wholesaler, although this is rather uncommon.

In bigger cities, designated wholesalers may sell to some smaller retail shops if they do not overlap with an existing distribution agent. In smaller cities, the designated wholesaler acts as a de facto distribution agent. But the primary wholesalers' major customers are the so-called *secondary wholesalers*. They are relatively small private wholesalers from surrounding towns and villages that buy all their products (food, beverage and consumer goods) from the same city wholesaler. They drive all the way in their own or rented truck and take home a truck-full of different products. For the ones that have not figured out transportation in advance, wholesale markets are encircled with private trucks of all sizes, ready to bargain, load and deliver.

Secondary wholesalers generally sell to small local retailers (convenience stores), although sometimes their products go onto tertiary wholesalers in even smaller localities. The retail price formation formula varies significantly for different products as they move through the above distribution channels. Generally speaking, lower-value bulk confectionery products are modestly marked up by manufacturers and wholesalers and rely on large volumes to achieve profitability.

Distribution, being a critical factor has been managed in different ways by the local manufacturers; to make it successful it is necessary to operate with a mixed distribution setup. For the purpose of the project under consideration, we propose that company owned distribution team would cover the home city and the factory surrounding areas to capture the niche market which will provide business a room for survival whereas remote distribution operations will be outsourced to the distribution agents playing around the distribution margins and gift schemes. Designated wholesalers and secondary wholesalers may also play a key role to capture the far off markets for the product. For setting up a distribution network and sourcing of distributors across the country for metro cities and town, a list of distribution networks is given in annexure.

### 1.3.2 Advertisement /Promotional Activities and Demand Creation

Promotional activities are the prime source of revenue generation. It is very important to focus on promotional activities to ensure a constant stream of business. Most of the confectionery producers offer variety of the same brand with different price mix to attract customers, which do not give them the desired results though to some extent it works especially in economically low scale areas.

The primary focus should be to introduce promotional activities in the concerned locality to attract a larger volume of retail shops. Although majority of the confectionery items producers bank on the promotional activities of the confectionery brands for attracting business, self initiated promotional activities that are specifically tailored to meet the requirements of the concerned localities are of vital importance to the confectionery business. For example, a Candy Specialty shop decorated colorfully might want to capitalize on the opportunity of attracting children with discounted prices.

**At the retail level, it has been suggested by the industry experts that it is more practical to have a promotional scheme on the confectionery item (e.g. 2 candies for Rs. 1 instead of 1 candy in Rs. 1) than to offer greater discounts or margins to the retailers.**



It is also important to ensure that the product has a meaningful point of difference (i.e. color, package, flavor, type, etc). Most new products fail in the market because they are "me-too" products with no unique benefit (or attraction) for the consumer (children).

Generally for the Confectionery business advertising budget is 3% of the total sale but for a small or medium scale confectionery concern, it may vary (on the higher side). It is generally said for the confectionery industry that advertising a confectionery is nothing but to keep confectionery item 'on top of the mind' because customer's level of involvement when buying sweets and candies is very little.

Billboards, Television, Radio, F.M Channels, and Newspapers are the conventional mediums, which have been powerfully used for the promotion of confectionery products, but the fact remains that availability and visibility of the product are key elements and through using good and effective distribution network, it could be achieved.

### 1.3.2.1 Product Marketing Plan and Budget Expenditures

Marketing and promotional activities will be critical in the success of any newly introduced candy brand; however, it takes years to establish brand equity which is highly dependant on electronic media and a continuous and persistent follow-up media campaign. Television and Radio have the most in-depth penetration in the consumer market of Pakistan and companies usually use these two electronic mediums for the promotion of their products; however these are also high cost options for product promotion and a new business entrepreneur will be constrained to afford this cost.

With the passage of time, new radio channels have been introduced, which are comparatively cheaper and cover most of the urban areas. Other mediums like local and national level Newspapers, evening newspapers, roadside hoardings, billboards etc. are also used for the advertisement of products. The print media is supposed to be of limited scope in terms of attracting (target) consumer. As in the case of confectionery items, it is known that children within the age bracket of 5 to 15 are the potential customers and they mostly stay either at home or go outside with in a limited circle of their residential area. Therefore, in this case hoardings and billboards can not fulfill the desired purpose of advertisement.

Keeping in mind the above limitations, it is proposed for a new entrepreneur to adapt a cost efficient marketing plan using flexible and innovative advertisement and promotional mediums. We propose the following promotional formats:

Promotional Format/Activity	Frequency of advertisement and other details	Approximate Cost
1. Promotional gift schemes and special discount for distributors and retailers (e.g. 5 additional candies in each bag)	Twice in a year and for one month period each	Rs. 600,000/-
2. Advertisement in the Local radio channel (i.e. FM radio channels or the national radio) <sup>1</sup>	5 to 10 spot ads (1 minute each) On national holidays	Rs. 300,000/-



Promotional Format/Activity	Frequency of advertisement and other details	Approximate Cost
3. Banners and Pamphlets	Once in a year	Rs. 200,000/-
4. Collaborate with a local favorite restaurant / fast food establishment / fueling station to promote their business for a percentage of their sales for a given date and time.	*	*
5. Advertisements in the child oriented papers, digests like Nonehal or Hamdard digest	Thrice in a year (in a monthly children magazine)	Rs. 200,000/-
6. Free availability of candies to local schools children at special events like 14th of August	Once in a year and target 5 to 10 schools	Rs. 150,000/-
7. Inviting school children for a study visit to your factory and provide them free gift packs of candies	Once in a year and target 5 to 10 schools	Rs. 150,000/-
8. Establish your candy brand participation in by organizing carnivals, talent shows, raffles and parties at local educational institutions	*	*

**\* For these types of advertisement and promotional activities, substantive huge logistic support and other resources may be needed; therefore it is suggested to avoid them during the initial operations and consider them after 3 to 4 years of business establishment.**

<sup>1</sup> Average rate would be approximately US\$ 80 for a 30 second commercial.

### 1.3.3 Product Mix and Innovation Parameters

Proposed product mix for the candy manufacturing business should be:

- Introduce at least 3 to 4 candy types like centrally filled, crystal candy or deposit etc.
- Introduce unconventional but somewhat known flavors with eye catching colors & shapes.
- Innovative packaging and designs should be given importance.
- Place emphasis on new products development and shift gradually towards a good mix of different candy types like chew candy, and other confectionery items, i.e. chewing gum and chocolate etc.

#### 1.3.3.1 Hard Candy - Brand Building

It is very important to develop a long term strategy for building a brand. Brands are extremely important in Pakistan today. Pakistani consumers are constantly bombarded with new, innovative, cheaper and different consumer products. They and their families have no particular history of consuming most of these products, and therefore almost negligible brand or product loyalty. They have to trust their perceptions, which today are largely influenced by the mass media and the art and science of marketing. Building a brand is the only way a company can differentiate its product from the rest and ensure long-term success in this very competitive market. Backing your brand with consistent

high quality is a winning formula and the reason why so many relatively expensive foreign products are gaining the upper hand over local ones.

The most popular brands in the Pakistani market largely depends on media campaign to make it successful, whereas, most favorite flavors are considered to be the Fanta, Coca, Milk candy filled with Khopra and some of the traditionally accepted tastes include saucy mixed with tamarind flavor (a good example would be Chooran Chatni). Nevertheless as a long term strategy, a company can not depend on one flavor or brand; a good mix of flavors with continuous development of the brand will only be the success path for a candy manufacturing business. However for the purpose of this feasibility, we propose to start with the following three hard candy types with traditionally popular flavors:

Candy Type	Flavor/Taste
1. Hard Boiled Crystal Candy	Saucy Tamarind
2. Centrally Filled Candy	Milk candy filled with fizzy lemon powder
3. Deposit Candy	Fizzy with Mango taste

#### 1.3.4 Product Life Cycle

**“With a very short life span a new brand of candy comes, enjoys its peak sale for 4 to 6 months and disappears” say industry experts. There is only one brand for a confectionery concern on which it survives and out of 3 to 4 newly introduced brands success to failure ratio is said to be 1:4.** Therefore an innovative approach in introducing different types and flavors of candy might be helpful to introduce new products. Currently in the local market following types of Hard Candy are successful:

- Centrally Filled (Powder), e.g. Khopra Candy
- Deposit Candy
- Crystal Candy

#### 1.3.5 Market Entry Timing

To take entry into Candy business, *beginning of winter is supposed to be the best time.* The reason is that in winter children and teenagers are more inclined to have food more rich in starch/sugar; secondly confections remain safe from melting and de-shaping. During summer children switch to something that is cold like Ice cream / Gola-Ganda (flavored ice) due to hot weather; however, arrival of mango also affects children's inclination towards sweets and candies.

#### 1.3.6 Existing Competition

When starting up a new business of candy manufacturing, direct competition will mainly be with un-organized or informal sector which is mostly indulged in producing ‘me-too’ products. Due to the simplicity of producing hard candy almost every confectionery manufacturer is producing hard candy which increases the level of difficulty to compete with existing players. To assess existing competition the factors to

consider would be the number of competitors, variety of products they offer, promotional schemes they offer etc. Besides the informal sector, following medium and small scale business units might be the tough competitors.

Sr. No.	Company Name	Est. Market Share
1	Candy Land	30~32 %
2	Hilal Foods	20~22 %
3	Mayfair	18%
4	Gibs	10~12%
5	B.P Sweets	4%
6	Jojo	3%
7	Danpak	2~3%
8	Sweet Hills	2~3%
9	Cemcon Foods, A & B Foods, Akbar Foods, Sana foods, KIMS etc	05~09%

\*source: Estimates based on discussion with market experts

#### 1.4 Proposed Business Legal Status

The legal status of business tends to play an important role in any setup; the proposed Hard Candy Manufacturing setup is assumed to operate as a Sole Proprietorship.

#### 1.5 Proposed Hard Candy Manufacturing Plant Capacity

Locally manufactured hard candy manufacturing plant with 350 k.g./hr. production capacity and 2 (at the beginning) working hours per day is an economical size for starting Candy business. However, due to the time required in developing market reputation and running of the unit, it is expected that the plant would achieve maximum 97% efficiency in the last year of the projected period.

#### 1.6 Project Cost

Total project cost of the Hard Candy business is approximately Rs. 11.615 million. Out of this, capital cost of the project is around Rs. 8.75 million and remaining will be the working capital.

#### 1.7 Project Investment

A total of **Rs. 11,615,000/-** will be required to setup and operate the proposed Hard Candy business.

## 1.8 Recommended Project Parameters

Capacity	Human Resource	Technology/Machinery	Location
3,636 bags of hard candy per day	14	Local Machinery	Medium Cost Industrial Area

## 1.9 Financial Summary

Project Cost	IRR	NPV (Rs)	Payback Period
11,615,000/-	47%	22,162,136	3 Years 1 month

## 1.10 Proposed Location

Location for setting up a candy manufacturing plant has imperial implications on fixed costs, operational costs and procedures. Generally locations where labor and skilled manpower is easily available and population density is also reasonable are preferred; however availability of utilities like power, water, gas, telephone, roads and sewerage should also be considered when deciding where to setup the business. With keeping in mind aforesaid factors, it is better to select location where manpower and utilities are easily available.

In addition, a location should be chosen from where business operations like storage and distribution can be performed quickly with low operational cost. These problems can be resolved by setting up business unit in already established industrial locations across the country. For the purpose of this study, it is assumed that the project will be setup in a medium cost industrial location.

## 2. SECTOR & INDUSTRY ANALYSIS

### 2.1 Project Risk Factors

Major risks that may hamper the attainment of the business objectives are:

- Volatile movements in the prices of major raw materials of sugar and glucose, which largely depend on the growth of agriculture sector and the government policies relating to regulation of prices of relevant agricultural commodities.
- Increased competition, especially from the small producers of low quality confectionery products in the informal sector who do not pay their taxes, indulge in counterfeit products and have minimum overhead costs.

### A Brief Snapshot of the Industry

Confectionery industry is considered to be a highly un-documented industry, which makes it difficult to determine the exact market share. However on a macro scale there are a number of major players like Hilal, Mayfair, CandyLand Cadbury and B.P., which account for most of the market share of the Candy business.

According to available industry information, there are 23 units in the organized sector. The Ismail Industries (Pvt) limited, with more than 30 brands, leading the confectionery market with 30-32% of retail value sales. The company's major brand Candyland have enjoyed immense brand equity and consumer trust. The company has many brands and wide market distribution network.

## 2.2 Sector Characteristics

### Retailer and Distributor Role

Distributor and retailers are supposed to be of primary importance in marketing confectionery products, especially for candies, toffees, chocolate and bubble gums because of easy availability of alternate brands. That is the reason that, unlike other consumer goods, distribution and retailer margins are relatively higher on confectionery items. For distributor and retailer, around 25 to 35% profit margins are normally given by the manufacturer, especially by those with small to medium sized operations.

The distribution network desirable for marketing and distribution of confectionery items like candy will be that one who provides complete solution from pickup of product from the manufacturer's premises, distribution and ensuring space availability for the product on the retail outlets. This kind of distribution solutions can be availed at the cost of 30 to 35% of the gross sales.

This type of distribution network is proposed for the reason that being a new business setup, it would be difficult for the manufacturer (owner) to handle logistics involved in managing distribution; therefore commissioning such kind of solution will make it possible for the manufacturer to concentrate on product development and broaden market niche. Once the product become successful, the distribution cost will gradually be reduced. The proposed distribution network for candy business is supposed to be operating on national level and having experience of distributing confectionery products as well.

### Consumption Patterns

Consumption patterns can be explained on the basis of following demographical factors:

*Age Group:* Children from 5 to 15 years of age are considered to be the potential buyers of confectionery products.

*Urban and Rural:* Low price candy brands are mostly consumed in economically low profile urban and in all rural areas.

*Low, medium and high Income areas:* Confectioneries products like chocolate, chewing gums etc. are consumed in medium and high income areas, but there is a difference of packaging mainly. For medium and high income areas candies are also being sold in good, attractive and fancy crystal jars, boxes and gift packs.

Demographic consumption patterns show that 60% to 70% of the total produced candy is consumed by children in the age group of 5 to 15 years and companies focus on this age group when launching and designing advertisement campaigns.

## Hard Candy - Local Market

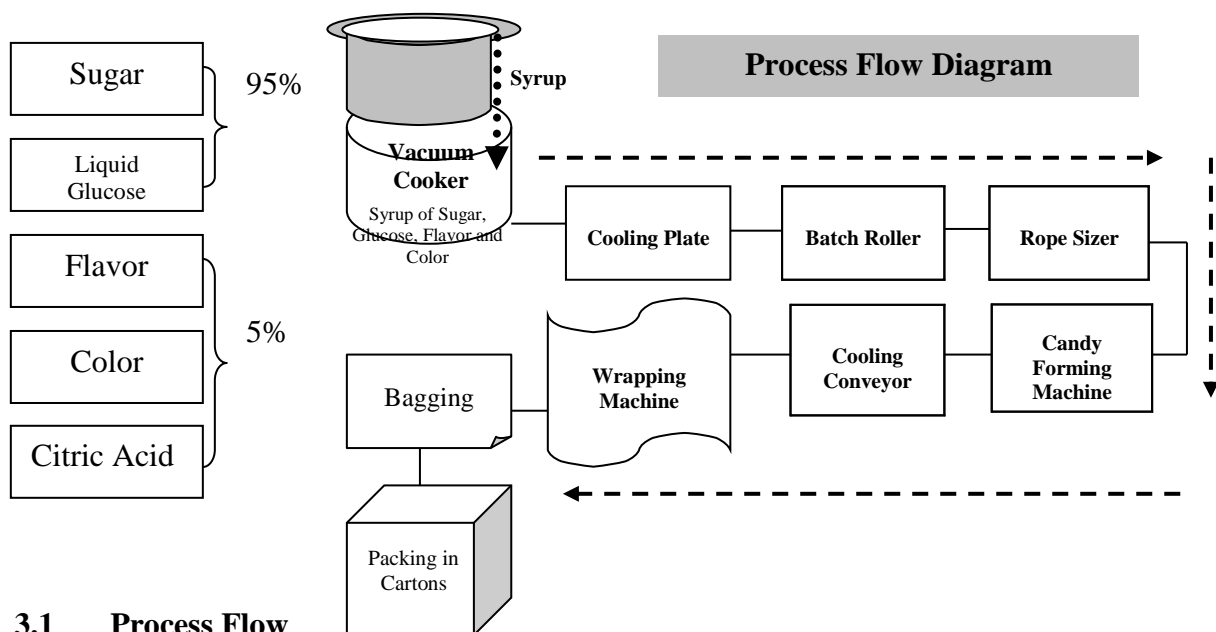
For Hard Candy, main markets are considered to be the following cities:

- Karachi
- Lahore
- Peshawar
- Quetta
- Rawalpindi and Islamabad
- Hyderabad
- Sukkur
- Faisalabad and;
- Multan

Since population is the main demand driver for hard candies, it is evident that Punjab accounts for more than half of the overall Candy market.

## 3. PROCESS FLOW AND HARD CANDY INGREDIENTS

Sugar and Glucose account for 95% of the total ingredients used for producing Hard Candy and are easily available in the local market. Following are the basic ingredients and their ratios for producing Hard Candy.



### 3.1 Process Flow

Sugar, liquid glucose and water are cooked together up to a certain temperature and then put into a vacuum unit to evaporate the moisture. The material is then cooled down on cooling plate and required essence and color are added in the warm state. This material is fed to batch former to form conical shape and then taken by Rope sizer to form the desired size rope. The rope is fed to forming machine which cuts it to required size and forms candies of desired shape and size. After forming, the candies are ejected to cooling conveyor where it can be wrapped individually by wrapping machines or in poly packs of required size.

### 3.2 Technology Options

The type of technology to be employed largely depends on the market to be captured. The proposed business setup is based on the assumption to cover local market where consumer gives nominal importance to the quality of candy; therefore locally manufactured machines can be used for the production, as majority of the Candy/Confectionery plants in informal sector operate on locally manufactured plants/machinery; however switching from local to export market will be easier with imported European machinery which, although is a high cost option, gives better quality and quantity of products.

In the following lines, the available technology options are provided:

1. Full European Plant – New
2. Full European Plant – Used
3. Full Chinese Plant with local Wrapping machine
4. Locally Manufactured Plant with Wrapping and bagging Machine

Beside technology options a few things should also be taken into account before deciding on setting up a candy manufacturing unit. Normally Candy Plants are not readily available in Pakistani market. Therefore entrepreneur will have to place order to the local plant and machinery manufacturer well in advance. Normally the delivery period is 1 ½ to 2 months for wrapping and bagging machines and 6 months for production plant/machinery. However for imported machinery professional indenters and importers may be contacted. A brief list of local and imported machinery manufacturers/supplier has been provided in annexure.

### 3.3 Product/Project Standards and Compliance Issues

There are certain requirements or standards to be met for operating a Candy manufacturing plant. There is a basic requirement to ensure proper handling of machine, especially when dealing with the production of food products, to avoid any unwanted health hazard. The government has laid down certain regulations which include registration of confectionery products with Pakistan Standard Quality Control Authority (PSQCA) and compliance of its regulations such as “PS: 4254-1998” for Hard candy Manufacturing and other safety standards generally applicable on food products like carrying a safety logo on the package need to be met. Failure to do so is punishable by fine and imprisonment.

## 4. LAND & BUILDING REQUIREMENT

### Land Requirement

The workspace required to setup the assumed Candy plant is a 120 square yards covered area, which will serve for the office, storage godown and manufacturing plant. It is normally available for Rs. 1.2 – 1.5 million in a medium cost industrial location. For the purpose this feasibility study, it is assumed that a rental space will be used to carry out business operations.



## 5. MANPOWER REQUIREMENT

15 persons can handle the operations of a candy manufacturing business unit. The business unit will work on one shift basis. Technical staff with secondary school education is sufficient to look after specific tasks at the plant while trained staff will be required for operating production plant and wrapping/bagging machines. Such staff is available in the local market. Total estimated manpower required for the business operations along with their respective salaries is given in the table below.

### Technical Manpower Required

Type of Manpower	Number	Monthly Salary	Annual Salary
Trained Plant Operator	1	40,000	480,000
Trained Wrapping and Bag Making Machine Operator	1	25,000	300,000
Helpers	6	14,000	1,008,000
Store Keeper	1	20,000	240,000
<b>Total</b>	<b>9</b>	<b>-</b>	<b>2,028,000</b>

### General Management / Administrative & Selling Staff

Type of Manpower	Number	Monthly Salary	Annual Salary
Owner	1	-	-
Admin. / Accounts Officer	1	40,000	480,000
Sales & Marketing Manager	1	40,000	480,000
Assistant Manager Sales	1	30,000	360,000
Office Driver	1	15,000	180,000
Security Guard	1	15,000	180,000
<b>Total</b>	<b>6</b>	<b>-</b>	<b>1,680,000</b>

1. **The owner** is required to manage the following jobs:
  - Overall business operations including general administration.
  - Procurement of new orders
  - Distribution
  - Customer handling
  - Product quality
  - Ensuring adequate cash flow to meet working capital requirements etc.
2. **The plant operator** is required to operate production plant, checking and managing raw material/production quantity/quality and mixing ingredients; and testing output quality etc.

3. **Wrapping and Bagging machines Operators** are required to operate the wrapping and bagging machines. They are also responsible for machine's timely maintenance, oiling, etc. Further, they will also be responsible for providing necessary support and assistance to the plant operator.
4. **Packer & Helper** are required to facilitate in packing process and shifting of produced material to store room etc.
5. **Sales Coordinators** are responsible for day to day coordination with distribution and production functions. They are also responsible to carry out field surveys and ensuring product availability in the immediate market.
6. **Admin. / Accounts Officer** is mainly responsible for carrying out day to day administrative activities of the overall business including facilitation provided to the owner as and when required.

## 6. FINANCIAL ANALYSIS & KEY ASSUMPTIONS

The project cost estimates for the proposed "Hard Candy Production Business" have been formulated on the basis of discussions with relevant stakeholders and experts. The projections cover the cost of land, machinery and equipment including office equipment, fixtures etc. The specific assumptions relating to individual cost components are given as under.

### 6.1 Land & Building

Size	Location	Total Cost (Rs.)	Rent Per Month (Rs.)	Expected Annual Increase in rent
120 Yards (covered area) (equivalent to 1100 sq.ft)	Medium Cost Industrial Area	1.2 to 1.5 million	50,000	10%
Construction Cost	Office & Stores	400,000		
	Production Facility	600,000		

This pre-feasibility assumes that the space will be acquired on rental basis with an initial deposit of 6 months and initial advance rent of 6 months after which the rent will be payable on a monthly basis. In addition construction and renovation will cost around Rs. 1,000,000/- which will depreciate at 10% per annum using diminishing balance method. Total initial outflow for acquisition of land would be as follows:

	Months	Rent
Security Deposit	6	300,000
Advance Rent	6	300,000
<b>Total</b>		<b>600,000</b>

Land & Building will include:

- General Management Office / Storage Area
- Production Factory

The expected area required for the set up would be a single story building with a storage godown of 12ft. x 12ft. on the first floor. The total covered area (plot size) of land & building will be around 120 yards.

It is assumed that all activities will be undertaken under one roof and the factory be acquired on a rental basis at Rs. 50,000 per month for the projected period. This rent is expected to increase at a rate of 10% per year. It is further assumed that there will be no addition or deletion during the projected period. Furthermore, it is assumed that Rs. 600,000 will be paid in advance before possession of premises. This will include advance rent for six months and six months security deposit.

### 6.1.1 Overall Factory & Office Renovation

It is expected that a total of Rs. 500,000 would be incurred to renovate the factory / office premises in Year 5 and Year 10.

In the following lines we are providing a break up of other assets required for setting up Hard Candy business.

### 6.2 Candy Manufacturing Plant and Machinery

Considering factors like tough competition in the industry, technology advancement, machinery used by prospective competitors, desired volume of production and the minimum cost in which machinery is easily available in the local market, we have assumed that local machinery will be used for the proposed set-up.

The production capacity of the machine would depend on the amount of business expected to be generated. Capacities vary from brand to brand but on a general scale they can be segregated into three categories as follows:

1. Machines having a production capacity of 350 k.g. of candy per hour
2. Machines having a production capacity of 750 k.g. of candy per hour
3. Machines having a production capacity of more than 1000 k.g. of candy per hour

The cost implications would depend on the capacity of the machine. For this pre-feasibility, local machinery with expected capacity of 350 k.g. per hour is assumed to be sufficient which cost around Rs. 6.35 million. The detailed specification of the machinery will be as follows:

Sr. No.	Unit	Local/ Foreign	Cost (Rs.)	Capacity in k.g.
1.	Syrup Making Pot	Local	500,000	350/hr.

**Candy making plant****(Manpower required to operate = 2)**

1.	Cooker	Local	1,200,000	350 kg/hr.
2.	Flavor and Colour Mixer	Local	400,000	Works synchronically
3.	Cooling Tables (6' x 3')	Local	125,000	Works synchronically
4.	Kneading Machine	Local	500,000	Works synchronically
5.	Batch Roller	Local	400,000	Works synchronically
6.	Rope Sizer	Local	400,000	Works synchronically
7.	Forming Machine	Local	900,000	Works synchronically
8.	Three Stage Cooling Tunnel(Open)	Local	500,000	Works synchronically
9.	Liquid & Powder Filler	Local	200,000	Works synchronically
10.	Pan Lifting Jack	Local	125,000	Works synchronically
	<b>Total Cost of Plant</b>	<b>Local</b>	<b>5,250,000</b>	<b>-</b>

**Candy Wrapping and bags making machine****(Manpower required to operate = 4)**

11.	Wrapping Machines (1)	Local	650,000	500 candy / min.
12.	Candy bags making machine	Local	450,000	1200 bags/hr.
	<b>Total Cost of Wrapping and Bagging machines</b>	<b>Local</b>	<b>1,100,000</b>	
<b>Total cost of the machinery</b>			<b>6,350,000</b>	

The selection of Candy making machine depends on the quality and quantity of business assumed to be undertaken. Based on discussions with industry stakeholders and other experts we understand that a local machine having a capacity of 350 k.g/ hour would be installed. A good quality local machine fulfilling such requirements is expected to cost around Rs. 6.35 million. Assumptions of working hours for plant and machinery at the beginning of the production operations will be as follows:

<b>Machinery</b>	<b>Working Hours</b>
Production Plant	2 hrs/day
Wrapping	8-12 hrs/day
Packing Machinery	8-12 hrs/day

*In addition, one additional wrapping machine will be required in the 4<sup>th</sup> year due to expected increase in the production which will cost around 650,000.*

**6.2.1 Maintenance Requirement**

The local machine is expected to be serviced on an annual basis, for the projected period, costing around 1.5% of the cost of machine for first five years and 3% for the coming years.

**6.2.2 Depreciation Treatment**

The treatment of depreciation would be on a diminishing balance method at the rate of 10% per annum. This method is also expected to provide accurate tax treatment.

**6.3 Factory / Office Equipment & Furniture**

A lump sum provision of Rs. 250,000 for procurement of office furniture and factory equipment is assumed. This would include table, desk, chairs, office stationery and

plant & machinery equipment. The breakup of Factory Office Furniture & Fixtures is as follows:

Item	Number	Total Cost
Table & Chair for Owner	1	18,000
Tables & Chairs for Staff	4	40,000
Air Conditioner	1	80,000
Waiting Chairs	6	20,000
Sofa Set	1	22,000
Curtains & Interior Decoration	-	20,000
Electrical Fittings & Fancy Lights	-	50,000
<b>Total</b>		<b>250,000</b>

### 6.3.1 Depreciation Treatment

Factory/Office equipment and furniture is expected to depreciate at a constant rate of 10% per annum according to the diminishing balance depreciation method.

## 6.4 Office Vehicle

The proposed setup would require an office vehicle (a second hand delivery van) to carryout all office activities and to cater urgent delivery requirements, if any. The cost of vehicle is assumed to be Rs. 850,000.

### 6.4.1 Depreciation Treatment

The office vehicle is expected to depreciate at a constant rate of 10% according to the diminishing balance method.

## 6.5 Utilities

The proposed Candy making machinery will operate using electricity for Candy production wrapping/bagging purposes. This would draw considerable amount of electricity, which would further increase in case of air conditioner. The cost of the utilities including electricity, telephone, and water is estimated to be Rs. 960,000 per annum. The utility expenses are assumed to increase at 10% per annum.

Utilities	Total Monthly Cost
Water & Gas	10,000
Internet & Telephones	10,000
Electricity	60,000
<b>Total</b>	<b>80,000</b>

## 6.6 Working Capital Requirements

It is estimated that an additional amount of approximately **Rs. 2,865,000** will be required as cash in hand to meet the working capital requirements / contingency cash for the initial stages. This provision has been estimated based on the salaries of the staff and utilities charges for first three months of operations of the proposed Hard Candy business.

Cost	Amount in Rs.
First Three Months Salary	927,000
First Three Months Utilities Charges	240,000
First Three Months Misc. Expenses	300,000
Inventory (Raw Material-One Month)	1,398,000
<b>Total</b>	<b>2,865,000</b>

### 6.7 Preliminary and Machinery Transportation Expenses

A lump sum provision of Rs. 500,000 is assumed to cover all preliminary expenses like registration, documentation charges etc. which will be amortized over the 5 year period. There has been a provision of Rs. 100,000 for plant and machinery transportation and services hired for trial production.

### 6.8 Miscellaneous Expenses

Miscellaneous expenses of running the business are assumed to be Rs. 100,000 per month. These expenses include various items like office stationery, daily consumables, fuel expenses, traveling allowances etc. and are assumed to increase at a nominal rate of 10% per annum.

### 6.9 Raw Materials Inventory

It is assumed that an initial raw material inventory for one month would be purchased the total cost of which would be Rs. 1,398,000. The cost of raw materials is expected to increase at the rate of 8% per annum for the projected period.

### 6.10 Finished Goods Inventory

The proposed setup is assumed to maintain a Finished Goods Inventory of at least 10 days of the total annual production.

### 6.11 Revenue Projections

Key assumptions for the revenue projections are as following:

• Candy Weight	3.5 gms. Hard Candy
• Net Weight per Candy Bag	192 gms.
• Candy Price/bag	Rs. 45

It is assumed that sales price will increase by 52% after 5 years (*This pattern is observed in the pricing practice of confectionery industry*).

It has been assumed that it will take some time for the business to reach the optimal capacity utilization point for the projected period. Therefore the first year sales are assumed to be based on 25% capacity utilization and an annual increase of 8% in capacity utilization is expected for the projection period. It is assumed that machine

will function at a maximum of 97% capacity utilization (around 8 working hours/day). Provision for raw material wastage is assumed to be 0.01% of the daily production.

#### **6.12 Accounts Receivables**

A collection period of 30 days is assumed for sales. A provision for bad debts has been assumed equivalent to 2% of the annual gross sales.

#### **6.13 Accounts Payables**

A payable period of 45 days is assumed for raw material purchases.

#### **6.14 Taxation**

The business is assumed to be run as a sole proprietorship; therefore, tax rates applicable on the income of an individual tax payer are used for income tax calculation of the business.

#### **6.15 Owner's Withdrawal**

It is assumed that the owner will draw funds from the business once the desired profitability is reached from the start of operations. The amount would depend on business sustainability and availability of funds for future growth.

#### **6.16 ANNEXURES**

##### **6.16.1 Cost and Revenue Sheet**

##### **6.16.2 Projected Income Statement**

##### **6.16.3 Projected Balance Sheet**

##### **6.16.4 Projected Cash Flow Statement**

##### **6.16.5 Summary of Key Assumptions**

##### **6.16.6 Distribution and Machinery suppliers**



## 6.16.1 Cost and Revenue Sheet

a.

HARD CANDY MANUFACTURING BUSINESS SETUP COST AND REVENUE SHEET	
<b>REVENUE CALCULATIONS</b>	
<b>Production</b>	
Rated capacity	350 Kg / Hr
Estimated No. of Operating Hours	8 Hrs / Day
Estimated Optimal Production	2800 Kg / Day
Expected Capacity Utilization (At the beginning of the projec	25%
Annual Capacity Utilization Growth Rate	8%
Expected Production at the beginning of the project	700 Kg / Day
Provision for Wastage	0.010%
<b>Total Realised Production</b>	<b>700 Kg / Day</b>
Approximate Net weight of Candy	3.5 Grams / Candy
Total Candies Produced	200,000 Candies / Day
Approximate No. of Candies per Bag	55 Candies / Bag
Number of Bags Packed in a Day	3,636 Bags / Day
Approximate No. of Bags per Carton	60 Bags / Carton
Number of Cartons Packed in a Day	61 Cartons / Day
Price of One Bag @1 Candy	45 Rs.
Price charged / Carton	2700 Rs.
<b>Total Price of Cartons Produced per Day</b>	<b>163,636 Rs.</b>
Total Price of Cartons Produced per Month	3,600,000 Rs.
Total Price of Cartons Produced per Year	43,200,000 Rs
Provision for Finished Goods Inventory	10 Days Inventory
Estimated Finished Goods Inventory at end of Year	1,636,364 Rs
<b>Gross Annual Sales</b>	<b>41,563,636 Rs.</b>
<b>Wrapping Machine</b>	
Rated capacity	27,000 Candies / Hour
No. of hours worked	8 Hrs / Day
Estimated Wrappings per day	216,000 Candies / Day
Number of Machines Proposed	1
<b>Total Estimated Wrappings per day</b>	<b>216,000 Candies / Day</b>
<b>Bagging Machine</b>	
Rated Capacity	1,200 Bags / Hour
No. of hours worked	8 Hrs / Day
<b>Estimated Number of Bags Packed</b>	<b>9,600 Bags / Day</b>

### 6.16.1 Cost and Revenue Sheet

b.

COST CALCULATION	
<b>Main Ingredients</b>	
Sugar & Glucose	50 Rs / Kg
Net Weight per Bag	192 grams
Number of Bgs per Kg	5 Bags
<b>Cost of Sugar &amp; Glucose per Bag</b>	<b>9.60 Rs.</b>
Food Color, Flavor, Citric Acid & Other Additives	5% of Price of 1 Bag
<b>Cost of Additives</b>	<b>2.25 Rs / Bag</b>
<b>Total Ingredient Cost</b>	<b>12 Rs / Bag</b>
<b>Wrapping &amp; Packing Material</b>	
Cost of Wrapping & Packing per Bag	12.5% of Price of 1 Bag
<b>Total Wrapping &amp; Packing Cost per Bag</b>	<b>5.6 Rs</b>
<b>Total Cost of Material per Bag</b>	<b>17.48 Rs.</b>
Number of Bags produced per day	3,636 Bags / day
Number of Bags Produced per Month (22 Working Days)	80,000 Bags / Month
<b>Total Material Cost per Month</b>	<b>1,398,000 Rs</b>

## 6.16.2 Projected Income Statement

HARD CANDY MANUFACTURING BUSINESS SETUP										
Projected Income Statement (Rs.)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Gross Revenue</b>	41,563,636	44,404,364	50,077,440	54,083,635	58,410,326	93,339,556	103,557,302	111,841,887	120,789,238	130,452,377
<b>Net (Adjusted Sales)</b>	40,732,364	43,516,276	49,075,891	53,001,962	57,242,119	91,472,765	101,486,156	109,605,049	118,373,453	127,843,329
<b>Cost of Sales</b>	19,764,000	21,948,422	24,374,669	27,069,550	30,062,852	33,387,670	37,080,772	41,183,013	45,739,781	50,801,510
Raw Material	16,776,000	18,661,622	20,759,189	23,092,522	25,688,121	28,575,466	31,787,348	35,360,246	39,334,738	43,755,962
Labor (Production Staff)	2,028,000	2,230,800	2,453,880	2,699,268	2,969,195	3,266,114	3,592,726	3,951,998	4,347,198	4,781,918
Utilities	960,000	1,056,000	1,161,600	1,277,760	1,405,536	1,546,090	1,700,699	1,870,768	2,057,845	2,263,630
<b>Gross Profit</b>	20,968,364	21,567,854	24,701,222	25,932,413	27,179,268	58,085,095	64,405,384	68,422,036	72,633,672	77,041,819
<b>Gross Profit Margin</b>	51%	50%	50%	49%	47%	63%	63%	62%	61%	60%
<b>General Administrative &amp; Selling Expenses</b>										
Salaries	1,680,000	1,848,000	2,032,800	2,236,080	2,459,688	2,705,657	2,976,222	3,273,845	3,601,229	3,961,352
Rent Expense	600,000	660,000	726,000	798,600	878,460	966,306	1,062,937	1,169,230	1,286,153	1,414,769
Office Miscellaneous & beginning Expenses	1,200,000	1,320,000	1,452,000	1,597,200	1,756,920	1,932,612	2,125,873	2,338,461	2,572,307	2,829,537
Amortization of Preliminary Expenses	100,000	100,000	100,000	100,000	100,000	-	-	-	-	-
Depreciation Expense	765,000	688,500	619,650	557,685	546,917	502,225	452,002	406,802	366,122	329,510
Maintenance Expense	79,375	79,375	79,375	79,375	79,375	158,750	158,750	158,750	158,750	158,750
Selling & Distribution	12,219,709	13,054,883	14,722,767	15,900,589	17,172,636	27,441,829	30,445,847	32,881,515	35,512,036	38,352,999
<b>Subtotal</b>	16,644,084	17,750,758	19,732,592	21,269,529	22,993,995	33,707,379	37,221,632	40,228,602	43,496,597	47,046,916
<b>Operating Income</b>	4,324,280	3,817,096	4,968,630	4,662,884	4,185,272	24,377,716	27,183,752	28,193,434	29,137,075	29,994,903
Financial Charges (15% Per Annum)	-	-	-	-	-	-	-	-	-	-
<b>Earnings Before Taxes</b>	4,324,280	3,817,096	4,968,630	4,662,884	4,185,272	24,377,716	27,183,752	28,193,434	29,137,075	29,994,903
Tax	1,385,998	1,208,484	1,611,521	1,504,509	1,337,345	8,404,701	9,386,813	9,740,202	10,070,476	10,370,716
<b>Net Profit</b>	2,938,282	2,608,612	3,357,110	3,158,375	2,847,927	15,973,015	17,796,939	18,453,232	19,066,599	19,624,187
<b>Monthly Profit After Tax</b>	244,857	217,384	279,759	263,198	237,327	1,331,085	1,483,078	1,537,769	1,588,883	1,635,349

### 6.16.3 Projected Balance Sheet

HARD CANDY MANUFACTURING BUSINESS SETUP											
Projected Balance Sheet (Rs.)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Assets</b>											
<b>Current Assets</b>											
Cash & Bank Balance	1,467,000	2,194,614	3,200,602	6,320,722	8,769,524	11,225,470	20,518,052	36,140,737	52,524,558	69,420,018	86,672,226
Raw Material Inventory	1,398,000	1,439,940	1,483,138	1,527,632	1,573,461	1,620,665	1,669,285	1,719,364	1,770,945	1,824,073	1,878,795
Finished Goods Inventory	0	1,636,364	3,888,000	4,199,040	4,534,963	4,897,760	8,040,163	8,683,376	9,378,046	10,128,290	10,938,553
Accounts Receivable	0	3,394,364	3,626,356	4,089,658	4,416,830	4,770,177	7,622,730	8,457,180	9,133,754	9,864,454	10,653,611
Prepaid Rent	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000	600,000
<b>Total Current Assets</b>	<b>3,465,000</b>	<b>9,265,282</b>	<b>12,798,097</b>	<b>16,737,052</b>	<b>19,894,779</b>	<b>23,114,072</b>	<b>38,450,230</b>	<b>55,600,657</b>	<b>73,407,304</b>	<b>91,836,836</b>	<b>110,743,185</b>
<b>Fixed Assets</b>											
Plant Machinery & Facility	6,550,000	5,895,000	5,305,500	4,774,950	4,747,455	4,372,710	3,935,439	3,541,895	3,187,705	2,868,935	2,682,041
Furniture & Fixtures	250,000	225,000	202,500	182,250	164,025	147,623	132,860	119,574	107,617	96,855	87,170
Vehicle	850,000	765,000	688,500	619,650	557,685	501,917	451,725	406,552	365,897	329,307	296,377
<b>Total Fixed Assets</b>	<b>7,650,000</b>	<b>6,885,000</b>	<b>6,196,500</b>	<b>5,576,850</b>	<b>5,469,165</b>	<b>5,022,249</b>	<b>4,520,024</b>	<b>4,068,021</b>	<b>3,661,219</b>	<b>3,295,097</b>	<b>3,065,588</b>
<b>Intangible Assets</b>											
Preliminary and Transportation Expenses	500,000	400,000	300,000	200,000	100,000						
<b>Total Assets</b>	<b>11,615,000</b>	<b>16,550,282</b>	<b>19,294,597</b>	<b>22,513,902</b>	<b>25,463,944</b>	<b>28,136,321</b>	<b>42,970,254</b>	<b>59,668,678</b>	<b>77,068,523</b>	<b>95,131,933</b>	<b>113,808,773</b>
<b>Owner's Equity</b>	11,615,000	14,453,282	16,961,894	19,919,004	22,577,378	24,925,305	39,398,321	55,695,260	72,648,492	90,215,091	108,339,277
<b>Short-term Liabilities</b>											
Account Payable	0	2,097,000	2,332,703	2,594,899	2,886,565	3,211,015	3,571,933	3,973,419	4,420,031	4,916,842	5,469,495
<b>Long Term Liability</b>	0	0	0	0	0	0	0	0	0	0	0
<b>Total Equity &amp; Liabilities</b>	<b>11,615,000</b>	<b>16,550,282</b>	<b>19,294,597</b>	<b>22,513,902</b>	<b>25,463,944</b>	<b>28,136,321</b>	<b>42,970,254</b>	<b>59,668,678</b>	<b>77,068,523</b>	<b>95,131,933</b>	<b>113,808,773</b>

## 6.16.4 Projected Cash Flow Statement

HARD CANDY MANUFACTURING BUSINESS SETUP											
Projected Statement of Cash Flows (Rs.)	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Cash Flow From Operating Activities</b>											
Net Profit	0	2,938,282	2,608,612	3,357,110	3,158,375	2,847,927	15,973,015	17,796,939	18,453,232	19,066,599	19,624,187
Add: Depreciation Expense	0	765,000	688,500	619,650	557,685	546,917	502,225	452,002	406,802	366,122	329,510
Amortization Expense	0	100,000	100,000	100,000	100,000	100,000	0	0	0	0	0
(Increase) / decrease in Receivables	0	(3,394,364)	(231,993)	(463,301)	(327,173)	(353,346)	(2,852,554)	(834,449)	(676,574)	(730,700)	(789,156)
Increase / (decrease) in Payables	0	2,097,000	235,703	262,196	291,667	324,450	360,918	401,485	446,612	496,811	552,653
(Increase) / decrease in RM	0	(41,940)	(43,198)	(44,494)	(45,829)	(47,204)	(48,620)	(50,079)	(51,581)	(53,128)	(54,722)
(Increase) / decrease in FG Inventory	0	(1,636,364)	(2,251,636)	(311,040)	(335,923)	(362,797)	(3,142,403)	(643,213)	(694,670)	(750,244)	(810,263)
<b>Net Cash Flow From Operations</b>	<b>0</b>	<b>827,614</b>	<b>1,105,988</b>	<b>3,520,120</b>	<b>3,398,802</b>	<b>3,055,946</b>	<b>10,792,582</b>	<b>17,122,686</b>	<b>17,883,821</b>	<b>18,395,460</b>	<b>18,852,208</b>
<b>Cash Flow From Financing Activities</b>											
Receipt of Long Term Debt	0										
Repayment of Long Term Debt		0	0	0	0	0	-	-	-	-	-
Owner's Equity	11,615,000	(100,000)	(100,000)	(400,000)	(500,000)	(500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)	(1,500,000)
<b>Net Cash Flow From Financing Activities</b>	<b>11,615,000</b>	<b>(100,000)</b>	<b>(100,000)</b>	<b>(400,000)</b>	<b>(500,000)</b>	<b>(500,000)</b>	<b>(1,500,000)</b>	<b>(1,500,000)</b>	<b>(1,500,000)</b>	<b>(1,500,000)</b>	<b>(1,500,000)</b>
<b>Cash Flow From Investing Activities</b>											
Capital Expenditure	(7,400,000)				(450,000)	(100,000)					(100,000)
Office Equipment & Furniture	(250,000)										
Preliminary Operating Expenses	(500,000)										
Security Deposit and Advance Rent	(600,000)										
Raw Material Inventory	(1,398,000)										
<b>Net Cash Flow From Investing Activities</b>	<b>(10,148,000)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>(450,000)</b>	<b>(100,000)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>(100,000)</b>
<b>NET CASH FLOW</b>	<b>1,467,000</b>	<b>727,614</b>	<b>1,005,988</b>	<b>3,120,120</b>	<b>2,448,802</b>	<b>2,455,946</b>	<b>9,292,582</b>	<b>15,622,686</b>	<b>16,383,821</b>	<b>16,895,460</b>	<b>17,252,208</b>
<b>Cash at the Beginning of the Period</b>	<b>0</b>	<b>1,467,000</b>	<b>2,194,614</b>	<b>3,200,602</b>	<b>6,320,722</b>	<b>8,769,524</b>	<b>11,225,470</b>	<b>20,518,052</b>	<b>36,140,737</b>	<b>52,524,558</b>	<b>69,420,018</b>
<b>Cash at the End of the Period</b>	<b>1,467,000</b>	<b>2,194,614</b>	<b>3,200,602</b>	<b>6,320,722</b>	<b>8,769,524</b>	<b>11,225,470</b>	<b>20,518,052</b>	<b>36,140,737</b>	<b>52,524,558</b>	<b>69,420,018</b>	<b>86,672,226</b>

### 6.16.5 Summary of Key Assumptions

Summary of Key Assumptions		
Sr. No.	PARTICULARS	TOTAL COST/DETAILS
1	Plant & machinery	6,350,000
2	Renovation Cost	200,000
3	Office Equipment & Furniture	250,000
4	Vehicles	850,000
5	Rent in Advance	600,000
6	Preliminary Expenses	500,000
<b>Total Capital Cost</b>		<b>8,750,000</b>
7	Utilities - Three Months	240,000
8	Salaries - Three Months	927,000
9	Raw Material Inventories - One Month	1,398,000
10	Misc. Expenses - Three months	300,000
<b>Total Working Capital</b>		<b>2,865,000</b>
<b>Total Project Cost</b>		<b>11,615,000</b>
PROJECT RETURNS AND OTHER FINANCIAL ASSUMPTIONS		
11	IRR	47%
12	NPV	22,162,136
13	Payback Period (Years)	3 Years and 1 month
14	Debt Equity Ratio	0:100
OTHER ASSUMPTIONS		
15	Depreciation	10%
16	Bad debts	2% of annual gross sales
17	Wastage During production	0.01% of the daily production
18	Repair & Maintenance	1.5% of the Total Plant Cost for Initial 5 Years and 2.5% after 5 Years
19	Increase in the Raw Material Cost (Annual)	8%
20	Increase in capacity utilisation (Annual)	8%
21	Capacity Utilisation at the beginning of the period	
a	Main Production Plant	25% = 2 Hours
b	Wrapping Machine	8-12 Hours
c	Bagging Machine	8-12 Hours
22	Addition of Wrapping Machine in the 4th year	1'
23	Finished Goods Inventory at the End of the Year	10 days
24	Accounts Receivable period	30 Days
25	Accounts Payable period	45 Days
26	Increase in Selling Price	52% after 5 Years

### 6.16.6 Distribution and Machinery suppliers

In order to facilitate potential investors, contact details of Distribution Networks and Machinery Supplier relevant to the proposed project are given next.

#### Distribution Network

##### Distribution Network - 1

Name of Distributor	<b>Fair Marketing Pakistan</b>
Address	405 R-2 Johar Town Lahore Punjab 54000, Pakistan
Phone	+92-42-35955284

##### Distribution Network - 2

Name of Distributor	<b>Burque Distributors</b>
Address	Plot # M-1, Begum Rabia Siddiqui Road, Central Commercial Area, Bahadurabad, Karachi - 74800, Pakistan.
Phone	+92-21-34949595

##### Distribution Network - 3

Name of Distributor	<b>Ariba Distributors</b>
Address	Near Civil hospital, PSO pump, Hyderabad
Phone	+0316-4386864

##### Distribution Network - 4

Name of Distributor	<b>Al-Shehbaz Confectionery</b>
Address	Dhak Road Sukkur
Phone	+071-5626360



## Machinery Suppliers

### Machinery Supplier - 1

Name of Supplier	<b>Mirza A.M. &amp; Sons.</b> (Complete Plant/Machinery Supplier)
Address	P-88, ST # 4, Yesrab Colony, Faisalabad 38090, Punjab, Pakista
Phone	041-8751502
E-mail	info@mirzaasons.com
Website	www.mirzaasons.com

### Machinery Supplier - 2

Name of Supplier	<b>Far Eastern Impex</b> (Complete Plant/Machinery Supplier)
Address	Far Eastern Impex (Pvt) Ltd.F.E.I. Centre G-3, Central Comm'l Area, KCHSU. Shahrah-e-Faisal, Karachi 75350, Sindh, Pakistan
Phone	021-3452 0127-9
E-mail	info@fei.com.pk
Website	www.fei.com.pk/

### Machinery Supplier - 3

Name of Supplier	<b>Ilyas Brothers Engineering</b> (Complete Plant/Machinery Supplier)
Address	Lahore
Phone	041-8710875 0301-8563889
E-mail	info@ibengineering.com
Website	http://ibengineering.com

### Machinery Supplier - 4

Name of Supplier	<b>Al-Abd Corporation</b> (Complete Plant/Machinery Supplier)
Address	21-D, Wahab Arcade M. A. Jinnah road, Karachi- 74200, Pakistan
Phone	021-32625322 021- 32621920

E-mail	alabd@alabdcorp.com.pk
Website	http://alabdcorp.com.pk/

## Machinery Supplier - 5

Name of Supplier	<b>Plastipack</b> (Packaging/Wrapping Machine Supplier)
Address	Plot # E-9, Sector 5, K.I.A., Karachi.
Phone	+92 21 3505 4448 +92 21 5505 4449
E-mail	info@plastipack.com
Website	www.plastipack.com

## Machinery Supplier - 3

Name of Supplier	<b>Sama Engineering</b> (Packaging/Wrapping Machine Manufacturers)
Address	Nazimabad # 2, Block-A, Plot No. 1/32, Opposite Firdous Colony KHI-74600 Pakistan
Phone	021-36688883 021-36603311 021-36602467
E-mail	info@samaengineering.com
Website	www.samaengineering.com

# Small and Medium Enterprises Development Authority

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