INTERNERSHIP REPORT ON The Marketing activities of solar ceramic Industries in Bangladesh

Rahman, Md. Atikur
Daffodil International University

http://hdl.handle.net/20.500.11948/1674
Downloaded from http://dspace.library.daffodilvarsity.edu.bd, Copyright Daffodil International University Library
INTERNSHIP REPORT ON

The Marketing activities of solar ceramic Industries in Bangladesh

An Internship Report Presented to the Faculty of Business Administration in Partial Fulfillment of the Requirements for the Degree of Bachelor of Business Administration

Supervised By:

Farhana Noor
Senior Lecturer
Department of Marketing
Faculty of Business & Economics
Daffodil International University

Submitted By:

Md. Atikur Rahman
ID#092-11-1045
Major in Marketing

Date of Submission: 20/08/2015

“©Daffodil International University”
Study Title for Internship Report:

The Marketing activities of Solar Ceramic Industries in Bangladesh.
LETTER OF TRANSMITTAL

August 20, 2015
Farhana Noor
Senior Lecturer
Faculty of Business & Economics
Daffodil International University

Subject: Submission of Internship Report on “The marketing activities of solar ceramic industries in Bangladesh.”

Dear Sir/Madam

It is my great pleasure to submit the report on “The marketing activities of solar ceramic industries in Bangladesh.” which has been assigned as an obligatory condition for the completion of the BBA program. I have tried my best to give this report a presentable shape and make appropriate and informative to accomplish the objectives of the study.

I would like to express my thanks to you for giving me the chance to work on such a project which is very much relevant to my study. I sincerely believe that the practical knowledge and experience gathered from the study will be very much helpful in my future life for doing this type of research work.

If any confusion arises or any further explanation is needed, I will always be available to explain the material to you.

Sincerely yours,

Name: Atikur Rahman
ID: 092-11-1045
Major in Marketing
Bachelor of Business Administration
Daffodil International University
LETTER OF ENDORSEMENT

The Internship Report entitled "The marketing activities of solar ceramic industries in Bangladesh." has been submitted to the Office of Placement & Alumni, in partial fulfillment of the requirements for the degree of BBA, Major in Marketing, Faculty of Business & Economics, on 20 August, 2015 by Atikur Rahman, Id # 092-11-1845. The report has been accepted and may be presented to the Internship Defense Committee for evaluation.

(Any opinions, suggestions made in this report are entirely that of the author of the report. The University does not condone nor reject any of these opinions or suggestions).

Farhana Noor
Internship Supervisor
Senior Lecturer
Department of Marketing
Faculty of Business & Economics
Daffodil International University
ACKNOWLEDGEMENT

At the very beginning, I would like to convey my sincere appreciation to the Almighty Allah for giving me the strength and ability to complete the task within the specified time.

Any assignment is the product of numerous people whose efforts, ideas and suggestions make the writer’s job manageable. I am indebted to many people and organization for their assistance in making this assignment a reality.

I am very much thankful to my honorable supervisor, Mrs. Farhana Noor, Senior Lecturer, Faculty of Business & Economics, Daffodil International University for his kind of guidelines. Without his constant supervision and valuable advices and suggestions, I would be failing to complete the whole thing in a right manner.

This report owes much to the executives and officers of the Solar Ceramics Limited of Uttara branch. I would like to express my heartiest thanks to Mr. AKM Kamaluddin, (Senior Vice President & Head of Branch), Mrs. Sharmin Akhter (Senior Assistant Vice President, Operation Manager), Mrs. Nasrin Rahman (Senior Officer), Mr. Tanim Hossain (Relationship Officer), and Mr. Sidikur Rahman (Credit In Charge) for their valuable support.

As always, any errors or omissions are the sole responsibilities of the writers. Any suggestions improving the quality of this assignment are welcomed.
Table of Content

CHAPTER 1: INTRODUCTION .................................................................................................................................1
1.1 Introduction ..................................................................................................................................................2
1.2 Rationale of the study ....................................................................................................................................2
1.3 Objectives of the study ..................................................................................................................................3
1.4 Methodology of the study ............................................................................................................................3
1.5 Limitations of the study ...............................................................................................................................4

CHAPTER 2: Overview of the ORGANIZATION .....................................................................................................5
2.1 Background of the Solar Ceramics ..............................................................................................................6
2.2 Organogram of Solar Ceramics ....................................................................................................................7
2.3 Manufacturing to consumer channel ..........................................................................................................8
2.3.1 Marketing & Sales .....................................................................................................................................8
2.3.2 Financing ..................................................................................................................................................8
2.3.3 Human Resources ....................................................................................................................................8
2.4 Work Related ................................................................................................................................................9
2.5 Organization Wide .......................................................................................................................................10
2.6 Mission & Vision ..........................................................................................................................................10
2.7 Engineering ..................................................................................................................................................11
2.8 Environmental Issues ..................................................................................................................................11
2.9 Occupational Health And Safety ...............................................................................................................13
2.10 Investment Opportunities ..........................................................................................................................14

CHAPTER 3: Analysis of the Study ....................................................................................................................15
3.1 Corporate Strategy .......................................................................................................................................16
3.2 Company Marketing Strategy ....................................................................................................................17
3.3 Description of Products ...............................................................................................................................18
3.3.1 Sanitary Ware Manufacturers: ..................................................................................................................19
CHAPTER 1

INTRODUCTION
1.1 Introduction

Solar Ceramics Ltd. produces a very wide range of products in the Ceramic World. This industry not only caters the local market demand, but also contributes in exports to international markets. For years the manufacturers of this area have built their un-matched skills in design, aesthetics and quality. Their products speak for themselves and set higher standards of quality and excellence. They are producing Different types of product such as different types of pan, Wash basin, Pedestal, Flat urinal, Commode, Foot rest, Soap case, Low down and so on. Solar Ceramics Private Limited Company started their venture during August, 2007 with full fledge production plant and suitable premises in Bangladesh. The primary objective of the company was to produce ceramic product in selected users. By the 2009 this organization changes their aspiration to cope up with market leadership in sanitary ware section. The ultimate objective was to produce, process, treat, mould, prepare, manufacturer, buy, sell, export, import all kinds of ceramic materials, chemicals, powder and to manufacturer various types of pickers, tops, buttons, jugs, cup, jars, toys, canes, containers, plates and dinner set items.

The valuation of Solar after 5 years really amazing for our sanitary market ware products and the upcoming ventures are Solar Jute Mills and Tiles wire.

1.2 Rationale of the Study

This is an obligatory requirement for completing the degree namely Bachelor of Business Administration (BBA) from Daffodil International University. I am doing my internship at Solar Ceramic Industry, Gazipur, and Dhaka for acquiring my institutional degree mentioned previously. Solar Ceramic had imposed me in their factory to conduct internship requirement. Bachelor of Business Administration major in Marketing has limited spaces in factory of sanitary ware products. By default workings imposed by human resource department at production plant management and system evaluation, I have chosen to work my report as titled “Production Process of Solar Ceramics”. From last one month it is a mandatory duty on me to work with production procedure management. Working into production controlled by operation management department of the organization and crude work of creativity really amaze me work there. Finally, it was my intention to write my affiliation report on production process of solar ceramics. Ceramics industry is precisely existing booming sector for our country and maintains massive growth in our economy. Bangladeshi business sector contemporarily belonging to the operation and incentives granted by Finance and Commerce Ministry approached us in a middle income economy by 2019. However, production is the crude part of any business entity and doing work with operation definitely add value to my knowledge of Accounting and Finance affairs.
1.3 Objectives of the study

The general objective of this study to evaluate the marketing activities of solar ceramic’s in Bangladesh: A study on Solar Ceramic’s Limited. The specific objectives of this study are as follows:

- To acquire knowledge on 4P of Solar Ceramic’s Marketing Strategy.
- To describe the concept of holistic marketing of solar ceramics.
- To know about segmentation, targeting & positioning Strategy of solar ceramics.
- To identify the elements of strengths, weaknesses, opportunity & threats of solar ceramic’s.

1.4 Methodology of the study:

The report is “Descriptive Research” in nature. It is prepared on the basis of information collected from primary and secondary sources. The secondary information was collected from Solar Ceramics annual report, magazine and staff of the Solar Ceramics and primary data collected from Company official as well as customers. Majority of information was collected from secondary sources

Sources of data

- Primary data: All the officers and customers of Solar Ceramics Ltd.
- Secondary data

Primary sources

- Customers
- Officers
Secondary sources

- Solar Ceramics annual report
- Solar Ceramics web site
- Newspaper

Sample Size

- 10 Customers
- 5 Officers

Sampling

- Convenience Sampling

1.5 Limitations of the study

The following are the limitation of the study:

- Three month time is not enough for such an extensive study. It is very difficult to collect all the required information in such period.

- No details data of Ceramics Company of our country.

- This study does not include any comparison with the similar company.

- A Worthwhile study requires the analysis of as much data as possible covering various aspects of the study. But I did not have access to the various types’ information about production management process.

- Due to some legal obligation and business secrecy Solar Ceramics Company are reluctant to provide data. For this reasons, the study limits only on the available published data and certain degree of formal and interview.

- To protect the organizational loss in regard of maintaining confidentiality some parts of the report are not in depth.

- The conclusion drawn and recommendation made are for overall company, May and most probably not applicable for particular unit or products, unless it is specifically mentioned.
CHAPTER 2
Overview of the Organization
2.1 BACKGROUND OF THE SOLAR CERAMICS

Solar Ceramics Private Limited Company started their venture during August, 2007 with full fledge production plant and suitable premises in Bangladesh. The primary objective of the company was to produce ceramic product in selected users. By the 2009 this organization changes their aspiration to cope up with market leadership in sanitary ware section. Beginning of their journey was in ceramic market with five future oriented entrepreneurs with their pivotal vision to success. The vision was to set up ceramic industries with all modern technological aggregation and create value for users. To run a ceramic industry they established highly well emphasized machineries and tenure skilled persons at Gazipur remote area of Dhaka. There are four basic department and distinguish sub department took place with their run. The major portion of the work deals with operation and production process unit with eight elementary organs. Clay is the major ingredients of making ceramic products with animal sculptures, Figurines etcetera are necessary elements. The ultimate objective was to produce, process, treat, mould, prepare, manufacturer, buy, sell, export, import all kinds of ceramic materials, chemicals, powder and to manufacturer various types of pickers, tops, buttons, jugs, cup, jars, toys, canes, containers, plates and dinner set items. Solar ceramics imports 90 percent of their raw materials from globally well known suppliers. Solar is the only sanitary ware producer who has separate department of Quality Management. Mr. Noor Islam and Al-Haj Md. Ekram was the pioneer of this industry. The corporate office of Solar situated at Ring Road, Dhaka and production plant (Factory) run through corporate management head (Executive Director). The operation department consists of eight sub department of Casting, Finishing, Checking, Glaze, Loading, Firing, Sorting and quality department. Each of the production or technical decision is made by top management and executive committee of Solar. Solar has total 16 distributors over the country. Financial growths of the company are in well path and this section will post on economic value analysis. The valuation of Solar after 5 years really amazing for our sanitary market ware products and the upcoming ventures are Solar Jute Mills and Tiles wire.
2.2 Organogram of Solar Ceramics

Chairman

- Director
- Director
- Director
- Director

Managing Director

- Accounts
  - Head of Accounts
    - Officer
    - Officer

- Marketing
  - Head of Marketing
    - Senior Officer
    - Territory Officer
    - Officer

- Human Resource
  - Officer
  - Officer

- Operation and production
  - Chief Operation Officer
  - GM
  - Production Manager
  - Floor In charge
  - Supervisor

- Casting
- Finishing
- Checking
- Glaze
- Loading
- Firing
- Sorting
- Quality Control Department

Production Workers
2.3 Manufacturing to Consumer Channel

2.3.1 Marketing & Sales
Manufacturers have developed contacts with the distributors in all over the country and place their product on the market through these outlets. Major distributors of Ceramics sanitary ware products are in six cities Dhaka, Chittagong, Rajshahi, Shylhet, Barisal and Khulna.

The distribution channel moves goods from producer to consumer.

![Diagram](Producer -> Distributors -> Dealers -> Consumer)

There is large export potential for ceramics sanitary ware in Middle East, Africa and Central Asia. But unfortunately only 10 – 12 sanitary ware manufacturers are involved in export. There is not any specialized marketing department even in medium level units.

2.3.2 Financing
Almost all the registered commercial banks of Bangladesh have their branches in the cluster and providing the financing at competitive rates. But most of stakeholders depend upon their own financial equity based resources. It is also observed that the entrepreneurs normally prefer obtaining loan from the informal sources. Due to unawareness, ineffective information flow and paper work these entrepreneurs are reluctant to go to the financial institutions.

2.3.3 Human Resources
Human resource is present in abundance and skills are traditionally inherited. The owner usually deals with management issues and marketing related activities. Most of the labor is semi skilled and are trained on job. There is no specialized marketing or accounts department. They facilitate their sales only on the basis of personal contacts and no proper accounts are maintained therefore certain problems related to tax return, monitoring and evaluation are faced. Only primary or intermediate level employees are handling accounts. Glazing supervisor, Body supervisor, Kiln supervisor, Designing or molding in-charge and accountant are considered middle level management that are ceramics diploma holders or experienced persons and also easily available in the market.
2.4 Work Related

I am humble to say about my internship workings duties on Solar Ceramic factory is really amazing experience worthy. The reality of making ceramic products through my eyes was something that astonished me. However, plant offices are full of painstaking and smooth surveillance. Production is the heart of any product or commodity. In the production maneuver was first sight fascinating for me in addition, the task they do for every single point of value creating hard work just for users. Quality Management approves only the best products. In contrast solar produces more than 13 types of sanitary wires. Such as:

- Asian Pen
- Wash Basin
- Pedestal
- Foot Rest
- Soap Case
- Low Down
- Flat Urinal
- Commode
- One Piece
- Sistern
- Oval Basin
- Counter Basin
- Table Top etc.
2.5 Organization Wide

Solar ceramic is quite known for its quality ceramics products. This industry not only caters the local market demand, but also contributes in exports to international markets. For years the manufacturers of this area have built their un-matched skills in design, aesthetics and quality. Their products speak for themselves and set higher standards of quality and excellence. The know-how about this industry is a result of technology and skill transfer from Syedpur, where people have been associated this kind of business. The first major sanitary ware factory (RAK Ceramics Limited) which was established in early 90’s in Dhaka and subsequently the establishment the role model of Ceramics. In 21st centuries have contributed to the development of the trend/style, expertise about manufacturing of different products and in technology transfer. Over the years this industry has expanded and resulted in a long chain of ceramics factories in this area and still they are growing.

2.6 Mission & Vision

Mission:
To manufacture of all kinds of Ceramic & Ceramic Products and carrying on the business of buying, selling, import, export and supply of the same to the local market and foreign countries.

Vision:
To set up modern ceramic industries with all modern technical knowhow and facilities in any part of Bangladesh.
2.7 Engineering

Plant machinery and equipment required for sanitary ware plant is presented in down. The total investment cost of plant machinery and equipment is estimated at Tk. 23.46 million. Out of which about Tk. 17.38 million will be required in foreign currency.

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaze preparation</td>
<td></td>
</tr>
<tr>
<td>Ball mill</td>
<td>3</td>
</tr>
<tr>
<td>Empty pipe line</td>
<td></td>
</tr>
<tr>
<td>Vibrating screen</td>
<td>1</td>
</tr>
<tr>
<td>Glass fiber reinforced drums</td>
<td>6</td>
</tr>
<tr>
<td>Body preparation</td>
<td></td>
</tr>
<tr>
<td>Ball mill</td>
<td>1</td>
</tr>
<tr>
<td>Empty pipe line</td>
<td></td>
</tr>
<tr>
<td>Concrete blunger</td>
<td>3</td>
</tr>
<tr>
<td>Discharge line, water dosing etc</td>
<td></td>
</tr>
<tr>
<td>Casting</td>
<td></td>
</tr>
<tr>
<td>Dryer unit, ceiling</td>
<td></td>
</tr>
<tr>
<td>Casting bench</td>
<td></td>
</tr>
<tr>
<td>Humidity drier</td>
<td>1</td>
</tr>
<tr>
<td>Glazing</td>
<td></td>
</tr>
<tr>
<td>Falling table and accessories</td>
<td>6</td>
</tr>
<tr>
<td>Visual inspection table &amp; accessories</td>
<td>3</td>
</tr>
<tr>
<td>Grinding</td>
<td></td>
</tr>
<tr>
<td>Grinding booth and tools</td>
<td>3</td>
</tr>
<tr>
<td>Shuttle kiln</td>
<td>1</td>
</tr>
<tr>
<td>Kiln car</td>
<td>10</td>
</tr>
<tr>
<td>Truck</td>
<td>LS</td>
</tr>
<tr>
<td>Mold preparation</td>
<td></td>
</tr>
<tr>
<td>Plaster preparation, plaster mixing, vacuum extraction</td>
<td></td>
</tr>
<tr>
<td>Care mold and drying unit</td>
<td>LS</td>
</tr>
</tbody>
</table>

2.8 Environmental Issues

Environmental issues associated with ceramic tile and sanitary ware manufacturing primarily includes the following:

- Air Emissions, Greenhouse Gases, and Energy Efficiency
- Wastewater
- Solid waste
Air Emissions

Particulate emissions (dust) may be generated from storage and handling of raw materials and during firing or spray drying of ceramics. Kiln operations can generate nitrogen oxide (NOx) and sulfur dioxide (SO2). The volume of these pollutants depends on the type of fuel and the temperature of the kiln. Chlorides and fluorides are pollutants found in waste gases from ceramic kilns, and are generated from impurities in clay materials. The heavy metal content of most ceramic raw materials is generally low and of limited concern, with the exception of some ceramic pigments glaze materials.

Wastewater

Process wastewater is mainly generated from cleaning water in preparation and casting units, and other processes. The potential pollutants of concern include suspended solids (e.g. clays and insoluble silicates), suspended and dissolved heavy metals (e.g. lead and zinc), sulfates, boron, and traces of organic matter.

Solid Waste

As with wastewater, the primary concern is to reduce the volume of solid waste generated. Process improvements such as polymer molds, using electronic controls for the firing curve, and using specialized spray booths can reduce the amount of breakage and allow reclamation of excess glaze. Broken ware, used molds, and sludge’s can be recycled.

Process waste originating from the manufacture of ceramic products mainly consists of sludge from process wastewater treatment and process sludge resulting from glazing, plaster, and grinding activities. Other process wastes include broken ware; solids from dust treatments; spent plaster molds; and packaging waste (e.g. plastic, wood, metal, paper).

Greenhouse Gases and Energy Efficiency

Greenhouse gas (GHG) emissions, especially CO2, are mainly associated with the use of energy in the kiln and spray dryer. Manufacturers should implement a plan to improve energy efficiency, which could include replacing inefficient kilns; substituting natural gas or LPG for heavy fuel oil and solid fuels; improving kiln sealing and thermal insulation to reduce heat losses arising from excessive air flow; and use of heat recovery systems to pre-dry products and pre-heat combustion air.

The energy efficiency of spray dryers can be improved by use of a spray dryer with an optimized nozzle; insulating the spray dryer, and proper sizing of exhaust fans and variable speed controls. Other energy efficiency opportunities include use of high pressure hydraulic presses in ceramic tiles; optimization of the amount of water in the mill mix; limitation of electrical load in mills through adoption of dual-speed electrical motors or electrical motors fitted with fluid couplings; and use of cogeneration of heat and power to generate power with waste heat from gas turbine–based operation of the spray dryer.
Wastewater

The first concern is to reduce the volume of wastewater, which can be done by the use of dry off-gas cleaning systems instead of wet off-gas cleaning systems; installation of waste glaze collection systems where practical; and implementing closed-circuit water reuse systems. Water recycling for ceramic tile manufacturing is typically 70–80 percent and 30 – 50 percent for sanitary ware manufacturing.

Techniques for treating industrial process wastewater include flow and load equalization with pH adjustment; sedimentation for suspended solids reduction using settling basins or clarifiers; multimedia filtration for reduction in non-settling suspended solids; dewatering and disposal of residuals in landfills, or if hazardous in designated hazardous waste disposal sites. Additional engineering controls may be required for advanced metals removal using membrane filtration or other physical/chemical treatment technologies.

2.9 Occupational Health & Safety

Occupational health and safety issues associated with the operations phase of ceramic tile and sanitary ware manufacturing primarily include the following:

- Respiratory hazards
- Exposure to heat
- Exposure to noise / vibration
- Physical hazards
- Electrical hazards

Respiratory Hazards

Workplace exposure to fine airborne particulate in the form of silica dust (SiO2), deriving from silica sands and feldspar, is the main occupational hazard in this sector. Other potential hazards may result from glaze application and combustion by-products. In addition to the measures to reduce dust and other air pollutants described above, the facility should segregate raw material storage from other operational areas; install local exhaust ventilation systems with filter units; implement periodic dust removal from surfaces (e.g. vacuum cleaning equipment with high-efficiency particulate air [HEPA] filters; and provide personal protective equipment (PPE), (e.g. overalls, goggles, gloves, and face masks) to workers operating in dusty environments and applying glaze.

Exposure to Heat

To reduce heat exposure, the facility should be well ventilated, hot surfaces should be shielded, time required for work in hot areas should be reduced, air-cooled break rooms should be provided, and workers provided with appropriate personnel protective equipment.
Noise and Vibration

Noise sources include raw material preparation (e.g. crushing, grinding, milling, dry and wet mixing, screening, and clarification), pressing and granulation processes, cutting, grinding and polishing, fan burners in kilns, and packaging activities.

Physical Hazards

Activities related to the operation and maintenance of equipment (e.g. mills, mill separators, and belt conveyors) represent a source of exposure to physical impacts, especially during equipment start-up and shutdown. Other typical hazards include handling sharp materials, lifting heavy objects, performing repetitive motions.

Electrical Hazards

Workers may be exposed to electrical hazards due to the presence of electrical equipment throughout ceramic tile and sanitary ware manufacturing facilities.

2.10 Investment Opportunities

The need for following projects as potential investment opportunities in Solar Ceramics Sanitary Ware has been identified on the basis of the key strengths of this cluster:

- Processed Imported Raw Material Depot.
- Trading (Relevant Machinery etc).
- Modern Kiln Designers.
- Warehousing.
- Local Machinery Manufacturing.
- Housekeeping.
CHAPTER 3
Analysis of the Study
3.1 Corporate Strategy

Corporate strategies of the Solar Ceramics are applied by market conditions and analytical review of the rivals. Due to potential rivalry are huge in numbers then doing business on same plate is cautiously difficult job to do. However, top management cascade potential shown below:

- Put entry diversified product to the market.
- Must be prudential in market analysis and targeting.
- Make 3 layer based planning to conduct business in tough competition with giant production houses.
- Implement Total Quality Management (TQM) internally in the production process.
- Impose reliable customer service department to verified well diversified workings.
- To conduct market research in every Quarter to measure practical position of the organization.
- To ensure stakeholder interest properly and maintain a trend.
- Quick delivery system in the case of customer satisfaction.
- Deployment of third party interest (Banks, Financial institutions etcetera).
- Fulfillment of investors’ interest.
- Top management is liable to provide satisfied services to the organization.
3.2 Company Marketing Strategy:

A marketing strategy that is developed by thinking about the business as a whole, it’s place in the broader economy and society, and in the lives of its customers. It attempts to develop and maintain multiple perspectives on the company's commercial activities.

Solar Ceramics (Bangladesh) Ltd. had to take certain vital decision in order to better market their design. Solar Ceramics marketing strategies are discussed in below:

Figure: Marketing Mix
3.3 Description of Products

Ceramics are defined as products made from inorganic materials having non-metallic properties usually processed at a high temperature at some time during their manufacture. The word "ceramics" comes from the Greek word "Keramos" meaning "Pottery," "Potter's Clay," or "a Potter" - primarily used to mean "burnt stuff."

The technical definition of ceramics encompasses a much greater variety of products than is normally realized. To most people, the word ceramics means dinnerware, figurines, vases, and other objects of ceramic art. The majority of ceramic products is not generally recognized, as such is much more recent in development and in general is utilitarian rather than aesthetic. Examples are bathtubs, washbowls, sinks, electrical insulating devices, water and sewerage pipes, bricks, hollow tile, glazed building tile, floor and wall tile, earthenware, porcelain enamel and glass. Variety of products is directly proportional to variety in clays being used in their manufacturing.

In Solar sanitary fitting was always a famous industry which continuous the demands for Ceramics Sanitary ware. Presently there are more or less 50 units. Amongst these product lines, sanitary ware is the major player. All these segments have approximately same raw material needs and in fact their suppliers are same too. Ceramics sanitary ware has great potential in local as well as in export market, therefore a large number of pottery units have shifted to towards this industry. Currently the Ceramic sanitary ware industry, Gujranwala is manufacturing the following products in various designs, sizes and specifications:

- Bathtub incl. legs
- Shower tray
- Washbasin
- Wash stand
- Toilet combination
- Wall toilet
- Bidet
- Urinal
- One piece toilet
3.3.1 Sanitary Ware Manufacturers:

There are around 20 major players/dealers in this sector. They have developed contacts with the dealers in all over the Bangladesh and market their products through these outlets. They are also exporting their products in Middle East, Africa and Central Asia.

3.3.2 Machinery Suppliers

Spray booth, Glaze Containers, drums and kilns are the machinery used for ceramics sanitary ware factory. Kilns are designed by ceramics engineers and manufactured by the kiln makers. There are about 12 kiln makers which are experts and fulfilling the need of industry. Glaze containers, spray both and drums are prepared by the engineering sector of the Solar.

3.3.3 Raw Material Suppliers

Supply chain is crucial to this field and without proper raw material supply these units cannot keep up with the production. There are about 4 to 5 companies supplying raw material to ceramics industry at Solar. The prominent names as ceramics raw material suppliers are M/S Star Ceramics Material, M/S JR Corporation (Importer & Wholesaler), Kareem Corporation (Local material supplier) and Chief Sanitary. These suppliers procure clay from mine owners1 and import barium carbonate and china clay from china and zirconium from England, USA, Italy, and Malaysia for fulfilling the raw material requirement of Ceramics Sanitary ware industry. However raw material supply is irregular and manufacturers have to face late delivery of raw material or shortage of raw material.

3.3.4 Current Scenario

Growth trend of Ceramics sanitary ware industry has been increasing every year. The industry has not only fulfilling the domestic needs but also exporting small quantities of ceramics sanitary ware goods over the last few years. Though the exports trend in the past two decades has been insignificant volume wise and erratic, the capability of the sector for export exists keeping in mind the technology & know-how available with the manufacturers. The main reason for not achieving the significant breakthrough in exports by this industry is the uncompetitive cost structure of domestic products due to ever increasing utilities prices coupled with the high tariffs on imported materials.
3.4 Production Operations

3.4.1 Raw Material

Raw materials for body include Quarts, Feldspar, China clays and Ball clay, Mianwali clay, K.D 7 Stone and K.D.10 Stone. Raw materials for glaze include Quartz, Feldspar, Limestone, Zinc oxide, Barium oxide, Zirconium and ceramic colors. Plaster of the Paris is the material that is used for modeling and molding of the Ceramics sanitary ware.

3.4.2 Slip Preparation and Glaze Making

For the slip preparation the raw materials are mixed with water as per the requirement. Proper composition along with the sufficient amount of water then gets loaded to the ball mills for grinding. Glaze is a glasslike, multi-ingredient, silicate thin layer, which adheres to the surface of ceramic body. It is usually sprayed upon dry body by manual or automatic spraying method, which after firing produces smooth, glossy, and surface with beautiful color and luster. So properties of glaze have large influence on quality of products. Generally ball milling is used to prepare glaze.

3.4.3 Casting and Drying

Slip is cast into plaster moulds. Due to the absorption and water character of porous moulds, an even thin layer gets formed on the surface which becomes thicker with time. When a desired thickness is arrived, surplus slip is poured out. Finally the layer continues to retract by dewatering resulting in the gross body. Before next process, all products need to be dried to a low water content to increase the strength of body, which is called drying.

3.4.4 Glazing

There are many glazing methods such as spraying glaze, dipping glaze, pouring glaze, brushing glaze etc. Sanitary wares are mostly adopted spraying glaze method because large volume complicated shape, low strength of body. Spraying glaze may be manual glazing or automatic glazing. Manual glazing is done in a booth with sufficient de-dust installation, and automatic glaze spraying is done on the conveying belt.
3.4.5 Firing

These sprayed clay wares are then taken to the kiln for firing. As a result the bodies will take place a series of physical and chemical reactions, and will take a fixed shape. The bodies are put in the entrance of tunnel and the products are pushed out from the exit. Fuel is burnt in the resisting firewall on both sides of tunnel. The tunnel kiln is consisting of three zones.

- Preheating zone
- Heating zone
- Cooling zone
- The heating zone has burners on the both sides, in the third section the product cools down by exhausting. The temperature of every section is strictly controlled by automatic ventilation equipment and the temperature-controlling facilities called thermo couples to ensure to fire every product evenly. Continuous kilns are classified as roller kilns and tunnel kilns, the roller kilns support and convey products by high temperature resistance ceramic rolling stick. In the tunnel Kiln, kiln cars are used that are made from steel frame wheels on which low mass refactories, silicon carbide board etc. are built to support products. These cars are pushed by hydraulic Pusher.

3.4.6 Inspection, Repairing, Re-firing and Packing

This is the last process of production. Finished products are determined according to stipulated standards to select passed products and un-passed parts by repairing and re-firing. Passed products are carefully packed and then send to customers.
3.4.7 Some Solar Ceramics Product

Crowny

DSE

Effoeuropeansp

European-ps

counsel

PR
3.4.8 Process Flow Chart of Solar Ceramics Sanitary Ware

Figure: Production Process
3.4.9 Raw Materials Availability

Raw material used in sanitary ware manufacturing is quite cheap. Raw materials are used in huge volumes and this makes their supply-chain an all important factor. Majority of the raw materials are imported and are supplied by the few raw material suppliers based in the local market.

Zirconium is one of the costly raw materials used in glazing of ceramics Sanitary ware products and is imported from England, U.S.A., Italy and Malaysia. Zirconium from England and U.S.A is considered of High Quality and also more costly than zirconium from Italy and Malaysia. K.D 7 Stone, K.D. 10 Stone and Mianwali clay (Poocha) are available in Mianwali. Only Mianwali residential can lease these mines. Mines of Sindhi clay are in Sindh area. Berfab clay is available from Swat. Distributors/dealers are importing China clay, Zink Oxide and Barium Carbonate from China. Quartz, Feldspar, Lime Stone, Kerosene oil and local clay are available in local market.

3.4.10 Quality Assurance

Supply chain is crucial to this field and without proper raw material supply these units cannot keep up with the production but there is one thing that is more important than any other thing and that is quality of the products and price competitiveness.

Currently the local market is being invaded by the cheap and better quality Chinese ceramics products. This invasion along with strong friction from other international manufacturers, local manufactured products are suffering from huge losses. Their biggest concern is the quality which requires high manufacturing cost and over whelming rejection rates (7 to 8 % scrap rate is common to this industry and sometimes it crosses this threshold too). One of the main causes of this problem is the low and inconsistent quality standards. There is no standards conformance control at the source (mines) from where the clay is excavated and manufacturers don’t have any facility where this raw material can be pre-processed before being used in production line. The results are as follows:
Finished products show cracks after whole process of casting and baking has been undertaken which cause loss of man hours, machine hours and finance.

Inconsistency of material causes pin holes and cracks which result into an extra fragile product which can rupture during use causing a fatal loss of customer satisfaction and further market penetration.

Few manufacturers are setting up their own pre-processing setups which do not provide required material refinement and add to extra burden of pre-processing cost resulting in higher cost of production.

Manufacturers can import preprocessed material from china and other countries but it would cost them more than double.

3.4.11 Technology Status

The technology employed by this cluster is traditional and old. In sanitary ware products SUI Gas cost makes up of 40% of the total manufacturing cost, due to the inappropriate design of Kiln and kiln furniture. Following are the common flaws in locally manufactured kiln:

- Excessive heat leakage from the walls and ceilings
- Exhausting flue gases at very high temperature.
- Incomplete combustion due to flaws in burner design.
- Presence of excess/low level of air than required from optimum combustion of the kiln.

By recycling the heat and kiln modification or use of imported kiln Gas consumption can be reduced.
3.5 Segmentation, Targeting and Positioning Strategy of Solar Ceramics Ltd.:

Solar Ceramics Ltd. know that they cannot serve all the customers profitably in given market at least not all customers in the same way. There are too many different kinds of client with too many different kinds of needs. Thus Solar Ceramics Ltd. must divide up the total market, chose the best segments and design strategies of profitable serving chosen segments. Segmenting is the process of dividing the market into segments based on customer characteristics and needs. This process involves market segmentation, target marketing and positioning.
3.5.1 Market Segmentation:

Every market has segment but not always of segmenting a market are equally useful. In case of Solar Ceramics Ltd. a client who wants the biggest near to the main road and prime location apartments regarding less of price make up one market segments. Client who care mainly about price and operating economy make up another segment, Solar Ceramics’ Ltd. are wise to focus their efforts on meeting the distinct needs of individual market segment.

3.5.2 Market Targeting:

After defined market segments Solar Ceramics Ltd. enter one or two of these segments. Generally Solar Ceramics Ltd. evaluates less price sensitive clients and their sales person frequently visits them.

3.5.3 Market Positioning:

Solar Ceramics Ltd. positioning system in totally different from the other architectural and consultancy firm that makes them unique from others Solar Ceramics Ltd. arranged their projects to occupy a clear, distinctive and desirable place relative to competing projects in the minds of target clients.
3.6 The Holistic Marketing

Solar Ceramics (BD) Ltd. is one of the new comers in present market. Though it is a small firm, they also follow marketing philosophy. This philosophy is “Holistic marketing” concept.

“Holistic marketing” concept is based on the development, design and implementation of marketing programs, process and activities that recognizes their breadth and inter dependencies.

Figure: This Figure provides a schematic overview of four broad themes characterizing Holistic Marketing

Some key concepts which are important in Holistic marketing are:

Internal marketing – Marketing between all the departments in an organization.

Integrated marketing – Products, services and marketing should work hand in hand towards to growth of the organization.

Social Responsibility marketing – Driving the sales and revenue growth of an organization holistically by reducing costs and increasing sales.

Relationship marketing - Building a better relationship with your customers, internal as well as end customers is beneficial for holistic marketing.
3.7 SWOT Analysis

3.7.1 Strengths

- Abundance of Low cost Labor
- Local base for machinery manufacturers
- Extensive supplier industry
- Strong linkages with other key regional clusters
- Entrepreneurial culture directed towards exports.

3.7.2 Weaknesses

- Non-availability of processed raw materials
- Large unorganized existence
- High Utilities Cost of utilities (gas & electricity)
- Lack of Modern Kiln technology leading to high energy losses (30%)
- Use of traditional techniques and technology
- Low R&D for product innovation
- Preference of informal credit
- No proper accounts maintenance and training
- Limited distribution channels and lack of marketing skills

3.7.3 Opportunities

- Rising domestic demand for tile, sanitary ware and table ware
- Large export potential in sanitary ware in Middle East, Africa and Central Asia.
- Exploit local expertise in related sectors, clusters technologies.
- Facilitate supply chain collaboration.

3.7.4 Threats

- Low priced import from china
- Changing consumer preferences
- Large surplus capacities in the international market.
- Increasing regulatory pressures
CHAPTER 4
FINDINGS, RECOMMENDATIONS
AND CONCLUSION
4.1 Findings

Identifying constraints/Challenges were significant in every time I was working there. Overcoming the challenges is most prominent objective for each players. In the context of my internship, it was hard to believe any uncooperative in production plant. Workings at office level were full of enjoyment and keys to learning facts. But some constraints I found at factory pointed below:

- Every officer is busy with their workings and has a little chance to give any moments to the interns and lower level staffs.
- Maximum spaces are being wasted for garbage throwing and trashing waste materials which is harmful for atmosphere.
- No hostel facility for workers in this company.
- No recreational facility inside the plant house to ensure inspired working moods of workers as well as to provide interim rest incentives.
- Lack of knowledge about sound business policy in top management.
- Does not have available rest room facility for production employees.
- Lack of skill full workers in this company.
- Top management does not check regular activity of the organization and production mechanism.
- Communication gap is an increasing problem within the organization.
4.2 Recommendations

Solar Ceramics has been updating their workings day by day but in terms of my internship report of work with them I may need to propose some guidelines which are given below to ensure better performance:

- Machineries need to be updated with international high-tech facilities and will be utilized as comparative advantage for this sector.
- Waste materials which is harmful for atmosphere so company must need to a specific place where waste materials are throwing.
- Need to establish hostel facility for workers to ensure 24 hours non-stop production.
- Need to provide recreational facility inside the plant house to ensure inspired working moods of workers as well as to provide interim rest incentives.
- Top management should set their effective goals to earn profit and ensure sound business policy to strengthen its growth in Bangladesh with full fledged facility.
- Solar ceramics need to give their employees available rest room facility.
- Solar company can start a training center for train his workers to be skill full.
- Company must need to know about their Top management regular activity of the caking organization and production mechanism in time.
- Communication gap is one of the major problem in a company so Solar company should take a proper steps to reduce communication gap.
- Production management needs to use time line and implement precisely on that schedule.
- Management needs to practice fair wage board for their employees.
- Solar Ceramics has been captured sanitary ware products and now need to expand their creativity.
4.3 Conclusion

Working as an intern at Solar Ceramics Limited was amazing for me that explained previously and plant, factories, raw materials, workers management were new facets for me. Solar Ceramics has been captured more than 60% of the market share in sanitary ware. In expansion mode of economy our ceramic industry pledge huge achievement and aspiration to us. Today more than 50% of the group of industries have subsidiary with ceramic portion. Solar ceramics definitely create plausible change in sanitary ware market. Raw materials are mostly come from India, USA and China and distributed complete products to 6 divisions of the country. Future expansion in jute mills and tiles ware will add hyper industrialization. Solar has been implemented high tech production facility with the help of Indian ceramics industries. In addition, Solar has a plan to sell their shares publicly as a public limited company and come up with a new vision of success. At last I should say many fallacies growing in the economy but ceramic industry one will dominate our economy. To earn that kind of goodwill need massive foreign investment in this sectors and acquiring new and creative technology in the country like Bangladesh. Today we are dreaming will be middle income economy by 2021, if our industrialization goes on in right path it will huge GDP growth for us.
REFERENCES

2. Prospectus of Solar Ceramics 2012
3. Research report on Sanitary Ware Production Manual 2011 by Solar Ceramics
4. www.solarceramics.com.bd