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CHALLENGES IN MINIMIZING PRODUCTION COSTS OF SMIs IN GCC COUNTRIES UNDER AN OPEN MARKET POLICY

by

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Challenges in minimizing production cost of SMI's in GCC countries under open market policy

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In this paper, major parameters contribute to production cost of small & medium industries (SMI'S) in GCC countries are studies at macro levels compared qualitatively to those international producers. The major cost parameters selected in this paper are input (raw) material, production capacity (market size), supply of equipment, skilled workforce, utilities, support R&D, manufacturing networking (integration), corporate tax, consultation and financing.

Low production capacity (due to the market size) and disintegration of manufacturing networks considered one of the major production costs contributors. In other hand, low cost of skilled workforce, exemptions of corporate tax, low rate of utilities and availability of developed industrial infrastructure are the major incentives of operating SMI's in GCC. The paper is exploring the impacts of international manufacturing competitiveness on small & medium industries in GCC and identifying the venues to reinvent their role for survival in international competition under open market economy.

Introduction:
There are about 7,200 industries in the GCC countries. Their activities are varied and involved in almost every sectors accept alcoholic beverages and arm (explosion) manufacturing. In this study, small, medium and large industries are distinguished based on size of investment. According to GOIC [1], total number of producers, employment, investment, export and production in the industrial sector are as shown in table 1.

Table 1
Industrial sector contribution in the GCC countries, 1999

Total No of industries	7200
Total No of employment	590,000
Total investment ($ million)	85,000
Total export ($ million)	11,971
Industrial production ($ million)	24,603

In table 2 [2], industrial distribution in GCC is indicating those small & medium industry accounts of 85% of the total manufacturing industries.

Table 2

Distribution of operating industries based on investment size in the GCC countries

[Small industry, Lower than $ 2 million/ medium industry, between 2$ and $ 6 million/ large industry, more than $ 6 million]

Sector	**Small**		**Medium**		**Large**	
	No	**%**	**No**	**%**	**No**	**%**
Food & Beverages	582	54.7	245	23.0	237	22.3
Textile & Leather	382	79.6	52	10.8	46	9.5
Wood products	365	79.6	61	13.3	32	7.0
Paper & prints	292	62.1	100	21 3	78	16,6
Chemicals, Rubber & Plastic	769	55,7	327	23.7	284	20.6
Mining services	832	71.5	175	15.0	157	13.5
Basic industries	44	46 3	16	16.8	35	36.8
Manufactured Metal	1365	70.1	352	18.1	230	11.8
Others	142	78.5	28	15 5	11	6.1
Total	**4,773**	**65.9**	**1,365**	**18.7**	**1,110**	**15.4**

Cost parameters:

In order to identify the sources of production cost of SMI's in GCC, major parameters have been identified and compared qualitatively (avoiding quantitative comparison) to other similar international manufacturers. The information has obtained from direct questionnaires and interviews with industrialists and foreign investors. Major running cost (cost of sale, operating expenses and non-operating expenses) and capital expenditure (cost of land development, machinery, installation, R&D, civil work, others) are discussed in combine without segregation. This approach will support to give an integrated qualitative description of the production advantages and avoid statistical comparison since there are large number of industries to compare inquire tedious and lengthy process, which is beyond the scope of this paper. The theme of this study is to emphasis on parameters that influence production cost of SMI's in GCC countries and compared relatively with those international manufacturers.

- **Raw material and input products**

Competitive raw material prices in the GCC countries are varied from sectors to sector depending on its availability in the local market. The attention of this paper is to concentrate on small & medium industries; therefore availability of manufacturing facilities of their raw material is investigated and determined its competitiveness.

In petrochemical, since it is a capital-intensive industry, majority of SMI's in this field is operating in downstream depending on specific activities such as extrusion, blow molding, blinding and packing. Some of the input materials of those activities are manufactured locally such as PET, PVC, and Polyolefins (polypropylene, polyethylene) where they delivered locally at competitive prices. In the other hand, some SMI's in petrochemical industries such as solvent base product manufacturers (paint, adhesive, resin) are importing their raw material requirement such as acetone,

ketone, heptane and other solvent. Their production cost could not be as competitive as plastic downstream producers, and would not be able to export their products competitively in the international markets. However, they are managing to compete effectively of similar imported products in the local market.

Regarding SMI's in aluminum industry, the availability of their raw material such as basic and intermediate aluminum products (ingots, rolled sheets, extruded profile, others) is supporting their competitiveness in the GCC. In consequence, the SMI's managed to produce variety of aluminum downstream products at relatively competitive production cost and export at efficient prices and quality. For steal industry, similar status despite that not all the intermediate products (rolled sheets, billets) is produced in GCC forcing SMI's to dominate local market but not able to compete in international markets. For other metal industries such as copper, magnesium and others, SMI's opportunity to produce downstream products at competitive prices for export or local markets is considered a major challenge.

Some food industries such as fish processing, herb treatment, traditional medicines are produced competitively due to the abandons of its raw material and due to the traditional availability of local infrastructure (distribution network, producers). Some other foods industries are able to compete despite their relative high cost due to its nature such as dairy products (fresh), beverages (balk filling & packaging), crackers (local tests) where they are not competitive to export in international markets.

- **Production capacity and markets**

Production capacity is one of the most effective factors determining the production cost of operating SMI's in GCC Higher production capacity will optimize the utilization of equipment and general overheads. Also, It minimizes the cost of depreciation and amortization and gives the advantage of producing higher volume at lower profit margin since it will be justified by the large sale quantity. Based on survey conducted, 70% of operating SMI's in the GCC are producing below their capacity [3]. One of the major reasons is the limitation of their local market (demand). Total population in GCC is about 30 million where its markets had already opened to several international brands and products from all over the world. For certain starting small & medium industries, it required a time and tremendous efforts to develop their products gradually in the local markets.

In addition, about 80% of the SMI's in GCC produce consumable products targeting end users [4]. This generates an attitude to depend on local market demand causing disappointment due to sever competition among local producers and international products. However, more than 30% of SMI's in GCC managed to export their products efficiently noting that those exports concentrate on chemical (downstream), plastic, fiber glass, aluminum and other specific products where manufacturers managed to achieve the international acceptance in term of quality, services, delivery and prices.

SMI's in subcontracting sector represents about 20% of total operating SMI's in GCC countries. One of the major factors explains this low percentage is due to the very low number of assembly industries. Assembly industries in GCC are focussed on specific products such as electrical panel, air condition where their production does not need complicated assembly processes and many parts. In addition, these local assemblers

have not supported SMI's with subcontracts since major of their parts such as compressors, motors, electronics are imported and the rest are cut and fabricated inside their assembly line. Electrical home appliances, electronic equipment, electromechanical parts, car assembly and other assembly activities have no presence in GCC despite their recent establishment in the surrounding regions such as India, Egypt, turkey and Iran. Subcontracting has direct impact on generating good sources of manufacturing activities to small & medium industries and assist in reducing production cost by optimizing the utilization of their facilities.

Recently, trend of large industries especially the state owned ones is to subcontract SMI's services and products in GCC Therefore, mechanical, electrical, engineering and some part fabrications of large industries are conducted by local SMI's. This has providea better utilization of their facilities and upgraded their capabilities. In addition, some of SMI's in the GCC managed to acquire the necessary capabilities and achieved large industries' dependence. For instance, some of the SMI's are starting to produce untraditional products such as special furnaces, boilers, petroleum columns, hydraulic systems, sewage plants and other complicated processes.

Back to certain food industry such as fresh milk or fish processing industries, small and medium industries in GCC will lose their competitiveness due to the establishment of large local and international industries in the same field. The cost of SMI's to produce one liter of fresh milk or kilogram of processed fish will be higher than those local large industries that are supported with farms, processing facilities, international marketing structure and outlets.

The issue of some large industry domination over small & medium activities is one of the globalization challenges. SMI's should reinvent their role to complement not to compete with the large industries. This is also true for garment, engineering, chemical, metal and most of the manufacturing sectors. SMI's should identify certain niche (lowering their overhead, producing flexibly, specializing efficiently) or integrating with large industries through subcontracting their products/services or utilizing large industries' product availability as raw material of their products. In order to increase their production capacities, SMI's should link their promotional, marketing and sales capabilities with international networks and distribution outlets.

- **Machinery and process equipment supply**

About 80% of SMI's in GCC produce consumable products where their processes are very much in common such as packaging, filling, extruding, blow molding, mixing, reacting, coating, weaving, recycling and fabricating. The usual costs of such machines are relatively high in the range of 10% to 30%. This increase in price is not only due to the transportation (freight) but also due to the cost of installation, commissioning, maintenance and training.

Other support accessories such as pipes, pumps, compressors, chiller, heat exchanger, electrical panels and other support equipment are being fabricated or assembled locally making their prices relatively competitive in GCC.

Producing spare parts to existing machinery's of SMI's in GCC countries is a developing service business. Local engineering industries managed to extend their

capabilities to produce different types of parts and equipment fabricated or cased locally. This would contribute to a certain extent in reducing production cost.

- **Skilled workforce and salaries**

It is well known that majority of operating SMI's in GCC countries depend heavily on Asian workforce and their expertise. The availability of wide variety of backgrounds at relatively low cost could not be avoided to enjoy its benefits. This can be noticed from the high percentage of non-local workforce employment in small & medium industries, which is reaching not less than 70% and in certain extreme cases become 100% [5] of their total working force. The contribution of the workforce on production cost would be considered relatively competitive.

Table 3

Wages and salaries ($/moth) in the GCC states of small & medium scale industries [6]

Labor	185 - 529
Technician	400 - 1,323
Supervisor	794 - 1,587
Manager	1,190 - 5,300

- **Rent, utilities and communication**

GCC authorities are subsidizing utilities and land to SMI's. Most of the small and medium industries are concentrating on industrial areas that are developed by governments. In general rents of industrial lands and cost of utilities have limited contribution on cost of sale and expenses. However, in certain manufacturing activities, utilities would effect the production cost and give the advantage to SMI's in GCC. Due to the developed infrastructure of communication in GCC countries, major services (Internet, Fax and telephone) are developed and available. In general, there are no major difficulties of SMI's to be connected electronically with international sources at competitive rate and efficiency.

Table 4

Charges of public utilities (in US Cents) for 1999 [7]

Water/m3	8.0 - 171 0
Electricity kWh/hr	1.6 - 5.3
Fuel oil/liter	8.0 - 30.0
Diesel/liter	10 - 31.0
Natural gas/m3	0.2 - 7.1
Land/m2/year	2.14 - 148.0

Plants' area of SMI in GCC usually built large due to the availability of lands and utilities. Average rent per square meter is ranging from $ 0.06 up to $ 3.2 where average cost of constructing administration, production, storage buildings are $317, $238 and $145 per square meter, relatively.

- **Research and development**

Research and development are one of the production facilities that SMI's would need to furnish in order to improve their competitiveness. Due to relative high cost to establish such activities, public R&D or testing facilities will effectively support their product quality. However, there are no such public facilities available in GCC and cost of testing and research activities in independent laboratories are considered high. It seems that R&D facilities in SMI's are not considered properly during the preparation of the feasibility studies.

SMI's previously used to supply certain products with standard specification to cater high range of applications. Due to severe international competition, local SMI's managed to develop in place (captively) various products customized according to their client applications and requirements. For instance, detergent industries used to manufacture formulas to serve different cleaning applications. Recently, some of those industries reinvent their approach by conducting site visit to identify the application specifically and develop special laboratory formula to this particular application. In furniture industry, clients are frequently changing tastes forced SMI's to alter their production capabilities and designs. The results, furniture with international standards such as American, Far East or Italian designs are produced locally at competitive prices and qualities.

In addition, new products are developed and customized according to the local need and environment. For instance, special water residential cooler (not for drinking purposes) is being developed and manufactured locally to control water temperature in summer. In addition, special type of kitchen wears, cleaning material, food kits, and other products are being developed by local SMI's to be customized according to the local taste and designs in GCC countries.

- **Production network and integration**

In general, horizontal and vertical integration supports small & medium manufacturing industries to reduce their production cost by furnishing their input material locally. For instance, producing cost of air conditions locally could be lower if major parts such as hermetic compressors and motors are manufactured in GCC. Similar example in paint industries, the absentee of local production of specific solvent (ketone, heptane, acetone, others) is effecting the final production cost. In the other hand, when some solvents are being produced locally (toluene, white sprite), production cost of their foinal products reduced by 20% lower as the case of some adhesive and paint industries. Further integration in food, metal, textile, assembly and other manufacturing sectors will definitely assist reducing their production cost

In GCC countries, there is relative integration in some sectors and are not in others. For instance, Aluminum industries are enjoying vertical integration in terms of supplying basic products (ingots, slabs and billets) and intermediate products (rolled sheets, extruded profiles, cables and powder) and down stream products such as construction material, kitchen wears, accessories and others. Relatively speaking, there is good advantage to manufacture aluminum products in GCC. Similar story could be withdrawn to some petrochemical and plastic industries where basic olefin and aromatic products such as polypropylene, polyethylene, PVC, benzene, toluene, and PET are manufactured locally and available at competitive prices. This will give

SMI's the advantage to produce downstream products competitively and support their opportunities to compete imported products.

In the other hand, assembly sectors in car, electromechanical equipment, or electrical appliances, the production cost of manufacturing is considered relatively high. For instance, producing domestic reverse osmosis (RO) unit will cost $ 260 for 50 gallon per day where same unit is produced in Taiwan at rate of $ 120. The tremendous reduction in production cost is due to two reasons; major parts are produced locally or imported in large quantities such as pumps and membranes. In addition, Taiwani manufacturers are well connected to international markets such as American, Middle East and Europe. They manage to stock and manufacture in large quantities as well as distribute their final assembled products internationally. In consequence, they subcontract small & medium industries to produce large production capacities where those SMI's can justify their investment in new equipment due to the consistency of subcontracted orders.

- **Exports, imports and taxes**

One of the major advantages in GCC countries that there is no corporate taxes. This advantage gives strong incentive to existing industries to enjoy major traditional cost reduction source. In addition, freights and shipment become internationalized in sea, air and land. The logistic and transportation infrastructure is advanced giving SMI's good support. In addition, the geographical location of GCC among Europe, Africa and Asia continents support freight cost reduction.

- **Consultation and studies**

Since the 1970s in the GCC, small and medium industries are established actively and diversified in different manufacturing activities. In addition, many senior employees in large industries are retired and established their own consultation services providing competitive study sources to SMI's. Recently, several independent consultation firms have specialized in their services catering professional and special studies in marketing, technical and financial fields. From a survey conducted by the author, detailed feasibility study of small-scale industry would cost from $ 6,000 up to $ 50,000. In addition, several reputed auditing firms whom also providing excellent management services are available giving SMI's large varieties of industrial consultation.

- **Financing**

All GCC countries are providing industrial loans through development or industrial banks. The interest rate is varying from 3% up to 10%. The loan repayment is extended from 3 to 10 years where the grace period is contained within 2 to 3 years. There are several commercial and off-shore banks providing financial services to manufacturing industries.

However, venture capital financing is still not matured in GCC. According to a study conducted [8], banks are not easy to give loans to SMI's due to the high risk associated with their cash flow and business stability. It is found that majority of SMI's in GCC is partially financed by banks where the rest comes from personal saving, relatives and independent investors. However, About 90% of established SMI's have no difficulties to facilitate their investment capital where about 79% of

similar sector find very much of difficulties to finance their working capitals [8]. Financing working capital to import raw material or modernize or purchase new equipment is one of the challenges facing SMI's especially in the first operating years. In addition, those entrepreneurs who have no enough funds or collateral's will have large difficulties to allocate venture capital loans in GCC.

Discussion & conclusion:

In general, there certain industries would have difficulties to continue in open market economy unless if they manage to reduce their production cost through modifying their role and achieving international capability in terms of competitive quality, quantities, prices and ability to distribute. SMI's in GCC should reinvent their role in some sectors to reach the competitive production cost. This could be fulfilled through maintaining competitive input material cost, producing at sufficient scale of economy, reducing maintenance cost, achieving skilled employees at competitive cost, utilizing low cost of utilities, complementing production facilities with R&D, integrating with manufacturing network, connecting with market outlets and distribution infrastructure.

Small & medium industries in GCC enjoy certain manufacturing competitiveness especially those who are supported with the availability of raw material in addition to other incentives such as the exemption from corporate tax, low cost of skilled workforce, strategic geographical location and operating in well developed industrial areas. however, most of the SMI's in GCC are facing challenges to produce at their designed capacities, lucking of manufacturing integration, weakness in international marketing and difficulty to finance their working capital.

Reviewing component of production cost (see table 5), cost of sales of SMI's in GCC are challenged to achieve low maintenance, however, their utilities and salaries are competitive. The issue of raw material will depend on their availability in the local market. For operating cost, selling and marketing expenses would be high to export their products in international markets, however, SMI"s could perform competitively in local and in international ones since it has no corporate taxes and therefore the extra cost of marketing would be compensated with no tax cost.

In addition, the capital expenditure in particular machinery, process equipment, installation and research & development are considered high for small & medium industries in GCC. This could be considered a major disadvantage, however, most of SMI's input material and equipment are duty exempted in addition to competitive prices of accessory equipment that produced locally.

Table 5

Cost component of production in small & medium industries

Cost of sales

- Raw material
- Salaries (production)
- Manufacturing expenses
    - Repair & maintenance
    - Utilities
    - Machinery depreciation

Operating cost

- Selling & marketing expenses
- General and administrative expenses

Non operating expenses

- Interest charges
- Depreciation (non productive assets)
- Amortization

Small & medium industries in GCC will survive the competition of open market economy if they managed to reinvent their operation and performance. This can be achieved if they manage to increase their productivity, integrate with local large industries complementarily and associate with manufacturing and marketing networks internationally.

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