

Competitive Advantage of Stone and Marble Cutting Firms: South of West Bank

Acknowledgments:

We would like to thank our supervisor Dr. Suhail Sultan, whose expertise, understanding, and patience added considerably to our graduate experience and for being patient and diligent in answering all of our questions.

A very special thank to (Municipal Council) Shari'a, Mr. Jawad Sayyid (Mayor's Advisor) and (Union of Stone and Marble) for their full support.

Appreciated the good cooperation of our college and university (Palestine Polytechnic University) offering us the chance and encouragement to research, especially for Mr. Amjad Al-Natah (Head of administrative sciences department) for his valuable advice, attention and help in resources.

Also appreciate the good cooperation of our colleagues at PPU.

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Appreciation also goes out to the administration of our college and university (Palestine Polytechnic University) for offering us the chance and encouragement to research, Especially for Mr. Amjad Al-Natsheh (Head of administrative sciences department) for his valuable advice, attention and help in resources.

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Abstract:

The study of the Competitive Advantage of Nations is one of the most important aspects of strategic & international business management. Most discussions of the competitive success of nations look at aggregate, economy-wide measures like the balance of trade. Porter chose a different starting point, beginning with individual industries and competitors and

Dedication:

To our colleagues past, present and future.

To our parents, brothers and sisters.

To our friends around the world.

Porter in 1985. He theories of obtaining a national competitive advantage. In his book "The Competitive Advantage of Nations" he introduced the diamond model which consists of 4 determinants that individually and as a system, create the context in which a nation's firms are born and compete. The determinants are firm strategy, structure, and rivalry; factor conditions (e.g., natural resources); demand conditions; and related and supporting industries.

Despite all critiques to the diamond theory, it stills the most applicable theory in our field. And if we add Information Communication Technology (ICT) it will be the most comprehensive model of National Competitive Advantage.

Applying the model on a given industry in a given country will allow this industry to be developed by knowing the strengths and weaknesses of the determinants. Research was applied the concept National Competitive Advantage and the use of ICT to obtain a competitive advantage on large stone and marble cutting firms in southern West Bank. And research findings were as follow:

All determinants of the diamond and the use of ICT foster the competitiveness of large stone and marble cutting firms in southern West Bank except rivalry which statistically proved that there is an inverse relationship between the level of rivalry and the level of competitive advantage.

Abstract:

The study of the Competitive Advantage of Nations is one of the most important aspects of strategic & international business management. Most discussions of the competitive success of nations look at aggregate, economy-wide measures like the balance of trade. Porter chose a different starting point, beginning with individual industries and competitors and building up to the economy as a whole. Nations do not compete in the marketplace—business firms do, and the performance of individual companies in particular industries in where competitive advantage is either won or lost.

Porter in 1990 introduced one of the most applicable theories of obtaining a national competitive advantage. In his book “The Competitive Advantage of Nations” he introduced the diamond model which consists of 4 determinants that individually and as a system, create the context in which a nation’s firms are born and compete. The determinants are firm strategy, structure, and rivalry; factor conditions (e.g., natural resources); demand conditions; and related and supporting industries.

Despite all critiques to the diamond theory, it stills the most applicable theory in its field. And if we added Information Communication Technology (ICT) it will be the most comprehensive model of National Competitive Advantage.

Applying this model on a given industry in a given country well allow this industry to be developed by knowing the strengths and weaknesses of the determinants. Research team applied the concept National Competitive advantage and the use of ICT to obtain a competitive advantage on large stone and marble cutting firms in southern West Bank. And research findings were as follow:

All determinants of the diamond and the use of ICT foster the competitiveness of large stone and marble cutting firms in southern West Bank Except rivalry which statistically processed data showed that if the level of rivalry increased the level of competitive advantage decreases as an inverse relationship.

Table of Content:

Chapter one: Introduction:

1.1. Natural Stone in Palestine	1
1.1.2. Palestinian Economy.....	3
1.1.3. Stone and marble	3
1.1.4. Stone and marble industry structure.....	4
1.1.5. Historical Background	6
1.1.6. Current Situation	6
1.1.7. Distribution of Palestinian Production	7
1.1.8. Sales and Market Share	9
1.1.9. Foreign Trade.....	10
1.2. Research Problem	13
1.3. Research Objectives	14
1.4. Research Questions	14
1.5. Research Hypothesis	15
1.6. Methodology/ Approach	16
1.7. Research Model	17
1.8. Limitations and obstacles	18
1.9. Overview of the Dissertation	18

Chapter Two: Literature Review:

2.1. Natural Stone and Marble	20
2.1.1. Leading Stone producers World Wide	21
2.1.2. Process Flow	23
2.1.3. Stone Main Uses	25
2.1.4. Stone and Marble International Market	26
2.2. Competitive Advantage as a Conceptual Framework.....	28
2.2.1. Theories of Competitive Advantage.....	29
2.2.2. Porter's Diamond.....	34
2.2.3. Critique of the Diamond Theory	46
2.2.4. Porter's Five Forces	48
2.2.5. Generic Strategies	50
2.2.6. Balanced Score Card	54
2.3. Information and Communications Technologies (ICT)	57
2.3.1. How Information Gives You Competitive Advantage.....	58
2.3.2. Benefit and limitation of ICT & E-Commerce.....	60
2.3.3. Porter five forces and ICT affect.....	61
2.3.4. ICT and Porter Diamond to build competitiveness of industry	63
2.3.5. ICT affect the generic strategy	64
2.3.6. Porter's Value Chain	66
2.3.7. How to use ICT in stone and marble industry	67
2.3.8. Challenges of the ICT	68

Chapter Three: Findings and Discussion:

References.....90

Appendices.....93

Chapter one: Introduction:

There has been a realization among economists and others about the importance of natural resources in advancing the economic development. Countries highly endowed with natural resources have an advantage over

List of Figures:

Figure 1: West Bank and Gaza Map with natural resources.....	2
Figure 2: Distribution of Palestinian production.....	7
Figure 3: Palestinian products flow to the End User.....	8
Figure 5: Palestinian Exports and Imports 1997 - 2004.....	11
Figure 6: Research Model.....	17
Figure 7: the oldest stone mechanical cutting machine.....	21
Figure 8: The diamond model of the competitive advantage of nations.....	36
Figure 9: Porter's Five Forces Model.....	48
Figure 10: The Balanced Score Card.....	54
Figure 11: Four Competitive Scenarios for large firms and ICT.....	59
Figure 12: Porter's Value Chain.....	66
Figure 13: The Value System.....	66
Figure 14: The Use of ICT.....	67

List of Tables:

Table 1: Major areas of quarrying in West Bank, in order of quality.....	5
Table 2: Number of Operating Stone-Cutting Firms and Quarries by Location.....	5
Table 3: Commercial agreements between Palestine and the world:.....	12
Table 4: Leading stone producers World Wide:.....	22
Table 5: World Stone Production with Respect to Colors.....	22
Table 6: Stone colors According to the minerals.....	23
Table 7: Process Flow:.....	24
Table 8: Natural Stone - Main uses.....	25
Table 9: Stone and marble top exporters, export values in \$ 1,000.....	26
Table 10: World Consumption Distribution.....	27
Table 11: Theories of Competitive Advantage:.....	30

Chapter one: Introduction:

There has been a realization among economists and others about the importance of natural resources in advancing the economic development.¹ Countries richly endowed with natural resources have an advantage over countries that are not.²

In an increasingly competitive open world Successful national export strategies are based on identifying a country's competitive advantage and understanding how to make the most of it.³ For a country, maintaining competitive advantage means managing the system which supports export development and measuring performance.⁴

Natural resources in the West Bank are scarce. A few exceptions include the salts and minerals found in the Dead Sea as well as the abundance of high quality marble and stone. Utilization of the latter resource yields approximately \$500 million per year.⁵ So Palestine is a land rich with the natural resource of stone and marble. "Palestinian marble and stone come in a variety of colors and textures, and are regarded internationally for their extremely high quality".⁶

1.1. Natural Stone in Palestine:

1.1.1. Palestine:

The Palestinian territory of the West Bank and Gaza Strip is located on the western edge of the Asian continent and the eastern extremity of the Mediterranean Sea. It is small in area covering 6170 square kilometers; thereby constituting 23% of the area of the pre-1948 British Mandate Palestine.^{7,8}

¹ · Ning Ding and Barry C. Field 2004.

² · Suhail S. Sultan, Maastricht 2007.

³ · Brian Barclay, 2003.

⁴ · Philip Williams, 2003.

⁵ · Israeli-Palestine Center for Research and Information (IPCRI), 2009.

⁶ · The Palestine National Authority, Ministry of Economy and Trade, 2001.

⁷ · Online CIA Factbook.

⁸ · Israeli-Palestine Center for Research and Information (IPCRI), 2009.

The West Bank is 5,800 square kilometers in area, 130 km long and ranges 40 to 65 km in width; it lies between The Palestinian territories occupied in 1948 to the West, and Jordan to the east and is divided into three main districts with eight sub-districts. These include the northern region, which comprises the sub-districts of Jenin, Tulkarem, and Nablus; the central region encompassing Jerusalem, Jericho, Ramallah, and the southern region comprises Bethlehem and Hebron.¹

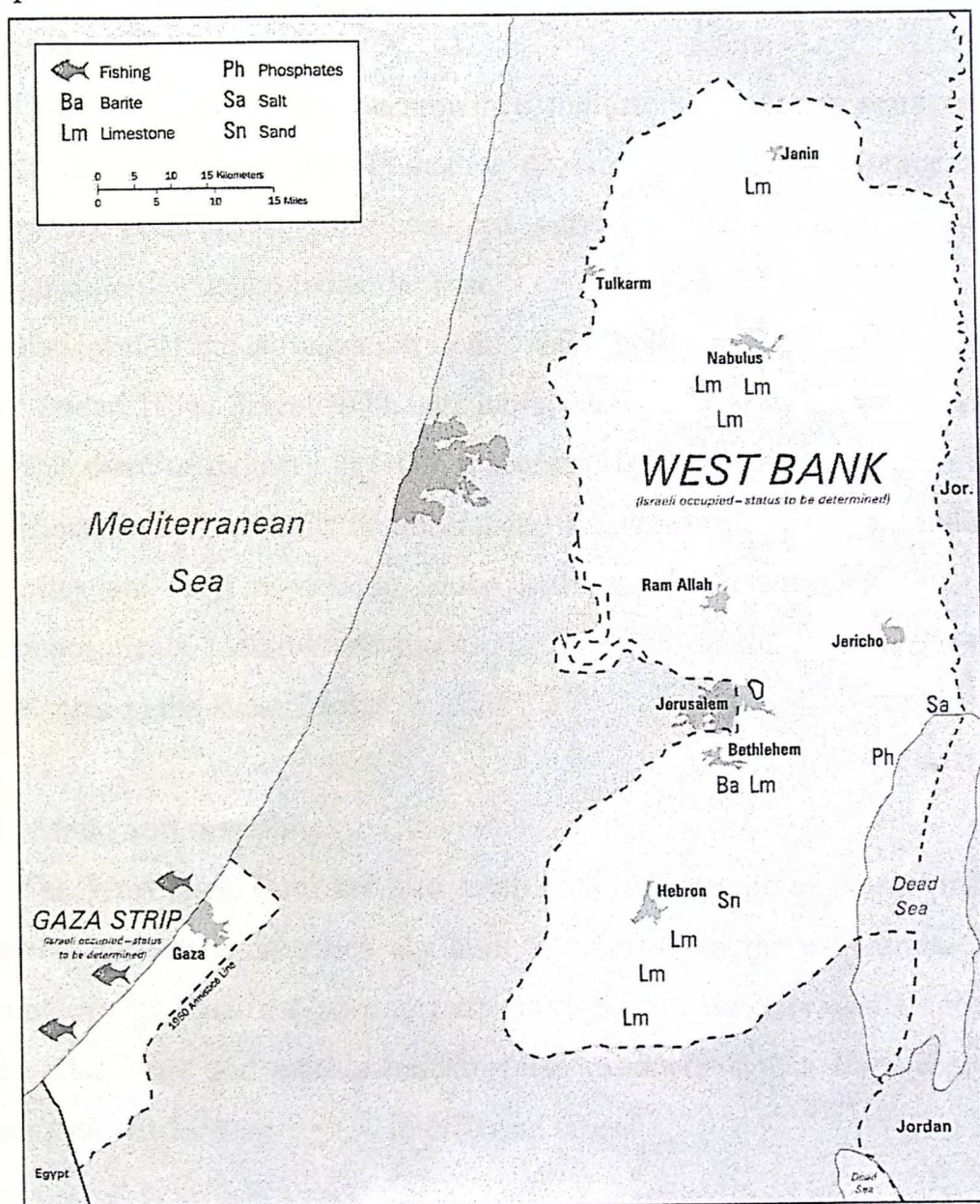


Figure 1: West Bank and Gaza Map with natural resources.²

¹ Information Note on the Economy of the Occupied Palestinian Territory (West Bank and Gaza), PNA, Ministry of Economy and Trade, 2001.

² Online CIA Factbook.

1.1.2. Palestinian Economy:

In the period since 1994, the Palestinian economy has commenced a process of transformation and modernization. A whole process of reconstruction and development aimed to upgrade infrastructure and improve the efficiency and productivity of the economy made. However, the Palestinian economy remains basically based on traditional activities, with preponderance of small cottage industries and sole proprietorship undertakings.¹

Palestinian economy's performance indicators in recent years rank it within the category of middle-income developing countries. Noting in this respect the poor infrastructure, coupled with a still-weak institutional set-up, and an underdeveloped industrial base.²

The level of industrialization in the West Bank and Gaza was historically low, under 10%. Since 1994, available data has re-estimated the annual average share of industry in GDP at around 16% in 2000. In addition to the significant branch of construction-related industries, the principal industrial activities are food processing, stone and marble industry, plastics, soap, pharmaceuticals, clothing and shoes. The industrial sector employs 9% of the work force in the West Bank.³

1.1.3. Stone and marble:

The West Bank from north to south is very rich with stone raw material quarries and stone factories are built very close to these quarries. These stones can be used for several purpose especially interior walls and floor tiles. The stone and marble industry also produces stones slabs especially manufactured for exterior use in different sizes.⁴

¹ Information Note on the Economy of the Occupied Palestinian Territory (West Bank and Gaza), PNA, Ministry of Economy and Trade, 2001.

² Online CIA Factbook.

³ West Bank and Gaza Investment Climate, unlocking the Potential of the Private Sector, Document of the World Bank, 2007.

⁴ Palestinian Marble and Stone Industry, IMC, DATA Research and Studies Co., 2005.

The colors of the stones vary from white to cream and from red to pink; the texture also varies from fine smooth texture to a coarse open one. It also can be finished, polished, honed, sandblasted, bush hammered, and flamed. The type of stone is known by its location, while quality is defined by its source.¹

1.1.4. Stone and marble industry structure;

Most of Palestinian stone factories are family owned businesses and most of the time they owned and managed by one person. This is one weakness the sector is suffering from. Also, the sectors capital investment is largely self financed and banking loans provide less than 10% of the financing required with minimal foreign direct investment in the sector this is putting a high level of burden on the factory and quarry owners and large margin of risk under volatile political situation. Also, leading stone and marble exporting companies are investing in having their representative offices across worldwide. Investments are made to create distribution channels for exporting companies around the world.²

Stone and marble industry is suffering from many problems the most important are: There are no defined specifications based on scientific tests.³ And there is lack of the existence of scientific and geological studies which help in future planning and in efficient use of raw materials.⁴

There are over 250 quarries distributed through the West Bank mostly concentrated in lime stone rich hills of Hebron and Bethlehem (Southern West Bank).⁵ All data shows the concentration of stone and marble industry firms in Hebron and Bethlehem cities. While there are five major areas of which stones are quarried. In order of quality, they are:

¹. Sector Report: Stone and Marble in West Bank/Gaza, USAID, MASSAR Associates, 2002.

². Israeli-Palestine Center for Research and Information (IPCRI), 2009.

³. Sector Report: Stone and Marble in West Bank/Gaza, USAID, MASSAR Associates, 2002.

⁴. Palestinian Marble and Stone Industry, IMC, DATA Research and Studies Co., 2005.

⁵. Previous resource.

Sorting	Area	Properties
1.	Yata (Hebron)	Free of cracks, good color and uniformity of texture.
2.	Jammaeen (Nables)	Almost have the same priorities as the yata stone.
3.	Bani Neim (Hebron)	Have no splits, hard quality which affects the sawing blades adversely.
4.	Kabatia (Jenien)	Hard quality, different colors (mostly beige).
5.	Al-Sheikhs (Bethlehem)	Almost have the same proprieties as the Kabatia stone.

Table 1: Major areas of quarrying in West Bank, in order of quality

And the following table shows the concentration of cutting & shaping facilities and quarries across West Bank cities as follow:¹

Location	No. of Cutting & Shaping Facilities	No. of Quarries
Hebron	175-180	125-135
Bethlehem	205-215	30-35
Ramallah	55	15-20
Nablus	55-65	20-25
Jenin	75-80	30-35
Tulkarem	10	2-5
Qalqilia	7-10	0
Salfeet	5-10	0
Jericho	2	0
Total	589-627	222-255

Table 2: Estimated Number of Operating Stone-Cutting Firms and Quarries by Location

¹ Sector Report: Stone and Marble in West Bank/Gaza, USAID, MASSAR Associates, 2002.

1.1.5. Historical Background:

The industry of stone and marble in Palestine is considered one of the main sectors in the Palestinian economy. Historically stone and marble industry is known to be owned and managed by family members and continues to be inherited by generations to come. However the structure of this industry is very centralized and lacks a clear mission, vision and strategy.¹

1.1.6. Current Situation:

Stone and marble sector is considered to be one of the most significant and most active industries in Palestine. This sector is distinguished for having the largest percentage of employment of the Palestinian labor force with more than 20,000 workers engaged in this sector by 2008.²

Palestinian stone and marble production estimates on the international level is not consistent, but there is consensus on the fact that the contribution of Palestinian stone and marble sector is significant. According to the "Marble Stat" book, Palestine is the 12th largest stone producer in the world. Palestinian stone and marble production constitutes around 4% of world production and less than 2% of world production value. It represents one third of Turkey's output and half that of Germany's. The sector contributes 4% to the Palestinian Gross National Product (GNP) and 5% to its Gross Domestic Product (GDP). This is remarkable considering the small size of the Palestinian territories.^{3,4,5}

¹ Palestinian Marble and Stone Industry, IMC, DATA Research and Studies Co., 2005.

² According to meeting with Wisam Al-Taraweh (USM), April-2009.

³ Palestinian Marble and Stone Industry, IMC, DATA Research and Studies Co., 2005.

⁴ Israeli-Palestine Center for Research and Information (IPCRI), 2009.

⁵ Sector Report: Stone and Marble in West Bank/Gaza, USAID, MASSAR Associates, 2002.

1.1.7. Distribution of Palestinian Production:

Ministry of economy estimates the percentages of stone and marble sales as follow:

50% of sales to the local Palestinian market (48% West Bank, 2% Gaza).

49% is exported to Israeli market.

1% to Arab and international countries.¹

Taking into account that a large percent of stone and marble exported to Israeli market is being exported again to international market. But there is no clear statistics of these activities. Israeli companies have traditionally purchased blocks from the West Bank, processed them into stone products in Israel, and exported them all over the world.²

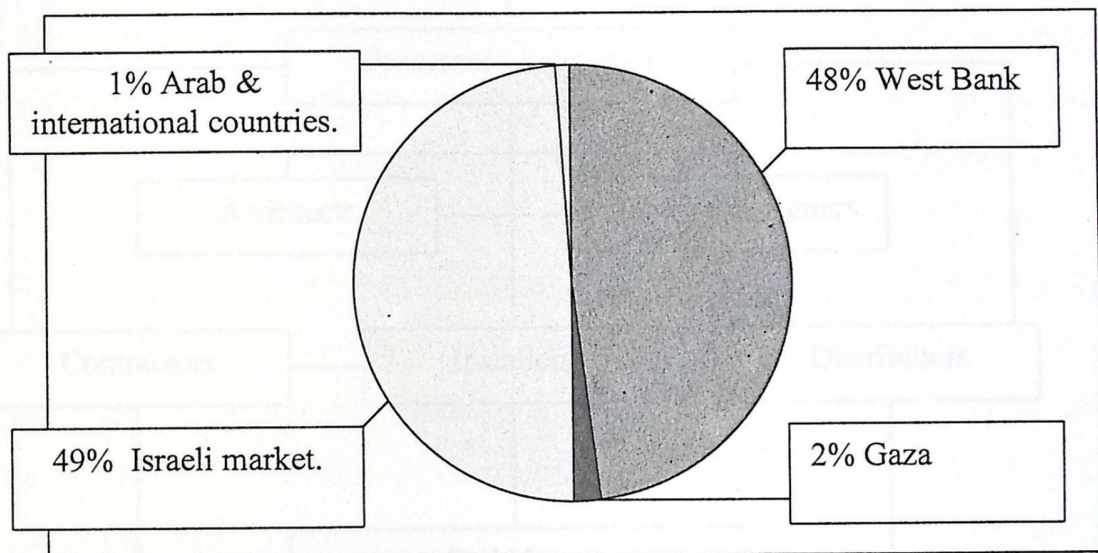


Figure 2: Distribution of Palestinian production.

Distribution has many forms; direct contact between the manufactures and end users is considered one of the main distributing channels locally. The decision maker regarding the quality and the color of the stone product is mainly the owner himself and is supported with engineers in case of villas and commercial buildings.³

¹ Palestinian Marble and Stone Industry, IMC, DATA Research and Studies Co., 2005.

² Sector Report: Stone and Marble in West Bank/Gaza, USAID, MASSAR Associates, 2002.

³ The Palestine National Authority, Ministry of Economy and Trade, 2001.

On the other hand, direct communication within the international market between the end users and the manufactures is almost impossible due to the sophistication of the international market.¹

Wholesalers, retailers and distributing agents are main links within the marketing chain of the stone and marble industry that supply the end users who's guided and supported by engineers, interior designers and architects. The following figure flow chart (1.3) illustrates the way products flows from the manufactures to the end users and the decision makers in the chain.²

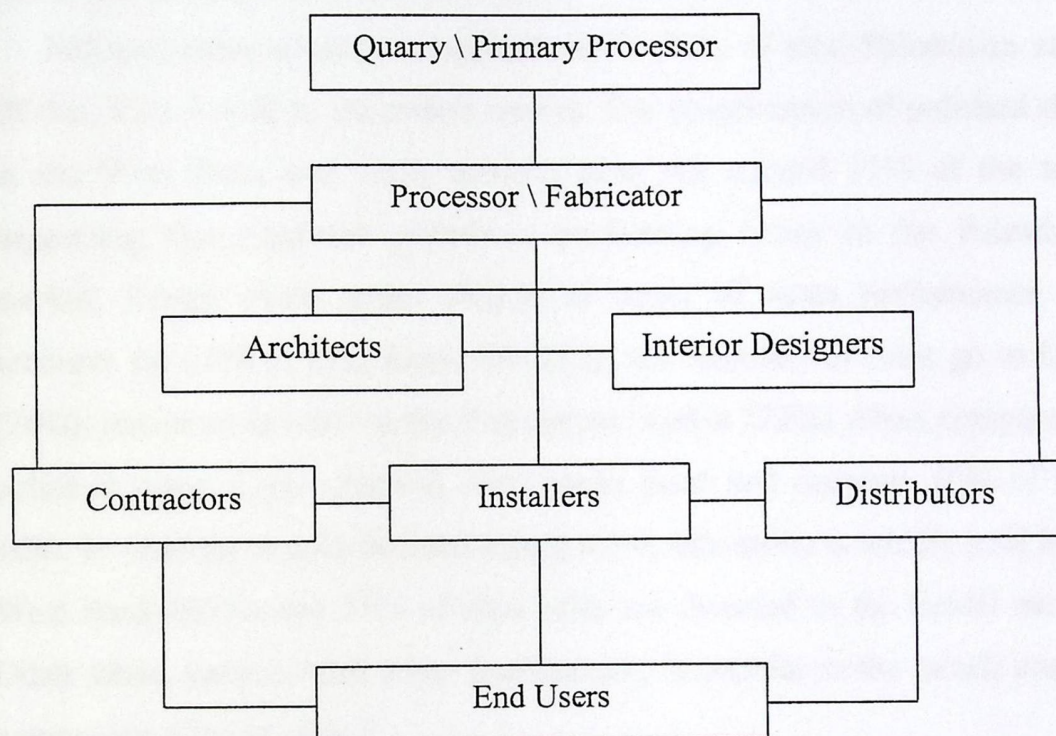


Figure 3: Palestinian products flow to the End User.

¹ National report of Palestine, MED BEST, Ramallah, 2004.

² Palestinian Marble and Stone Industry, IMC, DATA Research and Studies Co., 2005.

1.1.8. Sales and Market Share:

The total value of the annual sales in 2001 of Palestinian stone was estimated at \$ 600 million; \$ 150 million in the local market, \$ 360 million in Israel, and \$ 90 million in export markets. The market share of imported stone (marble and granite) is estimated at 13% of total quantity; an equivalent of 25% of total dollar value. These numbers indicate important issues: first, the market size of the West Bank and Gaza is large. Second, the market share of imported stone (marble and granite) is significant and its value is double that of the same quantity of local stone.¹

Polished stone constitutes approximately 38% of total Palestinian sales. Of this, 82% is sold to the Israeli market. The consumption of polished stone in the West Bank and Gaza markets does not exceed 11% of the total, suggesting that imported marble is performing better in the Palestinian market. Rough stone ranks second in terms of sales performance and accounts for 31% of total sales. Similarly, the majority of sales go to Israel (74%), but more is sold on the Palestinian market (22%) when compared to polished stone. Light chiseled stone ranks third and captures 10% of total sales. In contrast to polished and rough stone, this stone is widely sold in the West Bank (65%) and 33% of total sales are directed to the Israeli market. Other stone, such as bush stone (hammered), is popular in the Israeli market, comprising 67% of sales.²

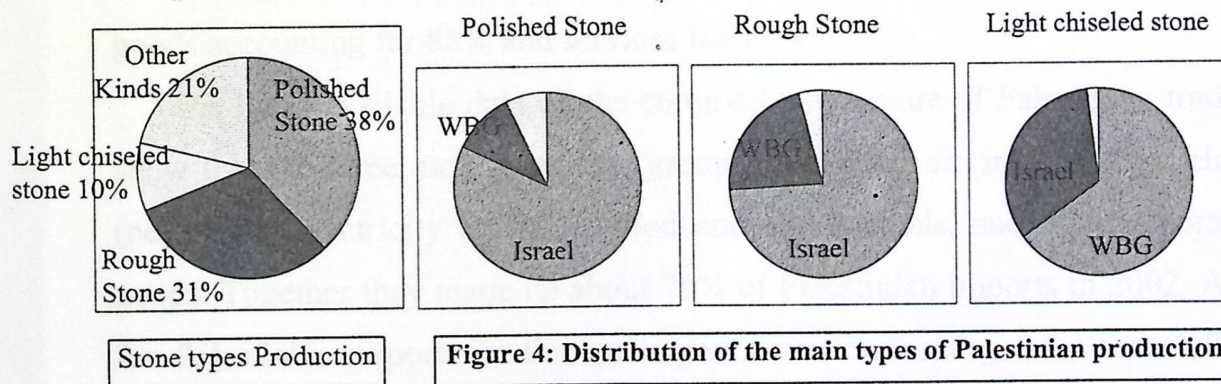


Figure 4: Distribution of the main types of Palestinian production

¹ Investment Guide to Palestine, Private Sector Development Program, GTZ, 2007.

² West Bank and Gaza Investment Climate, unlocking the Potential of the Private Sector, Document of the World Bank, 2007.

1.1.9. Foreign Trade:

The limited size of the Palestinian economy, combined with the lack of natural resources, suggests that foreign trade has a large potential to promote economic growth in the West Bank and Gaza Strip. As a result of the scarcity of domestic natural resources, it is required to increase the efficiency of imports as well as exports in order to maximize the benefits of larger trade flows. So far, Israeli occupation policies, including its control over Palestinian borders have stifled the development of Palestinian foreign trade.

Exports and imports were particularly hard hit by the outbreak of the Intifada in 2000 and the ensuing closures. Between 1999 and 2002, exports and imports of goods and services declined by 60% and 47% respectively. Palestinian exports decreased from \$763 million in 1999 to \$306 million in 2002, while imports dropped from \$3,712 million to \$1,977 million.¹

The World Bank identifies three reasons for the reduction in exports: increased transportation costs resulting from closures, making Palestinian products less competitive; foreign purchasers switch to more reliable sources of supply due to production and shipping interruptions; and Palestinian producers shifting towards domestic markets. Turning this negative trend around, trade indicators have recovered considerably since 2002.²

Preliminary data for 2004 from the Palestinian Central Bureau of Statistics indicate that total Palestinian exports reached \$407 million, with goods accounting for 88% and services for 12%.³

The latest available data on the commodity structure of Palestinian trade show that the three most important groups of imports are mineral fuels etc. (petroleum, electricity and gas), food and live animals, and manufactured goods. Together they made up about 70% of Palestinian imports in 2002. As for Palestinian exports in the same year, manufactured goods, especially

¹ Investment Guide to Palestine, Private Sector Development Program, GTZ, 2007

² Information Note on the Economy of the Occupied Palestinian Territory (West Bank and Gaza), PNA, Ministry of Economy and Trade, 2001.

³ West Bank and Gaza Investment Climate, unlocking the Potential of the Private Sector, Document of the World Bank, 2007.

stone and marble, accounted for 39%. Miscellaneous manufactured articles and food and live animals rank second and third, with 21% and 11% respectively. Israel is the main trading partner of the Palestinians. Trade with Israel made up 67% of total Palestinian exports and import in 2004. Palestinian net imports from Israel represent two thirds of the total trade deficit of the PA, which exceeds 60% of GDP.¹

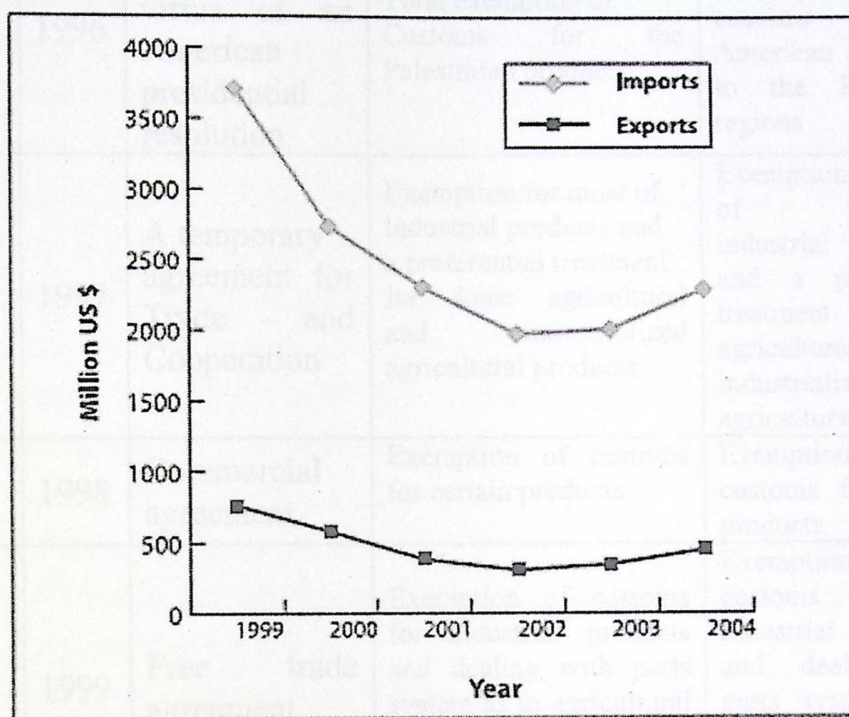


Figure 5: Palestinian Exports and Imports 1997 - 2004

Palestinian authority has signed various trade treaties with other countries, including the European Union (EU), EFTA, USA, Canada, Jordan and Egypt.² These agreements open a wide door to the Palestinian industry to compete in these countries:

¹ Israeli-Palestine Center for Research and Information (IPCRI), 2009.

² Investment Guide to Palestine, Private Sector Development Program, GTZ, 2007.

Party	Year	Nature of agreement	Exportation	Importation
Jordan	1995	Commercial agreement	Exemption for products specified in a list in the agreement providing that this list shall be progressively enlarged	Exemption for the mentioned products in lists A1.A2.B providing that these lists shall be progressively enlarged
Palestinian United States	1996	Agreement by virtue of an American presidential resolution	Total exemption of Customs for the Palestinian products	A total exemption of customs for the American products to the Palestinian regions
European Union	1997	A temporary agreement for Trade and Cooperation	Exemption for most of industrial products and a preferential treatment for some agricultural and industrialized agricultural products	Exemption for most of industrial products and a preferential treatment for some agricultural and industrialized agricultural products
Egypt	1998	Commercial agreement	Exemption of customs for certain products	Exemption of customs for certain products
Canada	1999	Free trade agreement	Exemption of customs for industrial products and dealing with parts system as to agricultural and industrialized agricultural products	Exemption of customs for industrial products and dealing with parts system as to agricultural and industrialized agricultural products
EFTA	1999	Temporary free trade agreement	Exemption of customs for most industrial products and a preferential different treatment of agricultural and industrialized agricultural products	Exemption of customs for most industrial products and a preferential different treatment of agricultural and industrialized agricultural products
Russia	1999	Commercial cooperation agreement	Exemption of customs for the specified products, MFN	Exemption of customs for the specified products, MFN

Table 3: Commercial agreements between Palestine and the world:

1.2. Research Problem:

"Natural resources are an important source of national wealth around the world"¹ and any nation should work on utilization of its natural resources to accelerate economic development. Palestinian stone and marble industry in southern West Bank is having some capabilities to compete globally but these capabilities are not used effectively to enhance growth of the industry.²

Natural resource of stone and marble alongside the high-tech machinery and professional labor and also investment in this industry are important. But the weakness of this industry is the lack of strategic thinking and plans, and the lack of competitiveness concept and strategies.³

Research team choose to implement this research on the southern West Bank because it has the highest concentration of stone cutting establishment especially in Bethlehem, near the lowest cost and richest quarries, and due to specialization of this area in the best quality products.⁴

Research team will study the Competitive Advantage of large stone and marble cutting firms in south of West Bank to satisfy the need of improving and enhancing this national industry. And this will be a modest effort to add a value to this industry and Palestinian community.

The definition of large firms is different from one nation to another, from one country to another depending on economic growth, labor force, and on size and dominates of industries.

Research team is strive for meeting with people who are experts in stone and marble industry, Mr.Mohamad sharea setting three criteria which can define and determine which one is large stone and marble cutting firms, these criteria are as follows:

Availability at least two Slab Cutting machine (Gang Saw/Vertical Or Horizontal Cutters), dominate or acquire the firms for secure natural stone resources such as(KK), and the last criterion is avaliabity or hiring 20employees at least at each firm.

Research team presented these three criteria on another specialist expert Mr.Jawad .Syyed. and he agree and accept about these criteria are required to each stone and marble cutting firms to be as large firms in stone and marble industry.

¹. Suhail S. Sultan, Maastricht 2007.

². Sector Report: Stone and Marble in West Bank/Gaza, USAID, MASSAR Associates, 2002.

³. Israeli-Palestine Center for Research and Information (IPCRI), 2009.

⁴. Palestinian Marble and Stone Industry, IMC, DATA Research and Studies Co., 2005.

1.3. Research Objectives:

The main objective of the research presented in this dissertation is to investigate factors of competitive advantage for large cutting firms working the natural stone in southern West Bank, Factors are determined from Porter's diamond (1990), in addition to the use of Information communication technology (ICT) as driver of Competitive Advantage.

This research will assess availability and level of:

1. Factor conditions.
2. Demand conditions.
3. Related and supporting industries.
4. Firm strategy, structure and rivalry.
5. The use of Information communication technology (ICT) as a source of competitive advantage.

1.4. Research Questions:

RQ1: To what extent Porter's diamond model facets can create a competitive advantage for stone and marble cutting firms in southern West Bank?

RQ2: To what extent different scenarios of the generic strategies affect the competitiveness of stone and marble cutting firms in southern West Bank?

RQ3: To what extent ICT acts as a source of competitive advantage for stone and marble cutting firms in southern West Bank?

1.5. Research Hypothesis:

The main hypothesis of this research can be defined as follow:

1. RH0: There is no significant relationship between Porter's diamond facets and the competitiveness of stone and marble cutting firms in southern West Bank.

And this main hypothesis covers 5 sub-hypothesis as follow:

- 1.1. There is no significant relationship between factor conditions and the competitiveness of stone and marble cutting firms in southern West Bank.
 - 1.2. There is no significant relationship between demand conditions and the competitiveness of stone and marble cutting firms in southern West Bank.
 - 1.3. There is no significant relationship between related & supporting industries and the competitiveness of stone and marble cutting firms in southern West Bank.
 - 1.4. There is no significant relationship between firm's structure and rivalry and the competitiveness of stone and marble cutting firms in southern West Bank.
 - 1.5. There is no significant relationship between firm's strategy and the competitiveness of stone and marble cutting firms in southern West Bank.
2. RH0: There is no significant relationship between the ICT and the competitive advantage of stone and marble cutting firms in southern West Bank.

1.6. Methodology/ Approach:

Literature from the fields of Competitive Advantage of Nations, ICT, Five Forces and Generic Strategies are reviewed in order to develop and test the hypothesis. An academic and business literature and other appropriate literature sources search were conducted. As part of the work, books, journal articles, catalogues, Internet sites, chambers of commerce surveys and professional association surveys have been used.

Background information is presented to highlight an overview of Stone & Marble cutting firms, Stone & Marble industry and its contribution in developing Palestinian economy, and methods of improving its competitiveness.

Based on the previous studies, the research develops an understanding of how the competitive advantage of a given industry is obtained in business environments.

The research presents and reports the result of a questionnaire for large cutting stone marble firms, and effective framework for achieving such values of competitive advantage in stone and marble cutting sector.

A combination of quantitative and qualitative methods is used in the research to collect and analyze the feedback. The main tool of the research is the qualitative questionnaire and its analysis. Although Semi structured meetings used to collect data.

1.7. Research Model:

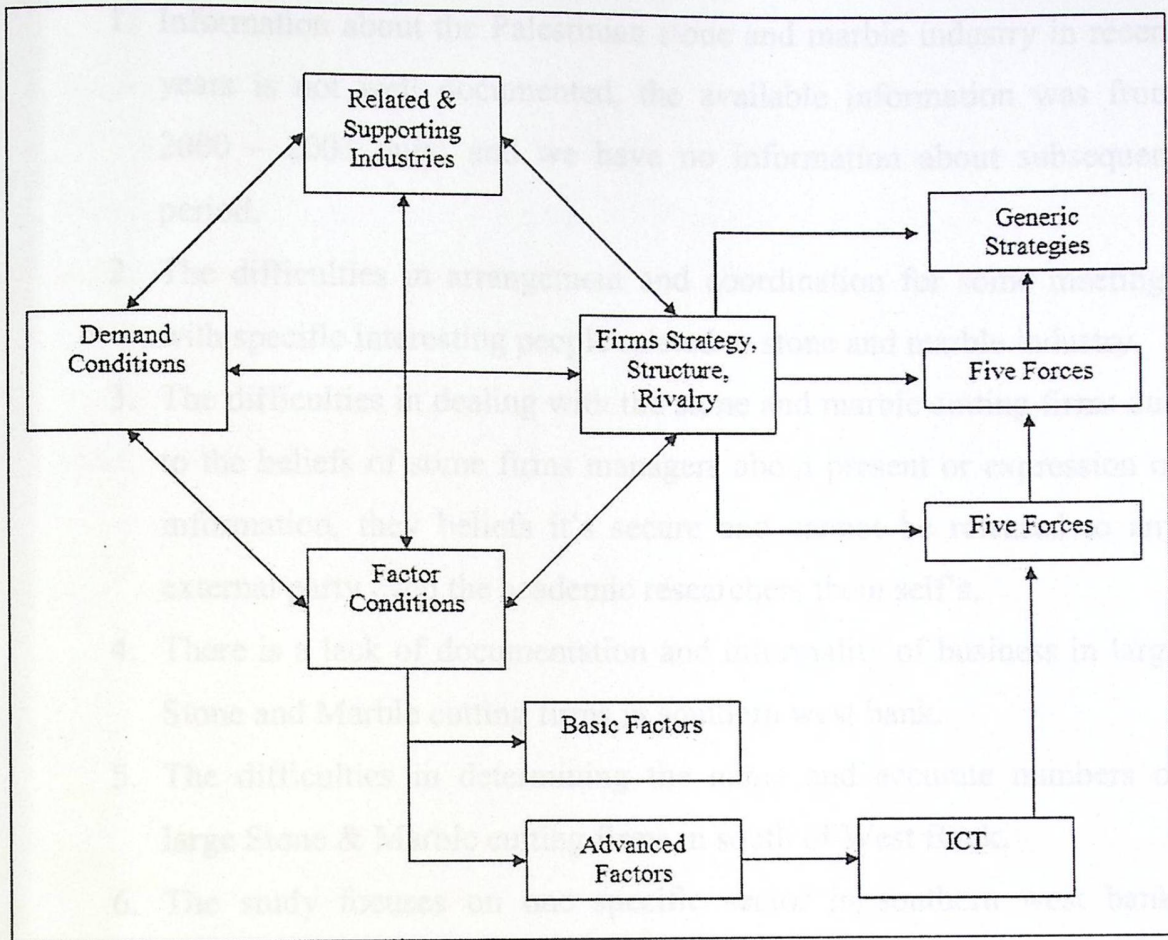


Figure 6: Research Model.

This model summarizes the relationship between the research variables, and it combines Porter's diamond of competitive advantage with other related fields of study.

Availability and employing of these variables could drive a given industry to gain a competitive advantage in business environment. The competitive advantage could be measured by a management tool called the Balanced Score Card.

1.8. Limitations and obstacles:

1. Information about the Palestinian stone and marble industry in recent years is not well documented, the available information was from 2000 – 2003 only, and we have no information about subsequent period.
2. The difficulties in arrangement and coordination for some meetings with specific interesting people related to stone and marble industry.
3. The difficulties in dealing with the stone and marble cutting firms due to the beliefs of some firms managers about present or expression of information, they beliefs it's secure and cannot be released to any external party even the academic researchers them self's.
4. There is a lack of documentation and informality of business in large Stone and Marble cutting firms in southern west bank.
5. The difficulties in determining the name and accurate numbers of large Stone & Marble cutting firms in south of West Bank.
6. The study focuses on one specific sector in southern west bank. Therefore, there are some limitations in generalizing the conclusions of the study.

1.9. Overview of the Dissertation:

The dissertation consists of three chapters.

Chapter one presents the introductory part of the research where the background, past and current status of the natural stone in south of west bank is presented.

The industry of stone and marble in Palestine is considered one of the main sectors in the Palestinian economy. Historically stone and marble industry is known to be owned and managed by family members and continues to be inherited by generations to come. The stone and marble from holly land "Jerusalem stone" is having important reputation around the

world. But how the competitive advantage of stone and marble cutting firms could be measured?

In addition, the research problem, objective, questions, hypotheses and methodology are described.

Chapter two presents the literature review of competitive advantage theories specially "porter" competitive advantage of nations, ICT and its role in the competitive advantage for large stone and marble cutting firms. and the challenges of using the ICT by these firms.

Chapter three discusses the findings and results of statically processing and recommendations.

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Chapter three discusses and recommendations.

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... slate, which can be
... referred to

Development Society, Jodhpur - India,
Islamabad- SMEDA, 2009.
Kandil & Tarek H. Selim.

Chapter Two: Literature Review:

This chapter covers the theoretical framework of the main area of research: Section 2.1. Covers stone and marble industry. While section 2.2. Discusses the theories of competitive advantage and Porter's theory of national competitive advantage and. section 2.3. Discusses the role of ICT as a source of competitive advantage.

2.1. Natural Stone and Marble:

Natural stone is the oldest construction material used by man from ancient times until today,¹ it could be said that "Ever since human life came into existence, natural stones are being used".² And natural stones are an integral part of the human history in terms of ornamental and construction use.³

Stone and marble quarrying and processing industries belong to the oldest industries of the world. The Ancient Egyptians, 5000 years ago, knew 40 different types of ornamental stones and worked chiefly with granite and some types of marble such as Alabaster. Some historians assert that the Greek and the Romans acquired the skills of quarrying and processing marble from the Ancient Egyptians. For over a thousand years now.^{4,5}

The most commonly used term in the natural stone sector is marble. In the commercial sense, the term marble is applied to material of whatever type of origin (sediment, magmatic or metamorphic) which can provide blocks consistent with accepted standards and, when cut and polished, display characteristics compatible with the criteria for facing.⁶

All natural stones including marble, granite and slate, which can be cut to sizes, polished and used for construction purposes, are referred to

¹ Natural Stones, Export Promotion Center of Turkey, 2009.

² K. Virendra Singh, President of Stone Industries & Mining Development Society, Jodhpur - India, 2009.

³ Cluster Diagnostic Study - Marble Processing -Rawalpindi/Islamabad- SMEDA, 2009.

⁴ Characteristics of the Marble Industry in Egypt, Azza I. Kandil & Tarek H. Selim.

⁵ Natural Stones, Export Promotion Center of Turkey, 2009.

⁶ Suhail S. Sultan, Maastricht 2007.

as dimensional stones. Dimensional stones are produced in more than 42 countries of the world while 12 of these producers are dominant in the international market they are 5 European countries and 5 from Asia and 2 from Americas.^{1,2}, detailed in table (2.1).

2.1.1. Leading Stone producers World Wide:

Economic activity in stone and marble industry developed for the first time with the invention of gunpowder and the use of mechanical cutting.³

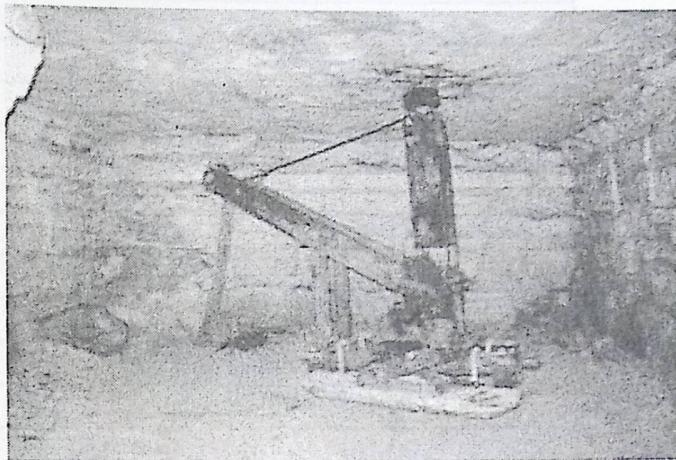


Figure 7: the oldest stone mechanical cutting machine.⁴

At the beginning of the 19th century, the production and trade in natural stone began to spread from Europe to other countries. In 1926, 1.5 million tons of stone were produced in a total of 42 countries. Almost (40%) of the total was produced in Italy,⁵ the economic activity of a city like Carrara in Italy has been relying on and revolving mainly around marble.⁶ Almost (50%) of the annual global production of natural stone blocks consists of marble and other colored stones, (40%) of granite and other hard stones, and (10%) of travertine and onyxes.⁷ The share of the 12 dominants producers of world production of stone and marble where in this respect by 2005:

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1. Cluster Diagnostic Study - Marble Processing -Rawalpindi/Islamabad- SMEDA, 2009.
 2. Palestinian Marble and Stone Industry, IMC, DATA Research and Studies Co., 2005.
 3. Characteristics of the Marble Industry in Egypt, Azza I. Kandil & Tarek H. Selim.
 4. Building and Roofing Stone, British Geological Survey, Mineral Profile, 2005.
 5. Suhail S. Sultan, Maastricht 2007.
 6. Characteristics of the Marble Industry in Egypt, Azza I. Kandil & Tarek H. Selim.
 7. Natural Stones, Tulay Uyanik, Export Promotion Center of Turkey, 2009.

Sorting	Country	Tons*1000	%
1.	Italy	8800	12,9
2.	China	8200	12,0
3.	Iran	7500	11,0
4.	Spain	7300	10,7
5.	Brazil	5500	8,1
6.	India	5400	7,9
7.	Turkey	2800	4,1
8.	Portugal	2500	3,7
9.	Greece	2100	3,1
10.	France	1800	2,6
11.	USA	1800	2,6
12.	Palestine	1250	1,8
13.	South Korea	1000	1,5
14.	Belgium	750	1,1
15.	Russia	700	1,0
16.	Indonesia	650	1,0
17.	Canada	550	0,8
18.	Ukraine	550	0,8
19.	Mexico	530	0,8
20.	Egypt	440	0,6
21.	Norway	440	0,6

Table 4: Leading stone producers World Wide:

Table (4) shows the distribution of the world natural stone production in 2005 based on colors:

Rating	Color	%	Million (tons)	Million (meter square)
1.	Gray	43.1	17.1	317
2.	Beige	13.8	5.5	102
3.	White	9.7	3.8	72
4.	Pink	6.8	2.7	50
5.	Yellow	5.2	2	38
6.	Red	64.2	1.7	31
7.	Brown	4.1	1.6	30
8.	Black	2	0.8	15
9.	Green	1.5	0.6	11
10.	Blue	1	0.4	7
11.	Other	8.6	3.4	63
	Total	100	24.5	736

Table 5: World Stone Production with Respect to Colors.

Stone was formed from different types of natural minerals. Marble's main consistency is calcium. Calcium carbonate is the natural source that bonds the stone. Certain additive minerals blended into during formation to customize

these brilliant colors. The additive minerals are also color developers present in granite and other natural stones.^{1,2}

Stone Color	Mineral
Black	Biotite, Hornblende, Carbon
Brown	Limonite
Gray	Variety of minerals
Green	Mica, Chloride, Silicate
Red	Hematite
White	Feldspar, Calcite, Dolomite
Yellow	Limonite

Table 6: Stone colors According to the minerals.

2.1.2. Process Flow:

Traditionally building stones are quarried or mined without the use of blasting techniques, which could have serious detrimental effects on the structure of the softer stone varieties. The quarry face is initially opened up by exploiting naturally occurring lines of weakness in the rocks provided by joints and / or bedding planes. The large blocks produced are then reduced in size by drilling and splitting using iron wedges (plug and feathers) or by diamond saw techniques.³

Technological advances in the last seventy years has increased the world production and consumption of dimensional stones to 150 million tons by 2004 while, consumption came to about 8.8 billion square feet (820 million square meters), generating overall turnover of \$40 billion.⁴ Nowadays The main processing activities of stone that conducted on the following:

1. L.I. Modern Marble, Inc. Fabrication & Installation, www.modernmarble.net

2. Natural Stones, Tulay Uyanik, Export Promotion Center of Turkey, 2009.

3. Building and Roofing Stone, British Geological Survey, Mineral Profile, 2005.

4. Andalusian Stone Technology Centre, Tommy Jansson, Technopolis Group for European Commission.

Processes	Machinery	Process Description
1. Squaring of Large Stones	Squaring Machines	Large Stones with irregular shape are squared or at least one side is leveled so that the stone can be placed in a proper manner on Gang saws and maximum square feet of processable stone can be retrieved.
2. Slab Cutting	Gang Saw/Vertical Or Horizontal Cutters	In this process squared/unsquared stone is cut into large slabs, which are defined as large on the basis of their length and/or width and/or height.
3. Sizing and Cutting into Slabs/Tiles	Single Cutter 12' to 36'	The large slabs are then dissected into saleable sizes, which can be in the form of slabs, tiles and etc.
4. Profiling, Edging, chamfering and calibrating	Auto Line	This is the first finishing process for the marble or stone tile/slabs. Edges are smoothed and tiles/slabs are chamfered and calibrated.
5. Polishing	Manual/ Auto-polisher	Polishing is done to give an attractive look to the products.

Table 7: Process Flow:¹

¹. Cluster Diagnostic Study - Marble Processing -Rawalpindi/Islamabad- SMEDA, 2009.

2.1.3. Stone Main Uses:

Today natural stone and stone products are used by the different end-users. The main end-users of stone processing industry are the building industry and the consumer market. The main uses of natural stone are tiles for floors and paving, special works such as balustrades, columns, fireplaces, fountains, grave stones, structural works like sets and curb stones, internal & external wall cladding and stairs/steps.^{1,2} Table below shows the percentage of each end-users use of stone.

Main uses of Natural Stone	% of Total
Flooring	37.0%
Exterior cladding	10.0%
Interior cladding	10.0%
Stairs	3.5%
Special works	12.0%
Structural works	10.0%
Funeral art	15.0%
Others uses	2.5%
Total	100.0%

Table 8: Natural Stone - Main uses.

¹. Characteristics of the Marble Industry in Egypt, Azza I. Kandil & Tarek H. Selim.
². Natural Stones, Tulay Uyanik, Export Promotion Center of Turkey, 2009.

2.1.4. Stone and Marble International Market:

The majority of world consumption comes from material that is quarried in different countries than those where it is eventually installed. The leading producers - China, India, Italy, Spain and Portugal - account for 53% of world quarrying production. While Italy, China and Spain are the major players in the international market and exported more than 55% of the dimensional stone's products (blocks and processed) by value. Other major exporters include Brazil, Spain, India, Turkey and Portugal.¹ The following table shows the leading countries in exporting stone and marble in order of its exports Values in \$ 1,000.

Top Exporters	2000	2001	2002	2003	2004
World	5,655,417	5,776,917	6,218,024	7,829,163	8,677,536
Italy	1,899,869	1,793,676	1,763,925	1,945,361	2,146,577
China	764,951	896,374	1,082,548	1,330,279	1,629,164
Spain	768,196	789,277	852,167	991,594	1,087,715
India	499,633	478,898	582,695	667,214	741,811
Brazil	263,103	273,093	331,273	421,287	589,148

Table 9: Stone and marble top exporters, export values in \$ 1,000.

It is noticed that the unvalued added products (marble and granite blocks and slabs) represent the major proportion of the world import and export.² in case of marble, 53% is exported directly from the mines, while other 47% includes 45% of indoor and outdoor floorings and stairs and 55% in handicrafts and other construction materials. Major importers of Marble & Granite products (processed and unprocessed) are China, Italy, Germany, USA, Spain, Japan, and more than 40% of the products are directed toward these countries.³

¹. Cluster Diagnostic Study - Marble Processing -Rawalpindi/Islamabad- SMEDA, 2009.

². Suhail S. Sultan, Maastricht 2007.

³. Andalusian Stone Technology Centre, Tommy Jansson, Technopolis Group for European Commission.

Table below highlights the main countries rated in respect of its consumption of stone and marble (processed and unprocessed) these data are in 2005:

Countries	Quantities	Shares	sq mt x 100
China	61.310	10.3%	5,4
Italy	58.130	9.8%	101,1
Germany	43.920	7.4%	53,5
United States	41.920	7.0%	15,7
Spain	39.330	6.6%	100,1
Japan	33.360	5.6%	26,5
India	26.880	4.5%	2,9
France	24.510	4.1%	42,3
Greece	15.120	2.5%	146,8
Saudi Arabia	13.890	2.3%	72,7
Turkey	9.270	1.6%	14,6

Table 10: World Consumption Distribution.

2.2. Competitive Advantage as a Conceptual Framework:

"Competitive advantage is a concept that often inspires strategists in a form of idol worship - a desire to imitate the strategies that make the most successful companies successful".¹

Competitive advantage has been defined in many different ways. For instance, Porter (1985) defined it as the "value a firm is able to create for its buyers that exceeds the firm's cost of creating it".² Another definition suggests that competitive advantage "seeks to identify particular properties of individual product markets which will give the firm a strong competitive position".³

Competitiveness can be defined at the firm level, the industry level, and the national level. Measures of the competitiveness at the firm level include firm's profitability, firm's exports, and market share.⁴ Competitive advantage of firms arises from the differential among them along any dimension of firm attributes and characteristics that allows one firm to better create customer value than do others.⁵

At the industry level, competitiveness is the ability of the nation's firms to achieve sustained success versus foreign competitors, without protection or subsidies. Measures of competitiveness at the industry level include the overall profitability of the nation's firms in the industrial sector, the industry's trade balance, the balance of outbound and inbound foreign direct investment, and direct measures of cost and quality at industry level.⁶

At the national level, competitiveness means the citizens' ability to achieve a high, and constantly rising, standard of living. In most countries, the standard of living is determined by productivity, which deploys national resources and the output of the economy per unit of labor and/or capital employed. A high and rising standard of living for all nationals can be

1. The Past and Future of Competitive Advantage, Clayton M. Christensen, 2001.

2. Competitive Strategy, Creating and Sustaining Superior Performance, Michael E. Porter, 1985.

3. Ansoff, 1965.

4. JMOP 2003.

5. Competitive Strategy, Techniques for Analyzing Industries and Competitors, Michael E. Porter, 1980.

6. Jordan's Competitiveness Book, Confronting the Competitiveness Challenge.

sustained only by the continuous improvement of productivity, either through achieving higher productivity in existing businesses or through successful entry into higher productivity businesses.¹

2.2.1. Theories of Competitive Advantage:

Strategic managers and researchers attempt to explain the sustained superior performance of firms². The leading hypothesis is that sustained superior performance arises from sustainable competitive advantages.³

Strategic managers and researchers have long been interested in understanding of competitive advantage for firms;⁴ so various theoretical frameworks and perspectives have been advanced that attempt to explain competitive advantage due to its importance to the long-term success of firms.⁵

The concept of competitive advantage is not new in the strategic management literature. In 1937, Alderson hinted at basics of competitive advantage, that a fundamental aspect of competitive adaptation is the specialization of suppliers to meet variations in buyer demand.⁶ Alderson (1965) was one of the first to recognize that firms should strive for unique characteristics in order to distinguish themselves from competitors in the eyes of the consumer. Later Hall (1980) and Henderson (1983) highlighted the need for firms to possess unique advantages in relation to competitors if they want to survive. These arguments form the basis for achieving competitive advantage.⁷

In this respect Strategic managers and researchers have viewed precisely opposite factors to be sources of competitive advantage at different points in

¹. The previous source.

². Ru-melt, Schendel and Teece, 1994.

³. Barney, 1997; Grant, 1998; Roberts, 1999.

⁴. Looking inside for Competitive Advantage, Jay B. Barney, The Academy of Management Executive, 1993.

⁵. Creation and preemption for competitive advantage, Hao Ma, Bryant College, 1990.

⁶. An Examination of the "Sustainable Competitive Advantage" Concept: Past, Present, and Future,

Nicole P. Hoffman, The University of Alabama

⁷. The Past and Future of Competitive Advantage, Clayton M. Christensen, 2001.

the histories of a number of industries.¹ So in order to understand the historical development of the competitive advantage concept we will review the most important theories discussed the competitive advantage and its sources:

Table 11: Theories of Competitive Advantage:

Author(s) and Date	Article/Book Title	Main Contributions
Alderson (1965)	<i>The Search for Differential Advantage</i>	Precursor to SCA; proposes three bases for differential advantage: technological, legal, and geographical; four strategies for achieving differential advantage: segmentation, selective appeals, transvection, and differentiation.
Hall (1980)	<i>Survival Strategies in a Hostile Environment</i>	Successful companies will achieve either the lowest cost or most differentiated position.
Henderson (1983)	<i>The Anatomy of Competition</i>	Continues discussion of those unique advantage(s) of one firm over competitors; those who can adapt best or fastest gain an advantage over competitors.
Porter (1985)	<i>Competitive Advantage: Creating and Sustaining Superior Performance</i>	Introduces idea of the "value chain" as the basic tool for analyzing the sources of CA.
Coyne (1986)	<i>Sustainable Competitive Advantage: What It Is, What It Isn't</i>	Explanation of the conditions needed for an SCA to exist; idea of capability gaps.

¹ Competition and Business Strategy in Historical Perspective, P. Ghemawat, Business History Review, 2002.

Ghemawat (1986)	<i>Sustainable Advantage</i>	Discussion of those advantages that tend to be sustainable: size in the targeted market, superior access to resources or customers, and restrictions on competitors' options.
Day & wensley (1998)	<i>Assessing Advantage: A Framework for Diagnosing Competitive Superiority</i>	Potential sources of advantage are superior skills and superior resources; in assessing ways to achieve SCA, both competitor and customer perspectives should be considered.
Dierickx & Cool (1989)	<i>Asset Stock Accumulation & Sustainability of Competitive Advantage</i>	Sustainability of a firm's asset position is based on how easily assets can be substituted or imitated.
Hamel & Prahalad (1989)	<i>Strategic Intent</i>	A firm should not search for an SCA, it should learn how to create new advantages to achieve global leadership.
Porter (1990)	<i>Competitive Advantage of Nations</i>	Introduced the Diamond of National Advantage which contains four broad attributes of a nation, attributes that assessed individually and as a system that affect the competitiveness of the playing field that each nation establishes and operates for its industries. These attributes are: Factor conditions, Demand conditions, Related and supporting industries, Firm strategy, structure, and rivalry
Prahalad & Hamel (1990)	<i>Core Competence of the Corporation</i>	SCA results from core competencies; firms should consolidate resources and skills into competencies that allow them to adapt quickly to changing opportunities.

Barney (1991)	<i>Firm Resources and Sustained Competitive Advantage</i>	Discusses four indicators of the potential of firm resources to generate SCA: value, rareness, inability to be imitated and imperfect substitution.
Conner (1991)	<i>A Historical Comparison of Resource-Based Theory and Five Schools of Thought within Industrial Organization Economics: Do We Have a New Theory of the Firm?</i>	With a resource-based view, to achieve above-average returns, a firm product must be distinctive in the eyes of buyers, or the firm selling an identical product in comparison to competitors must have a low-cost position.
Peteraf (1993)	<i>The Cornerstones of Competitive Advantage: A Resource-Based View</i>	Discusses four conditions which must be met for SCA: superior resources (heterogeneity within an industry), ex post limits to competition, imperfect resource mobility, and ex ante limits to competition.
Hall (1993)	<i>A Framework Linking Intangible Resources and Capabilities to Sustainable Competitive Advantage</i>	Identifies various intangible resources (including assets and competencies) that allow firms to possess relevant capability differentials which result in SCA
Day and Nedungadi (1994)	<i>Managerial Representations of Competitive Advantage</i>	A firm's use of strategy and reaction to the environment depends on its orientation (customer-oriented versus competitor-oriented); CA is based on this orientation.

<p>Hunt and Morgan (1995)</p>	<p><i>The Comparative Advantage Theory of Competition</i></p>	<p>Compares neoclassical theory and comparative advantage theory of the firm; comparative advantage in resources can translate into a competitive advantage in the marketplace; offers categorization of resources.</p>
<p>Oliver (1997)</p>	<p><i>Sustainable Competitive Advantage: Combining Institutional and Resource-Based Views</i></p>	<p>Proposes a model of firm heterogeneity which suggests that both resource capital and institutional capital are indispensable to SCA.</p>

2.2.2. Porter's Diamond:

Many theories of competitive advantage tried to explain why a country is more competitive than another. But no theory made the contribution which competitive advantage of nation's theory as porter introduced in 1990.¹ Porter's Competitive Advantage of Nations theory and the diamond framework are important for bridging the gap between strategic management and international economics while contributing substantially to both.² They are important contributions to the theoretical foundation of strategic management because they answer, the reason why some firms are better at differentiating between products and sources of competitive advantages needs to be explored. Second an explanation of why the nation appears to be the desirable home base for competing in a given industry.³

Porter's research on the competitive advantage of nation's center is his statement that "National prosperity is created, not inherited..." (Porter, 1990). By saying this, he rejects the traditional economic theory which teaches that variables like labor costs, interest rates and economy of scale are of most importance for the competitive advantages of a nation. These are often a result of historical events and traditions. And he introduced new sources of nation's competitiveness which according to porter depends on the capacity of its industry to innovate and upgrade. Companies gain advantage against the world's best competitors because of pressure and challenge. They benefit from having strong domestic rivals, aggressive home-based suppliers, and demanding local customers.⁴

The Diamond framework is an industry-level framework seems that it's focusing on the nations as its core unit of analysis.⁵ While the primary objective of the theory is to explain why particular countries succeed in

¹ The Competitive Advantage of Nations and Choice of Entry Strategies, M. Helvik, M. Harnecker, 2006.

² Porter's Competitive Advantage of Nations: An Assessment, Robert M. Grant, 1991.

³ Competitive Advantage in Global Industries, D. Passemard and Brian H. Kleiner, Management Research News, 2000.

⁴ Michael Porter's Contribution to Strategic Management, Jan J. Jorgensen, McGill University, 2008.

⁵ The Competitive Advantage of Nations and Choice of Entry Strategies, M. Helvik, M. Harnecker, 2006.

particular industries, in Porter's analysis, it is firms rather than nations which are the principal actors.¹ The influence of the nation on the international competitive performance of firms occurs through the ways in which "a firm's proximate environment shapes its competitive success over time".² So the theory determining whether the industry (in a given nation) can provide firms with such favorable conditions allowing them to compete internationally.³ In other words, the Diamond framework says whether or not a firm has the competitive advantages necessary for an international launching.⁴ While the primary role of the nation is the 'home base' which it provides for the firm. Since firms typically develop within a domestic context prior to expanding internationally, the home base plays a key role in shaping the identity of the firm, the character of its top management, and its approach to strategy and organization, as well as having a continuing influence in determining the availability and qualities of the resources available to the firm.⁵

The Diamond framework consists of four country-specific determinants, which describe characteristics of a nation's competitive advantage, and two external variables. The determinants are factor conditions, demand conditions, related and supporting industries, firm strategy, structure and rivalry, chance and government.⁶

The determinants, taken individually and as a system, create a context in which a nation's firm is born and competes. Weakness in any one of those determinants constrains the industry's potential for upgrading and gaining competitive advantages.⁷

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1. Porter's Competitive Advantage of Nations: An Assessment, Robert M. Grant, 1991.
 2. The Competitive Advantage of Nations, Michael E. Porter, Harvard Business School, 1990.
 3. Looking inside for Competitive Advantage, Jay B. Barney, The Academy of Management Executive, 1993.
 4. Competitive Advantage in Global Industries, D. Passemard and Brian H. Kleiner, Management Research News, 2000.
 5. Michael Porter's Competitive Advantage: It Should Be Taken More Seriously, Hamid Hosseini, King's College, PA.
 6. An Analysis of the Computer Industry in China & Taiwan Using Porters Determinants of National Competitive Advantage, Larry Bridwell and Chun-Jui Kuo, 2005.
 7. Porter's Cluster Strategy and Industrial Targeting, Douglas Woodward and Paulo Guimaraes, 2008.

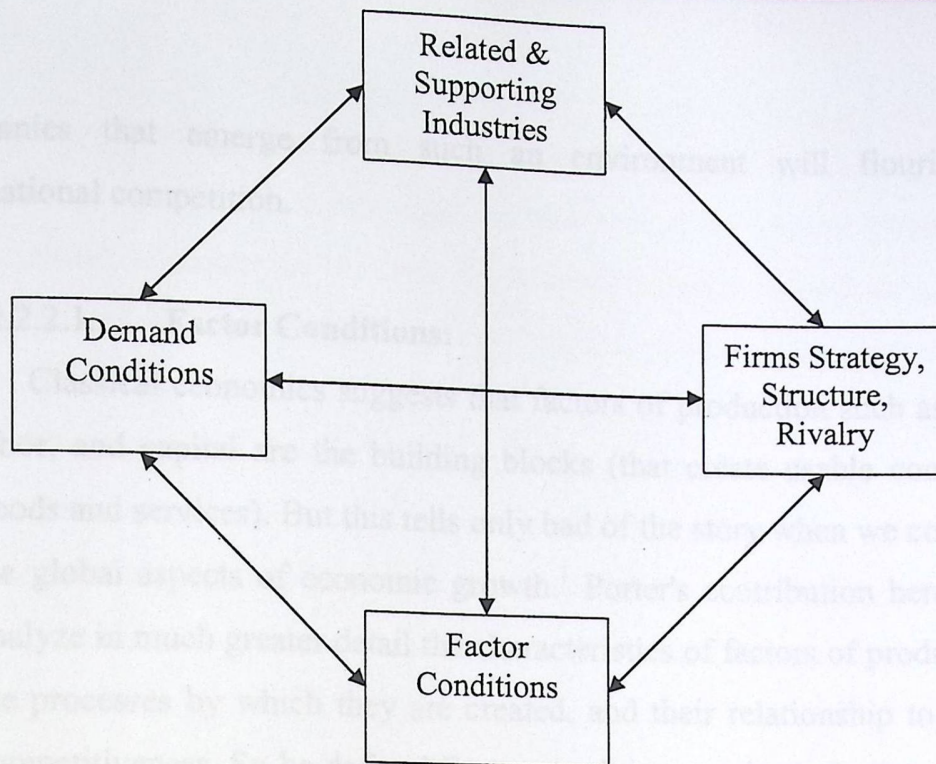


Figure 8: The diamond model of the competitive advantage of nations.¹

The determinants as a system constitute the Diamond framework, which is a mutually reinforced system meaning that the effect of one determinant depends on the state of the others, means that these four sets of national influences on competitive advantage operate interdependently rather than individually.² The determinants, individually and as a system, create the context in which a nation's firms are born and compete: "the availability of resources and skills necessary for competitive advantage in an industry; the information that shapes what opportunities are perceived and the directions in which resources and skills are deployed",³ "the goals of the owners, managers, and employees that are involved in or carry out competition; and most importantly, the pressure on firms to invest and innovate".⁴

In other words, nations succeed in particular industries because their home environment is the most dynamic and the most challenging. This environment stimulates firms to upgrade and widen their advantages over time, for instance where the national diamond is the most favorable. The

¹ The Competitive Advantage of Nations, Michael E. Porter, Harvard Business School, 1990.
² The Competitive Advantage of Nations and Choice of Entry Strategies, M. Helvik, M. Hamecker, 2006.
³ Creation and preemption for competitive advantage, Hao Ma, Bryant College, 1990.
⁴ The Competitive Advantage of Nations, Michael E. Porter, Harvard Business School, 1990.

companies that emerge from such an environment will flourish in international competition.

2.2.2.1. **Factor Conditions:**

Classical economics suggests that factors of production such as land, labor, and capital are the building blocks (that create usable consumer goods and services). But this tells only part of the story when we consider the global aspects of economic growth.¹ Porter's contribution here is to analyze in much greater detail the characteristics of factors of production, the processes by which they are created, and their relationship to firms' competitiveness. So he defined Factor conditions as the nation's position in factors of production, such as skilled labor or infrastructure, necessary to compete in a given industry.² He recognizes hierarchies among factors distinguishing between basic factors (such as natural resources, climate, location, and demographics) and advanced factors (such as highly educated and specialized labor and other factors that in particular meet the needs of the industry, and research facilities).³ Advanced factors are the most significant for competitive advantage and, unlike factors whose supply depends upon endowment, advanced factors are a product of investment by individuals, companies, and governments.⁴

The relationship between basic and advanced factors is complex. Basic factors can provide initial advantages which are subsequently extended and reinforced through more advanced factors, conversely, disadvantages in basic factors can create pressures to invest in advanced factors.⁵ He even argues that having general high school or college/university education does not necessarily represent competitive advantage in the modern international competition. What is important to

1. Porter's Competitive Advantage of Nations: An Assessment, Robert M. Grant, 1991.

2. Michael Porter's Contribution to Strategic Management, Jan J. Jorgensen, McGill University, 2008.

3. Michael Porter's Competitive Advantage: It Should Be Taken More Seriously, Hamid Hosseini, King's College, PA.

4. Creation and preemption for competitive advantage, Hao Ma, Bryant College, 1990.

5. Porter's Cluster Strategy and Industrial Targeting, Douglas Woodward and Paulo Guimaraes, 2008.

create competitive advantages, are factors highly specialized to an industry's particular needs, like venture capital in Silicon Valley and scientific research facilities in the aircraft-industry. These factors are scarce and hard to imitate, and they require sustained investment to be created.¹

The advanced factors which provide the most enduring basis for competitive advantage tend to be specialized rather than generalized which inevitably implies a close interaction between industry success and the creation of the specialized factors of production necessary to that success.²

In other words, what is important in sophisticated industries and advanced economies is not the stock of factors itself, but how it most efficiently can be created, upgraded and deployed into particular industries. Usually, competitive advantage results from the presence of leading institutions that first create specialized factors and then continually work to upgrade them.³

¹ The Competitive Advantage of Nations and Choice of Entry Strategies, M. Helvik, M. Hannecker, 2006.

² Porter's Competitive Advantage of Nations: An Assessment, Robert M. Grant, 1991.

³ Local or National Competitive Advantage? The tensions in cluster development policy, Philip Raines, University of Strathclyde, 2001.

2.2.2.2. Demand Conditions:

Demand conditions since the creation of advanced factors such as sophisticated skills and new technologies plays such an important role in establishing and sustaining national advantages, it is essential to understand the features of the national environment which are conducive to such investment.¹

Demand conditions relates to the nature of home-market demand for the industry's products or services. Porter (1998) states that nations gain competitive advantage in industries where the home demand gives their companies a clearer and/or earlier picture of emerging buyer needs.²

Within his diamond framework Porter places particular emphasis on the role of home demand in providing the impetus for upgrading competitive advantage. Firms are typically most sensitive to the needs of their closest customers; hence the characteristics of home demand are particularly important in shaping the differentiation attributes of domestically-made products and in creating pressures for innovation and quality.³

Such home bases are often characterized by having some of the world's most sophisticated and demanding buyers for the product or service. This is the reason why sophisticated demand conditions provide advantages, because firms are forced to respond to tough challenges by innovating and upgrading sooner than its foreign competitors. However, the size of the home demand proves less significant than the character of home demand.⁴

However, sophisticated demand conditions in the home market are of little value if domestic preferences are not transferable to other nations. A nation's companies can anticipate global trends only if the nation's values

¹ Porter's Competitive Advantage of Nations: An Assessment, Robert M. Grant, 1991.

² The Competitive Advantage of Nations and Choice of Entry Strategies, M. Helvik, M. Harnacker, 2006.

³ Michael Porter's Contribution to Strategic Management, Jan J. Jorgensen, McGill University, 2008.

⁴ Local or National Competitive Advantage? The tensions in cluster development policy, Philip Raines, University of Strathclyde, 2001.

are spreading. Nations export their values and tastes through media, through training foreigners, through political influence, and through the foreign activities of their citizens and companies. Transferring domestic preferences to foreign markets, do not only benefit market growth in general, but is most important for small, open economies whose home market is too small to secure a high growth rate.¹

2.2.2.3. **Related and Supporting Industries:**

An industry's investments in advanced factors of production are likely to have spillover benefits beyond the confines of that industry. One of the most pervasive findings of the study was the tendency for the successful industries within each country to be grouped into clusters of related and supporting industries.²

Related and supporting industries relate to the presence or absence in the nation of supplier industries and other related industries that are internationally competitive.

Internationally competitive home-based suppliers create advantages in downstream industries in several ways, such as the ability to offer the most cost-effective input delivery and close working relationships. Short lines of communication can improve the information flow and the exchange of ideas and innovations due to a quick and constant process.³

The nation's companies benefit most when the suppliers themselves are global competitors. It is ineffective for a company to create suppliers that are totally dependent on the domestic industry and in the worst case, also prevented from serving foreign competitors. The same principle applies to suppliers and their recipient firms. As for firms and their customers, suppliers also need rivalry and the constant pressure for product innovation and better logistics to perform better. Besides, serving

1. Porter's Cluster Strategy and Industrial Targeting, Douglas Woodward and Paulo Guimaraes, 2008.
2. Porter's Competitive Advantage of Nations: An Assessment, Robert M. Grant, 1991.
3. The Competitive Advantage of Nations and Choice of Entry Strategies, M. Helvik, M. Harnecker, 2006.

only one industry or one market, makes them very vulnerable for economic fluctuations, meaning that risk involved is much higher than would be the case with a broader customer base.¹

Home-based competitiveness in related industries provides similar benefits as with suppliers, where information flows and technical interchange speed the rate of innovation and upgrading.²

2.2.2.4. Firm Strategy, Structure and Rivalry:

Porter identifies systematic differences in the characteristics of the business sectors of different countries which are important determinants of the industry pattern of competitive advantage within each country. These characteristics include strategies, structures, goals, managerial practices, individual attitudes, and intensity of rivalry within the business sector. For example, the large number of small, family-owned companies in Italy has been conducive to the success of design-orientated, craft-based industries where entrepreneurial responsiveness and flexibility in adjusting to fashion changes are important sources of competitive advantage.³

Within this broad set of influences, the most interesting relationship which Porter identifies is between domestic rivalry and the creation and persistence of competitive advantage. Rivalry is critically important in pressuring firms to cut costs, improve quality, and innovate. Because competition between domestic firms is more emotive and personal, and because domestic rivals compete from a common national platform, their rivalry tends to be more intense than with foreign competitors. Hence, domestic rivalry is particularly effective in promoting the upgrading of competitive advantage.⁴

¹ Porter's Cluster Strategy and Industrial Targeting, Douglas Woodward and Paulo Guimaraes, 2008.

² Creation and preemption for competitive advantage, Hao Ma, Bryant College, 1990.

³ National and firm competitiveness: a general research model, Attila Chikan, University of Budapest, 2008.

⁴ Looking inside for Competitive Advantage, Jay B. Barney, The Academy of Management Executive, 1993.

The business context varies widely among nations, and national advantage arises from good match between choices regarding the context and the sources of competitive advantage in a particular industry.¹

Porter (1998) uses Germany to illustrate how the engineering and technical background of many senior executives has produced a strong fascination toward methodical product and process improvement. Likewise, their organizations are often hierarchical and impersonal. This has led to a great success in industries with a high technical or engineering content, whereas German successful firms in consumer goods and services are rarer.²

Porter (1998) mentions in his book a lot of nation-dependent aspects influencing the ways in which firms are organized and managed. Many of these aspects are similar to the issues dealt with in the cultural dimensions of scholars like Hofstede and Trompenaars and Hampden-Turner.³

Nations also differ remarkably in the types of goals that firms and individuals seek to achieve. Company goals reflect the national characteristics of capital markets and the shareholder/stakeholder issue. They also reflect how managers are being compensated. The characteristics of the appraisal systems most commonly accepted, are also important to competitive advantage as it influences individual motivation to work and expand skills. Individuals, no matter what level or position, should be encouraged to maintain and expand their skills and competencies. Outstanding talent is a scarce resource in any nation, and it is up to each nation to catch those talented individuals before someone else does. This is important because a nation's success largely depends on which type of education these talents pursue, where they choose to work and their commitment and effort in their vacancies. Other important

1. The Competitive Advantage of Nations, Michael E. Porter, Harvard Business School, 1990.
2. Porter's Cluster Strategy and Industrial Targeting, Douglas Woodward and Paulo Guimaraes, 2008.
3. Competitive Advantage: Logical and Philosophical Considerations, Thomas C. Powell, Strategic Management Journal, 2001.

nation-variables are attitude towards individualism, equality, inherited status vs. achieved status etc.¹

Finally, domestic rivalry is a powerful stimulus to the creation and persistence of competitive advantage. Domestic rivalry is so important because of the mutual pressure for improvement and innovation. Porter (1998b) argues that the rivalry among domestic firms often go beyond a pure price-war, they push each other for better quality and services and the creation of new products and processes. The competition may reach a point where the incumbent firms might not preserve advantages for long periods, but the active pressure from its competitors and the fear of falling behind stimulates to new thinking and innovation.²

To achieve and sustain competitive success in a given industry of advanced economies, it is necessary that advantages are sourced throughout the diamond. Although, advantage in every determinant is not a prerequisite for competitive advantage in an industry, but competitive advantage should be based on more than only one or two determinants. The interaction of advantage in many determinants creates self-reinforcing benefits that are extremely hard for foreign rivals to nullify or replicate.³ The Diamond states that firms gain competitive advantage under three conditions:⁴

- If home base allows accumulation of assets and skills
- In industries where home base affords better information and insight into product and process needs
- If goals of the owners, managers and employees support intense commitment and sustained investment.

¹. National and firm competitiveness: a general research model, Attila Chikan, University of Budapest, 2008.

². Local or National Competitive Advantage? The tensions in cluster development policy, Philip Raines, University of Strathclyde, 2001.

³. New Global Strategies for Competitive Advantage, Michael Porter, Planning Review; 1990.

⁴. The Competitive Advantage of Nations, Michael E. Porter, Harvard Business School, 1990.

2.2.2.5. The Two External Determinants; Chance and Government:

According to Porter, a nation is most likely to succeed in industries or industry segments where the national diamond, consisting of the four mentioned attributes, is the most favorable. However, he also recognizes that: "Two additional variables can influence the national system in important ways. These are chance and government".¹

As stated by Porter, "In the histories of most of the successful industries we studied; however, chance events also played a role". And he defines chance events as: "occurrences that have little to do with circumstances in a nation and are often largely outside the power of firms (and often the national government) to influence". Some examples that Porter finds particularly important in influencing competitive advantage are: acts of pure invention, major technological discontinuities (for example, biotechnology, microelectronics), discontinuities in input costs such as the oil shocks, significant shifts in world financial markets or exchange rates, surges of world or regional demand, political decisions by foreign governments, or wars.²

According to Porter: "chance events are important because they create discontinuities that allow shifts in competitive position. They can nullify the advantages of previously established competitors and create the potential that a new nation's firms can supplant them to achieve competitive advantage in response to new and different conditions".³ He cites the example of microelectronics that was very important in neutralizing American and German dominance in numerous electronically based industries. For, this provided Japanese and others to gain position or, a surge in demand for shifts that gave South Korea the opportunity to enter the shipbuilding industry against Japan. Or, the

1. The Competitive Advantage of Nations, Michael E. Porter, Harvard Business School, 1990.

2. New Global Strategies for Competitive Advantage, Michael Porter, Planning Review, 1990.

3. Michael Porter's Competitive Advantage: It Should Be Taken More Seriously, Hamid Hosseini, King's College, PA.

apparel industry developed in Singapore after Western nations placed quotas on apparel imports from Hong Kong and Japan.¹

While Smith's absolute advantage, and Ricardian and the H-O-S versions of comparative advantage doctrine see no role for the government, new trade theorists justified some limited role for the government. For example, new trade theorists Krugman (1987) and Brander (1986) have reminded us of the role governments can play in regards to attaining international trade advantages. Proposing strategic policy, these new trade theorists have argued that governments can influence the comparative trade advantage of a nation if it can ensure domestic firms to gain first mover advantage.²

Porter too believes that government, at all levels, can improve (or detract from) the national advantage of the nations. This, to him, takes place by influencing the four attributes of competitive advantage. For example, as he indicates, government antitrust policy affects domestic rivalry, regulation can influence home demand conditions, investment in education influences and changes factor conditions, and government purchases of domestic products can stimulate related and supporting industries. In other words, according to Porter, "Government's real role in national competitive advantage is in influencing the four determinants".³

1. Michael Porter's Contribution to Strategic Management, Jan J. Jorgensen, McGill University, 2008.

2. Creation and preemption for competitive advantage, Hao Ma, Bryant College, 1990.

3. Creation and preemption for competitive advantage, Larry Bridwell and Chun-Jui Kuo, 2005.

3. Determinants of National Competitive Advantage, Douglas Woodward and Paulo Guimaraes, 2008.
& Porter's Cluster Strategy and Industrial Targeting, Douglas Woodward and Paulo Guimaraes, 2008.

2.2.3. Critique of the Diamond Theory:

As the title suggests, this part will deal with the criticism of the Diamond framework and some major challenges it faces as the world economy has changed since it was first published in 1990.

2.2.3.1. The major academic objections have been Porter's choice of the nation as the unit of analysis. This view is shared by Rugman and D'Cruz (1993), Cartwright (1991), Rasmussen (2002) and others.¹

2.2.3.2. Porter's framework has repeatedly been challenged by other academics and strategists. Kevin Coyne and Somu Subramaniam have stated that three dubious assumptions underlie the five forces: that buyers, competitors, and suppliers are unrelated and do not interact and collude; that the source of value is structural advantage (creating barriers to entry); and that uncertainty is low, allowing participants in a market to plan for others behavior.

2.2.3.3. Traditional Porter's thinking was largely limited to achieve a better competitive position against other players. Porter's theories based on the economic situation in the eighties. This model might not explain today's dynamic changes.

2.2.3.4. Downes' arguments are convincing. In fact, digitalization, globalization and deregulation have become powerful forces during the last years, but Porter's models rarely take them into consideration. Today's markets are highly influenced by technological progress, especially in information technology. Therefore, it is not advisable – if not to say impossible – to develop a strategy solely on the basis of Porters models.

2.2.3.5. So far, the conceptual critics of the diamond framework have been discussed. The discussion on the validity of the diamond continues, focusing on the impact of internet and new ways of doing business and reaching customers. According to scholars like

¹ The Competitive Advantage of Nations and Choice of Entry Strategies, M. Helvik, M. Harnacker, 2006.

Laudon (2003) and Parsons and Oja (2006) e-commerce includes internet activities like online shopping, electronic auctions, online travel-ticket ordering, online banking and stock trading and online education. The unique feature of shopping digital products like news, music, videos, databases, software, and all types of knowledge-based items, is that they can be transformed into bits and delivered over the web. Consumers can get them immediately upon completing their orders, and no one pays shipping costs. The issue with e-commerce and the diamond-framework is the assumption that online business makes country borders less significant. Parsons and Oja (2006) go on arguing that as long as the customers have internet-access, credit card for payment possibilities and access web pages are written in a language understandable to them, all requirements needed for a successful e-commerce transaction are evident. For online orders of physical products. On the other hand, Porter (2001) does not agree with the assertion of internet and e-commerce as a new economy. His main arguments for this is that e-commerce so far has failed to produce high profitability for the firms involved and thereby has not been strong enough as an influencing force to be able to create any industry structure of its own. According to him, "Internet technology provides better opportunities for companies to establish distinctive strategic positioning than did previous generations of information technology" (Porter, 2001). By this he means that internet in itself is not a competitive advantage, but that it can be used as a tool to compete. By doing so, it may seem as he defends the old position regarding online shopping just as a supplement to the traditional bricks-and-mortars, and not as the independent corporate structure it has become.¹

¹. National and firm competitiveness: a general research model, Attila Chikan, University of Budapest, 2008 & Porter's Cluster Strategy and Industrial Targeting, Douglas Woodward and Paulo Guimaraes.

2.2.4. Porter's Five Forces:

A framework for diagnosing industry structure, built around five competitive forces that erode long-term industry average profitability.¹ The industry structure framework can be applied at the level of the industry, the strategic group (or group of firms with similar strategies) or even the individual firm.² Its ultimate function to explain the sustainability of profits against bargaining and against direct and indirect competition. In every industry (taken nationally or worldwide), the competitive game can be described through five forces:³

1. Threat of new entrants enterprises.
2. The threat of substitute products.
3. The bargaining power of suppliers.
4. The bargaining power of customers.
5. The rivalry among existing competitors.

The action of these five forces determines the long run profitability of a given industry.

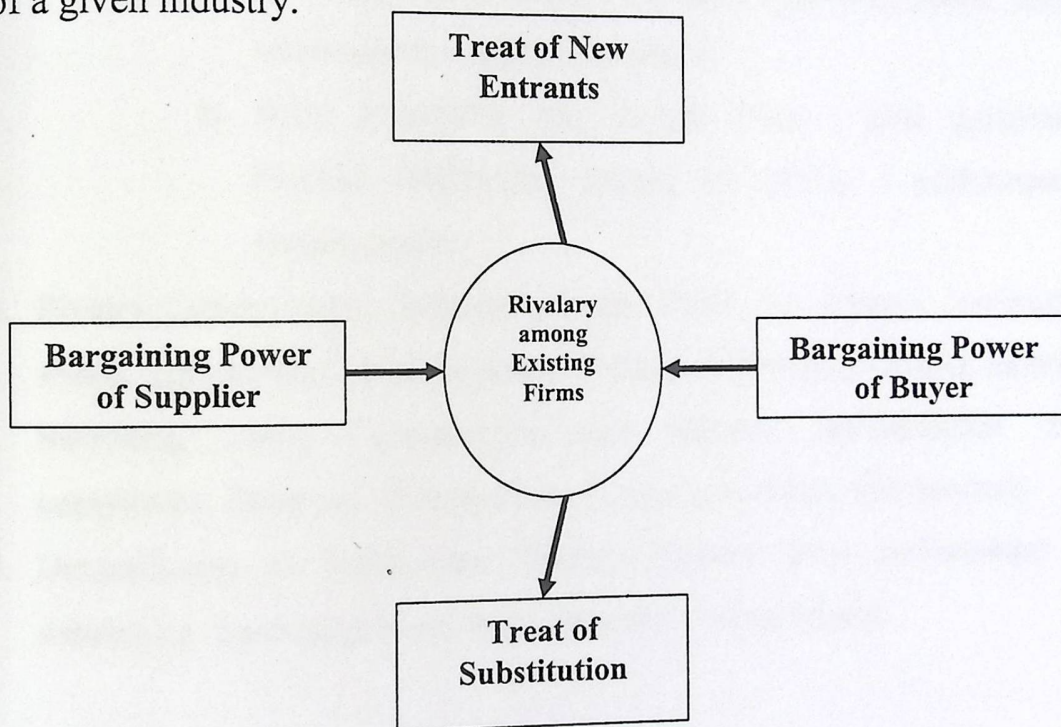


Figure 9: Porter's Five Forces Model.⁴

The elements involved with each force are shown below

¹ Looking inside for Competitive Advantage, Jay B. Barney, The Academy of Management Executive, 1993.

² Michael Porter's Contribution to Strategic Management, Jan J. Jorgensen, McGill University, 2008.

³ Creation and preemption for competitive advantage, Hao Ma, Bryant College, 1990.

⁴ The Five Competitive Shape Strategy Forces, Michael E. Porter, 1979.

1. Entry Barriers: which include Economies of scale, Proprietary product differences, Switching costs, capital requirements, Access to distribution, Absolute cost advantages, Proprietary learning curve, Access to necessary inputs, Government policy.
2. Supplier Power: which include Differentiation of inputs, Switching costs of suppliers and firms in the industry, Presence of substitute inputs, Supplier concentration, Importance of volume to supplier, Cost relative to total purchases in the industry, Impact of inputs on cost or differentiation, Threat of forward integration relative to threat of backward integration by firms in the industry.
3. Buyer Power which include the following:
 - a. Bargaining Leverage that include Buyer volume, Buyer switching costs relative to firm switching costs, Buyer information, Substitute products.
 - b. Price Sensitivity that include Price / total purchases, Product differences, Impact on quality / performance, Buyers profits.
4. Rivalry Determinants: Industry growth, Fixed (or storage) costs/value added, Intermittent over capacity, Product differences, Brand identity, Switching costs, Concentration and balance, Informational over complexity, Diversity of competitors , Corporate stakes, Exit barriers. .
5. Determinants of Substitution Threats: Relative price performance of substitutes, Switching costs, Buyer propensity to substitute.



2.2.5. Generic Strategies:

- Porter's five-force model describes strategy as taking actions that create defensible positions in an industry.
- In general, the strategy can be offensive or defensive with respect to competitive forces.
- Defensive strategies take the structure of the industry as given, and position the company to match its strengths and weaknesses to it.
- In contrast, offensive strategies are designed to do more than simply cope with each of the competitive forces; they are meant to alter the underlying cause of such forces, thereby altering the competitive environment itself.

There are, of course, many specific strategies of each type (offensive or defensive), and identifying which is best depends on the circumstances. But Porter suggests 3 broad or generic strategies for creating a defensible position in the long-run and outperforming competitors.¹

2.2.5.1. Cost Leadership Strategy:

- Cost leadership means having the lowest per-unit (i.e., average) cost in the industry that is, lowest cost relative to your rivals.
- This could mean having the lowest per-unit cost among rivals in highly competitive industries, in which case returns or profits will be low but nonetheless higher than competitors.
- Or, this could mean having lowest cost among a few rivals where each firm enjoys pricing power and high profits.
- Notice that cost leadership is defined independently of market structure.

¹. Competitive Strategy, Techniques for Analyzing Industries and Competitors, Michael E. Porter, 1980.
& Competitive Strategy, Creating and Sustaining Superior Performance, Michael E. Porter, 1985.

2.2.5.2. Differentiation Strategy

Cost leadership is a defensible strategy because:

- It defends the firm against powerful buyers. Buyers can drive price down only to the level of the next most efficient producer.
- It defends against powerful suppliers. Cost leadership provides flexibility to absorb an increase in input costs, whereas competitors may not have this flexibility.
- The factors that lead to cost leadership also provide entry barriers in many instances. Economies of scale require potential rivals to enter the industry with substantial capacity to produce, and this means the cost of entry may be prohibitive to many potential competitors.

Achieving a low cost position usually requires the following resources and skills:

- Large up-front capital investment in new technology, which hopefully leads to large market share in the long-run, but may lead to losses in the short-run.
- Continued capital investment to maintain cost advantage through economies of scale and market share.
- Process innovation – developing cheaper ways to produce existing products.
- Intensive monitoring of labor, where workers frequently have an incentive-based pay structure (i.e., a contract which includes some combination of a fixed-wage plus piece-rate pay).
- Tight control of overhead.

2.2.5.2. Differentiation Strategy:

- Differentiating the product offering of a firm means creating something that is perceived industry wide as being unique.
- It is a means of creating your own market to some extent.

There are several approaches to differentiation: A differentiation strategy may mean differentiating along 2 or more of these dimensions.

1. Different design
2. Brand image
3. New technology
4. Number of features

Differentiation is a defensible strategy for earning above average returns because:

- It insulates a firm from competitive rivalry by creating brand loyalty; it lowers the price elasticity of demand by making customers less sensitive to price changes in your products.
- Uniqueness, almost by definition, creates barriers and reduces substitutes. This leads to higher margins, which reduces the need for a low-cost advantage.
- Higher margins give the firm room to deal with powerful suppliers.
- Differentiation also mitigates buyer power since buyers now have fewer alternatives.

Achieving a successful strategy of differentiation usually requires the following:

- Exclusivity, which unfortunately also precludes market share and low cost advantage.
- Strong marketing skills.
- Product innovation as opposed to process innovation.
- Applied R&D.
- Customer support.
- Less emphasis on incentive based pay structure.

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- Product innovation as opposed to process innovation.
- Applied R&D.
- Customer support.
- Less emphasis on incentive based pay structure.

2.2.5.3. Focus Strategy:

- Here we focus on a particular buyer group, product segment, or geographical market.
- Whereas low cost and differentiation are aimed at achieving their objectives industry wide, the focus or niche strategy is built on serving a particular target (customer, product, or location) very well.
- Note, however, that a focus strategy means achieving either a low cost advantage or differentiation in a narrow part of the market. For reasons discussed above, this creates a defensible position within that part of the market.

2.2.5.4. Stuck in the Middle:

- Failure to develop a strategy in one of these 3 directions is a firm that is “stuck in the middle.”
- This means you lack the market share, capital, and overhead control to be a cost leader, and lack the industry wide differentiation necessary to create margins which obviate the need for a low-cost position.
- Being “stuck” implies low profits as a rule: profits are bid away to compete with low cost producers; or, the firm loses high margin business to firms who achieve better differentiation.
- Classic examples of this problem are large, international airline companies, many of which are now bankrupt.
- Depending on a firm’s capabilities and resources, a “stuck” firm must gravitate toward either low cost (usually by buying market share) or focus or differentiation (which may mean decreasing market share).

2.2.6. Balanced Score Card:

The balanced scorecard is a strategic planning and management system that is used extensively in business and industry, government, and nonprofit organizations worldwide to align business activities to the vision and strategy of the organization, improve internal and external communications, and monitor organization performance against strategic goals.

It was originated by Drs. Robert Kaplan (Harvard Business School) and David Norton as a performance measurement framework that added strategic non-financial performance measures to traditional financial metrics to give managers and executives a more 'balanced' view of organizational performance.

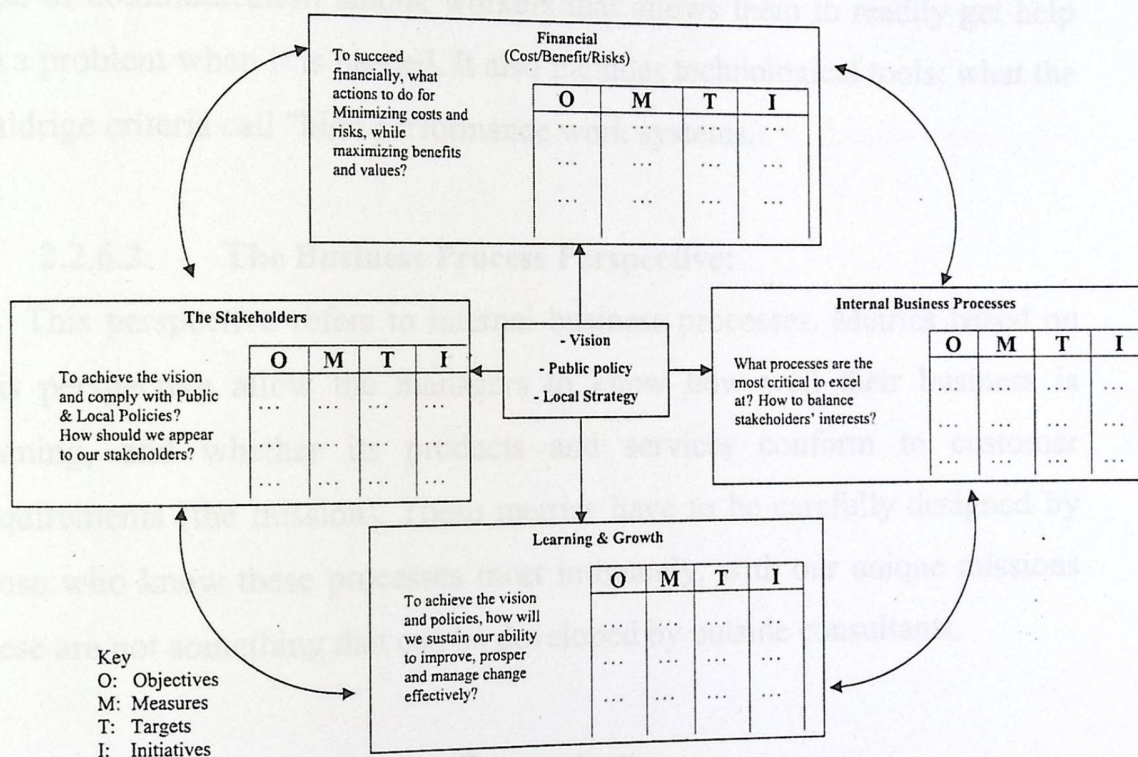


Figure 10: The Balanced Score Card

2.2.6.1. **The Learning & Growth Perspective:**

This perspective includes employee training and corporate cultural attitudes related to both individual and corporate self-improvement. In a knowledge-worker organization, people are the main resource. In the current climate of rapid technological change, it is becoming necessary for knowledge workers to be in a continuous learning mode. Metrics can be put into place to guide managers in focusing training funds where they can help the most. In any case, learning and growth constitute the essential foundation for success of any knowledge-worker organization.

Kaplan and Norton emphasize that 'learning' is more than 'training'; it also includes things like mentors and tutors within the organization, as well as that ease of communication among workers that allows them to readily get help on a problem when it is needed. It also includes technological tools; what the Baldrige criteria call "high performance work systems.

2.2.6.2. **The Business Process Perspective:**

This perspective refers to internal business processes. Metrics based on this perspective allow the managers to know how well their business is running, and whether its products and services conform to customer requirements (the mission). These metrics have to be carefully designed by those who know these processes most intimately; with our unique missions these are not something that can be developed by outside consultants.

2.2.6.3. **The Customer Perspective:**

Recent management philosophy has shown an increasing realization of the importance of customer focus and customer satisfaction in any business. These are leading indicators: if customers are not satisfied, they will eventually find other suppliers that will meet their needs. Poor performance from this perspective is thus a leading indicator of future decline, even though the current financial picture may look good.

In developing metrics for satisfaction, customers should be analyzed in terms of kinds of customers and the kinds of processes for which we are providing a product or service to those customer groups.

2.2.6.4. **The Financial Perspective:**

Kaplan and Norton do not disregard the traditional need for financial data. Timely and accurate funding data will always be a priority, and managers will do whatever necessary to provide it. In fact, often there is more than enough handling and processing of financial data. With the implementation of a corporate database, it is hoped that more of the processing can be centralized and automated. But the point is that the current emphasis on financials leads to the "unbalanced" situation with regard to other perspectives. There is perhaps a need to include additional financial-related data, such as risk assessment and cost-benefit data, in this category.¹

¹. Applying the balanced scorecard, Melcurm Publishing, 2006.

2.3. Information and Communications Technologies (ICT):

All companies and the new economy are increasingly dependent on intangible capital, which is comprised of two main components: intellectual capital and marketing capital. Intellectual capital includes research and development capability, human resources, and organizational practices. Marketing capital encompasses the reputation associated with brand name and other marketing assets. Both are essential to the new economy. The information and communication technology (ICT) sector, the power behind the new economy, epitomizes the growth and importance of intangible capital. It has been estimated that roughly one-third of the growth in gross domestic product (GDP) since 1995 has come from the ICT sector, although that sector's share of GDP is only 8 percent.¹

The advance of the ICT causes local firms in developing and transition economies to face more competitions and the competitive advantages that any firm now processes will become smaller and less durable. It is important that the local firms must learn and begin to implement ICT as part of their regular business practice in order to becoming globally competitive and actively pursue the new business opportunities. The government also must establish ICT infrastructure, ICT regulations, and supports to facilitate and encourage local firms to make a move into this transition, i.e., to invest in ICT, employ skilled ICT people, upgrade for new ICT technology and become globally competitive. Given the dynamics and complexities of today's international market, both the national strategy and the firm strategy in term of using ICT to develop the competitiveness should be aligned to each other. Therefore some kind of standard framework for this alignment must be established and developed so that both the government and individual firm will forward in the same direction and will be automatically adaptive to each other.²

¹ Economic Report of the President, ERP, 2001.

² Dr. Rungruang Limchoopatipa, ICT for competitiveness development.

2.3.1. How Information Gives You Competitive Advantage:

The information revolution is sweeping through our economy. No company can escape its effects. Dramatic reductions in the cost of obtaining, processing, and transmitting information are changing the way we do business".

The information revolution is affecting competition in three vital ways:

1. It changes industry structure and, in so doing, alters the rules of competition.
2. It creates competitive advantage by giving companies new ways to outperform their rivals.
3. It spawns whole new businesses, often from within a company's existing operations.

An important concept that highlights the role of information technology in competition is the "value chain". This concept divides a company's activities into the technologically and economically distinct activities it performs to do business. We call these "value activities." The value a company creates is measured by the amount that buyers are willing to pay for a product or service. A business is profitable if the value it creates exceeds the cost of performing the value activities. To gain competitive advantage over its rivals, a company must either perform these activities at a lower cost or perform them in a way that leads to differentiation and a premium price (More Value).

The value chain for a company in a particular industry is embedded in a larger stream of activities that Porter termed the "value system". The value system includes the value chains of suppliers, who provide inputs (such as raw materials, components, and purchased services) to the company's value chain. The company's product often passes through its channels' value chains on its way to the ultimate buyer. Finally, the product becomes a purchased input to the value chains of its buyers, who use it to perform one or more buyer activities.

Competitive advantage in either cost or differentiation is a function of a company's value chain. A company's cost position reflects the collective cost of performing all its value activities relative to rivals. Each value activity has cost drivers that determine the potential sources of a cost advantage. Similarly, a company's ability to differentiate itself reflects the contribution of each value activity toward fulfillment of buyer needs. Many of a company's activities—not just its physical product or service—contribute to differentiation. Buyer needs, in turn, depend not only on the impact of the company's product on the buyer but also on the company's other activities (ex: logistics or after sales services).

Information technology and ICT is permeating the value chain at every point, transforming the way value activities are performed and the nature of the linkages among them. It also is affecting competitive scope and reshaping the way products meet buyer needs.

Every value activity has both a physical and an information-processing component. The physical component includes all the physical tasks required to perform the activity. The information-processing component encompasses the steps required to capture, manipulate, and channel the data necessary to perform the activity.¹

<p>Customer Dominance <i>High Efficiency</i></p> <p>Word processing Accounting E-mail, Internet</p>	<p>Low Coordination</p> <p>Word processing Accounting Customer databases E-mail, Internet</p>
<p>Collaboration</p> <p>Word processing Accounting MRP EDI E-mail, Internet Performance Measurement</p>	<p>Innovation</p> <p>Word processing Accounting Customer databases E-mail, Internet MRP LANs</p>

Figure 11: Four Competitive Scenarios for large firms and ICT²

¹ How Information Gives You Competitive Advantage, Michael E. Porter & Victor E. Millar, HBR, 1985

² Levy and Powell 1997, Michael E. Porter & Victor E. Millar, HBR, 1985

2.3.2. **Benefit and limitation of ICT & E-Commerce:**

Few innovations in human history encompass as many benefits as EC. The global nature of the technology, the opportunity to reach hundreds of millions of people, its interactive nature, the variety of possibilities for its use and the resourcefulness and rapid growth of its supporting infrastructure, especially the web, result in many potential benefits to organizations. The benefits are just starting to materialize, but they will increase significantly as EC expands. It's not surprising that some maintain that the EC revolution is as profound as the change that accompanied the Industrial Revolution. Some of the EC benefits to organizations which we will discuss below:

1. Global reach: locating customer and supplier at reasonable cost and time.
2. Cost reduction: lower cost of information processing, storage, and distribution.
3. Supply chain improvement: reduce daily inventory and cost.
4. Business always open: 24/7/365.
5. Customization/personalization: make special products for customers.
6. Seller specialization (niche market): seller can specialize in a narrow field.
7. Ability to innovate: facilitate innovation and enable unique business models.
8. Rapid time to market and increase speed.
9. Lower communication cost: the internet is cheaper than private networks.
10. Efficient procurement: save time and cost by enabling E-procurement.
11. Improve customer service and relationship: direct interaction with customer.

Limitation of EC:

1. Security and privacy data concerns.
2. Lack of trust and unknown sellers.
3. Difficult to measure benefits of EC for some people.
4. Not all people have access to the web.¹

¹ (Drucker 2002).

2.3.2. **Benefit and limitation of ICT & E-Commerce:**

Few innovations in human history encompass as many benefits as EC. The global nature of the technology, the opportunity to reach hundreds of millions of people, its interactive nature, the variety of possibilities for its use and the resourcefulness and rapid growth of its supporting infrastructure, especially the web, result in many potential benefits to organizations. The benefits are just starting to materialize, but they will increase significantly as EC expands. It's not surprising that some maintain that the EC revolution is as profound as the change that accompanied the Industrial Revolution. Some of the EC benefits to organizations which we will discuss below:

1. Global reach: locating customer and supplier at reasonable cost and time.
2. Cost reduction: lower cost of information processing, storage, and distribution.
3. Supply chain improvement: reduce daily inventory and cost.
4. Business always open: 24/7/365.
5. Customization/personalization: make special products for customers.
6. Seller specialization (niche market): seller can specialize in a narrow field.
7. Ability to innovate: facilitate innovation and enable unique business models.
8. Rapid time to market and increase speed.
9. Lower communication cost: the internet is cheaper than private networks.
10. Efficient procurement: save time and cost by enabling E-procurement.
11. Improve customer service and relationship: direct interaction with customer.

Limitation of EC:

1. Security and privacy data concerns.
2. Lack of trust and unknown sellers.
3. Difficult to measure benefits of EC for some people.
4. Not all people have access to the web.¹

¹ (Drucker 2002).

2.3.3. Porter five forces and ICT affect:

Porter views business as being pressed by five competitive forces: the threat of new entrants, the intensity of rivalry among existing firms, the pressures from substitute products, the bargaining power of buyers, and the bargaining power of suppliers. He further proposes three generic strategies with which to combat these forces: differentiation (distinguish your company's products and services from others in all market segments), cost (become the low cost producer in all market segments), and focus (concentrate on a particular market segment and then either differentiate or become the low cost producer in that segment).

Internet impact on rivalry among competitor

- Reduces differences among competitors as offerings are difficult to keep proprietary.
- Migrates competition to price.
- Widens the geographic market, increasing the number of competitors. 3
- Lowers variable cost relative to fixed cost, increasing pressures for price discounting

Internet impact on barriers to entry

- Reduces barriers to entry such as the need for a sales force, access to channels, and physical assets - anything that Internet technology eliminates or makes easier to do reduces barriers to entry.
- Internet applications are difficult to keep proprietary from new entrants
- A flood of new entrants has come into many industries

Internet impact on bargaining power of suppliers

- Procurement using the Internet tends to raise bargaining power over suppliers, though it can also give suppliers access to more customers
- The Internet provides a channel for suppliers to reach end users, reducing the leverage of intervening companies
- Internet procurement and digital markets tend to give all companies equal access to suppliers, and gravitate procurement to standardized products that reduce differentiation
- Reduced barriers to entry and the proliferation of competitors
- Downstream shifts power to suppliers

Internet impact on the bargaining power of customers and sales channels

- Eliminates powerful channels or improves bargaining power over traditional channels. It's Shifts bargaining power to end consumers and Reduces switching costs.

Internet impact on substitutes:

- By making the overall industry more efficient, the Internet can expand the size of the market.
- The proliferation of Internet approaches creates new substitution threats.

2.3.4. The use of ICT and Porter Diamond to build competitiveness of industry:

1. Factor (supply) conditions: The firm had to develop short or intermediate term ICT strategy to provide sufficient infrastructure and technology to maintain and sustain effective basic ICT operation.
 - a. Business driver: Sustainability.
 - b. Firm response (Firm ICT strategy): ICT Innovation and Capability, and Upgrading.
2. Firm strategy and rivalry: The firm had to develop short or intermediate term ICT strategy to implement ICT applications for the firm productivity improvement.
 - a. Business driver: Operational Excellence.
 - b. Firm response (Firm ICT strategy): ICT Implementation for Productivity Improvement (MRP, ERP, Benchmarking, TQM, and Web-Services Solutions).
3. Related and supporting industries: The firm had to develop short or intermediate term ICT strategy to collaborate with other forms in the industry to drive for lower production cost, lower inventory, fast delivery, and improving quality.
 - a. Business driver: Business Networking and Partnership
 - b. Firm response (Firm ICT strategy): Supply/Value Chain Implementation (SCM/VCM).
4. Demand conditions: The firm had to develop short or intermediate term ICT strategy to understand customers demand and to be able to response
 - a. Quickly to the world market.
 - b. Business driver: Customer Intimacy
 - c. Firm response (Firm ICT strategy): Customer Relationship Management (CRM), including telemarketing, customer call center, business information and customer analysis.

2.3.5. ICT affect the generic strategy:

As the field of strategic management has expanded, strategy researchers and practitioners have shown increasing interest in the role of information technology (IT) in strategy formulation and implementation, and in its impacts on financial performance.

One of porter diamond element is the organization strategy structure and rivalry which we discussed but in this section we discuss how firm strategy and generic strategy are affected by the ICT especially at the internet level.

1. Internet and cost leadership: "doing the same things better" (operational effectiveness):

- a. The internet is a powerful tool for increasing operational efficiency: Speed-up and simplifies information processing and its Openness of the Internet allows achievement of these efficiency improvements at relatively low cost.
- b. But improvements can only be a source of competitive advantage in the case that they are higher in relation to competitors: due to the openness and the degree of standardization of the Internet all competitors may achieve nearly the same improvements. this reduces in fact the range of differentiation opportunities, and may lead to a price-based competition.
- c. Improvements in efficiency are a strategic need, but more important is a strategic differentiation.

2. Internet and differentiation: "doing different things" (strategic positioning):

- a. The importance of differentiation grows the more the efficiency advantages are hard to realize.
- b. It requires a strong focus on profitability rather than just growth, an ability to define a unique value proposition, and a willingness to make tough trade-offs in choosing what not to do.

- c. Seek for strategic opportunities.
- d. Configuration of a tailored value chain (or network of partners).
- e. Achieve the advantages by managing the relationship, not only by implementing an ICT.
- f. Try to build up unique assets.

Examples of strategic impact of such system in business:

- In pharmaceuticals distribution, McKesson provides its pharmacists with computer terminals that allow them to enter orders directly, simultaneously improving customer service and increasing switching costs.
- Federal Express drivers use hand-held computers and a sophisticated data management system that improve service and reduce costs, making overnight delivery services profitable and affordable to customers.
- Merrill Lynch introduced the Cash Management Account (CMA), based on an information system that combined customers' checking, savings, credit card, and securities accounts into a single statement, automatically investing unused funds in interest-bearing money market funds.
- Large retailers like Toys R Us and Wal-Mart use sophisticated inventory management technologies, including electronic data interchange with suppliers, to increase operational efficiencies and improve services.

2.3.6. Porter's Value Chain:

Porter argued that firm's opportunities to create competitive advantage occur at different steps in the value chain. The value chain is made of the primary and support activities that contribute to a firm's margin value. Increasing that marginal value is the objective of the chain model while the Margin is the value of the firm's products and services less their costs, as perceived by the firm's customers, Firms can create value by performing activities which Porter calls value activities.

M. Porter's Value chain

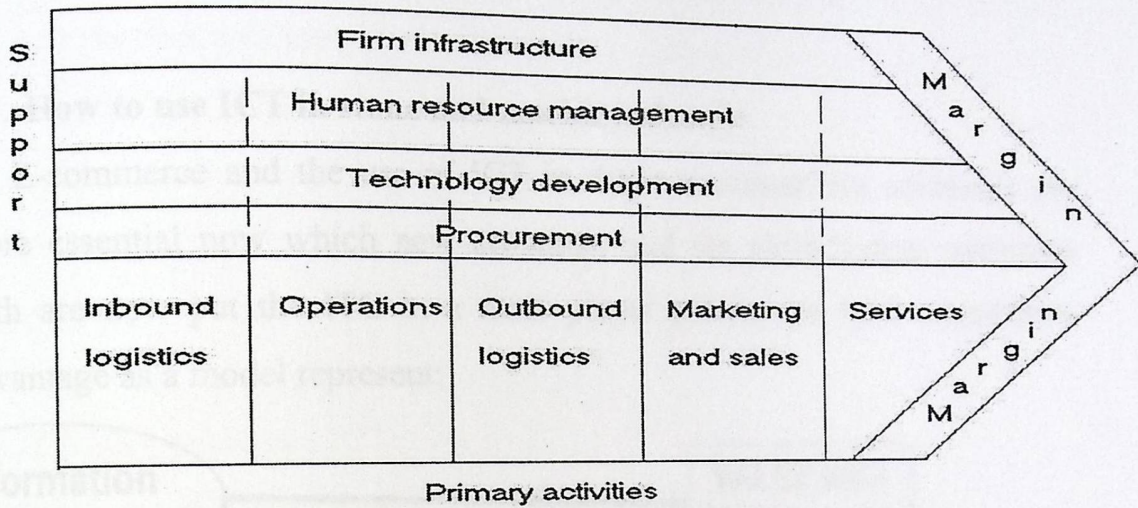


Figure 12: Porter's Value Chain.

Every value activity has both a physical and an information-processing component. The IS component encompasses the steps required to capture, manipulate and channel the data necessary to perform the activity. Additional advantages that can be achieved by linking the firm's value chain to those of other organizations creating an inter-organizational system (IOS) where in which The participating firms (business partners) work as a coordinated unit, creating a synergy that cannot be achieved by working alone. Porter termed this the value system.

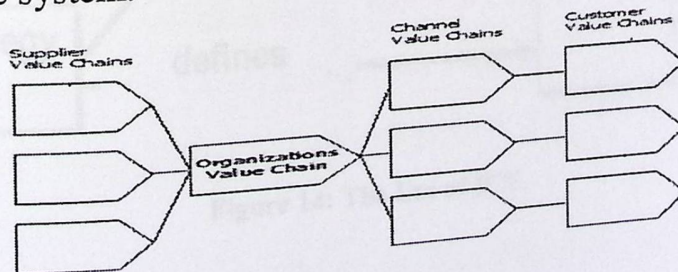


Figure 13: The Value System.

Transforming the Value Chain: IT is advancing faster than technologies for physical processing, This expands the limits of what companies can do faster than managers can explore the opportunities, also IT is generating more data about activities and products, information that was not available before, There is a higher information content in products and IT enhances the ability to exploit linkages between activities both inside and outside the company, IT allows companies to coordinate activities in widely dispersed geographic locations, finally IT can store and help analyze the flood of information.

2.3.7. How to use ICT in stone and marble industry:

E-commerce and the use of ICT in shape a competitive advantage are more essential now which new economic and the globalization restriction both are now put the ITC in a main player position to have competitive advantage as a model represent:

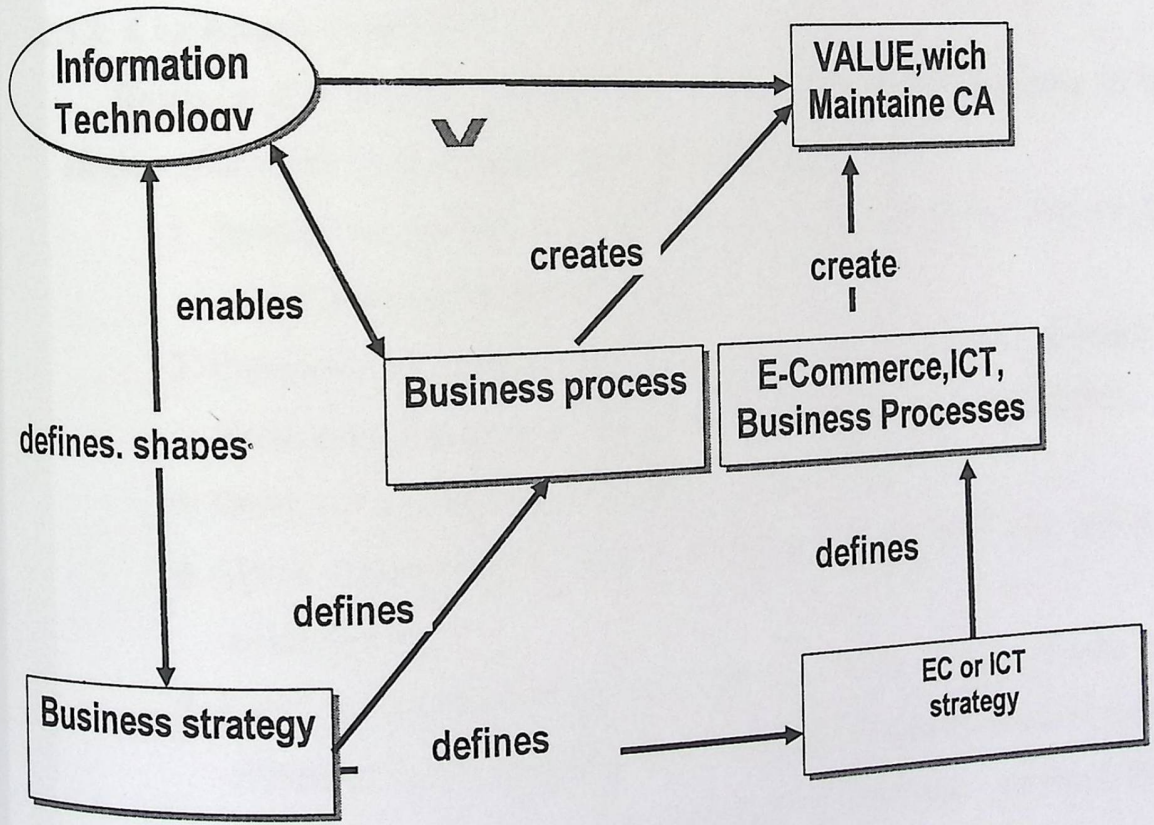


Figure 14: The Use of ICT.

Many points discusses the application of E-commerce and ICT in sustained competitive advantage for an organizations or sector:

1. Use of internet and e-commerce in marketing which will be achieved by organizational web site ,and advertisement in other portal, and form, and, marketing through visit web site that are related industry.
2. Use of computer application in control work flow and monitoring.
3. Increase work productivity of employees by automated many working like accounting 'and the use of e-banking', and automate order schedule and so.
4. Use of e-commerce in market research and segmentation and automate their process will save cost and time also ecommerce here enable them to use of one to one marketing which will serve them in customer relationship building.
5. E-commerce allow them to make more faire comparison of their machine supplier, since stone and marble cutting firms are import there machine from many country like Italy, and china.

2.3.8. Challenges of the ICT:

However ICT and e-commerce are many interesting application in the shape a competitive advantage it has many challenges like:

1. Internet access that is limits percentage of people and firms in the world to access to the internet.
2. Computer software program too costs; much computer software is costs and off the shelf software is high cost for an organization.
3. Online Marketing and advertising cost.
4. Skills reacquired in use and apply ecommerce and software administrative.
5. Lack of understanding how to determine which system are effective for an organizations, with the broadly package of system and there are less understanding the different between these system.
6. English language which is the dominant language in the E-commerce transaction.

Chapter Three: Findings and Discussion:

3.1. Research methodology and Statistical Analysis:

A combination of the quantitative and qualitative methods is used employing qualitative and quantitative data in order to test the hypotheses.

3.1.1. Statistical processing:

After collecting the data, research team had review the 12 questionnaires which had been filled and research team was able to get them back in the period lasted for 3 weeks from 26/5/2009, review was to enter its data into computer, and it entered with specific numbers, through convert words "oral" answer to numbers, while number "5" represent very negative, number "4" negative, number "3" moderate, number "2" positive, and number "1" very positive. When the number is increase the competitive advantage of stone and marble large cutting firm in south of west bank decreases, and vice versa.

The processing of required data was done through output the numbers, percentages, mean, and standard deviation. The hypothesis of the research was tested at level $\alpha=0.05$, through using the following statistical tests: Factor Analysis, Cronbach alpha, Regression, and all were on SPSS.

3.1.2. Consistency of Research Tool:

The consistency of research tool was calculated by internal consistency, through calculate consistence equation (Cronbach Alpha), and the results are explained in the following table:

Table (1): Results of (Cronbach Alpha) for research tool:

	No. of paragraphs	Alpha value
• How do you evaluate the following elements that help in developing local industries?	23	0.897
• Factor Conditions	9	0.706
• Demand Condition	6	0.753
• Related and Supporting Industries	8	0.753
• Which of the following industry structure do	5	0.524

you consider to be the critical threats to the future of your business		
• Which type of generic business strategy is most closely related to your firm's strategy	12	0.930
• Using the Internet and IT helps you to	8	0.871

3.1.3. Sample Demographics:

Table (2): Sample Demographics:

Variables	Number	Percent	Value
District			
• Bethlehem	5	41.7	
• Hebron	7	58.3	
The firm is built on area			
• Industrial	11	91.7	
• Agricultural	1	8.3	
• Residential	0	-	
Legal Status			
• Sole proprietorship	2	16.7	
• Partnership	9	75.0	
• Company	1	8.3	
The type of your firm:			
• Family	8	66.7	
• Non- Family	4	33.3	
Type of land possession			
• Private	11	91.7	
• Leased	1	8.3	
• Guarantee	0	-	
Main source of funding			
• Private	8	66.7	
• Family	3	25.0	
• Banks	1	8.3	

• Loan institutions	0	-	
Source of machinery			
• Italy	3	25.0	-
• Turkey	1	8.3	
• Italy+ Turkey	4	33.3	
• Italy+Germany	1	8.3	
• Italy+others	1	8.3	
• Italy +Turkey+ others	2	16.7	
Have you added new production line or expanded the firm after year of Establishment			
• Yes	11	91.7	-
• No	1	8.3	
Do you prefer to employ administrators			
• Yes	10	83.3	-
• No	2	16.7	
Do you train your employees			
• Yes	12	100.0	
Do you have a quality control system			
• Yes	9	75.0	-
• No	3	25.0	
If not, do you think to adopt it later			
• Yes	2	66.6	-
• No	1	33.4	
Do you use a computer			
• Yes	12	100.0	
Do you use an Internet and ICT			
• Yes	10	83.3	
• No	2	16.7	

3.1.4. Research Questions:

3.1.4.1. Question one:

RQ1: To what extent Porter's diamond model facets can create a competitive advantage for stone and marble cutting firms in southern West Bank?

The question could be answered by output of numbers, means, and standard deviations for the elements of the evaluation as it explained in the table.

Table (3): Means, and standard deviations for the elements of the evaluation that help in developing local stone and marble industry, are ranked by the degree of importance.

Elements	Mean	Standard deviation
• Political and economic uncertainties	4.33	0.65
• Local demand	3.66	0.98
• The local and international market accessibility	3.66	1.15
• Bureaucratic rules and regulations	3.66	0.77
• Infrastructure costs	3.41	1.08
• The relationship with research and training centers and universities	3.33	1.07
• Infrastructure availability	3.33	0.88
• Acquiring Capital	3.16	0.71
• The relationship with public institutes	3.08	0.90
• The relationship with governmental institutes	3.08	0.90

The previous table explains the elements of the evaluation that help in developing local stone and marble industry, are ranked as degree of importance. And its start with Political and economic uncertainties, Local

demand of stone and marble, the local and international market accessibility, Bureaucratic rules and regulations, Infrastructure costs, The relationship with research and training centers and universities, Infrastructure availability, Acquiring Capital, The relationship with public institutes, and the relationship with governmental institutes.

That's as explained at calculated mean in table above.

The mean of answers on the relationship with governmental institutes showing a weakness in this relationship, and upon research team opinion Palestinian government until today still having no strategic or clear view to support any industry in the Palestinian territories due to uncertainty in the political situation, the poverty of the government and its dependence on international aid.

The mean of answers on the relationship with public institutes showing a weakness in this relationship, and upon research team opinion this weak relation refer to the lack of coordination between firms in their relationship with these institutions coupled with the shortage of Union of Stone and Marble (USM) in doing his responsibilities.

Also stone and marble cutting firms do not commit to their responsibilities toward these public institutes, for example most of stone and marble cutting firms are debited in millions to the municipality for prices of electricity and water.

The aspect of acquiring capital mean of answers shows a weakness and this upon research team refers to the high start up cost needed to operate a stone and marble cutting firm, and very expensive operating costs especially electricity and water.

While stone and marble cutting firms do not depend on investment companies, they depend on self or family financing which is not a sustained source of capital.

3.1.4.2. **Question two:**

RQ2: To what extent different scenarios of the generic strategies affect the competitiveness of stone and marble cutting firms in southern West Bank?

This question is answered by output of numbers, means, and standard deviations for the elements of the evaluation which about determine the Competitive Advantage. And that as it explained in the table.

Table (4): Numbers, means, and standard deviations for the elements of the evaluation which about determine your Competitive Advantage are ranked as degree of importance.

Elements	Mean	Standard deviation
• Cost reduction	3.08	1.72
• Time necessary to develop new generation of product	3.08	1.44
• Revenue growth	3.08	1.50
• Profitability	3.00	1.53
• Return on Investment	2.83	1.64
• Your market share	2.58	1.37
• Percentage of new products of total turnover	2.50	1.56
• Exportation	2.41	1.37
• Employees keep on	2.16	1.26
• Customer keep on	2.16	1.52
• Your employees satisfaction	1.58	0.90
• Customer satisfaction	1.50	0.79

The previous table is explains the elements of the evaluation which about determine your Competitive Advantage are ranked as degree of importance. And its start with Cost reduction, Time necessary to develop new generation

of product, Revenue growth, Profitability, Return on Investment, Your market share, Percentage of new products of total turnover.

That's as explained at calculated mean in table above.

The mean of answers in respect of customer satisfaction shows difficulty in doing so. And upon research team opinion this refers to Unawareness of customers of the technical specifications of stone and marble which distinguish prices and add value of the final product, this means high cost product without customer realization of value and it lead to unsatisfied customers.

According to experts bad economic situation for Palestinian people lead them to search for lower prices products despite quality, this creates pressure on firms expressed by the mean of answers of cost reduction aspect which shows that it is the most important. While stone and marble cutting firms face a lot of problems in processing low quality stones due to its defects.

The mean of answers in respect of employee satisfaction shows a lack of satisfaction between employees, this upon research team opinion refer to the bad conditions of work in stone and marble cutting firms, employee should work long hours in unhealthy conditions dust, water and noisy sounds are the main factors of unsatisfied employees.

3.1.4.3. Question three:

RQ3: To what extent ICT acts as a source of competitive advantage for stone and marble cutting firms in southern West Bank?

This question is answered by output of numbers, means, and standard deviations for the elements of the evaluation of using the Internet and IT (computer) act as a source of competitive advantage. And that as it explained in the table (5).

Table (5): Means and standard deviations for the elements of the evaluation of using the Internet and IT (computer) act as a source of competitive advantage are ranked as degree of importance.

Elements	Mean	Standard deviation
• Accounting		
• Pay roll	2.00	0.00
• Sales	1.91	0.28
• Printing	1.91	0.28
• Inventory	1.83	0.38
• Link business with information system	1.66	0.49
• Production	1.58	0.51
• Others	1.50	0.52
	1.16	0.38

The previous table is explains the elements of the evaluation of using the Internet and IT (computer) act as a source of competitive advantage are ranked as degree of importance. And its start with Accounting, Pay roll, Sales, Printing, Inventory, Link business with information system, Production, Others.

That's as explained at calculated mean in table above.

Payroll, sales and printing are widely used in stone and marble cutting firms and it's upon research team opinion the use of computer in these areas refers to the ease of its use, standardization of its application, its low cost of setup and implementation, and unskilled employees can work on these activities. The use of computer into accounting is widely used due to its importance in determination of costs, profits, tax which take the priority in these firms.

Computer operations of Inventory, Link business with information system, Production are rarely used and its upon research team opinion this refers to the need of skilled employees to operate such systems, the high cost of systems that link the whole firm operations with information systems and the need of experts to setup and implement the system are major restrictions on the use of computer in these operations.

Table (6): Means, and standard deviations for the elements of the evaluation of using the Internet and IT (Internet and IT) act as a source of competitive advantage are ranked as degree of importance. Answer (Yes)

Elements	Mean	Standard deviation
• A tool for communicating	1.83	.380
• A tool for advertising and marketing	1.75	.450
• A tool as fax	1.75	.450
• A tool for selling	1.58	.510
• A tool for improving interaction within the company (processes/ organization)	1.50	.520
• A tool for conducting banking and financial transactions	1.33	.490
• A tool of integration	1.33	.490
• A tool for buying	1.33	.490
• Others	1.00	.000

The previous table is explains the elements of the evaluation of using the Internet and IT (Internet and IT) act as a source of competitive advantage are ranked as degree of importance. And its start from a tool for communicating, a tool for advertising and marketing, a tool as fax, A tool for selling, A tool for improving interaction within the company (processes/ organization), A tool for conducting banking and financial transactions, A tool of integration, A tool for buying, Others.

Table (7): Means and standard deviations for the elements of the evaluation of using the Internet and IT (Internet and IT) act as a source of competitive advantage are ranked as degree of importance. Answer (No)

Elements	Mean	Standard deviation
• Do not know how to cope with the complex rules governing this area.	1.16	.380
• Uncertainty about benefits	1.08	.280
• Uncertainty about the legal, regulatory and tax environment	1.00	.000
• The high cost of Internet access is a further impediment	1.00	.000
• The predominance of English on the World Wide Web	1.00	.000
• Ensuring the security of payments and privacy of personal data	1.00	.000
• The fear of too low use of e-commerce by customers and suppliers	1.00	.000
• Low level of technological expertise	1.00	.000

Table (8): Means, and standard deviations for the elements of the evaluation of using the Internet and IT (helps you in business to) are ranked as degree of importance.

Elements	Mean	Standard deviation
• Reduce transaction costs	2.83	1.58
• Reach new suppliers	2.50	1.50
• Improve quality	2.50	1.44
• Increase the flexibility of your firm	2.00	1.20
• Defend yourself against competitors engaging in E-commerce	1.75	0.96
• Work with large firms (local and international)	1.58	0.79
• Enter new markets	1.33	0.65
• Increase market share	1.33	0.65

The previous table is explains the elements of the evaluation of using the Internet and IT (Internet and IT (helps you in business to)? are ranked as degree of importance. And its start from Reduce transaction costs, Reach new suppliers, Improve quality, Increase the flexibility of your firm, defend your self against competitors engaging in e-commerce, Work with large firms (local and international), Enter new markets, Increase market share.

3.2. Research Objectives: (Confirmatory Factor Analysis):

The tables show that the confirmatory factors are more than 0.5. It means that there is an internal consistency of each construct.

3.2.1. Factor Conditions:

Table (9):

Element	Factor
• Acquiring capital	0.745
• Acquiring information	0.749
• Political and economic uncertainties	0.798
• Bureaucratic rules and regulations	0.734
• Infrastructure availability	0.641
• Infrastructure costs	0.896
• Inconsistent raw material quality	0.815
• Technical qualifications	0.451
• The market accessibility	0.879

3.2.2. Demand Conditions:

Table (10):

Element	Factor
• Local demand	0.616
• International demand	0.738
• Product image in the international markets	0.757
• Customer awareness with regard to product quality standards	0.599
• Sophisticated customers	0.312
• Supplier buyer relationships have depended on the family and Supplier buyer relationships have depended on the family and personal ties	0.789

3.2.3. Related and Supporting Industries:

Table (11):

Element	Factor
• The relationship with local banks	0.800
• The relationship with insurance firms	0.579
• The relationship with research and training centers and universities	0.748
• The relationship with local manufacturers	0.802
• The relationship with public institutes	0.766
• The relationship with governmental institutes	0.796
• The relationship with stone cutting firms in the same region	0.438
• The relationship with firms from other sectors (design/ marketing)	0.913

3.2.4. Five Forces:

Table (12):

Element	Factor
• The intensity of rivals	0.904
• The power of buyers	0.959
• The power of suppliers	0.892
• The threat of substitutes	0.869
• The threat of new entry	0.883

3.2.5. Balanced Score Card:

Table (13):

Element	Factor
• Percentage of new products of total turnover	0.940
• Time necessary to develop new generation of products	0.737
• Customer satisfaction	0.887
• Your market share	0.819
• Customer keep on	0.798
• Your employees satisfaction	0.957
• Employees keep on	0.788
• Return on Investment	0.909
• Profitability	0.875
• Revenue growth	0.894
• Cost reduction	0.940
• Exportation	0.737

3.3. Research Hypothesis:

The main hypothesis of this research can be defined as follow:

1. RH0: There is no significant relationship between Porter's diamond facets and the competitiveness of stone and marble cutting firms in southern West Bank. And this main hypothesis covers 4 sub-hypothesis as follow:
 - 1.1. There is no significant relationship between factor conditions and the competitiveness of stone and marble cutting firms in southern West Bank.

The (Standardized Regression) is used to ensure validity of this hypothesis which related between factor conditions and the competitiveness of stone and marble processing firms in southern West Bank.

Table (14): Results of the (Standardized Regression) with the related between factor conditions and the competitiveness of stone and marble processing firms in southern West Bank.

variables	Beta	Statically value
Factor Condition	0.851	0.00

R Square = 0.725

Previous table is highlight the influence relationship with statically value at level $\alpha=0.05$ between Factor Condition and competitiveness of stone and marble cutting firms in southern West Bank.

There is Direct relationship that when increase in the level of Factor Condition there is also increase in competitiveness of stone and marble processing firms in southern West Bank and vice-versa.

1.2. There is no significant relationship between demand conditions and the competitiveness of stone and marble cutting firms in southern West Bank.

The (Standardized Regression) is used to ensure validity of this hypothesis which related between Demand Conditions and the competitiveness of stone and marble processing firms in southern West Bank. . that is explained in table(15).

Table (15): Results of the (Standardized Regression) with the related between Demand Conditions and the competitiveness of stone and marble processing firms in southern West Bank

variables	Beta	Statically value
Demand conditions	0.904	0.00

R Square = 0.817

Previous table is highlight the influence relationship with statically value at level $\alpha=0.05$ between Demand conditions and competitiveness of stone and marble processing firms in southern West Bank.

There is Direct relationship that when increase in the level of Demand conditions. There is also increase in competitiveness of stone and marble processing firms in southern West Bank and vice-versa.

1.3. There is no significant relationship between related & supporting industries and the competitiveness of stone and marble cutting firms in southern West Bank.

The (Standardized Regression) is used to ensure validity of this hypothesis which related between related & supporting industries and the competitiveness of stone and marble processing firms in southern West Bank. . that is explained in table(16).

Table (16): Results of the (Standardized Regression) with the related between related & supporting industries and the competitiveness of stone and marble processing firms in southern West Bank

variables	Beta	Statically value
Related and Supporting Industries	0.781	0.003

R Square = 0.610

Previous table is highlight the influence relationship with statically value at level $\alpha=0.05$ between Related and Supporting Industries and competitiveness of stone and marble processing firms in southern West Bank.

There is Direct relationship that when increase in the level of Related and Supporting Industries there is also increase in competitiveness of stone and marble processing firms in southern West Bank and vice-versa.

1.4. There is no significant relationship between firm's strategy and the competitiveness of stone and marble cutting firms in southern West Bank.

The (Person correlation) is used to ensure validity of hypothesis which related between firm's strategy, and the competitiveness of stone and marble processing firms in southern West Bank. . that is explained in table(17).

variables	Number	Value(r)	Statistical value
Firm Strategy	12	0.416	0.178

Previous table is highlight the direct relationship with statically value at level $\alpha=0.05$ between firm's strategy and competitiveness of stone and marble processing firms in southern West Bank.

There is Direct relationship that when increase level in the firm's strategy, there is also increase in competitiveness of stone and marble processing firms in southern West Bank and vice-versa.

1.5. There is no significant relationship between firm's structure and rivalry and the competitiveness of stone and marble cutting firms in southern West Bank.

The (Person correlation) is used to ensure validity of hypothesis which related between the firm's structure and rivalry and the competitive advantage of stone and marble processing in southern West Bank.. that is explained in table(18).

Table (18): Results of the (Regression) is used to ensure validity of hypothesis which firm's structure and rivalry and the competitiveness of stone and marble processing firms in southern West Bank.

Element	Beta	Statistical value
• Intensity of rivals	-0.131	0.027
• Power of buyers	-0.059	0.752
• Power of suppliers	-0.853	0.889
• Threat of substitutes	0.560	0.185
• Threat of entry	0.050	0.335

R Square = 0.395

Previous table is highlight the influence relationship with statically value at level $\alpha=0.05$ the critical threats to the firm and the competitiveness of stone and marble processing firms in southern West Bank.

- There is Inverse relationship that when increase in the firm's structure and rivalry there is also decrease in competitiveness of stone and marble processing firms in southern West Bank and vice-versa.
2. RH0: There is no significant relationship between the ICT and the competitive advantage of stone and marble cutting firms in southern West Bank. Was discussed.

3.4. Results:

The analysis of data rejected the fifth sub hypothesis. there are Inverse relationship that when increase in the level of firm's structure and rivalry there is also increase in competitiveness of stone and marble processing firms in southern West Bank and vice-versa.

It is noticed that the "high the level of firm's structure and rivalry with high competitiveness" the firm's structure and rivalry has the highest influence on the competitive advantage of the large firms working in processing the natural stone in the South of West Bank. However, due to the high level of local rivalry between large stone and marble firms is become enmity and it's considered as personal rivalry and it's have negative influence on the national competitive advantage.

3.5. Recommendations:

According to statistical analysis of data, and the results built on; research team is highly recommended the following for large stone and marble cutting firms in southern West Bank

1. Improve the work conditions in their firms by adopting standards of operating machines and setting air and water filtering in order to increase employee satisfaction, and improve performance.
2. Adopt policies encourage the customer retention in order to make the customer beneficial. Offering new customers differentiated products at a reasonable cost will built a strong image on his mind about the firm and he will be back again with more demand.
3. Make a promotional campaign to learn customers about the technical specifications of stone and marble, that if the customer knows more he will be more able to make an action.
4. Improve the relationship with stone and marble cutting firms in the same region, efforts must be more coordinated relationship to improve competitive advantage of stone and marble cutting firms in southern west bank. This issue can be improved through building coordination channel between these firms, USM and local universities can build inter-organizational system to help these firms in making Beneficial and matured coordination.
5. Adopt academic researchers and provide those researchers with data needed for projects and it will be finally to the sector benefit.

And research team recommends the following for related authorities:

6. Activate the role of Union of Stone and Marble (USM) in gathering the voice of these firms and Representation to public and government institutions on behalf of the union Participate firms.
7. Help firms that are locally competitive to expand globally by working on establishing a Stone and Marble Export Management Company (EMC), by the contribution of the Ministry of National

Economy, USM and Bethlehem and Hebron Chambers of Commerce.

8. Improve the technical qualifications in West bank market , There are poor technical qualifications (part of Factor Conditions) that have important role and impact on the national stone and marble competitive advantage, which will lead to improve competitive advantage, Palestine Polytechnic University is in its way to fill the shortage by opening the stone and marble major at the university.

And for colleagues working on academic research

9. Study the stone and marble cutting firms in details specially production and marketing process in order to improve efficiency and effectiveness of the firms. And implement theories of growth and expansion on the firms

10. Work on comprehensive study of the whole stone and marble sector including small and medium enterprises and even quarrying sector.

11. For Information and Communication Technology researchers they should direct their efforts to this industry, by making their researches applications that help improve the work in this industry.

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1. The firm is built on what: Industrial Agricultural

Residential

2. Legal Structure: Sole proprietorship Partnership

Company Other ()

3. The type of ownership: Family Non-family

4. Type of asset possession: Private Leased

Corporate Other ()

5. Main source of funding: Private Family

Banks Loan institutions

6. Source of machinery: Italy Turkey

Germany Other ()

7. Have you added new production line or expanded the firm after year of establishment? Yes No

8. Number of firms employees: _____ One

9. Do you prefer to employ automation? Yes No

10. Do you train your employees? Yes No

11. Do you have a quality control system? Yes No

12. If not, do you think to adopt it later? Yes No

Appendix (1): Questionnaire (English)

Part One: Firm's Profile:

1. District: Bethlehem Hebron
2. Name of firm:
3. Date of Establishment:
4. The firm is built on area: Industrial Agricultural
 Residential
5. Legal Status: Sole proprietorship Partnership
 Company Others ()
6. The type of your firm: family Non family
7. Type of land possession: Private Leased
 Guarantee Others ()
8. Main source of funding: Private Family
 Banks Loan institutions
9. Source of machinery: Italy Turkey
 Germany Others ()
10. Have you added new production line or expanded the firm after year of Establishment? Yes No
11. Number of firms employees
12. Do you prefer to employ administrators? Yes No
13. Do you train your employees? Yes No
14. Do you have a quality control system? Yes No
15. If not, do you think to adopt it later? Yes No

Part Two: Environment:

1. How do you evaluate the following elements that help in developing local industries?

	very Neg.	Neg.	Mod	Pos.	Very Pos.
• Acquiring Capital					
• Acquiring Information					
• Political and economic uncertainties					
• Bureaucratic rules and regulations					
• Bureaucratic rules and regulations					
• Infrastructure availability					
• Infrastructure costs					
• Inconsistent raw material quality					
• Technical qualifications					
• The market accessibility					
• Local demand					
• International demand					
• Product image in the international markets.					
• Consumer awareness with regard to product quality standards					
• Sophisticated customers visit many manufacturers before purchasing					
• Supplier buyer relationships have depended on the family and personal ties					
• The relationship with local banks					
• The relationship with insurance firms					
• the relationship with research and training centers and universities					
• The relationship with local manufacturers					
• The relationship with public institutes					
• The relationship with governmental institutes					
• The relationship with stone cutting firms in the same region					
• The relationship with firms from other sectors (design/ marketing)					

Which of the following industry structure do you consider to be the critical threats to the future of your business (Rank in order 1, area of major threat & 5, not an area of major threat)?

	1	2	3	4	5
• The intensity of rivals					
• The power of buyers					
• The power of suppliers					
• The threat of substitutes					
• The threat of entry					

Part Three: Firm's Strategy and Performance:

3. Which type of generic business strategy is most closely related to your firm?

Your firm is the low cost producer in the sector. The standard products are offered in a broad market area.
Your firm offers differentiated products, and they are produced at lowest cost. The products are offered in a broad market area.
Your firm is operating in one or a few specific market niches and offers standard products. Within this market niche, your firm is the low cost producer.
Your firm is operating in one or a few market niches. In these niches many differentiated products are offered and produced at low cost as possible.
Your firm is NOT the lowest cost producer in the sector. The standard products are offered in a broad market area.
Your firm offers many differentiated products, and you are NOT the low cost producer. The products are offered in a broad market area.
Your firm is operating in one or a few specific market niches and offers standard products. Within this market niche, your firm is NOT the low cost producer.
Your firm is operating in one or a few market niches. In these niches you offer differentiated products, your firm is NOT the low cost producer.

4. How do you evaluate the following elements at your firm?

	very Neg.	Neg.	Mod.	Pos.	Very Pos.
• Percentage of new products of total turnover					
• Time necessary to develop new generation of products					
• Customer satisfaction					
• Your market share					
• Customer keep on					
• Your employees satisfaction					
• Productivity of your employees					
• Return on Investment (Profitability)					
• Revenue growth					
• Cost reduction					
• Exportation					

Part Five: Information and Communication technology and Electronic Commerce

5. Do you use a computer?

Yes

No

If yes, for what purpose:

Printing

Accounting

Inventory

Pay roll

Sales

Production

Other: please specify:.....

Do you use an Internet and ICT?

Yes

No

If yes, for what purpose:

- A tool for communicating
- A tool of obtaining information
- A tool for advertising and marketing
- A tool for buying
- A tool for selling
- A tool for conducting banking and financial transactions
- A tool for improving interaction within the company (processes/ organization)

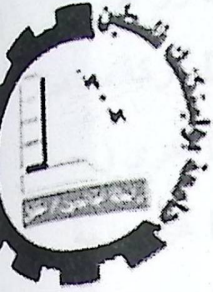
If no, what is the reason?

- Low level of technological expertise
- Uncertainty about benefits
- The fear of too low use of ecommerce by customers and suppliers
- Ensuring the security of payments and privacy of personal data
- Do not know how to cope with the complex rules governing this area.
- The predominance of English on the World Wide Web
- The high cost of Internet access is a further impediment
- Uncertainty about the legal, regulatory and tax environment

7. Using the Internet helps you to
(Rank in order 1, most important & 5, least important)?

	1	2	3	4	5
• Reduce costs					
• Improve quality of product/service					
• Reach new suppliers					
• Reach new customers					
• Defend your self against competitors					
engaging in e-commerce,					
• Increase market share					
• Enter new markets					
• Increase the flexibility of your firm					

Appendix (2):
Questionnaire (Arabic):



جامعة بوليتكنك فلسطين
كلية العلوم الإدارية ونظم المعلومات

السيد مدير / صاحب منشار الحجر والرخام المحترم:

يقوم فريق البحث بدراسة حول "الميزة التنافسية لصناعة الحجر والرخام في جنوبي الضفة الغربية للحصول على درجة البكالوريوس في تخصصي إدارة الأعمال المعاصرة ونظم المعلومات. ويأمل فريق البحث من حضرتكم التكرم بالإجابة عن فقرات الاستبانة لما لرأيكم من أهمية في إنجاح هذه الدراسة.

علمًا بأن المعلومات التي سيحصل عليها فريق البحث لن تستخدم إلا لأغراض البحث العلمي، وستكون سرية تامة.

شاكرين لكم حسن تعاونكم والله ولي التوفيق.

فريق البحث: إياس زاهدة

حسن الصاحب

إيهاب أبو مرخية

الجزء الأول: بيانات عامة عن الشركة:

بيت لحم

الخليل

1. المحافظة:

2. اسم المنشأة:

3. سنة التأسيس:

4. المنشأة مقامة على منطقة:

5. الوضع القانوني للمنشأة:

6. المنشأة:

7. نوع الملكية لأرض المنشأة:

زراعية

صناعية

شركة مساهمة

ملكية فردية

أخرى (

شراكة عادية

غير عائلية

عائلية

إيجار

ملك خاص

(

أخرى)

8. ما هو المصدر الأساسي لتمويل المنشأة:

بنوك

عائلي

ذاتي

أخرى (

مؤسسات إقراض تنموية

9. حدد مصدر الآلات الموجودة لديك:

ألمانيا

تركيا

إيطاليا

(

أخرى)

10. هل قمت بإضافة خطوط إنتاج جديدة أو توسيع في المنشأة بعد سنة التأسيس:

لا

نعم

11. العدد الإجمالي للموظفين والعاملين لديك

12. تفضل توظيف إداريين في منشأتك؟

لا

نعم

13. تقوم بتدريب الموظفين العاملين في منشأتك؟

لا

نعم

14. هل عندك نظام لمراقبة الجودة داخل المنشأة؟

لا

نعم

15. إذا كانت إجابتك بلا، فهل تفكر لاحقاً في إدخال نظام لمراقبة الجودة داخل المنشأة؟

نعم

لا أعرف

لا

الجزء الثاني: البيئة المحيطة:

1. كيف تقيم العوامل التالية والتي تساعد في تطوير الصناعة المحلية؟

إيجابي	مقبول	سلبي	سلبي جدا	
				• سهولة الحصول على رأس المال
				• سهولة الحصول على المعلومات
				• الأوضاع السياسية والاقتصادية
				• القوانين والأنظمة المعمول بها
				• البنية التحتية المتوفرة حاليا
				• كلفة البنية التحتية
				• إمكانية تزويد كميات كبيرة من الحجر بنفس الجودة أو اللون
				• المؤهلات الفنية المتوفرة حاليا
				• سهولة الدخول إلى الأسواق المالية والعالمية
				• مستوى الطلب المحلي على الحجر والرخام
				• مستوى الطلب العالمي على الحجر والرخام
				• سمعة الحجر والرخام الفلسطيني في الأسواق العالمية
				• درجة وعي الزبون حول المواصفات الفنية للحجر والرخام
				• الزبون يطلب تحسين وتطوير على المنتجات بشكل مستمر
				• وجود العلاقات الشخصية في البيع والشراء
				• تعاون البنوك المحلية
				• تعاون مؤسسات التأمين المحلية
				• تعاون مراكز البحث والتدريب والاستشارات والجامعات
				• تعاون المصنعين المحليين للمعدات والأدوات
				• تعاون المؤسسات العامة (غرف تجارية / اتحادات / بلديات)
				• تعاون المؤسسات الحكومية
				• تعاون مؤسساتك مع مؤسسات من نفس قطاع الحجر والرخام
				• تعاون مؤسساتك مع مؤسسات من قطاعات أخرى (تصميم / تسويق / فحص وجودة)

2. كيف تقييم العوامل التالية حسب تهديدها لمؤسستك:

(الرقم (1) يمثل العامل الأكثر أهمية، الرقم (5) يمثل العامل الأقل أهمية)

	1	2	3	4	5
• شدة المنافسة بين المؤسسات					
• درجة تحكم المشتري (المتعهد/الزبون)					
• درجة تحكم المورد (المحجر)					
• تهديد دخول سلع بديلة (حجر صناعي)					
• تهديد دخول منافسين جدد لقطاع الحجر والرخام					

الجزء الثالث: استراتيجية المؤسسة والميزة التنافسية:

3. أي من الاستراتيجيات التالية هي أقرب لمؤسستك؟

مؤسستك هي المنتج ذات التكاليف الأقل في قطاع الحجر والرخام وتقوم بإنتاج منتجات كغيرها من المنتجين (ستاندرد) لخدمة فئات متعددة في السوق
مؤسستك هي المنتج ذات التكاليف الأقل في قطاع الحجر والرخام وتقوم بإنتاج منتجات متميزة عن المؤسسات المنافسة لخدمة فئات متعددة في السوق
مؤسستك هي المنتج ذات التكاليف الأقل في قطاع الحجر والرخام وتقوم بإنتاج منتجات كغيرها من المنتجين (ستاندرد) لخدمة فئة محددة في السوق
مؤسستك هي المنتج ذات التكاليف الأقل في قطاع الحجر والرخام وتقوم بإنتاج منتجات متميزة عن المؤسسات المنافسة لخدمة فئة محددة في السوق.
مؤسستك ليست المنتج ذات التكاليف الأقل في قطاع الحجر والرخام وتقوم بإنتاج منتجات كغيرها من المنتجين (ستاندرد) لخدمة فئات متعددة في السوق.
مؤسستك ليست المنتج ذات التكاليف الأقل في قطاع الحجر والرخام وتقوم بإنتاج منتجات متميزة عن المؤسسات المنافسة لخدمة فئات متعددة في السوق.
مؤسستك ليست المنتج ذات التكاليف الأقل في قطاع الحجر والرخام وتقوم بإنتاج منتجات كغيرها من المنتجين (ستاندرد) لخدمة فئة محددة في السوق.
مؤسستك ليست المنتج ذات التكاليف الأقل في قطاع الحجر والرخام وتقوم بإنتاج منتجات متميزة عن المؤسسات المنافسة لخدمة فئة محددة في السوق.

4. كيف تقيم العناصر التالية في مؤسستك والمتعلقة بتحديد ميزتك التنافسية؟

إيجابي	مقبول	سلبي	سلبي جدا	
				● نسبة إدخال منتجات / أصناف جديدة من مجمل المنتجات
				● الفترة التي تستغرقها لإدخال منتجات / أصناف جديدة
				● درجة رضى الزبائن
				● حصتك في السوق المحلية
				● درجة الاحتفاظ بالزبائن
				● درجة رضى الموظفين
				● مستوى الإيرادات بالنسبة لحجم الاستثمار (بشكل عام)
				● متوسط الربحية (بشكل عام)
				● النمو في الإيرادات (بشكل عام)
				● مستوى تقليل التكاليف في الإنتاج
				● مستوى الكمية التي تصدرها

الجزء الرابع: تكنولوجيا الاتصالات وأنظمة المعلومات:

5. هل تستخدم الكمبيوتر:

لا

نعم

إذا كان الجواب نعم فذلك لغرض: (يمكن اختيار أكثر من إجابة)

طباعة

محاسبة

ضبط مخزون

ربط الأعمال بنظم معلومات متقدمة

رواتب

مبيعات (إرساليات)

إنتاج

استخدامات أخرى

6. هل تستخدم الإنترنت وتكنولوجيا المعلومات؟

لا

نعم

إذا كان الجواب نعم، فذلك لغرض: (يمكن اختيار أكثر من إجابة):

- كأداة للاتصال بدل الفاكس أو التلفون.
- كأداة للحصول على المعلومات.
- كأداة للإعلان والتسويق.
- كأداة للبيع (حيث يتم بيع المنتجات واستلام ثمنها باستخدام بطاقة الائتمان).
- كأداة للشراء (حيث يتم شراء المنتجات ودفع ثمنها باستخدام بطاقة الائتمان).
- كأداة للتكامل (عمل دمج وتكامل مع كافة الأقسام والاعمال اليومية للمنشأة).
- كأداة لتسوية الأمور البنكية والاتصال بالمؤسسات المالية.
- كأداة لتحسين التفاعل داخل المؤسسة (تصميم/ضبط مخزون/فحص جودة).
- أمور أخرى:

إذا كان الجواب لا، فما هو السبب (يمكن اختيار أكثر من إجابة):

- قلة مستوى الخبراء في المجال.
- عدم معرفة الفوائد من استخدام الإنترنت والتجارة الإلكترونية.
- الخوف من قلة استخدام التجارة الإلكترونية من قبل المستهلك و/أو المورد.
- تأكيد سرية عمليات الدفع والأمور الشخصية (عدم وجود الثقة بالإنترنت).
- عدم معرفة كيفية المواكبة بهذا التطور.
- هيمنة اللغة الإنجليزية في مجال برامج نظم المعلومات ودعم لقرارات.
- ارتفاع تكاليف خدمة الإنترنت.
- عدم المعرفة بالقوانين والأنظمة المتعلقة بالتجارة الإلكترونية.

7. برأيك استخدام الإنترنت وتكنولوجيا المعلومات في أعمال مؤسستك قي يساعد مؤسستك في:

(الرقم 1) يمثل العامل الأكثر أهمية، العامل رقم (5) يمثل العمل الأقل أهمية).

5	4	3	2	1	
					● تقليل التكلفة
					● تحسين جودة المنتج / الخدمة
					● سهولة الوصول لموردين جدد
					● بناء أداة دفاعية أمام المنافسين الذين يستخدمون الإنترنت ونظم المعلومات في اعمالهم.
					● مواكبة المؤسسات الكبيرة التي تستخدم الإنترنت ونظم المعلومات ودعم القرارات.
					● توسيع رقعة السوق
					● فتح أسواق خارجية
					● زيادة مرونة المؤسسة