

# **Perspectives on Strategy**

**Contributions of Michael E. Porter**

**F.A.J. van den Bosch and A.P. de Man (Eds.)**

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# Perspectives on Strategy

## Contributions of Michael E. Porter

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## 6.

### **Porter on national and regional competitive advantage**

*Ard-Pieter de Man, Frans van den Bosch, Tom Elfring*

#### **Introduction: approaches to competitiveness**

In the last decade, the issue of competitiveness has captured an important position on the agenda of politicians and policymakers. The growing strength of Asian firms on the world market has been debated at some length in both the USA and in Europe. In the USA the focus of the debate was on the trade deficit and the weak performance of American firms compared to their Japanese competitors. In the European countries competitiveness became a buzzword in the discussions about rising unemployment. An increase in competitiveness was not only seen as a remedy against the lay-offs in mature industries but was believed to spur growth rates in new high-tech sectors as well.

These discussions about competitiveness can be divided into three distinct schools of inquiry (Nelson, 1991). The first school has the individual firm as the unit of analysis. These studies stress that the determining factors of competitiveness reside within the firm. In this view the existence and survival of a firm is about combining difficult to imitate resources in a coherent way. A failure to achieve that has,



according to the authors working in this tradition, to do with the internal side of the firm. In the USA for example, the discussion focused on the short time horizon of American companies, compared to European and Japanese firms. The success of some of the latter companies can be traced back to their stamina and long-term investments in marketing, technology and human capital (Chandler, 1990). American firms seem to retreat from industries with low rates of return fairly swiftly, they don't want to wait for better times. Instead of following these stop-and-go strategies, American firms should show more commitment according to this school of research. It is argued that a company must commit itself to develop a set of capabilities superior to its competitors in order to create a competitive advantage (Ghemawat, 1991).

American firms might lack commitment, Dutch firms seem to be overly committed to mature industries. They lack the capability to innovate and shift from the mature mass production sectors to niche markets with customized high value-added products (Metze, 1990; Jacobs, et al., 1990). Similar to this is the analysis that American firms are still applying old style mass-production methods, while markets demand a more flexible manufacturing approach (Dertouzos, et al., 1989). On a general level the problem that the business environment has changed while firms have not, applies to some European firms as well. In Europe many companies have to adjust to more competitive circumstances, as a result of the breakdown of national borders, cartels and monopolies.

Quite opposite to the inside-out perspective of the first school, the literature in the second and third school are driven by an outside-in approach. The second school of writings can be labelled as the industrial policy debate. The industry is the unit of analysis, and the main thrust of this type of literature is how the government can shape the industry environment in order to foster the growth, profitability and competitiveness of the firms within that industry. Different roles of the government can be distinguished. The government can play a leading role in guiding and directing industrial activities. The prime example is the MITI in Japan. However, usually the government's involvement is less farreaching. Often it is about the creation of mechanisms to coordinate, stimulate or support certain activities, for example research and development or high-tech industries. The least active role of the government is the one of facilitator: creating

conditions for companies to work together, establish networks or ease the diffusion of innovations are examples of this.

The third school of studies deals with the impact of the macro-environment on the competitiveness of the business community. This is a somewhat diverse group. It ranges from the negative impact of the low saving rate and limited public education on competitiveness in the United States to the detrimental effects of high tax rates and high wages costs in Europe on its competitiveness. In short, in this school macro variables are seen as the key to good performance. The three schools are summarized in table 6.1.

*Table 6.1: Three traditions of research into competitiveness identified by Nelson*

	<b>Unit of analysis</b>	<b>Key to competitiveness</b>
First school	firm	superior management
Second school	industry	industrial policy
Third school	macro-economic conditions	low interest rates, taxes, wages etc.

These three schools of writings about the issue of competitiveness have developed more or less independently. There have been only limited efforts to integrate those three distinct strands of reasoning. As a result opportunities for new insights were missed. In this chapter we will position the contribution of Porter as an effort to integrate those three separate schools of thought into his diamond framework. This framework allows us to analyze the influence of the macro-environment on firm behaviour in industries.

### **A puzzle**

After having analyzed the role of industry structure (Porter, 1980) and the value chain (Porter, 1985), Porter was confronted with a *puzzle*. He observed that competitive advantage in particular industries is often concentrated in a certain country, often with several successful competitors based in the same region. How to explain this phenomenon? This puzzle stimulated Porter to accept a richer view of the role of the business environment. This view emerged from his analysis of the causes of international competitive success of firms as



described in his thought provoking book of 1990: *The Competitive Advantage of Nations*.

### **Subject of the competitive advantage of nations book**

As pointed out above, in the eighties the question arose: Why do some nations succeed and others fail in international competition? According to Porter, this is the wrong question. In keeping with other critics of the concept of national competitiveness (e.g. Krugman, 1994), Porter claims that not nations compete, but firms do within internationalizing industries. Hence, Porter proposes as a research question to look for determinants in the national business environment that can explain why in some countries firms in particular industries are more successful than those in other nations. This way of approaching the international competitiveness of firms was quite novel. The various aspects of this key question are illustrated in table 6.2. As can be seen from this table concepts like the home base of international firms, the capacity to improve (Porter likes the word 'upgrading') and to innovate are connected with this research question. The home base is defined as the nation in which the essential competitive advantages of the firm are created and maintained. Other activities can be performed in a variety of other nations. Upgrading is described as the process of improving the value chain in such a way that more sophisticated types of competitive advantage come into being. These can for example employ higher levels of skills and technology or emerge from close working relationships with suppliers.

*Table 6.2: Various aspects of the key research question posed in Porter's book The Competitive Advantage of Nations (1990)*

- |  |
|--|
| <ul style="list-style-type: none"> <li>a) What is the role played by a nation's economic environment, institution, and policies in shaping the competitive success of firms in particular industries?</li> <li>b) Why does a nation become the home base for successful international competitors in an industry?</li> <li>c) Why and how do multinationals from a particular nation develop unique skills and know-how in particular industries?</li> <li>d) How does a nation provide an environment in which its firms are able to improve and innovate faster than foreign rivals in a particular industry?</li> </ul> |
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Source: based on Porter (1990, chapter 1).

### **Aim and approach**

Porter's aim is quite clearly stated as follows: "My aim is to help firms and governments, who must act, choose better strategies and make informed allocation of national resources" (p. 30). His message to managers of firms is clear as well: "what I have found is that firms will not ultimately succeed unless they base their strategies on improvement and innovation, a willingness to compete, and a realistic understanding of their national environment and how to improve it. The view that globalization eliminates the importance of the home base rests on false premises, as does the alluring strategy of avoiding competition." (p. 30). These clear recommendations are based on a very thoroughly performed research project in which ten important trading countries (a.o. USA, UK, Japan, Germany, Italy) are investigated regarding internationally successful industries at three points in time: 1971, 1978 and 1985. Porter analyzed the patterns of these successful industries in each country over time and paid special attention to the relationships among a nation's competitive industries: the so called clusters, which are industries connected through vertical and horizontal relationships. The research results in a framework which describes the determinants of competitiveness: the diamond.

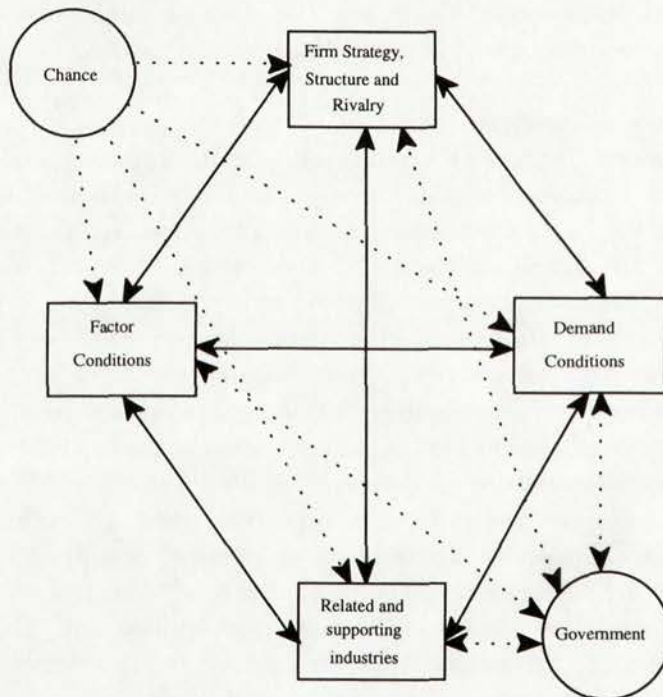
### **The diamond framework**

The diamond framework consists of four determinants and two additional variables, together forming a mutually interacting system (see figure 6.1). Factor conditions deal with a nation's position in factors of production, such as skilled labour and knowledge resources. Of special importance are the advanced and specialized factors. These factors are difficult to procure in global markets and provide a sustainable basis for competitive advantage. Porter gives interesting examples of how competitive advantage can grow out of a disadvantage in some factors. In this connection he points at the Dutch cut flower industry (also see chapter 7), by far the world leader in this industry, despite Holland's relatively "cold and grey climate". Regarding the second determinant of demand conditions, three attributes are distinguished. The most important attributes of home demand are those that in particular create initial and ongoing incentives for investment and innovation. In this connection, demanding local buyers, consumer needs that anticipate those of other nations and early saturation of the home market are very important. The third determinant, related and supporting industries, deals with the presence and absence in the national environment of internationally



competitive related and supporting industries. For example, internationally competitive semiconductors and software industries have an important impact on many other industries. Related industries create the possibility of sharing activities in value chains with respect to for example manufacturing and distribution. Of the fourth determinant especially domestic rivalry is important. Porter states: "Among the strongest empirical findings from our research is the association between vigorous domestic rivalry and the creation and persistence of competitive advantage in an industry" (p. 117). Porter even claims that domestic rivalry is more important than international competition, especially when it leads to pressure on domestic firms to improve and to innovate in ways that upgrade their competitive advantage. In particular, geographic concentration of domestic rivals creates a fertile environment for innovations. We will elaborate on this aspect below when discussing the subject of regions and cities as "diamonds".

Figure 1: The diamond framework



Source: Porter (1990)



The two additional variables in the diamond framework are chance and government. Chance events are considered to be exogenous factors, that is outside the power of firms to influence. Examples are significant shifts of exchange rates and political decisions by foreign governments. The second additional variable concerns the role of government in creating international competitiveness. According to Porter, government's true role in national competitive advantage is in influencing the four already distinguished determinants. This influence can be either positive or negative. An example of a positive influence is the early recognition of facsimile documents as legal documents by the Japanese government, which stimulated early demand for facsimile equipment. An example of a negative influence is the highly restrictive Italian regulation of local financial markets, leading to a disadvantage for Italian financial institutions in international competition. Porter does not deny the influence of the government on national competitive advantage, but states that its role is inevitably partial: the government lacks the power to create national competitive advantage directly by itself.

The core of competitiveness therefore lies at the firm level. That is why Porter's analysis does not remain at the national level, but pays considerable attention to the upgrading strategies of firms as well. Not only the internal organization of firms is important in this regard, but also the way in which firms stimulate the diamond surrounding them, for instance by transferring knowledge to customers and suppliers. In other words, Nelson's (1991) first school of studies as discussed in the introduction, is represented in the diamond framework as well.

### **The diamond framework as a dynamic system**

Porter's diamond framework is not a static framework. On the contrary, the effect of one determinant depends on the development of and interaction with the other determinants (see figure 1). The determinants reinforce each other and as this mutual reinforcement proceeds, the contribution of each determinant to national competitive advantage becomes blurred. However, two elements play a key role in making the diamond a really dynamic self-reinforcing system.

These elements are domestic rivalry and geographic industry concentration. Domestic rivalry in particular stimulates the upgrading of the diamond while geographic concentration especially magnifies the interactions within the diamond. These geographic industry

concentrations give rise to groups of connected industries, the so-called *clusters*. Porter observed that successful industries are usually linked through vertical links, that is buyer/supplier relationships, and/or through horizontal links, for example common demanding customers or distribution channels. These vertical and horizontal links provide mechanisms for the exchange and flow of information among buyers, suppliers and related industries. If these links do not reduce active rivalry, the conditions for competitive advantage in the cluster are favourable. The emergence of these clusters can be explained by the diamond framework as for example competitive supplier industries stimulate the emergence and competitiveness of downstream industries. The competitiveness of an industry becomes dependent on the competitiveness of other related and supporting industries as well. This means in fact that national competitive advantage resides as much at the level of the cluster as it does in individual industries.

### **Regions and cities as diamonds**

On the basis of his extensive research Porter concludes that: "Competitors in many internationally successful industries, and often entire clusters of industries, are often located in a single town or region within a nation." (p. 154). Porter observed that cities and regions can contain a remarkable concentration of rivals, customers and suppliers leading to not only efficiencies and specialization, but to concentration of information and visibility of competitor behavior as well. Porter's examples of these geographic concentrations in Germany are the steel industry around Dortmund, Essen and Düsseldorf, the machine tool industry in Stuttgart and the cutlery industry in Solingen. Basel is the home base for the Swiss pharmaceutical giants. British auctioneers are "all within a few blocks in London".

The question rises whether this wellknown empirical phenomenon can be explained by the diamond framework. Although this diamond framework is originally developed for and applied at the level of the national environment, Porter claims that it can be applied successfully at the regional and city level as well: "Indeed, the reasons why a particular city or region is successful in a particular industry are captured by the same considerations embodied in the 'diamond'" (p. 158). Porter elaborated this line of reasoning even further by investigating the competitive advantage of the inner city.



In a Harvard Business Review Article published May 1995, Porter pays attention to this subject using the diamond framework and criticising the existing approaches, labelled by him as "social models", in which the government's role is dominant. In accordance with his diamond framework in which the government's role in creating a competitive advantage is indirect, Porter criticises the leading role of the government in the existing approaches to city development. Moreover, normally inner cities are considered in isolation from their surrounding urban areas and regional economy. On the basis of his diamond framework, Porter stresses the necessity of integrating the inner city with the regional economy.

By firstly identifying the main competitive advantages of the inner city (like its strategic location and local market demand), insight can be gained into possibilities for further development. Secondly, when the real disadvantages of the inner city like the high cost of building space and security are addressed, there is a basis for business development in the inner city. The private sector should have the leading role in that, and not the government. This brief sketch of the application of Porter's diamond framework at the inner city level clearly shows a lot of valuable clues for strategy formation of firms already present in inner cities or of those considering such a location.

#### **An evaluation of Porter's contribution to the study of competitiveness**

Evaluating Porter's contribution to our understanding of national and regional competitive advantage, it must be remarked that first of all Porter's approach is used in practice by various governments. The next two chapters will give some examples of this in the Netherlands and the Rotterdam region. So far the influence of Porter's work on the business community seems to be less farreaching, even though the number of firms which actively upgrade their diamonds appears to be augmenting.

A question raised in the debate surrounding Porter's book is whether his view is completely new. Of course it is not: the importance of networks for innovation for example had been established before Porter published his research results. This underscores how well-grounded Porter's research is in theory. In addition, Porter's work is grounded in practice as well. It is this combination of theory and practice which emanated in a practical method for studying national competitiveness. This combination of theory, practice and tools forms



the core of Porter's innovativeness. Few authors are able to draw together very different streams of literature, even fewer are able to ground their theory in extensive empirical research and, again, still fewer are able to come up with practical methods and frameworks.

Hence, more than a contribution to individual fields of research, Porter's main addition lies in the integration of various research approaches. Porter discusses the individual firm in relation to its industry and the macro-environment it operates in. The three schools discussed in the introduction of this chapter are therefore all present in *The Competitive Advantage of Nations*.

When a book written by an influential academic as Michael Porter appears, it is inevitable that the book is discussed and used widely. Since *The Competitive Advantage of Nations* appeared, the method described in it has been applied scores of times on countries, regions, industries, cities, clusters and even individual firms. The book has been reviewed and discussed extensively in academic journals (a good general discussion is Grant, 1991) and on conferences. It would be surprising if after having received so much attention, no extensions and criticism would have come up. It is only natural, and even quite positive for the creation of knowledge, that various authors have come up with new ideas inspired by Porter's work. Below some of the key points of critique have been summarized.

**Limited attention for governmental policy.** Several authors have criticized Porter for not paying enough attention to the role of government in the diamond framework. Most authors seem, however, to have misunderstood the role government can play in Porter's framework. The fact that it is seen as an influencing factor and not as a determinant does not mean that governmental policy has a negligible influence on the creation of national competitiveness. In fact, quite the contrary is the case and Porter's chapter on governmental policy is one of the largest in his book.

Van den Bosch and De Man (1994) have criticized Porter's view on government on three grounds. Firstly, they point to the fact that Porter has not incorporated local and regional governments in his discussion of government's role, but has limited himself to national government. As was shown in the section on the city level above, Porter has recently paid attention to this issue. Secondly, there is a shift in governmental

policy from macro policy making towards policy directed at meso- and micro-levels (Branscomb, 1992; Ostry, 1990), which Porter does not account for. The more government will play a role on these lower levels, the more it will become intertwined with the diamond and the less clear it will be that government should be an influencing factor in the diamond and not a determinant. Thirdly, Porter does not relate the role of government to the industry life cycle. Porter does claim that in different stages of national competitive development, government plays a different role. Yet, the same effect can also be observed with regard to different phases of the industry life cycle. A government may be very active in the early phases of development, diminish in influence when the industry matures and may come back to play an important role in restructuring the industry in the decline phase. Incorporating these extensions in the Porter framework, would contribute to a more balanced understanding of the impact of government on competitiveness.

**Limited attention for transnational business.** Dunning (1992) adds transnational business activity (TBA) as an influencing factor to the diamond. He consistently works out the influence of TBA on every determinant. For example, a foreign multinational which locates itself in a country can be more demanding than the incumbent firms. Its demands can force suppliers to upgrade. Another possibility is that the firm makes the country aware of different consumer demands and thus stimulates the quality of demand in the home market. By incorporating transnational business activity as an influencing factor, Dunning has extended the diamond in keeping with Porter's ideas. It provides us with a tool which subscribes to Porter's views on inward and outward foreign direct investments, but which allows us to give a more detailed account of them.

**Unclear regarding the correct geographical level.** The title of *The Competitive Advantage of Nations* suggests that it is a book which deals with the level of the nation state. Yet, many examples in the book concern the regional level while cross border clusters of firms can be distinguished as well. Rugman (1992) defends a so-called 'double-diamond' approach to explain this. This approach suggests that firms in order to gain a competitive advantage should not just direct their strategies at their own diamond, but take markets in other countries into account as well. According to Rugman, a focus on clusters in the home country does not take into account the internationalization of



competition. As Porter and Armstrong (1992) point out, this approach fails to distinguish between the geographic locus of competitive advantage and the geographic scope of competition. The place where the strategies are formed and sustained can be a small region, which can compete on a world wide basis. Firms can strengthen their international competitive position precisely by strengthening their home base.

A table developed by Jacobs and De Jong (1992) clarifies this and extends Porter's analysis of the correct geographical level (see table 6.3 for a recent version). They make a distinction between the geographic scale of the production network and the geographic scale of the market. They show that Porter's notion of clusters can include crossborder clusters and that the right geographical level of analysis is determined by the specific cluster. Some clusters can be regionally concentrated and compete in world markets (like for instance Dutch cut flowers), other clusters are characterized by international production networks and international markets. Table 6.3 gives some examples of relevant industries for the Netherlands. The strongest and most competitive clusters can be found in the lower left hand corner: regionally concentrated clusters competing on a world wide basis.

**Extension of Porter's analysis of clusters.** Jacobs and De Man (1996) extend the analysis of the cluster concept. As the cluster concept is not clearly defined by Porter, different ideas on what a cluster is, have come into being. The Dutch Ministry of Economic Affairs for example uses a much more limited definition of the cluster concept (see chapter 7). It defines clusters as networks of companies surrounding a core enterprise. Porter's conception of clustering is much broader. As the famous example of the cluster of the Italian ceramic tile industry shows, clusters can consist of equal companies as well. In order to get a firmer grip on the cluster concept Jacobs and De Man put forward several dimensions of clustering and relate them to feasible policies and strategies. In this way a menu of policies and strategies is created from which firms and governments can pick those elements which are most applicable to their specific needs. This method makes the idea of clusters as developed by Porter more tangible. The dimensions of clustering are the geographical scope of the cluster, the vertical, horizontal and lateral relations in it, the focal point(s) around which a cluster centers (e.g. a research institute, an entrepreneurial family), technological similarities and the quality of the network.



Table 6.3 Geographical scope of markets and production networks of selected industries in The Netherlands.

market	world	Europe	Netherlands
production			
world	Telecommunications Recorded discs Long haul trade		
NW Europe		Trucks and lorries Plastics & polymers	
Netherlands	Machinery for the dairy industry Yacht building (top segment) Industrial textiles	Dairy industry Road transport	Engineering for the dairy industry Yacht building (lower segment)
regional	Cut flowers Greenhouse construction Cocoa Dredging	Copiers Short haul trade	Construction

Source: Jacobs and De Man (1996) based on strategic sector studies by TNO-STB.

**Underestimating globalization.** Ohmae (1990) claims that the lowering of trade barriers, the internationalization of capital markets etc. has made firms footloose. In his view, firms can establish themselves wherever they want. Globalization thus reduces the role of the place where a firm is established. Porter however argues, that the more international competition increases, the less firms are protected behind artificial barriers to competition and, consequently, the more they will have to draw on real capabilities and resources in order to be able to compete. These capabilities and resources lie to a large extent in the immediate environment of the firm, thus rendering the location of a firm more, not less, important. The internationalization of competition thus exposes the true strengths of countries. This counterintuitive finding appears to be consistent with research by Ruigrok and Van Tulder (1995), who find that the extent of globalization is often exaggerated.

#### Limited analysis of the role of culture

Even though Porter pays attention to the role of culture in creating competitive advantage, it remains unclear to what extent it is of relevance. Van den Bosch and Van Prooijen (1992) point to possibilities

of extending Porter's analysis of culture, by using Hofstede's (1980) dimensions of national culture. They conclude that the attitude towards uncertainty and the masculine/feminine characteristics of a country can influence various aspects of the diamond. For example, if a country is characterized by avoidance of uncertainty, its firms may be more inclined to establish long-term relationships with their suppliers. Using Hofstede's dimensions may thus give a clearer insight into the impact of culture on country competitiveness.

### Summary

Porter's *The Competitive Advantage of Nations* integrates various approaches to national competitiveness. His diamond framework and his ideas on clustering are grounded in a wealth of empirical and theoretical research. It has also proven to be applicable in practice and on different levels of analysis (the nation, the region, the city). Porter's explicit attempt to connect firm level processes to national processes holds important implications for managers and governments alike. Since the book appeared various extensions have been proposed, most of them within the context of Porter's original framework. The already remarkable richness of his analyses has only been extended since.

That his insights are relevant to practice as well, can be seen in the next two chapters. Two well-known Dutch policy makers discuss the way in which Porter has contributed to the formulation of policies in the Netherlands and the Port of Rotterdam.

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