



DCU Business School

RESEARCH PAPER SERIES

PAPER NO. 7
1996

**The Creation and Control of EC Industrial
Policy**

Lessons from the Electronic Sector

Thomas C Lawton
University of Essex

ISSN 1393-290X

THE CREATION AND CONTROL OF EC INDUSTRIAL POLICY LESSONS FROM THE ELECTRONICS SECTOR

ABSTRACT

This paper begins by undertaking, a theoretical analysis of EC industrial policy. This will involve selecting definitions and identifying policy instruments, and conclude by advancing an industrial policy model with which we may better comprehend contemporary EC industrial policy.

Secondly, it is my aim to explore the relationship which exists between the European Commission and electronics transnational corporations (TNCS) in the creation and control of EC¹ industrial policy. The objective is to understand and to provide a framework of analysis for the processes of Commission-TNC relations. This necessitates understanding how the various organisations interact and how they influence one another². This policy-making power interplay is best conceptualised in terms of the Pentagonal Diplomacy model. I acknowledge that other actors, especially national governments, are important players in EC industrial policy formulation. I argue however, that EC electronics policy is shaped and guided mainly by the Commission and a group of large firms. This process occurs through what Wilks & Wright describe as "informal relationships" [1987:2861, the effects of which are often underestimated in analyses of EC industrial policy.

Thirdly, I advance the notion that the emergence and consolidation of an EC industrial policy has eroded national sovereignty and contributed to the closer union of Europe's nation states. The 1990 delineation of an explicit industrial policy for the European Union has implications which go beyond mere rhetoric. Member states are now obliged to consult each other and coordinate their actions in many spheres. This means that the industrial policy competence of the Union should also be understood as part of the integration process. That is, through the Maastricht Treaty, the coordination of economic and monetary policies has become central to the development of European integration. The coordination of industrial policies can be seen as a flanking dimension of this endeavour.

¹ Following the terminology of the Maastricht Treaty, the term 'European Community' (EC) is employed throughout to denote the economic and social "pillar" of the European Union. This paper does not deal with the other two pillars - common foreign and security policy and cooperation in the field of justice and home affairs.

² Stephen Wilks & Maurice Wright (ed) (1987), *Comparative Government-Industry Relations*..

Following on from the 1950s creation of a High Authority for coal and steel policy, competence has, since the early 1980's, shifted from the national to the European level in several other important economic sectors. This power shift signifies a weakening of national government policy autonomy, and a strengthening of supranational bodies, most notably the European Commission. It indicates an integration of decision-making power, as well as an irreversible fusing of national economic interests for core industrial sectors. I shall support these assertions with evidence from the electronics industry.

1. THEORIES OF INDUSTRIAL POLICY AND THE INNOVATION POLICY MODEL

'Industrial policy' is utilised, in one form or another, by all industrialised and industrialising states. Is it possible though for such a policy to operate at an EC-level? The answer would appear to be 'yes'. Following the publication of the 1990 *Industrial Policy an Open and Competitive Environment* European Commission white paper, outlining a new Community approach to industrial policy, two consecutive meetings of the European Council³ in late 1991 endorsed the approach, and thus, gave the EC - for the first time - an explicit mandate in industrial policy.

Academic definitions of industrial policy vary widely. In fact, it may be argued that the concept has neither a clear definition nor measure of success. Curzon Price (1981) advances one of the most inclusive theories as to what makes traditional industrial policy. She argues that industrial policy constitutes all government efforts, either individual or in coordinated groups, to "promote or prevent structural change". Consequently, Curzon Price states that all of the advanced industrial economies have had some form of industrial policy for a long time.

In recent years, a "narrower sense" of industrial policy has emerged in many countries. This may be defined as any *selective* government measure, or set of measures, to prevent or promote structural change on a *specific ad hoc basis*. This definition comes closest to (although not quite encompassing) the EC policy model which we are trying to frame.

Curzon Price argues that

There are two basic types of industrial policy - whether broadly or narrowly defined. One is positive and forward looking: its aim is to assist the process of structural change either by promoting new industries and high technology or by helping old ones to 'restructure'. The other is negative: it attempts to slow down, or even prevent, the process of structural change, or more bluntly, to keep declining sectors alive through artificial respiration⁴.

From this, it may be inferred that the National Champions' policy pursued by many EC countries during the 1960s and 1970s was a negative type of industrial policy,

³ The European Council is a (usually) biannual meeting of the twelve European Community member countries heads of government (and head of state, in the case of France)

⁴ *ibid.*

whereas, the positive form of industrial policy outlined by Curzon Price is more in line with the ongoing EC approach. Hence, it is argued here that it is this more focused, or as both Audretsch (1993) and Curzon Price (1981) term it, "selective", form of industrial policy which is being employed as a policy framework by the European Community. However, given this "prioritising" nature, and the fact that the sectors of priority can be defined almost exclusively as 'high technology', it is conceptually desirable to proceed beyond categorising this policy framework as industrial policy in the traditional sense of the term. Therefore, in search of a more specific and applicable industrial policy theoretical model, we inevitably arrive at an examination of what the OECD first identified⁵ as 'innovation policy'.

The definition and description of innovation policy expounded here, is based on that formulated by Sylvia Ostry (1990), who begins her exposition of innovation policy by stressing the fact that

innovation policy is not a given: it is a policy set, in the making, focused on the promotion and adoption of new technology (that is, the commercial development of the fruits of basic research). Thus however much the policy mix and institutional structure of 'industry vary from country to country, the government-corporate interface is an essential component⁶.

She continues by arguing that innovation policy has developed since the late 1970s as a progressive "spin-off" from, or logical extension of, traditional industrial policy. This is because it shifted the emphasis from ailing industries (what Curzon Price described as "negative industrial policy") towards a new policy set aimed at improving international competitiveness. Furthermore, recent developments in economics (most notably, increasing support for the active role of government, espoused most eloquently through the US new trade theory), is creating a conducive environment for the fostering of new ideas. This "new orthodoxy" is establishing a 'middle way' between the free trade model, and the protectionist school, concerning the role of markets vis-a-vis governments, in both trade and industrial policy, for leading-edge, high technology industries⁷. Ostry proposes that there is no longer an unchallengable belief amongst economists that trade liberalisation always leads to national gains.

⁵ The term was first used in OECD, *Innovation Policy Trends and Perspectives*, Paris, 1982

⁶ Sylvia Ostry, *Governments and Corporations in a Shrinking World [Trade and Innovation Policies in the United States, Europe, and Japan]*, 1990, p53

Two basic models are identified which encapsulate the fundamental nature of innovation policy strategies.

One seeks to push forward the technological frontier by developing leading-edge techniques, and the other centers on closing the gap between the actual and the best available practice by fostering technology diffusion⁸.

It is accepted that in reality, most countries innovation policies manifest aspects of both of these general strategies. However, some, most notably the United States, are more concerned with advancing the technological frontiers. Conversely, other countries, such as many of the individual west European states (including Ireland), tend to focus on efficiently diffusing technology domestically. The Japanese case is exceptional though, in that it provides for the two strategies to a more-or-less equal extent, as well as explicitly coordinating them at a government level. It is within this latter, more unique set, that EC innovation policy may be placed.

The EC's mandate for coordinating trade, competition, and technology policies was finally clarified and legitimised with the creation of the European Technology Community, under the 1986 Single European Act. This mandate was, of course, most explicitly for the (strategically targeted) information technology realm, which became the locus of the EC's new innovation policy. Preoccupation with declining competitiveness -especially in the information technology sector- vis-a-vis Japan in particular, precipitated a heavy emphasis on the first of the three main domains of innovation policy - research and technological development (R&TD). This EC coordination of R&TD became the central pillar of EC innovation policy.

The other two policy instruments or structural pillars of EC innovation policy are *trade*, and market structure (*competition policy*)⁹. To expand briefly on these important tenets of our policy model, they employ a number of tools through which the overall objective of enhancing EC competitiveness is advanced. These tools, within the trade dimension of innovation policy, are: informal pressures (so-called "voluntary restraint agreements"), rules of origin, local content requirements, the common external tariff, quotas, and most importantly, anti-dumping measures. All of

⁷ *ibid.* p60

⁸ *ibid.* p61

these instruments are heavily politicised, and their enactment is generally at the discretion of the European Commission. It is not the intention to get into descriptive and critical detail on these policy tools at this time¹⁰.

With regards to the third pillar of innovation policy, competition policy, its main function is of course antitrust. As Rosenthal (1990) illustrates, this competence is manifest in

setting and enforcing standards for, firstly, legal business combinations - by acquisition or strategic alliance, secondly, anticompetitive market-dominating behaviour (monopolisation); and thirdly, collusion between firms that is not directed by lawful governmental authority and that adversely affects competition in the market¹¹.

Of these second two dimensions of innovation policy, most of the more controversial issues arise within the trade pillar however, and generally fall outside the legal jurisdiction of competition policy.

A further important and often overlooked aspect of the EC policy framework for competitiveness - which falls jointly within the realm of trade and competition policy is the Single Market programme. Broadly speaking, the two fundamental premises of this programme are 'deregulation' and 'liberalisation'. Industry-wide gains from such trade-liberating activities would include increased economies of scale and the creation of a large, barrier free market. Liberal economic theory suggests that the competitiveness of European-based corporate enterprises would be subsequently enhanced. The achievement of a liberalised, deregulated EC internal market would also create a more level playing-field from which EC-based firms could compete with their American and Japanese rivals for both European and world market share. In addition, as Howell et al. (1992) point out, the Single Market programme provides the European Commission with a further tool of competitiveness - 'trade leverage'.

⁹ The main function of EC competition policy is antitrust. For further details see for example Howell et al., *Conflict Among Nations*, 1992, pp412-9.

¹⁰ For a legalistic description of these policy measures, see in particular Howell et al., *Conflict Among Nations*, 1992, pp412-419. Also, a detailed analysis of anti-dumping can be found in Ostry *op.cil* 1990, pp39-52

¹¹ Douglas E. Rosenthal, "Competition Policy", from Gary Clyde Hufbauer (ed), *Europe 1992: An American Perspective*, p295

As it eliminates its internal barriers, the Community has called for "reciprocity" and "balance" in the conduct of its external trade, the notion being that third countries will be allowed to participate in the Single Market only to the extent that the EC enjoys reciprocal access to the markets of their countries¹².

The ability of trade leverage to increase market share through greater market access is acceptable - if kept general and unquantifiable - and may prove successful in the short to medium term. However, its utility in enhancing competitiveness in the long term is questionable, especially if the policy instrument demands a specific market share for a given product-

To conclude, innovation policy is generally manifest only in industrialised countries. It is aimed more at revitalising or enhancing the competitiveness of an industrial (usually high technology) capacity which already exists (and may have been competitive previously), than with establishing an initial presence in a given industrial sector. Therefore, innovation policy - particularly with regards to the EC - is aimed at long-term, competitive revitalisation. Central to achieving this objective is of course an emphasis on science and technology R&D. We argue that EC industrial policy for knowledge intensive industries, such as electronics, is best understood and analysed through the innovation policy model.

2. EC INDUSTRIAL POLICY PARTNERS

At the close of the 1970s, European Commission Vice President, Viscomte Etienne Davignon, initiated a set of meetings with the chief executives of Europe's twelve largest native¹³ electronics firms. These 'round table' meetings were the first serious attempts by the European Commission to establish a close working relationship, at a senior level, with a group of transnational enterprises. It signified a new departure in policy-making: both a new policy bargaining axis, and the genesis of European level efforts at enhancing the global competitiveness of information technology industries. The 1980s witnessed a sea-change in the nature of the agenda-setting and policy-making processes for the EC electronics sector. EC policy-making has gone from being an intra-institutional consensus-building process, to a multi-sided bargaining process. The role of non-governmental actors in policy formulation and

¹² Howell et al., *op cit.*, pp411-12.

¹³ This paper does not intend to debate the issue of corporate nationality. For analytical purposes, we apply the term 'native' simply to those electronics firms' which have their corporate headquarters within a European Community member state

implementation has increased significantly since the late 1970s. In particular, large European information technology firms have significantly enhanced their policy bargaining position in relation to public sector actors. Firms have gone from being 'policy outsiders' to 'policy partners'. Grant (1987) advances five main roles that government has in relation to business. These are as a policy-maker, as a sponsor, as a regulator, as a customer, and as an owner¹⁴. Grant omits one key role of government however. that of 'partner' with business. This paper advances the notion that EC industrial policy is sometimes created and controlled by a partnership between the European Commission and transnational corporations.

Although often diametrically opposed, and never identical, European public policy and corporate strategy objectives can converge at certain times, and in specific circumstances. Peterson (1991) supports this conclusion. He cites the Single Market programme as an example of such convergence, arguing that it was launched largely because both European governments and industry reached consensus on its desirability¹⁵. A significant actor which Peterson omits however is the European Commission. We contend that in certain cases, European "state"-firm bargaining takes place primarily between firms and EC institutions - national governments participating via the EC Council of Ministers. This is because within the EC, much of the policy competence for electronics has shifted since the early 1980s from national governments to the European Commission. This is evident in two main policy realms: trade and research and development (R&D). The Commission's legal competence for the external trade affairs of the twelve, combined with the "Research & Technology Community" enshrined in the Single European Act, establishes it as the primary governmental institution dealing with the activities of the electronics industry. In addition, the Commission's business policing mandate, expressed through its competition policy, cedes further authority to Brussels in activities concerning industrial actors. These three policy pillars may be grouped together and analysed collectively as 'innovation policy' [Ostry 1990], which we have previously discussed.

¹⁴ Wyn Grant (with Jane Sargent) (1987), *Business and Politics in Britain*, p36.

¹⁵ John Carl Peterson, *The Politics of European Technological Collaboration: An Analysis of the Eureka Initiative*, PhD thesis, LSE, 1991

3. PENTAGONAL POLICY BARGAINS

Stopford & Strange (1991) and Tucker (1991) argue that contemporary industry - specific policy is shaped through a process of government-firm bargaining¹⁶. Thus, in effect, the entire nature of international economic relations has changed fundamentally, as the negotiating power of firms within the international arena, has increased significantly. As Strange (1992) puts it:

governments must now bargain not only with other governments, but also with firms and enterprises, while firms now bargain with governments and with one another¹⁷

Hence, not only has the nature of government-industry relations changed, but as Stopford & Strange (1991) conclude, the entire nature of international diplomacy has been transformed as "industrial policies and economic management" replace conventional military-based foreign policies, as the chief form of inter-state competition¹⁸. These authors develop the notion of a 'Triangular Diplomacy' within international policy bargaining. They argue that within the contemporary international political economy, the notion of 'diplomacy' must be expanded to include power bargaining with and between transnational corporations. Thus, states must now bargain both with each other and with global firms, whilst global firms also bargain with each other [Stopford & Strange 1991: 19-23].

The 'Pentagonal Diplomacy' notion attempts to expand the Stopford & Strange model of state-firm bargaining in specific applications. That is to say, when applied to the unique institutional structure of the European Community - which is an international setting, given that it consists of fifteen nation states - an extra dimension must be added to the bargaining process. In analysing, within an EC context, how firms and governments relate to and negotiate with one another over defined mutual goals, one must include another player or level of "governance"¹⁹

¹⁶ The concept of 'bargaining' is taken here as meaning the process whereby "an agreement or contract establishes what each party will give, receive, or perform in a transaction between them", *Collins English Dictionary*, London, 1979.

¹⁷ Susan Strange, "States, Firms, and Diplomacy", in *International Affairs*, 1992

¹⁸ Susan Strange & John Stopford, *Rival States, Rival Firms*, 1991

¹⁹ The inclusion of "another level of governance and interaction (the European Commission)" into the Stopford & Strange model, was propounded by Maria L. Green in her paper, *The Politics Of Big Business in the Single Market Program*, presented for the ECSA Third Biennial Conference, Washington DC, May, 1993. Ms. Green argued that such an inclusion was necessary in applying the triangular diplomacy framework to the Single Market programme. Her argument is in line with that which this author developed in a 1991-95 European University Institute PhD thesis. Ms. Green fails to get into the issue in depth however, and to expand the notion to policy bargaining realms beyond the Single Market programme.

within the paradigm, i.e. the European Commission. Thus, two other "angles" must be included, to transform Stopford & Strange's triangle into a pentagon²⁰.

Governments must thus negotiate not only with other governments and with firms, but also with the Commission. and firms must bargain with other firms, governments, and with the European Commission. Hence, what emerges is more along the lines of 'pentagonal diplomacy', rather than triangular diplomacy [*Diagram 1*]. Such a five-sided bargaining structure is complex, because the interplay varies according to the specificities of a particular bargain. In effect, the pentagonal diplomacy concept is a framework for analysing and explaining how industrial policy develops within the European Community. It entails five interlinked sets of negotiating bargains: state-state, firm-firm, state-firm, firm European Commission, and European Commission-state. All five bargaining sets come into play for each industry. However, the policy impact of the individual sets varies according to the industry. Thus, for some industries, the firm-Commission interplay is negligible for instance, whilst for others, it may be the state-state bargain which has little input into policy development. The intention is to determine which bargaining set(s) dominate a particular policy-making process, which of the public and private sector players involved in the policy sphere actually define and drive a given policy. Government-Commission bargaining (which is usually an intra-institutional procedure, between the Commission and the Council) can be a rigorous ordeal, or it may merely constitute a Council "rubber stamping" of a particular policy. Similarly, Firm Commission negotiating can be central to the development of a particular policy, or it may be peripheral, if not irrelevant, to the policy process. Competencies within the EC still vary, and firms can thus end up bargaining either with government, with the European Commission, or with both.

Through the Pentagonal Diplomacy conceptual framework, EC industrial policy bargains can be comprehensively understood and assessed. National governments for instance, are seen to wield considerable influence in certain realms of EC electronics diplomacy. This is evident in EC policy areas such as Eureka coordinated information technology R&D collaborative programmes. It is also visible in EC policy variables, mainly the size of budget allocations and the scope of EC technology policy. However, the actual policy agenda-setting, trade tool utilisation,

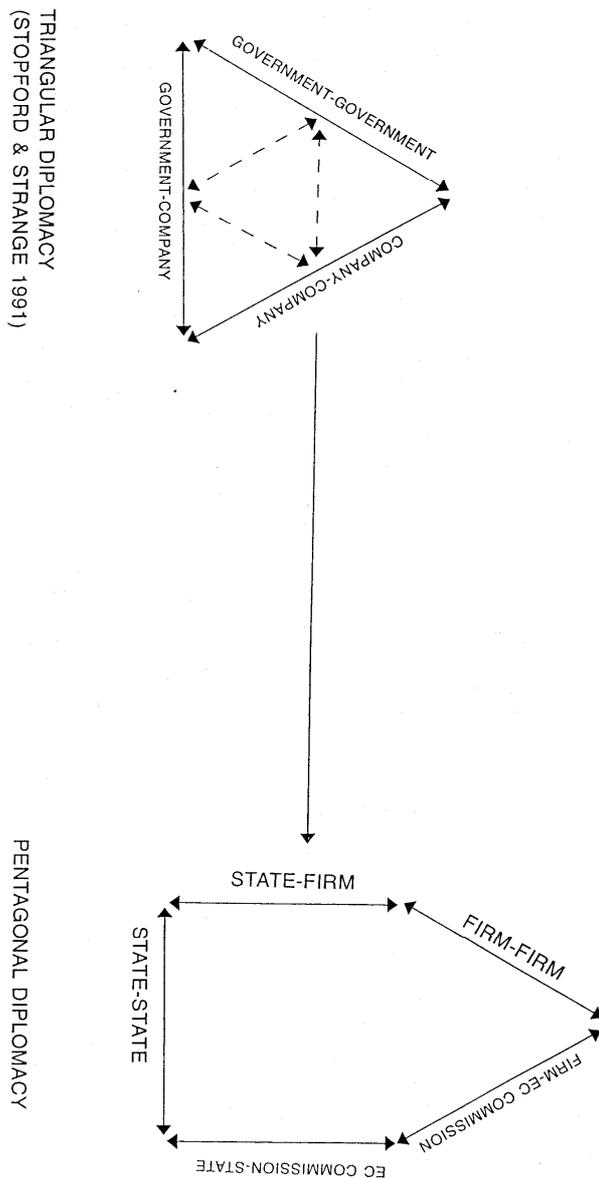
²⁰ European industry associations and European regional governments also feature in this EC bargaining process. We include European industry associations within the firm perspective, given that such associations are seldom more than the sum of their parts. European regional governments can often conduct semi-autonomous bargains with firms and with the European Commission. However, in the creation and control of EC policy for the electronics industry, we argue that the regions have little or no influence. They are therefore incorporated under the 'state' actor side of the bargaining process.

rules governing competition, and concentration of resources, remain largely the domain of the European Commission, in partnership with certain large corporate enterprises.

4. INDUSTRIAL INTEGRATION THROUGH COLLABORATIVE R&D

We previously alluded to the fact that in discussing the nature of EC industrial policy, one element emerges as the dominant policy tool. In fact, it may be argued that the other "pillars" of the policy (trade instruments and competition policy) are often secondary to - and sometimes merely supportive of - the R&D activities. As previously indicated, this emphasis on "knowledge" creation and dissemination is the essential part of any innovation policy. R&D is perhaps the basket within which the Commission 'places most of its eggs'. The sheer financial and structural scale of EC involvement in research and development is indicative of this policy emphasis. For instance, the EC spends, in total, approximately \$2 billion per annum on research, much of it on subsidies to collaborative industry programmes. Also, it concurs with

DIAGRAM 1



the Commission's stated objective of acting as a "promoter", rather than as a "protector". Although collaborative research is often viewed as a recent development, the first European joint research and development project began more than quarter of a century ago - into nuclear energy under the 1956 Euratom Treaty²¹. In the early days, the Community's research activities were confined to coal, steel, and nuclear energy. However, since the mid-1970's, they have gradually been extended to other fields. Little by little, a Community research and technology policy began to evolve. During the late 1970's, large European firms, attempting to adjust to the new global competitive framework, began to perceive a need for cooperation

²¹ Paul Taylor cited in *The Financial Times*, 17 March, 1992.

and public policy involvement at an EC, as well as or instead of, at a national level. In addition, the EC Commission, through individuals such as Commissioner Davignon, saw an increased role for it vis-a-vis large European firms.

A symbolic starting point for large scale EC "high tech industrial policy" activity is Davignon's 1979 meetings with the leaders of Europe's 'big twelve' electronics firms. As Sharp has argued, "under Davignon's guidance, the Commission began to develop a more strategic approach to the IT sector" [1989: 202]. The creation of a "round table", comprising both EC officials and industrialists²², was intended to jointly devise ways in which the Community could help restructure Europe's high technology industries through research.

Therefore, from the early 1980's, one could witness a significant transformation in the nature of European industrial policies. As Sharp (1989) argues,

While the 1960's and 1970's could well be called the Age of the National Champion, the 1980's may earn the title the Age of Collaboration²³.

The early 1980's proved a period of policy transition in the EC; with an expanded role for Community institutions - primarily the Commission. Such a role was sometimes in tandem with and often at the expense of, national government - depending on the industrial sector in question. The power shift was most obvious within information technology industries - where the need for global competitiveness and greater economies of scale was most evident. Also, this was illustrative of an extension of Community research activities from more traditional industries such as coal and steel, into the new knowledge intensive industries. Thus, driven by the necessity of expanding their economies of scale and sharing R&D costs, western European states ceded considerable policy authority in information technology to Brussels. Business supported this power shift, seeing benefits to be had in a larger "home" market, greater trans-European cooperative linkages, and more sources of governmental R&D support. As Mazey & Richardson (1993) argue,

²² The corporate members of Davignon's round table were ICL, GEC, Plessey, AEG, Nixdorf, Siemens, Thomson, Bull, CGE., Olivetti, STET, and Philips.

²³ Margaret Sharp (1989), 'Corporate Strategies and Collaboration: The Case of ESPRIT and European Electronics', in Mark Dodgson (ed), *Technology Strategy and the Firm.. Management and Public Policy*, p202.

increasingly, groups themselves have recognised the logic and momentum of greater Europeanization of solutions²⁴.

Finally, the European Commission actively sought this new policy competency, arguing that competitiveness could best be achieved if policy was implemented at a European level.

From the early 1980s, the Community's participation in R&D had two separate and distinct manifestations: firstly, through its financial involvement in pan-European Eureka²⁵ projects. and secondly, through the EC's own Framework Programmes. With this two-pronged technology policy, the Community have placed inordinate industrial policy emphasis on knowledge creation and dissemination. From a legalistic standpoint, the formulation and entry into force of the Single European Act, was a significant landmark in the development of EC technology policy, giving it a legal basis in the Treaty of Rome, Through the SEA, a European Research and Technology Community was established, and the Community was given specific powers in the field of scientific and technical cooperation, primarily under the auspices of the Framework Programme of research and development.

The special "strategic" role accorded to science and technology in general, and information technology in particular, was described during the 1980s by EC Commission Vice-President, Karl Heinz Nades:

It was not until 1980 that the Community was able to take a strategic view of science and technology. It was then that that the Commission first stated its belief that it was not possible to devise a new model for society, to secure Europe's political and economic autonomy, or to guarantee commercial competitiveness, without a complete mastery of the most sophisticated technologies²⁶.

Furthermore, Narjes argued that the Community had a responsibility to "strengthen the scientific and technological basis of European industry", in addition to actively

²⁴ Sonia Mazey & Jeremy Richardson, *Lobbying in the European Community*, 1993, p252.

²⁵ The European Research Coordination Agency (EUREKA) was launched by seventeen European countries and the European Commission in 1985, in an effort to improve the global competitiveness of Europe's industries and economies through collaborative high technology R&D.

²⁶ Karl Heinz Narjes, *Europe's Technological Challenge: A View From the European Commission*, Science and Public Policy, December 1988, p396.

encouraging industry to become more responsive to the global competitive environment. Thus, it is obvious that at the most senior levels of EC industrial policy making during the 1980's, an active interventionist view was taken towards European high tech industries' competitive enhancement.

Policy styles changed as the EC entered the 1990s. The main policy document outlining this new Community role, is the 1990 *Industrial Policy In An Open and Competitive Environment* report. Internal Commission sources²⁷ argue that this document is indicative of the more liberal tendencies within the Commission. It is seen as a victory for liberalism over interventionism. The document's initial argument is that a growing consensus has emerged on the type of policy needed to lay down the conditions for a strong and competitive industry' [CEC 1990: 1 1. This consensus derives from the experience of Community policies operational since the mid- 1980's The implicit argument is that it has been recognised within the Commission that the top-down and heavily interventionist policies of the 1980's have not succeeded in enhancing competitiveness; and thus, a new post-interventionist policy set, with emphasis on global competitiveness, is needed. The communique goes on to state that the 'role of public authorities is above all a catalyst and pathbreaker for innovation. The main responsibility for industrial competitiveness must lie with firms themselves, but they should be able to expect from public authorities clear and predictable conditions for their activities'.

There is nothing new in this argument. To say that the ultimate onus for competitiveness is on firms themselves, is to blandly state the obvious. To say that this firm responsibility should be extensively supported by the public sector, is to focus on the real issue. The Commission acknowledges that firms compete for world market share *but* it argues that they cannot do so alone. Thus, a middle-way is advocated, between government directed firm strategy and free market competition. The result is policy partnership.

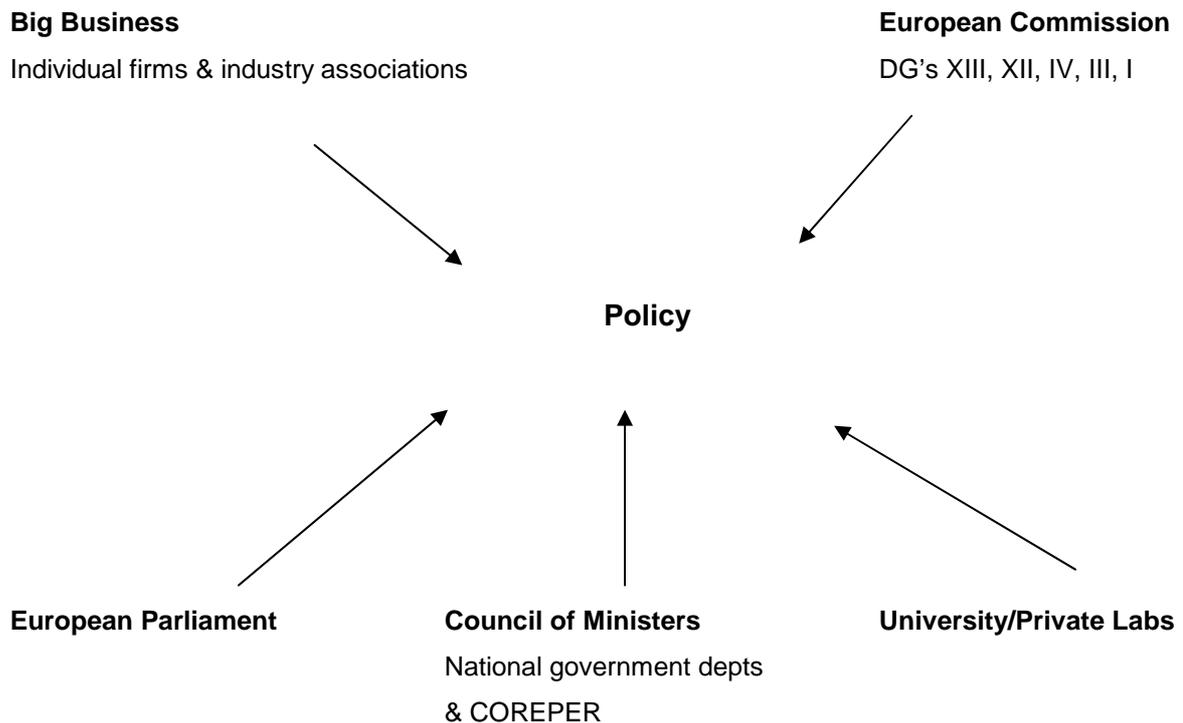
5. THE MAIN POLICY ACTORS FOR ELECTRONICS

The EC industrial policy bargaining process for electronics comprises five categories of actor: firstly, on the Commission side, Directorate-Generals XIII (Telecommunications, Information Market and Exploitation of Research), 111 (Internal Market & Industry), XII (Science & Research), and to a slightly lesser extent,

²⁷ Interview conducted with senior Commission official, Brussels, February, 1994.

I (External Relations)²⁸, and IV (Competition Policy). secondly, on the Council of Ministers side, assorted national government departments and COREPER (national permanent representatives to the Community). thirdly, the European Parliament, on budgetary issues. fourthly, university and private research laboratories; and finally, most of the leading European-based electronics firms.

EC Policy-Bargaining for Electronics: the Actors



Of these, earlier research²⁹ suggests that the most important actors are Directorate-Generals 1, 111, IV, and XIII of the European Commission, and the large European electronics firms.

One can see that the process has become more complex, as the number of actors that influence the policy bargaining procedure has increased. It may be argued that more checks and balances now exist on and within the Commission, and the general policy-making process is more transparent and inclusive. However, this fact does

²⁸ Directorate-General I is included here due to its competency for trade tools such as anti-dumping.

not appear to have exposed the weaknesses inherent in this policy, nor altered its broadly interventionist nature.

6. THE FIRM AS A POLICY ENTREPRENEUR

Mason (1992) argues that for cars, EC policy-making is a member state-dominated process. Thus, in theoretical terms, he comes down on the side of the neo-realists, perceiving the EC as a loose network of inter-state bargains, controlled by national governments. Governments dominate the European Commission, and not the other way around, as neo-functionalists might have you believe.

This paper subscribes to a different principle from both the neo-functionalist and neo-realist schools. This approach attributes influence to both sources of political authority (EC and national), within the policy bargaining process. However, for the electronics industry, the process is dominated by EC institutions, in conjunction with large firms. As Green (1993) argues, neither intergovernmentalism nor neo-functionalist theory takes account of the firm as an actor within EC policy-making³⁰. Neither is sufficient to analyse recent EC policy-making for industry, as neither can adequately explain the increased influence of the firm within this process.

Other academic studies support our emphasis on the central role that firms play within (EC) policy-making. From their study of European government-industry relationships in both the telecommunications and consumer electronics sector, Cawson et al. found that

even where governments were acting strategically in the promotion of industries and products, outcomes were ultimately decided by the strategies of firms [1990: 361].

Firm bargaining power was particularly strong in situations where governmental actors set 'performance' objectives, such as the competitive enhancement of the domestic electronics industry. In these situations, government is trying to set both the policy means and ends - a situation which gives more bargaining power to the

²⁹ Thomas C. Lawton (1995), *Technology and the New Diplomacy: the Creation and Control of EC Industrial Policy*, chpt 4.

³⁰ Neo-functionalism does propose a coalition between supranational organisations such as the Commission, and business interests. However, this approach envisages a political alliance between the European Commission for instance, and business associations. This alliance would be primarily intended to supercede the nation-state and

corporate actors, without whose specific actions the policy ends could not be achieved [Cawson et al. 1990: 3621. This supports our argument concerning the role of firms in EC policy for the electronics industry. Such policy has specified 'performance' objectives (competitive enhancement), thus giving electronics producers greater policy bargaining strength relative to EC governmental agents. Similarly, June (1992) argues that large firms occupy centre stage in the creation and control of EC policy for areas such as trade and the environment. He argues that they influence policy-making both through their economic activity, and through their political interventions [1992: 23]. These transnational corporations get directly involved in policy development when their interests are at stake, or when their cooperation is needed in order to implement specific measures:

Their relationship with the Commission (and national political bodies) implies more than that of the normal lobbyists who try to impose their vision on government. Representatives of MNCs are often called in by government (or the Commission, for that matter) because of their indepth knowledge of specific affairs which civil servants would lack [June 1992: 24].

George Ross (1993; 1995) substantiates this argument. As an observer within the Delors Cabinet during 1991, he witnessed first-hand the direct and high level relationship which existed between the Commission and the European electronics industry. Frequent meetings occurred between President Delors and the Chief Executive Officers (CEOs) of some of Europe's industrial giants³¹. The overall objective for both parties was to halt the competitive decline of the indigenous European electronics industry. Delors participated in such meetings because he believed in the need for a corporate input into industrial policy formulation. He listened even more attentively to the electronics firms because of their implicit threats to withdraw their political support for the Community (and thus for the integration process) if their views were not adequately accounted for in the policy-making process [Ross 1995: 115-61. Not only did the Commission fear losing the confidence of European business (and thus losing power vis-a-vis national governments) but as several observers have argued³², the Commission saw

further the development of a federal Europe. There is no real conceptualisation of individual firms, or an alliance of individual firms, attempting to advance their own agendas through bargaining with political actors.

³¹ George Ross (1995) describes the high level Commission-industry relationships, in *Jacques Delors and European Integration*, pp 1 15-6.

³² Most notably, the United States Office of Technology Assessment in their 1991 report on competitiveness, and Forum Europe in a 1992 document released by them.

European industry - especially high technology sectors - as potential allies in the struggle to achieve a federal Europe. The Commission endeavoured to create a common area of action for European industrial affairs and electronics was at the forefront of this undertaking. Moreover, the Commission purposefully "courted" big business, seeing them as important allies in the European integration process. This policy partnership for EC industrial policy has contributed to the erosion of national sovereignty amongst the member states of the European Union.

7. SOME POLICY CONSEQUENCES

How can one rate the "partnership" between EC governmental actors and industry in creating competitive advantage for specific European information technology sectors? More particularly, how is EC policy affecting the competitiveness of European electronics producers?

The 'Porter Diamond'³³ was created as a means of conceptualising the interrelated components which together comprise a nation's competitive advantage. For Porter (1990), government's role in establishing competitive advantage for an industry is to stimulate improvement and innovation domestically. He stresses that it is up to the industry alone to actually compete though. Thus, the Diamond advances four attributes which shape the domestic competitive environment for corporate enterprises, and by extension, enhance or hinder the domestic firms' competitiveness in the global market. In brief, they are factor conditions (e.g. skilled workforce), demand conditions (e.g. sufficient domestic economies of scale), related and supporting industries (e.g. having a software industry in addition to a computer hardware industry), and firm strategy, structure, and rivalry (e.g. regulatory systems such as EC competition policy)³⁴. These four Porter Diamond attributes comply perfectly with the present EC policy approach for electronics. This is actually not a surprise. In searching for a more acceptable policy structure, the European Commission set upon Porter's model, correctly seeing it as *en vogue* amongst large segments of the international business and governmental community. One can see Porter's concepts throughout the 1990 *Industrial Policy in an Open and Competitive Environment* Commission report. Indeed, his competitive advantage model is mentioned by name in the document. Policies have been implemented for human capital development ('factor conditions'), sufficient economies of scale, through the

³³ Michael Porter, *The Competitive Advantage of Nations*, 1990.

³⁴ For further details on these attributes, and on the 'Porter Diamond' in general, see Porter. *The Competitive Advantage of Nations*, 1990.

Single Market programme ('demand conditions'), developing links between enterprises at different stages in the production cycle, and encouraging the development of indigenous semiconductor design and equipment manufacturers ('related and supporting industries'), and, through competition policy, to regulate corporate structure and behaviour ('firm strategy, structure, and rivalry').

Thus, if one sees any utility in the Porter model and if it has been applied to the EC policy structure, why has competitiveness not improved?

The answer lies in the important extra-Diamond variable, *government*. As argued previously, government (or governmental actors such as the European Commission) should not attempt to control competitive advantage. If it does, the competitive diamond will be distorted. Although unable to control competitive advantage, there is no denying the influence which public policy can have on said phenomenon [Porter 1990]. Therefore, the argument here is that the overall thrust of EC policy has failed to enhance the global competitiveness of the European electronics industry because it has been overly interventionist and frequently directed at the wrong areas. Thus, using Porter's model, one can argue that the nature and extent of EC policy has upset the balance of the Diamond and adversely affected the competitiveness of European electronics producers. We suggest a number of ways in which the Community could change its overall policy structure. These include the abolition of trade tools such as antidumping, rules of origin, and import tariffs, which merely protect uncompetitive European-based firms. the phasing out of large collaborative R&D programmes which are administered by the Commission; greater emphasis on funding of basic research within the framework of the industry-led Eureka initiative. and more promotional assistance - through training schemes, technological diffusion, etc. - for start-ups and young SMEs' within the electronics industry.

Such changes may reinforce the Diamond and finally permit the creation of a viable domestic competitive environment for European producers. After that, it is up to the firms themselves to build competitive advantage and capture greater global market share.

8. CONCLUSIONS

The power interplay between various actors involved in the formulation of EC industrial policy can best be understood and analysed through the Pentagonal Diplomacy policy bargaining model. As this model suggests, for certain industries, EC industrial policy is determined jointly by corporate and governmental agents. Several previous studies support this notion of large firms partly creating EC policy [June 1992. Green 1993]. Ross lends further support to the argument that EC electronics policy has been shaped by a Commission-large firm partnership. He reveals that a number of large electronics companies have been directly involved in the creation of EC policy for this sector [1995:115-61]

It is difficult - if not impossible - to establish the impact which a policy has on a firm. This is particularly true for R&D policies. The counterfactual proves insurmountable in any assessment of "competitive enhancement" resulting from R&D policy. Similarly,, it is difficult to gauge the precise effect of trade tools on corporate market performance. Whilst not being able to assign definitive "success" or "failure" labels to EC policy tools, electronics policy has not had the desired effect on industry. This may mean that policy has had no obvious impact, either positively or negatively; or it may mean that a policy has distorted market forces in a way which can hinder competition.

As regards EC industrial policy for the electronics industry, it is suggested that in the medium to long term, too much collaboration can become collusive, sustain or create oligopolies, and therefore adversely affect competitiveness [Mytelka 1991]. Thus, EC electronics policy has market distorting elements. A remedy might be to restrict or abolish trade tools such as antidumping practices, rules of origin, local content requirements, and import tariffs, which merely protect uncompetitive (former national champion) European firms. Further restructuring of collaborative R&D initiatives may also contribute to a more competitive European-based electronics industry.

From the late 1970s, the European Commission began to broaden its industrial affairs competency. From its traditional industrial policy domains of coal, steel, and nuclear energy, the Commission sought a competency in newer industries which were of core economic value to Community member states. It thus focused its efforts on those groups of industries comprising the information technology sector. The Commission successfully acquired considerable policy power from national

governments through developing a type of knowledge-oriented industrial policy known as innovation policy, and concentrating this policy on information technology industries such as electronics. Thus, EC industrial policy for the electronics industry evolved as part of the Community's efforts to create a common area of action for industrial affairs. This is evident from the 1979 Davignon 'round table' meetings with electronics leaders, through the creation of the EC-directed Framework and ESPRIT R&D programmes and EC involvement in Eureka, culminating in the 1990, 1991 and 1994 EC industrial policy documents, wherein electronics are explicitly targeted for "special treatment". Large electronics firms have gone from being policy outsiders until the late 1970's, to being policy partners since the early 1980s. Their senior executives are consulted by and negotiate with governmental actors on policy decisions. It is reasonable to assume that this firm-Commission interplay is also an important variable in the policy-making process for other business sectors. Thus, any contemporary analysis of EC industrial policy should take account of the Commission-TNC relationship in the policy-making process.

REFERENCES

- Audretsch, David (1993), 'Industrial Policy and International Competitiveness', in Phedon Nicolaides (ed.), *Industrial Policy in the European Community: A Necessary Response to Economic Integration?*, Dordrecht, The Netherlands: Martinus Nijhoff.
- Cawson, Alan/Morgan, Kevin/Webber, Douglas/Holmes, Peter/Stevens, Anne (1990), *Hostile Brothers: Competition and Closure in the European Electronics Industry*, Oxford: Clarendon Press.
- Commission of the European Communities, *Industrial Policy in An Open and Competitive Environment, Communication of the Commission to the Council and to the European Parliament, COM (90) 556 Final*, Brussels, 16 November 1990.
- Forum Europe (1992), *The Horizons of Research: The Future of Cross-Border R&D in the European Community*, conference report written by Debora McKenzie, Brussels: Forum Europe.
- Curzon Price, Victoria (1981), *Industrial Policies in the European Communities*, London: Macmillan Press, for the Trade Policy Research Centre.
- Grant, Wyn (with Jane Sargent) (1987), *Business and Politics in Britain*, London: MacMillan.
- Green, Maria L. (1993), *The Politics of Big Business in the Single Market Programme*, paper presented for the ECSA Third Biennial Conference, Washington DC.
- Howell, Thomas R./Wolff, Alan W./Bartlett, Brent L./Gasbaw, R. Michael (1992), *Conflict Among Nations: Trade Policies in the 1990's*, Boulder, CO: Westview Press.
- Hufbauer, Gary Clyde (1990), *Europe 1992: An American Perspective*, Washington D.C.: Brookings Institution.

Junne, Gerd (1992), 'Multinational Enterprises as Actors', in Walter Carlnaes/ Steve Smith (ed.), *The European Community and Changing Foreign Policy Perspectives in Europe*, London: Sage.

Lawton, Thomas (1995), *Technology and the New Diplomacy: The Creation and Control of EC Industrial Policy*, European University Institute: Florence.

Mazey, Sonia/Richardson, Jeremy (ed) (1993), *Lobbying in the European Community*, Oxford University Press: Oxford.

Mytelka, Lynn Krieger (ed.)(1991) *Strategic Partnerships and the World Economy: States, Firms, and International Competition*, London: Pinter.

Jarjes, Karl Heinz (1988), 'Europe's Technological Challenge: A View From the European Commission', *Science and Public Policy*, Vol.15, No. 6, December, 395-402.

Ostry, Sylvia (1990), *Governments and Corporations in a Shrinking World: trade and innovation policies in the United States, Europe, and Japan*, New York/London: Council on Foreign Relations.

Peterson, John Carl (1991), *The Politics of European Technological Collaboration: An analysis of the Eureka initiative*, doctoral dissertation, London School of Economics.

Porter, Michael (1990), *The Competitive Advantage of Nations*, London: MacMillan.

Ross, George (1993), 'Sliding into Industrial Policy: Inside the European Commission', *French Politics and Society*, 11.

Ross, George (1995), *Jacques Delors and European Integration*, Cambridge: Polity Press.

Sharp Margaret (1989), 'Corporate Strategies and Collaboration: The Case of ESPRIT and European Electronics', in Mark Dodgson (ed.), *Technology Strategy and the Firm:*

Competition for World Market Shares, Cambridge: Cambridge University Press.

Strange, Susan (1992), 'States, Firms, and Diplomacy', *International Affairs*, Vol.68, No.1.

Tucker, Jonathan B. (1991), 'Partners and Rivals: A Model of International Collaboration in Advanced Technology', *International Organisation*, Vol.45, No. 1, Winter.

Wilks, Stephen/Wright, Maurice (ed.) (1987), *Comparative Government-Industry Relations.. Western Europe, the United States, and Japan*, Oxford: Clarendon Press.

U. S. Congress, Office of Technology Assessment (1991), *Competing Economies: America, Europe, and the Pacific Rim*, OTA-ITE-498, Washington DC: U. S. Government Printing Office.