

**LOCAL OR NATIONAL COMPETITIVE ADVANTAGE?
THE TENSIONS IN CLUSTER DEVELOPMENT POLICY**

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Abstract

The paper explores the tensions in cluster development policy arising from the combination of different economic spaces on which cluster policies can be targeted and the different levels of governance which produce them. In seeking to enhance industrial competitiveness at different spatial scales, the contrasting strategies of national and regional/local authorities towards cluster development have led to a sharpening of the differences between different governance levels. The policy tensions highlight potential conflicts between policies pursuing national and local competitive advantages. Based on a longer term research project on cluster policy, the paper is based on brief case studies of how cluster concepts have influenced policy-making in eight Western European countries. It concludes that cluster policy has largely arisen from spatial rather than industrial policy traditions, and far from exacerbating tensions between different policy areas and governance structures, it has provided a useful means of resolving them.

Introduction

The apparent paradox inherent in the simultaneous globalization and localization of economic activity has generated considerable academic interest in recent years. The recent emergence of the 'cluster' concept represents one of the most common policy approaches to addressing this paradox. Originally articulated in the work of Porter, Enright and others - though building on longer traditions encompassing the work of Marshall and others - the factors influencing the propensity of industries to cluster in certain locations have been extensively examined over the past decade. The so-called 'Porter diamond' suggested that competitiveness derives not simply from individual firms, but from relationships between these firms (Porter, 1990). More generally, such clusters have been interpreted as self-reinforcing networks of not just firms, but a range of other organizations - including research institutes, financial bodies and public sector agencies - all of which are characterized by high levels of both competition and collaboration. Interest in the 'cluster' concept has been especially apparent in economic development policy, as seen in the increasing support for cluster development at both national and sub-national levels. Cluster policies have proliferated over the past decade - both those clearly designated as such and related policy initiatives such as regional innovation strategies and measures to support local production systems (Enright, 2000).

However, the spatial scale at which cluster policies have been targeted has varied. Clusters have been analyzed in territories diverse in size, ranging from the national sector groups which are the focus of industrial policy in the Netherlands to the micro *systemes productifs localisés* within French localities. As clusters develop in environments whose overall features provide incentives for firms to act as competitive industrial networks, a cluster's spatial scale is ultimately defined by the nature of these features. They can be limited to the national level (in terms of the macroeconomic, cultural and legal framework encouraging industrial competitiveness) or the sub-national (in terms of the externalities and 'untraded interdependencies' deriving from geographical proximity (Storper, 1997)). As a result, there is no clear locus for policy intervention, and indeed, cluster development actions may be required at different levels.

This uncertainty can result in national and regional policy-makers pursuing parallel cluster development policies, creating the potential for a series of tensions within the policy process. The tensions derive from the relationship between governance and economic boundaries as well as between different, often overlapping administrative spaces. Uncoordinated policies between different governance levels sharing (at least part of) the same economic space can lead to a lack of policy coherence and multiplying conflicts. The tensions can exist between national and local levels of governance, as when regional agencies decide to target policy resources at one industry group while national authorities favour other groups within the region, or perhaps competing industry groups in other regions. Tensions arising between different combinations of economic space and governance level can be typified using a matrix. Several policy categories can be produced using these two key axes: the spatial scale of *competitive advantage* within industries, referring to whether cluster development is conceived of in national terms or geographically-proximate sectoral groups; and the spatial scale of *governance*, concerning the institutional level at which cluster policy is defined. Three policy types result from the analysis:

- *national advantage policy*: where policy is centralized nationally and targets industrial competitiveness at the national level (in many respects, the traditional description of industrial policy);
- *centralized cluster policy*: where improving the competitive advantage of local industry is the goal of policy, but it is centrally coordinated at the national level; and
- *decentralized cluster policy*: where sub-national governance levels are responsible for developing industrial competitive advantage within their own economic spaces.

		Spatial scale of competitive advantage	
		National	Local
Spatial scale of governance	National	<u>National advantage policy</u> National policy to improve national industrial competitiveness	<u>Centralized cluster policy</u> National policy to improve local industrial competitiveness
	Local	Local policy to improve national industrial competitiveness	<u>Decentralized cluster policy</u> Local policy to improve local industrial competitiveness

The fourth category in the matrix – local policy aimed at the national scale of competitive advantage (the bottom left hand box) – will not be examined because it has occurred so rarely. However, another category which is not readily captured on the matrix will be examined: policies that focus on sub-national competitive advantage but which involve significant coordination between different governance levels, as some countries do not have clear demarcation between these levels (what might be called ‘interactive’ cluster policies, effectively in the transition between the centralized and decentralized policy models).

Using this typology, this paper aims to explore the tensions in cluster policy in Western Europe. In examining how the potential policy conflicts with respect to cluster development have emerged, the paper considers these tensions from the perspective of how different governance levels have responded to the economic development challenges of the increasing globalization of economic activity by policies of localization. In seeking to develop industrial competitive advantages at different spatial scales, the strategies of national and regional/local authorities have led to a sharpening of the differences between different governance levels. Moreover, the paper will examine how different governance levels have reached accommodations in policy responsibilities in different countries. It will focus on how the cluster concept has influenced policy-making in eight Western European countries, only noting key policy trends in each rather than providing a detailed historical analysis of their development given space restrictions. The paper is based on *Euro-Cluster*, a continuing research project within the European Policies Research Centre comparing cluster policy approaches in Western Europe.

Cluster policy and national competitive advantage

Before considering how cluster policy has been designed and operated at national and sub-national levels, it is important to clarify what policy-makers understand by 'cluster'. This is difficult, as there is no underlying, unifying theoretical consensus on what constitutes a cluster and, more importantly, over what spatial scale it operates (Feser 1998). Indeed, although the term 'cluster' has been used widely – applying to a variety of distinct industrial processes – it has often been interchangeable with other terms such as 'industrial districts', 'value chains' and 'business networks'. As a result, 'clusters' have been subject to a variety of separate definitions and interlocking concepts. For example, Porter (1990) maintained a highly firm-centric view of cluster development, addressing issues of sectoral competitiveness in terms of business access to key inputs into their production process, their markets and the behaviour of competitor firms in the same industry: clusters are viewed in national terms, and are the main constituents of national competitive advantage. Others have viewed cluster development in more explicitly spatial terms, seeing cluster development as a function of key sub-national factors and their systemic interaction. In this context, clusters are linked to notions of local competitive advantage, where distinct sub-national economic spaces not only operate relatively autonomously, but many of the factors which underlie their economic performance arise from the relationships of businesses and supporting organizations in the main local industries.

The link between cluster development and national competitive advantage is most often associated with Porter (1990). In examining the conditions that allow (and encourage) firms within industries to become (and remain) competitive, Porter's focus was largely fixed on the attributes of industries at a national level. His diamond model explained competitiveness primarily in terms of the macro-economic parameters within which the industries functioned rather than through the benefits of spatial proximity, seeing competitive advantage in terms of a transactional and regulatory rather than a physical space. This is not to say that geographical concentration was not recognized as a significant factor in cluster development, but proximity merely magnified existing competitive advantage deriving from national structural causes as embodied in the diamond.

The implications for cluster development policy were only partially considered by Porter. Porter viewed the impact of government in cluster development as minimal and argued that traditional forms of industrial policy are unlikely to support national competitive advantage. Government's role is restricted to "the context and institutional structure surrounding firms" (Porter 1990, p.620) and is cast in terms of how policy can support the existing competitive factors in a national sector's diamond. Nevertheless, despite Porter's caution, policy interest in how to influence national competitive advantage has been rising. Indeed, the role of government in shaping industrial competitiveness at national level has been widely reappraised in recent years. A 'new paradigm' for public intervention in industry has been said to emerge, based on the so-called 'knowledge-based economy' and involving a reconsideration of the scale and avenues of policy influence (Drake 1997). In contrast to the 'national champion' aims of traditional industry policy, the responsibilities of government have been reconceived in terms of setting the conditions in which industries compete and in addressing clearly-defined market failures, particularly those relating to technological knowledge and its diffusion. As a result, the sphere of government action has moved outwards from a focus on individual firms to industrial networks of businesses and beyond, to the economic environments in which these networks operate. Competitiveness may still reside in individual firms, but governments have more and more attributed at least part of that competitiveness to systemic elements in the national economy (ie. the national competitive advantage).

The link with cluster theory has come from combining network approaches to understanding the success of certain industry groups with this new appreciation of the scope for government industrial policy action. Boosted by the popularity of Porter's work, a 'national advantage' model of cluster policy has been described, where the tasks of cluster development are undertaken at the national level (Boekholt and Thuriaux 1999). In stylized form, national advantage policy can be said to have four aspects:

- *the economy is viewed as an interlinked series of national competitive advantages* (or the 'strategic' aspect of the policy model), as seen in government studies

- analyzing the whole economy with cluster maps and assessing the strengths and weaknesses of individual clusters;
- *broadly-defined industries become the strategic focus of policy* (or its 'sectoral' aspect), which can result in clusters being defined in relatively general sectoral terms (eg. a food/drink industry rather than a cheese-making or whisky sector);
 - *policy activities are restricted to affecting framework conditions for industry* (or its 'framework' aspect), whether these are specific regulations affecting certain forms of product development (eg. patenting or environmental controls) or more general policy setting the macro-economic context for cluster development (eg. steady growth, low inflation etc.); and
 - *government addresses national areas of market failure within an industry* (or its 'externalities' aspect), such as the provision of specialized forms of infrastructure (eg. national research centres designed to address private sector reluctance to invest in new technological developments).

The features of the national advantage model can be seen with respect to the two most prominent countries in Western Europe to have focused on national-level clusters: Denmark and the Netherlands. In the case of *Denmark*, the national government has targeted industrial policy on a series of 'resource areas', defined as business and institutional networks with a set of products which have a common set of 'homogenous market characteristics' (Drejer, Kristensen and Laursen 1999). The policy has a clear strategic aspect as the resource areas were identified in terms of the main value chains in the Danish economy in a cluster mapping exercise of the whole country. It has a sectoral aspect in that these resources include sectors as widely defined as 'leisure and consumer goods' and 'transport, environment and energy'. As a policy, the Danish government distinguished it from older forms of sector policy by the cross-sectoral nature of the resource areas and their internal interdependency. This is reflected in the measures associated with the policy, which display both a framework aspect (as supporting policies have been devised for the individual macro-economic framework conditions of each resource area) and an externalities aspect (as seen in the creation of 'virtual' research centres bringing together specific research expertises from the private sector, universities and the government).

Similar developments took place in *the Netherlands*, where a succession of national-sponsored cluster studies culminated in a full policy commitment to cluster policy at the national level with a 1997 White Paper (Roelandt *et al* 1999). The intensity of the mapping exercises and their understanding of the national economy exclusively in terms of interdependent value chains show the strategic and sectoral aspects of policy. The framework and externalities aspects of the policy are apparent in the White Paper, which laid out three areas for policy intervention: developing favourable macro-economic conditions for all sectors (eg. by pursuing an active competition policy); acting as broker and information provider in promoting links within specific clusters (eg. encouraging interfirm alliances in the development of strategic technologies); and using the government's position as a customer to encourage technological improvements within clusters (eg. through procurement practices).

Denmark and the Netherlands are among the few European countries to have applied cluster concepts to developing competitive advantage on an exclusively national scale. While aspects of the national advantage model can be seen in other countries – especially its strategic aspect (notably the cluster mapping responsibilities of national government) – they have not been combined together in a strategy to support national competitive advantage. The surprising absence can be partly explained by examining distinctive features of Dutch and Danish industrial policy. Cluster policy has emerged out of national industrial policy in both countries: dissatisfaction with previous policies creating national champions in a handful of individual businesses – sometimes in industries with weak roots in the national economic structure – led to both governments being strongly susceptible to Porter's work. Moreover, the territorial compactness of their countries has meant that both countries have been able to take advantage of geographical proximity in their cluster development: in other words, one of the key features of local competitive advantage – geographical proximity – has been present in national competitive advantage.

Cluster policy and local competitive advantage

In spite of the original contextualization of industrial clusters within a framework of national competitive advantage by Porter, it is the concept of local competitive

advantage which has dominated discussion of cluster development over the past decade. In part, this is due to the longer tradition of research on localizing competitive advantage, which linked aspects of the cluster concept – notably innovation as an interactive, uncodified and location-specific process and its embedding in local business networks – to spatial considerations. While particularly evident in the industrial district literature (eg. Piore and Sabel 1984), the importance of local context was endorsed by Porter and subsequently investigated in greater detail in the writings of Enright, Storper and others. The result has been an increasing diversity of spatial scales at which competitive advantage and policy is defined.

This has manifested in the growing numbers of regional and local cluster policies in Western Europe over the past decade (Enright 2000). They differ from policies in support of national competitive advantage in certain key respects. National competitive advantage policies frequently concentrate on support for large firms as the key drivers of developments in certain sectors (as in the case of Denmark and the Netherlands). As a result, they have tended to proceed out of national industrial policy, providing assistance directly (through subsidies) or indirectly (by supplying facilities from which only large firms are likely to benefit). In contrast, sub-national cluster strategies tend to favour SMEs: smaller firms not only require more public intervention to overcome internal and external limits on their capacity to innovate, but that capacity is often linked to key cluster characteristics, notably networking with other firms and research institutes. As a result, sub-national cluster policies tend to be more deeply rooted in spatial policy traditions. The overlap can be seen in the similarity of measures to support networking - among firms, between firms and research institutes, between firms and the private sector, and within the private sector – such as broker programmes, schemes to encourage university RTD commercialization, the development of local industrial associations and the provision of common industrial services. Policies are aimed at affecting the behaviour of the principal agents within a potential or an existing cluster, rather than the economic and regulatory parameters governing the cluster as a whole.

The rise in regional and local cluster policies is part of wider shifts in sub-national economic development policy-making. They are not just 'regionalized' versions of policies to support national competitive advantage, but view their local economies as

relatively self-contained units on which policy can act. The growing influence of the cluster concept on these policies can be attributed to a series of factors, the most important of which are changes in the focus, delivery and resources available to local economic development policy; each of these are now discussed in turn.

Policy focus

Although differing in specifics, rationales for most cluster strategies have tended to focus on the common issues of the production of knowledge, the importance of learning and the use of both in the local economy. To a large extent, this is a recognition of two important insights into regional development which have been popularized in recent years. First, it reflects a greater awareness of the place of knowledge and innovation in sustaining the competitive advantage of industries and, more importantly, the structures in place to ensure that such knowledge can be generated on an on-going basis, diffused throughout a particular sector/region and transformed into products and services which will enhance individual businesses' competitiveness. Second, it proceeds from an understanding that such knowledge and innovation are *localized* processes, made possible by the geographical proximity of a range of innovation institutions (Storper 1997). Proximity and innovation have been closely linked through a renewed understanding of the necessity for trust and cooperation in the development of collective learning. Innovation is perceived to be the function of a local *system* of inter-linked businesses, research institutes and other agents rather than the output of isolated firms.

These insights have contributed to shifts in economic development policy-making over the last two decades away from a focus on direct business subsidies and attracting capital investment into regions and towards support for the wider business environment, the RTD capacity of indigenous businesses and the ability of local business networks to facilitate local economic development. The trends have been reinforced by mutual changes in other policies, where the cluster approach – and its related concepts of regional innovation systems or milieu – has addressed different policy needs by providing a way in which policy-makers can understand how innovation can contribute to regional economic competitiveness and the points at which policy actions can have an influence. This has been particularly apparent in the cases of technology and foreign investment

policies. In *technology policy*, regionalization exhibits a more sophisticated policy approach to supporting RTD, not least in addressing the specific innovation needs of SMEs (Downes *et al* 2000). The benefits of a regionalized policy derive from the greater ease with which local policy-makers can identify the RTD strengths and weaknesses of small enterprises and their ability to develop local networks to support innovation. At the same time, the changes in policy mirror new ways of dealing with the challenges of *inward investment attraction*, which has long been a major feature of spatial development policy. With policy priorities shifting more towards retaining existing investment projects, winning 'follow-on' investment and deepening the ties of foreign plants in local economies, policy has concentrated more on groups of firms in related value chains – often with key foreign-owned plants at their apex - rather than on the investment intentions and behaviour of individual firms. (Brown and Raines 2000).

Policy delivery

The popularity of cluster policy models parallels the increasing role of strong, regionalized policy institutions in sub-national economic development. In particular, it can be linked to the rise of regional development agencies (RDAs) in Western Europe and concurrent changes in the institutions responsible for regional development. Over the past few decades in Europe, there has been a clear trend towards the decentralization of regional development policy-making. While funding has continued to be centrally provided, more scope has been given to 'bottom-up' attitudes to local economic development, in large part because there is greater recognition that local institutions are often in a better position to determine local economic needs and (in the case of RDAs) can combine a range of previously disparate policy resources and measures to act on those needs (Halkier and Danson 1997).

The rise of RDAs in Europe and the increasing popularity of cluster policies at sub-national level are linked. It can be seen in the way in which the newly-created RDAs in the English regions have made 'clusters' a prominent feature of their initial development strategies. Several reasons can be cited for the interest in clusters by RDAs. First, cluster development fits with the goal of many RDAs as coordinators of development policy within the same region. Rather than undertaking all policy delivery themselves, RDAs

can take the lead in developing consensus in economic development priorities among different organizations and manage the distributed system of policy implementation. In many cases, RDAs are responsible for drawing up development strategies for their regions, and the localized nature of much cluster policy offers an attractive means of organizing these strategies. Second, RDAs are still often implementers of many of the relevant measures involved in cluster strategies, such as support for training, RTD incentives and industry benchmarking studies; the appeal of a policy model that provides a unified system for their different policy responsibilities can be very strong.

Policy resources

Lastly, localized cluster policy can also be seen as a response to changes in the resources available for spatial development. Indeed, the attractiveness of the cluster concept can be interpreted as a solution to the problem of declining national resources for regional development. Yuill *et al* (1999) have noted that expenditure on national regional policy in Western Europe – especially business incentive schemes - has been steadily falling since the 1980s (though more clearly in the case of northern than southern European countries). Cluster policy methods favour a more sophisticated focus of policy activity on particular aspects of a regional economy. It also supports the integration and coordination of existing policy measures within a region so the spending that does take place is complementary. In this respect, cluster policy has made public sector agencies shift from simple providers of additional resources to support industrial development in regions to *facilitators* of existing resources. This is especially apparent in the 'self-help' ethic that characterizes many cluster strategies, in which the public sector acts as a broker or enabler of innovation activity rather than the source of it.

Centralized cluster policy

As can be seen then, there are a variety of policy rationales for supporting competitive advantage at different governance levels. However, as noted above, this has only led to the development of national advantage policies in a few countries – such as the Netherlands and Denmark – where clusters have been defined largely in terms of national competitive advantage and evolved out of national level industrial policies. Localized

cluster strategies appear to be more prevalent in a larger number of countries. Within Western Europe, there are three different ways in which local competitive advantage has been defined within cluster policy, as presented in the matrix in the paper's introduction. Each describes a distinct set of relationships between national and sub-national governance levels: centralized cluster policy; decentralized cluster policy; and interactive cluster policy. With respect to *centralized* cluster policy, both local competitive advantage and policy tend to be set at national level: in this context, it is worthwhile reviewing the examples of France and Norway in developing a cluster policy, with particular attention to the policy area in which the cluster concept has been adopted.

France

Traditionally, France has had a strong centralized industrial policy, distinguished by a dirigiste attitude to supporting technological development in industry. Policy interventions tended to take the form of supporting nationalized companies in industries whose technological significance was viewed as part of the national interest (such as aviation and aeronautics), employing a mixture of financial subsidy to large-scale projects (set at relatively high levels), market monopolies and support for blue-sky scientific/technical projects (Dodgson and Bessant 1996). Policy was dominated by considerations of national competitive advantage and a spatial dimension was not regarded as a major source of sectoral competitiveness. However, this has been counterbalanced by strong spatial considerations: as well as promoting advantage at a national level, policy has also been used to reduce the wide economic disparities between the Île de France and other regions by encouraging, if not actively directing, the sources of French industrial competitiveness to locate to different parts of the country. This regionalization of industrial policy should be seen as a way of redistributing the components of national competitive advantage rather than a national effort to take advantage of local competitive advantage. This was particularly apparent in the policy of locating technology and science parks in regions as well in the establishment of a network of Regional Centres for Innovation and Technology Transfer to facilitate technology transfer to locally-based SMEs (Hilpert and Ruffieux 1991).

Nevertheless, changes in the way in which local competitive advantage has been addressed have come less from industrial policy in recent years, but spatial policy (that is – in the case of France - policy aimed at reducing spatial economic disparities). As with industrial policy, the highly centralized governing system has historically meant that the framework for – and in many respects, the measures in – spatial policy have been largely fixed at national level through DATAR and other central government ministries (Wishlade 1996). The growing use of the cluster concept in French spatial policy has seen an increased national interest in policies which focus on local competitive advantage. As a first step, in 1999, DATAR funded a nationwide cluster mapping exercise, identifying localized sources of sectoral growth in terms of *systèmes productifs localisés* (SPLs), or 'local production systems', existing at very local levels in France and involving mainly small firms in craft-based industries (Josserand 2000). This was followed by a limited programme of national support of SPL projects. The awarded projects are highly localized, often inspired outside of the public sector by chambers of commerce, and targeting specific sectoral niches.

Norway

As in France, a strong centralized tradition exists within Norwegian industrial and spatial development, but with a different set of relationships between the national and sub-national governance levels (Halvorsen 1991). The sub-national level has historically had considerable administrative and political strength, as extensive planning powers have been delegated to the *fylke* (or county) level of government and the principle of regional equality in standard of living has been a strong element of Norwegian government policy. This represents an informal 'pact' between national and sub-national governance levels, as local economic development has long been a cornerstone of overall national economic planning. In a sense, it is an approach that regards national competitive advantage in strongly local terms, as balanced regional development is regarded as essential for overall national growth - not just for equity reasons, but out of concern that to do otherwise might exacerbate peripherality, economic underdevelopment and outmigration in some regions (Mønnesland 1994).

The importance of regional considerations has been apparent in national innovation and technology policy. This has been particularly clear in the last decade, when the Norwegian government set up a number of policies supporting both regional technology transfer and the embedding of key technological expertises at regional level. For example, industry-business collaboration at local levels has been promoted through the RUSH programme (and its successor, REGINN) and the NT programme, which is restricted to the northern, most peripheral part of the country (Asheim and Isaksen 1997). However, as in France, the cluster concept seems to have had the most explicit influence in spatial rather than industrial policy. An active approach towards clusters has been a very recent development: while cluster studies have been commissioned over the past decade, it is only this year that it has been openly discussed in policy terms. The Ministry of Local Government and Regional Development's recent White Paper discussed a shift towards supporting local competitive advantage through policy assistance to local clusters. A large-scale analysis of Norwegian clusters at the national level is underway, with a view to introducing new cluster-specific measures next year. Hence, while cluster policy is being discussed in the context of supporting regional development, it is being driven at a national level, acting in a sense on behalf of the regions. Indeed, the Norwegian example can be regarded as a country which has conceived of national and local competitive advantage as closely linked, and consequently in need of coordination at the national level.

Decentralized cluster policy

Typically in countries noted for strong regional governance and active local awareness of distinct regional identities, cluster policy has emerged at sub-national levels without significant national coordination. In this context, cluster policy is part of longer processes of decentralization in economic development policy-making. In large part, what this shows is how the language and ideas of cluster policy could be quickly adapted to existing policy approaches at regional level. This can be seen in how cluster policy has been expressed in the examples of Austria and Italy.

Austria

Cluster policy has been restricted to regional level in Austria. As is also the case in Italy, this is partly the outcome of the long-standing policy divisions between governance levels in Austria as the *Land* had retained the primary responsibility for economic development policy-making. While the central government may provide much of the financing for business development at sub-national level, the various Departments of Economic Development in the *Länder* have the major responsibility for developing local industrial and innovation policy. Austria is a federal state with strong traditions of decision-making by consensus at different governance levels (Downes, 2000). In strategy terms, the nine *Länder* have individual regional development plans, produced and implemented separately by them and aimed at economic development in a self-contained area. In addition, the majority of *Länder* now have regional development agencies with specific spatial responsibilities.

In the *Land* of Styria, autonomous policy-making has taken the form of an explicit cluster strategy (Tödtling and Sedlacek 1997). This has formed around the *Land*-driven Technology Policy Concept, an innovation strategy largely developed around support for identifiable regional clusters (which in Styria include 'low-tech' industries such as wood/paper as well as more complex production sectors such as automotives). Principally intended to foster a 'technology policy network' among the main organizations involved in technology promotion/development, the strategy is based around a series of initiatives involving cooperation between different agencies, including federal level ministries, local government, research institutes, capital providers and 'social partners' (such as union representatives). Focused on local clusters, the strategy integrates existing federal and regional measures, grouping them under several headings: those supporting cooperation capacity, 'absorption and diffusion' measures, and training and quality standards policies.

Italy

Italy presents perhaps the most studied model of a country where local competitive advantage has been pre-eminent. The phenomenon of the Italian industrial districts has not only been a major subject of research, but has been critical in crystallizing new concepts of regional economic development which influenced cluster theory, particularly

SME networking. In dissecting the patchwork of local competitive advantages that make up northern Italy, numerous studies have been conducted on the sources of industrial district growth, highlighting not just the local economic factors, but sociological (eg. the role of families in business), historical (eg. long-standing crafts traditions) and cultural (eg. the impact of the values of the ruling political parties) ones as well (eg. Cossentino, Pyke and Sengenberger 1996). The development of Italian industrial districts is too varied and complex a process to consider here – what is important to note is that it is widely acknowledged that public policy has not been critical in developing local competitive advantage (eg. Balestri 2000). However, where policy has been significant, it has been largely confined to local actions designed to reinforce existing local competitiveness. Indeed, cluster policy has tended to be the prerogative of municipal authorities, reflecting the highly localized nature of Italian district clusters and distinguished by a 'bottom-up' system favouring the promotion and reinforcement of collective learning, the enhancement of the existing technological capabilities of firms and the development of 'shared service' centres to address market failures in common externalities.

Belatedly, there has been increasing activity in cluster policy by national government, but it has been less in terms of creating national competitive advantage, than in facilitating local competitive advantage. As in other European countries, an active science and technology policy has been pursued at national level with strong sectoral foci but unlike countries such as the Netherlands, it has not developed an explicit cluster dimension (Vitale and Wislade 1997). Similarly, spatial policy has not fostered a notably cluster approach, as until 1992, it was largely directed to economic development in the *Mezzogiorno* region. Cluster policy actions have only emerged at national level in response to local policy initiatives: for example, the recent passage into legislation of law 317/91, which would grant formal recognition on industrial districts and their institutions (Mistri 1999).

Interactive cluster policy

The last typology covers those countries where cluster policy has emerged through an iterative process of policy formation across different governance levels. In the two cases

below, the initiative for cluster policy has come from sub-national policy, but been mediated through national level to influence other regional/local policy efforts. Moreover, the national level has established the basic policy framework conditions which allow sub-national authorities to initiate, design and pursue individual cluster policies. Indeed, in the cases of Sweden and the UK, cluster policy developments were part of a wider regionalization of economic development powers.

Sweden

In common with other Scandinavian countries, Sweden has had a strong centralized approach to both its industrial and spatial policy. Spatial policy has been shaped by social equity considerations, but national competitive advantage considerations pervade industrial policy. However, unlike its neighbour Norway, Sweden has experienced the emergence of a strong local governance role in cluster development, occurring against a background of wider policy decentralization. This has taken place in several ways. First, there has been an increasing shift towards university-based national science and technology policy, where the relationships of the university to the local business community have been a national policy priority in line with the overall commercialization of university-based research (Brown 1998). Second, national spatial policy has moved recently towards a greater use of 'regional cooperation agreements'. Initiated last year, the agreements have been undertaken by regionally-based County Administrative Boards as strategies laying out the priorities for public policy expenditure in each region. Effectively, these have become medium-term regional economic strategies. The government wants these agreements to foster greater interaction between different policy areas at regional level so that sector-specific central government expenditure can maximize regional growth and prosperity.

The two trends have both reinforced local competitive advantage and encouraged local authorities to take advantage of it. In the case of one region – East Sweden – this has led to the emergence of a fully-fledged cluster development perspective. The East Sweden cluster policy developed out of initial and widespread local authority agreement on a series of cluster mapping exercises in 1999. As well as identifying local clusters, these studies highlighted the role of the local university and science park in catalyzing growth

in the region's information/communications technology and software clusters. Both the clusters and the factors supporting them have been given explicit focus in the East Sweden regional growth agreement. While the agreement contained no new measures, it has provided strategic coordination of existing policies and set aside financial resources for developing cluster policy in target sectors.

This cluster approach has not been adopted widespread yet in Sweden, but it has increased interest in the cluster concept at national level, especially in the main Swedish industrial development body, NUTEK. This year, NUTEK has initiated cluster policy workshops involving representatives of all regions. It is also likely to lead to strong national encouragement for a cluster emphasis in the next round of regional growth agreements. In combination, these activities describe a kind of policy loop, in which the regionalization of certain activities by the national level – particularly in the policy towards universities and the regional growth agreements – has induced new policy ideas at a regional level, which in turn have influenced the national level.

UK

The autonomous development of local competitive advantage at sub-national level has long characterized the governance structure of the UK (Evans and Harding 1997). Over the past four decades, there has been considerable decentralization of economic development powers to territorial agencies in Wales, Scotland and Northern Ireland. The territorial agencies have historically also been active in forming economic development strategies for their regions, involving not only the combination of a range of policy areas under common objectives, but the independent identification of these region-specific industrial and wider economic goals in the first place. In light of this tradition of sub-national policy-making, it is not surprising that cluster policy in the UK was developed first in these areas.

The policies took different forms in the different territories of Wales and Scotland. In *Wales*, 'proto-cluster' themes were apparent in the supplier development programmes of the 1980s (Cooke and Morgan 1998). Following an EU-funded RITTS and Regional Technology Plan for the region – which undertook pilot audits of Wales' 'innovation

capacity – a range of measures were introduced which focused on SMEs, such as the 'Source Wales' programme, targeting groups of indigenous suppliers in FDI-dominated sectors such as automotives and consumer electronics. In *Scotland*, a more self-consciously cluster-based approach was undertaken in the mid-1990s (Danson and Whittam 1998). Following a comprehensive cluster mapping exercise, there was prolonged internal debate over the merits of the model within Scottish Enterprise, which ultimately led to the development of an explicit cluster strategy. The strategy identified four pilot sectors within the Scottish economy for cluster policy intervention, and has been supplemented by a series of action plans for each sector.

To an extent, these sub-national developments took place in parallel with similar changes in national industrial policy (Raines 1997). Although an interventionist stance on industrial policy had declined during the Conservative governments of 1979 to 1997, renewed attention on focusing on key sectors and the sources of their competitiveness could be seen in a number of policy developments. The most substantial of these was the Technology Foresight programme, based on the use of widely-drawn consultative panels to assess trends and commercial opportunities in a series of key technology areas. A more active industrial policy approach to cluster development arose with the election of the Labour government. The cluster concept was flagged in the 1998 Competitiveness White Paper, which was followed by a pilot cluster study of national competitive advantage in biotechnology. This in turn has led to the launch of a national cluster mapping exercise, administered by the national level but involving regional consultation in identifying local competitive advantages.

However, as in other countries, national interest in cluster policy has emerged less from industrial than spatial policy. Recent changes to the governance structure of the UK – with institutional devolution in Wales, Scotland and Northern Ireland and the creation of RDAs in England – have taken place alongside a more active promotion of the cluster concept by national government. Here, as in Sweden, the national level has been interested in applying the experience of the territorial agencies in cluster-related policies – notably Scotland – to the revised sub-national governance structure of the English regions (if only – at present – tentatively). Hence, in their strategies listing sectoral priorities for spending their national-based budgets at regional level (which are not

dissimilar to the regional growth agreements in Sweden), the new RDAs have been encouraged centrally to identify clusters within their newly-defined territories and develop measures to support them. The national Department of Trade and Industry has also provided significant financial grants to each of the RDAs for projects to develop locally-based clusters. The cluster concept has been a useful corollary to the recent devolution efforts: not only has it helped to give a simple (and standardized) focus to the strategy functions of the new RDAs, but overall, it has been recognized as a way of maximizing the limited development resources available to them.

Whose competitive advantage?

The case studies show that the use of the basket of spatial and industrial development ideas associated with cluster theory has been instrumental in integrating different policy areas and governance levels. Reviewing the case studies as a whole, there are several relevant points to note. First, cluster policy seems to have been more important in promoting local rather than national competitive advantage as an objective of policy. The result has been a tendency for national competitive advantage increasingly to be viewed in some countries as a patchwork of local competitive advantages. For example, it can be seen in the national level's assumption of the task of cluster mapping exercises (notable in the cases of Norway, Sweden and the UK here), almost universally the first step in developing a cluster policy approach: in a sense, defining local competitive advantage and 'authorizing' the spatial scale at which competitiveness should be considered. In some respects, this can be viewed as a reversal of Porter's original ideas, diminishing the importance of national-level factors in industrial competitiveness, or at least suggesting that the factors on which policy operates most effectively tend to occur at sub-national rather than national levels. At least in Europe, it is only geographically compact countries such as Denmark and the Netherlands which have maintained a distinctively national competitive advantage approach towards cluster development.

More significant differences between countries are apparent in the governance level at which local competitive advantage and overall cluster policy frameworks are defined. Two broad models have been identified in this paper. In *centralized* approaches, the national level of governance has the principal responsibility for identifying the targets and

instruments of cluster policy. By contrast, in the *decentralized* policy model, the national level of governance has traditionally been far weaker, so the application of cluster policy has directly grown out of existing spatial development strategies at sub-national level. Hence, policy tensions between different governance levels have tended not to arise, not just because national and local competitive advantage policies have not been actively pursued at the same time, but also because of the clear lines of policy authority in most countries. The third category discussed in the case studies – *interactive* approaches, where policy is in a state of flux through the interaction of different governance levels – provides an illuminating example of how cluster policy has helped to formalize these spheres of policy activity rather than exacerbate uncertainties and conflicts. In both Sweden and the UK, a delegation of authority between governance levels has been accompanied by a degree of policy experimentation at sub-national level. National level functions have been more important in terms of distributing (and to an extent, enforcing) policy best practice. Overall, cluster policy has not only benefited from decentralization, but partly accelerated the process: it has reinforced both local governance (through a partnership approach to policy which can solidify local policy-making identity) as well as local economic space (by defining local economic boundaries and understanding the local factors which influence them).

The second important point to note is that cluster policy has evolved more directly out of spatial than industrial policy traditions. Given the prevailing concern with local competitive advantage, this is perhaps not surprising: in combining different policy areas, cluster policy has acted as a kind of 'trojan horse' in bringing the insights of other policy areas into spatial policy. The resulting relationships between spatial and industrial policies can be summarized by cluster policy typology using the matrix from the introduction.

		Spatial scale of competitive advantage	
		National	Local
Spatial scale of governance	National	<u>National advantage policy</u> <i>Denmark, the Netherlands</i> <ul style="list-style-type: none"> • Industrial > spatial policy (though in practice, industrial policy with strong spatial elements) 	<u>Centralized cluster policy</u> <i>France, Norway</i> <ul style="list-style-type: none"> • Spatial > industrial policy
	Local		<u>Interactive cluster policy</u> <i>Sweden, the UK</i> <ul style="list-style-type: none"> • Spatial • industrial policy
			<u>Decentralized cluster policy</u> <i>Austria, Italy</i> <ul style="list-style-type: none"> • Limited policy input

On first glance, the matrix suggests that a clear pattern of industrial and spatial policy relations is not apparent: in some cases, cluster policy has proceeded from industrial policy traditions (national advantage model), in others, the reverse is true (centralized policy model). On closer analysis though, the dominance of spatial policy reveals itself:

- in the *national advantage* model, industrial and spatial policies are closely intertwined because of the compactness of national territories;
- in the *centralized* model, national level concerns with the national ramifications of uneven spatial development have prompted cluster policy experiments;
- in the *interactive* model, spatial and industrial policy have overlapped as the national level has encouraged newly-empowered local governance structures to set local industrial priorities; and
- in the *decentralized* model, neither national industrial nor spatial policy has been particularly relevant, but instead a regionalized industrial policy has been foremost in cluster development.

The latter model highlights the common thread in the different case studies: the regionalization of industrial policy (joined in some cases, by a 'sectoralization' of spatial policy). In Western Europe, this has been a long-term evolution of policy, but the cluster concept seems to have introduced a strong impetus into the process, acting not only as a tool for bringing together a range of new ideas from spatial development research but also policy instruments from different policy traditions. As such, cluster policy has

become a means of resolving – rather than exacerbating - existing tensions between different policy areas and governance structures.

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