How to institutionalize innovative clusters?  
Comparing explicit top-down and implicit bottom-up approaches

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Abstract
The cluster concept has become a popular guideline for regional policies fostering industrial competitiveness and innovativeness based on sectoral specialization and collaboration. This article discusses the issue of effective institutional forms of cluster promotion, juxtaposing two modes: Explicit cluster policies implemented top-down by regional authorities and implicit initiatives that are organized and financed bottom-up by groups of firms. Both approaches are compared from a theoretical and empirical perspective, pointing out differing patterns of effects, relative strengths and weaknesses. Realization of these differences, considered in relation to regional preconditions and objectives, may help to adequately institutionalize cluster support.

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1. Introduction
The notion of cluster, despite its lack of conceptual clarity as criticized by Martin and Sunley (2003), has gained worldwide recognition as a guideline for economic promotion policies, acknowledging the (subnational) regional level as a suitable arena for supporting industrial innovativeness (EU Commission, 2002; Keeble and Wilkinson, 2000; OECD, 1999, 2001; Sölvell et al., 2003). Some evidence seems to confirm that clustered firms tend to be more innovative than non-clustered ones (Baptista and Swann, 1998; Baptista, 2000; challenged by Martin and Sunley (2003)). There are even cluster ‘manuals’ offering practical guidance (Cluster Navigators Ltd., 2001; Rosenfeld, 2002), which, however, provide rough prescriptions rather than sound policy models on how to effectively foster spatial agglomerations of competitive, innovative sector related firms. Developing a consistent theory of practice is difficult, though, because just as the cluster concept leaves wide scope for interpretation due to its fuzzy, polycentric and hybrid nature, the same is true for cluster support (Bennworth et al., 2003; Bennworth and Henry, 2004; Enright, 2003; Martin and Sunley, 2003). But this realization should...
not prevent us from advocating an analytical view: this article suggests a conceptual categorization of cluster promotion that is meaningful for assessing effects.

Set against the vital public interest in the concept’s application, scientific debate has so far offered only partial insights in that regard. It has mainly been discussed which assets and dynamics are at the heart of successful clusters (e.g. Enright, 2003; Malmberg and Maskell, 2002; Maskell, 2001; Porter, 1990, 1998, 2000a; Steiner, 1998), and how to empirically identify, classify or ‘map’ examples (e.g. Brenner, 2004; DTI, 2001; Sternberg and Litzenberger, 2004; van der Linde, 2003; Wolfe and Gertler, 2004). Research is increasingly also exploring whether and how clustering can be intentionally supported (Benneworth et al., 2003; Lagendijk, 1999; Lorenzen, 2001; Mariussen, 2001; Newlands, 2003; Nolan, 2002; Porter, 2000b; Raines, 2002a; Rosenfeld, 2001; Sternberg, 2003; Wolfe and Gertler, 2004). Yet, the debate is marked by three major shortcomings: First, given a focus on describing, comparing and classifying official cluster policies (Boekholt and Thuriaux, 1999; EU Commission, 2002; Raines, 2000, 2001, 2002b; Roelandt and den Hertog, 1999; Roelandt et al., 2000), most scholars overlook that cluster effects emerge also from predominantly private initiatives (as noted by Benneworth et al. (2003) and Sölvell et al. (2003)), often not referring to the label (Martin and Sunley, 2003). This restricts the range of options that are discussed and neglects to debate whether public agency is actually the right way to support clustering (Formica, 2003). Second, it has been insufficiently explored how institutional forms of cluster promotion, i.e. ways of organization, governance and associated norms and cultures of interaction, influence effects, although recognizing institutions as important assets of clusters (Enright, 2003; Maskell, 2001; Nauwelaers, 2001; Wolfe and Gertler, 2004) and of regional innovation support (Howells, 1999). Third, the crucial task of evaluating impacts of cluster support, discerning strategies that achieve the best results depending on preconditions, has hardly been addressed due to the intricate methodological complexities involved (Aneis Diez, 2001; Learmonth et al., 2003; Raines, 2002c; Sölvell et al., 2003). Thus, theorizing cluster promotion is a contested field marked by a ‘striking lack of consensus over how clusters are started and to what extent their emergence can be set in motion by conscious design or policy interventions’ (Wolfe and Gertler, 2004, p. 1073).

This article takes up the three issues by discussing implications of different institutional modes of cluster promotion for innovation oriented regional development, based on theoretical and empirically informed considerations. Leaving the debate on the cluster notion to others, we focus on the topic of deliberate support, assuming that clusters offer promising options to regionalize innovation promotion that deserve backup. We first point out major common features of such strategies and then suggest a framework of categorization according to institutional features. In the main part two contrasting modes of institutionalization are compared regarding differing patterns of effects: Explicit cluster policies established top-down by regional governments and initiatives which only implicitly refer to the cluster idea and are governed bottom-up by private companies. Arguments are supported by the authors’ own current empirical investigation of two distinct cases of cluster promotion concerning the same sector group: The publicly established Automotive Cluster (AC) Styria initiative, Austria, and the private industry association car/competence center automotive region Aachen/Euregio Maas-Rhein e.V., Germany. Important questions are: In which respects do both approaches, in principle, differ, and what are the consequences for the realization of cluster advantages? Which of the two ‘philosophies’ of institutionalization promises to show better results depending on regional preconditions? In conclusion, recommendations for the effective promotion of regional innovative clusters are derived.

2. What is (regional) cluster promotion?

In order to define cluster promotion we need to briefly address major features of the cluster notion, as the latter sets the goals targeted by the former. A ‘constant and reiterative process of mutual re-definition’ (Raines, 2002a, p. 21), however, renders the relationship of cluster concept and practical application a moving target. We conceive a cluster as a regional agglomeration of sector or value chain related firms and other organizations (like universities, R&D centers, public agencies) which derive economic advantages from co-location and collaboration (a common denominator of various definitions; see Martin and Sunley,
Potential benefits of increased competitiveness and innovativeness emerge, first, from externalities of agglomeration and, respectively, localization economies which offer sector related firms easy access to collective resources, such as specialized labor markets and infrastructure, and provide a stimulating mix of competition and collaboration (identified decades ago by Marshall and others and recently emphasized by Enright, 1998, Malmberg and Maskell, 2002; and Porter, 1990, 1998, 2000a}). Second, clusters favor systemic dynamics of learning and knowledge creation based on socially embedded vertical and horizontal linkages of co-locating firms and their interaction with education/R&D and other organizations nearby (Lagendijk, 2000; Malmberg and Maskell, 2002; Maskell, 2001; Steiner, 1998; Wolfe and Gertler, 2004). Clusters thus encompass material elements, like support infrastructure, as well as immaterial aspects enabling collective innovativeness (Steiner and Hartmann, 2001). Promotion therefore needs to cater to quite diverse requirements which calls for an integrated approach (Nauwelaers, 2001; Raines, 2002a).

Against this backdrop we define cluster promotion (similar to cluster initiative; Sölvell et al., 2003) as any coordinated set of measures, in whatever constellation and style of implementation, that supports the development of a regional industrial agglomeration towards ideal features of a cluster in terms of a specialized, competitive, collaborative and collectively innovative set of sector related industries, research/education and other organizations. This conception corresponds to the broad understanding of cluster organizations as public or private formal institutions that take over responsibilities to foster cluster activities (Lagendijk, 2000; Benneworth et al., 2003). Accordingly, cluster promotion includes all designated policy schemes officially drawing on the cluster idea and imposed upon (potential) cluster members by government bodies, termed \textit{explicit top-down} initiatives here. They are launched, financed and directed by public agencies, with Austria’s cluster managements providing good examples (Bergman and Lehner, 1998a, 1998b; Steiner and Hartmann, 1998; Tödtling, 2001). At the other end of the spectrum, cluster promotion also embraces private coordinated efforts that are mainly instigated, funded and governed by companies. Addressing the same set of objectives they hardly consciously refer to the cluster notion, hence named \textit{implicit bottom-up} initiatives.

Examples are regional thematic industry associations or competence networks, quite common, for instance, in Germany (VDI Technologiezentrum GmbH, 2004). These institutional types of cluster promotion are further discussed and analyzed below.

In practice, cluster promotion substantially varies across regions and sectors, necessarily taking account of path-dependent, place- and industry-specific conditions, economic history and structure, institutional and infrastructure endowments, as well as national and regional (political) cultures (EU Commission, 2002, OECD, 1999, 2001; Raines, 2000a, 2002a; Sölvell et al., 2003). Measures may also differ according to cluster life cycle phases (Ardeshir and Feldman, 1996; Bruch-Krumbein and Hochmuth, 2000). Despite such heterogeneities, a standard combination of features allows to subsume various approaches under the common label of cluster promotion (summarized from Boekholt and Thuriaux, 1999; Enright, 2003; EU Commission, 2002; Martin and Sunley, 2003; Raines, 2001, 2002a; Sölvell et al., 2003):

- Strategies are designed to build upon existing potential in terms of some regional concentration of firms, other organizations and linkages in target sectors. Respective measures mainly try to unfold, activate and strengthen pre-existing proto-clusters.
- Instead of applying ‘hard’ measures of concrete financial support for individual firms, the focus is set on ‘soft’ activities of community building, consulting and moderation that address entire groups of actors, aiming to improve the overall efficiency of regional systemic interaction in target sectors (Nauwelaers, 2001, talks of a shift from ‘hardware’ to...
over ‘software’ to ‘orgware’). This requires participative approaches involving various public and private actors and calls for a new type of regional economic promotion officer, coordinator or ‘cluster manager’ who is capable to co-ordinate support across organizational boundaries and to integrate various instruments and interests.

• Activities facilitate the firms’ access to previously insufficiently used public and private assets in the region that support competitiveness and innovativeness. This relates to fostering information exchanges and collaboration between regional firms (especially SMEs) and including other organizations, expected to entail the pooling of resources, quality improvements and the creation of collective solutions and identities. Furthermore, contacts of firms to regional universities and R&D centers are enhanced in order to serve as channels for technology transfer, the development of product and process innovations, the recruitment of highly qualified staff and upgrading of staff qualifications.

• The specific industrial strengths are actively marketed inside and outside the region in order to improve the visibility and development framework of firms.

• New industrial investors that may complete regional value chains are attracted to the locality or raised as start-ups in order to strengthen the systemic potential of the cluster.

There is often a certain sequence of activities, a ‘cluster policy cycle’ (Gilsing, 2001), with a diagnostic phase followed by a prescriptive and an operational one (Raines, 2002b). The last phase may again consist of a first sub phase focusing on the build-up of contacts and common sense and the reduction of interaction barriers, and a second one when concrete collaboration projects are initiated on these foundations (EU Commission, 2002; OECD, 1999, 2001).

3. Categorizing institutional modes of cluster promotion

The list of systemic tasks and objectives of cluster promotion raises the question which type of initiative achieves the best results under given regional and sector conditions. Surprisingly, research has rarely taken up the issue how to adequately assess the outcomes of intentional cluster support (Angeles Diez, 2001; Learmonth et al., 2003; Raines, 2002c), which contrasts to the attention devoted to evaluating network programs (Rosenfeld, 2001). This gap is even more striking when seen against the substantial effort invested into recording, classifying and analyzing cluster initiatives, their rationales and elements. Among numerous case studies and surveys, the projects investigating 34 initiatives in 17 European countries (EU Commission, 2002) and 238 initiatives worldwide (out of 509 contacted ones; Solvell et al., 2003) are particularly noteworthy. Although these surveys have tried to capture outcomes, too, the applied methods – asking cluster coordinators about the success of their own activities or looking at aggregate indicators of industrial development – have neither produced reliable objective information on the actual effects of cluster promotion apart from other influencing factors nor allowed to relate certain effects to types of cluster promotion.

One major reason for the ‘blind spot’ in research on the effectiveness of cluster strategies is the great diversity of approaches, measure combinations and sector-, place- and time-specific contexts which hampers to find aspects of distinction that matter for effects. Input quantities in terms of the number of organizations included in the cluster and the size of the promotion budget are hardly relevant, ‘scale is not necessarily the most important determinant of [cluster] policy’ (Raines, 2001, p. 11), since outweighed by qualitative aspects. For detecting features that are actually at the heart of cluster advantages, evaluation should accentuate systemic qualities (Angeles Diez, 2001; Raines, 2002c).

Addressing this issue we suggest a categorization of cluster promotion based on institutional modes, assuming that this has a bearing on systemic effects. We therefore focus on different ways to initiate, organize and govern cluster promotion which significantly affects rules of interaction, norms, routines and cultures of collaboration and collective learning, in short, major qualities of innovative clusters (Howells, 1999; Malmberg and Maskell, 2002; Maskell, 2001; Nauwelaers, 2001; Wolfe and Gertler, 2004). Institutional differences in particular relate to different kinds of actors leading a cluster initiative which entails other distinctions in
cluster procedures. In this regard, the public-private dichotomy plays a major role (Formica, 2003; Guinet, 2003), as elaborated below.

There would be other options for classifying system types of cluster promotion, for instance, based on different cluster models guiding a strategy. Gordon and McCann (2000) distinguish a 'pure agglomerations economies model' relying on localization externalities, an 'industrial complex model' based on the formation of local production systems, and a 'social network model' that emphasizes information exchange and collective learning. Bockholt and Thuriaux (1999) identify 'national advantage', 'inter-firm networking', 'regional development' and 'industry-research' cluster policies. Raines (2002b) differentiates approaches that focus on specific linkages and projects, on improving common resources, and on promoting community building. Initiatives may support existing clusters, businesses that already collaborate, or connect non-cooperating firms (Gilsing, 2001; Benneworth et al., 2003). There are endogenously and exogenously driven innovative regions (Asheim and Isaksen, 2002).

In practice, however, cluster promotion hardly follows a single model but usually combines several objectives (Raines, 2002b), which obstructs effect-oriented differentiations. Drawing on institutional modes of cluster promotion introduces a distinction that seems to be pointed enough for allowing an empirical identification of differing implications and effects. Furthermore, the selection of underlying cluster models or goals highly depends on decisions made on the institutional level of an initiative which thus represents the superior arena where the course is set. Accordingly, taking the institutional mode as a base of distinction inherently also captures objectives and measures, in addition to other important aspects which are insufficiently included in categorizations based on cluster models, like genesis, member composition and commitment, and structures of finance and decision making.

Our approach, on the one hand, differentiates between top-down and bottom-up institutionalizations of cluster promotion. This refers to whether public or private actors, interests and money are leading drivers of a cluster strategy, affecting organizational and operational features as outlined in Section 4. Recent critics that contest the adequacy of public agency for successful cluster promotion against independent private initiative underscore the relevance of this distinction (Enright, 2003; Formica, 2003; Guinet, 2003, p. 158) even states: ‘The creation of clusters should not be a government-driven effort, but should result from market-induced and market-led initiatives’. The top-down category comprises all public initiatives and policy schemes that deliberately foster clustering, at least temporarily (co-)financed by public funds and directed by publicly dominated agencies. Most cases taken up in recent research on cluster promotion belong to that type, either emerging from national policy frameworks, like in The Netherlands, Sweden and the UK, or from regional ones, like in Austria, Belgium, Germany or Spain (see a list of examples in EU Commission, 2002, pp. 47–49; case studies in OECD, 1999, 2001; Raines, 2002b; Svolvær et al., 2003).

The second category encompasses coordinated initiatives that are primarily instigated, funded and governed bottom-up by private actors, mostly companies, as the actual agents of cluster dynamics. This highlights that cluster promotion is not limited to the policy sphere, but may also take institutional shapes emanating from the willingness and capability of self-organization of clusters, from ‘cluster governance’ in terms of intended collective actions of members to upgrade the cluster, especially for improving innovativeness (Gilsing, 2000). Regional sector or theme specific industry associations, formalized networks, interest groups or forums are main forms of organization (VDI Technologiezentrum GmbH, 2004, lists about 100 examples). Although neglected by research, bottom-up cluster promotion is far from insignificant: Out of 238 initiatives surveyed by Svolvær et al. (2003, p. 10), 27% have predominantly been initiated by industrial firms and 18% mainly base on private finance. 35% rely equally on public and private initiative, 25% on equal public and private funding.

As these figures indicate, however, the line between top-down and bottom-up cluster institutions may not be drawn unambiguously. Cluster promotion, due to its systemic, participative nature, generally requires and implies greater involvement of private industrial actors (‘clusterpreneurs’) also in activating, designing and implementing public efforts (EU Commission, 2002; Lorenzen, 2001; Raines, 2001, 2002a; Roelandt et al., 2000; Rosenfeld, 2003), although firms rarely substantially fund official cluster programs (Nauwelaers, 2001). Vice versa, private industrial initiatives are hardly implemented without some encouragement,
small participation or, at least, benevolent acceptance by public actors. Even when clusters evolve without any direct public intervention, indirect effects of the wider national or regional policy framework play a role concerning, for instance, infrastructure or sector oriented support (Sölvell et al., 2003; Wolfe and Gertler, 2004). This conflict of distinction may be solved when applying the criterion which party, public or private, actually dominates the overall operation and institutional qualities of the cluster initiative, no matter if dominance is expressed in terms of initiative, finance, decision power and/or the implementation of promotion measures.

To avoid misunderstanding of the top-down/bottom-up dichotomy it must be noted that our distinction does not relate to interacting hierarchy levels of government in innovation promotion, like national to regional (Howells, 1999). Instead, we juxtapose activities directed by public agencies (no matter of which scale of responsibility), rather external to the subjects of clustering, and those directly determined and controlled internally by the mostly private cluster members. Our conception also deviates from the idea of top-down and bottom-up cluster policies introduced by Roelandt et al. (2000). For them, the first term signifies government schemes that set national priorities and future visions and decide on the inclusion of actors, whereas the second addresses the public fostering of dynamic market functioning and removal of imperfections. Still, our polarization has some taste of the classical 'state versus market' argument in setting government-against industry-driven approaches (similar to Formica, 2003). Yet, bottom-up cluster promotion should not be equaled with pure market forces unfolding effect. In some sense both bottom-up and top-down initiatives address perceived market failures regarding the development of supportive cluster structures, in each case triggering an active implementation of promotion measures. How action is organized, however, differs between modes close to market mechanisms or relying on the state.

On the other hand, our approach introduces a second dimension of categorization distinguishing explicit and implicit cluster promotion, also due to institutional implications. The first category includes initiatives which officially use the cluster label in their name and/or expressly rely on the concept, however it may be defined. Porter’s (1990, 1998) ideas often serve as a guideline (EU Commission, 2002; Raines, 2002b; Sölvell et al., 2003). Consequently, a certain model and set of expectations may be associated with the strategy, which affects its institutional set-up and implemented activities, as outlined in Section 4. Connecting this dimension of distinction to the first one, the cluster notion has become fashionable especially among public actors, motivating many policy schemes (Martin and Sunley, 2003; OECD, 1999, 2001; Raines, 2002a), but rarely private initiatives (Sölvell et al., 2003). The category of implicit cluster promotion, in contrast, comprises initiatives that follow cluster related objectives without officially or consciously drawing on the concept and model. They are guided just by pragmatic considerations or use other terms of reference, like competence networks (VDI Technologiezentrum GmbH, 2004). Private regional industry initiatives, more than public agencies, tend towards that type. Overall, this categorization reminds of Feser’s (1998) differentiation of cluster-specified and cluster-informed policies, yet addresses an even wider scope.

It points at the fact that implementing measures that support cluster advantages does not necessarily require to use the concept or know it, in line with the statement by Martin and Sunley (2003, p. 24): ‘In many cases it appears that the cluster framework is either unnecessary or even constraining’. Difficulties of distinction, however, also mark the implicit versus explicit categorization. From the outside most initiatives do not show whether they actually draw on the cluster idea or not; a closer look is required. Often cluster coordinators themselves may not be able to tell whether their activities rely on the concept or not, and in which respects. Anyway, even many official cluster policies are not really following the concept which raises the question whether a reliance on the cluster notion makes a difference at all. An investigation of several European cases by Raines (2000, 2001, 2002b) and his project team suggests that the influence of the cluster concept on the design and delivery of regional economic promotion policies is minor compared to that of general institutional and strategic environments and pre-existing policy trajectories (see also Benneworth et al., 2003; Nauwelaers, 2001). Yet, the conceptual orientation tends to lead to better integration of different topics and to more focused and systemic approaches, creates a common terminology and reference points. This argument helps to keep up the suggested distinction.
Eventually, the suggested institutional categories of cluster promotion can be graphically depicted in a coordinate system (Fig. 1). Each cluster scheme is regarded as a specific combination of the two categorical dimensions, with the one axis serving to position examples according to their bottom-up or top-down nature and the other one signifying their implicit or explicit quality. The sliding scales allow to differentiate grades of attribution (taking into account that in particular top-down cases are often marked by major bottom-up influences) and to indicate directions of institutional change which marks the evolution of many cluster initiatives (Gilsing, 2001; Raines, 2002b; Sölvell et al., 2003). The four quadrants each comprise approaches that belong to a certain institutional category: In the upper left section explicit top-down modes of cluster promotion are positioned, like all public official cluster schemes. The lower right section is the place for implicit bottom-up initiatives of private industrial actors that regionally support their own sector group without referring to the cluster notion. These two antagonistic variants appear to be the most common forms of cluster promotion and are assumed to bear interesting differences in implications, which is why they are analyzed later on. Fig. 1 names corresponding examples (theme of automotive) and positions them in the systemic framework (categorizing the Austrian ACStyria case as being quite explicit, but evolving from top-down towards bottom-up, and car e.V., Germany, as being clearly implicit and bottom-up). There are two more categories of cluster promotion which are not further regarded here. Implicit top-down cases are public schemes of regional sector support which do not expressively
relate to the cluster concept (exemplified by a German biotechnology example). Explicit bottom-up promotion in terms of a pointed ‘let’s cluster’ strategy employed by private companies drawing on the theoretical base hardly exists in reality (taking up the interesting question why is beyond the scope of this article).

4. How explicit top-down and implicit bottom-up modes of cluster promotion differ

We have categorized cluster promotion in order to point out implications for regional effects. The most common antagonistic types of explicit top-down institutions (in short ETs) and implicit bottom-up ones (IBs) are now subject to further analysis. Earlier findings have already indicated that the public–private distinction affects outcomes of cluster support: ‘Emergence from industry-led projects creates problems with government commitment, and vice-versa, government-led projects tend to stifle commitment from industry once the CI [cluster initiative] is set up’ (Sölvell et al., 2003, p. 12). Elaborating on this issue, central questions are in which regard ETs and IBs create distinct institutional settings that influence cluster dynamics, and how to empirically capture crucial differences.

For answering these questions theoretical considerations are combined with some empirical underpinnings. As influences of institutional forms of cluster promotion on patterns of effects have hardly been analyzed in detail before, evidence mainly comes from our own current field work. In order to discern institutional differences irrespective of sector specificities, our investigations cover two cluster initiatives that target the same sector group, but belong to the two separate categories of cluster promotion (Fig. 1): ACS Styria, Austria, as an ET (publicly implemented and funded 1996–1999, but then turned into a privately financed, yet still publicly controlled limited company/GmbH), and car/competence center automotive region Aachen/Euregio Maas-Rhein e.V., Germany, as an IB (established 2001). Both initiatives operate in a comparable setting regarding population size of the target region (1.2 Mio.) and its major city (240,000), a good research and education infrastructure, and some similarities of economic history and restructuring problems.

The theme of automotive technology and supplies is but one of a wide range of fields addressed by cluster strategies worldwide. Yet, it offers particularly good potential for cluster advantages due to increasing competitive pressure requiring collective innovation and qualification, extended vertical disintegration and rising importance of systemic collaboration between co-locating knowledge intensive service providers and producers (Hudson and Schamp, 1995; Schamp et al., 2004). Whether our findings comply with institutional cluster dynamics in other sectors, like information or medical technology, must be left to other in depth investigations.

Both our case studies include five to six expert interviews (cluster coordinators, representatives of research/education and regional economic promotion organizations) and semi-standardized personal interviews with CEOs/executives of 17–20 selected cluster member firms, which provide qualitative and quantitative information on organizational features and actually perceived effects on individual companies, the cluster collective, and the regional economy (in line with multi-level and pluralistic methods suggested by Angeles Deez (2001) and Rames (2002c). Field work on car e.V. has been completed in spring and summer 2004 while investigation of ACS Styria has started only recently. The latter case, however, has often been documented in the literature (e.g. Hartmann, 2002; SFG, 2001; Sölvell et al., 2003, pp. 66–69; Tödtling, 2001; Tödtling and Trippl, 2004).

As discussed in the following sections, the compared ET and IB modes of cluster promotion, in principle, bear different implications with regard to four main domains: Institutional genesis and composition of the actor group, structures of finance and decision making, preferred target areas and support measures, and, consequently, effects of increased innovativeness and competitiveness. Each institutional type can be associated with a specific pattern of qualities or relative advantages regarding those domains.4

4 Sölvell et al. (2003, p. 34) include initiatives in over 40 technology areas, with automotive on rank six according to frequency, behind information/communication, medical technology and biopharmaceuticals.
Table 1  Qualities of explicit top-down (ET) and implicit bottom-up (IB) cluster promotion regarding institutional genesis and composition of the actor group

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Qualities of ETs (e.g. official cluster policies)</th>
<th>Qualities of IBs (e.g. regional thematic associations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genesis of the initiative</td>
<td>Emergence from wider public interest and policy objectives regarding regional development, focused by cluster idea, better analytical and conceptual base; may be started by just one initiator/key person of the top political level, formal set-up integrated into regional administrative structures</td>
<td>Emergence from perceived real industrial needs of a group of firms to start a targeted initiative, apart from (restricting) theoretical concepts and politics; combines a group of first actors, formal set-up on a private basis independent of administrative structures</td>
</tr>
<tr>
<td>Composition of the actor group</td>
<td>Inclusion of a wide range of firms and other organizations right from the beginning according to defined target groups, inviting also previously isolated actors</td>
<td>Selective inclusion of a smaller range of ‘useful’ actors based on pre-existing contacts, creating a group of organizations already linked to each other</td>
</tr>
<tr>
<td>Spatial reach, mode of regionalization</td>
<td>Membership may be shaped according to administrative boundaries because of public funding regulations, but also options of flexibility and border-crossing inclusion</td>
<td>Membership can flexibly be shaped according to suitable functional (border-crossing) reach, not bound to administrative regions; logic of inclusion prefers functional aspects to formal location</td>
</tr>
<tr>
<td>Sectoral reach</td>
<td>Determination of sector(s) to get included into and be eligible for promotion, incorporated in the brand name; conscious sectoral inclusion strategy, bearing a certain budget in mind</td>
<td>Flexible evolution of sectoral reach and inclusion strategies; membership develops according to common interests and themes attractive to several sectors; no financial constraints to sector inclusion</td>
</tr>
</tbody>
</table>

Source: depiction by the authors.

4.1. Institutional genesis and composition of the actor group

Right from the start the juxtaposed modes of cluster promotion provide a different setting for the entire effort. Relevant points appear to be the genesis of the initiative, composition of included organizations, spatial reach and mode of regionalization, and sectoral reach regarding the selection of included industries. Principle advantages of both institutional types are summarized in Table 1, with the following paragraphs adding explanations and evidence.

Regarding genesis, ETs mainly emerge from the political sphere, yet often with involvement of some private firms, like in the ACStyria case where especially two large corporations have fundamentally encouraged public efforts (SFG, 2001; Tödtling, 2001; Tödtling and Tripl, 2004). The ETs’ advantage of targeting regional development as a whole, against a more narrow, yet demand-driven base of intent of IBs, however, may go in line with higher influences of election- or party-related interests and an urge to follow internationally ‘fashionable’ concepts for the sake of policy marketing effects, no matter if there really is a need for cluster support. This may obstruct adequate functioning and incentive structure of a scheme (as outlined by Formica (2003)). Possibly outweighing that disadvantage, ETs draw on a stronger analytical base and usually emerge from a mutually stimulating dialogue of policy-makers with specialized consultants and academists (Benneworth et al., 2003; Learmonth et al., 2003). Accordingly, the ACStyria initiative has been thoroughly prepared and accompanied by several professionally conducted in-depths investigations of various cluster related features of the target community (Adametz et al., 2000; SFG, 2001; Hartmann, 2002).

Although IBs may suffer from a rather spontaneous, less well-reflected start, top-down large-scale statistical efforts do not always identify real cluster potential, as people’s intuition does. The automotive strengths of the Aachen region on which car e.V. is based, for instance, could not be traced by an independent survey searching for cluster potential in motor vehicle production due to an approach just looking at manufacturing (Sternberg and Litzenberger, 2004, p. 780f). The differences of ETs and IBs regarding the number
of initiators and the formal set-up (Table 1) influence relations of cluster coordinators and member firms, as outlined below.

Institutional differences clearly mark the evolution of cluster memberships and actor composition (Table 1). The ETs’ mission to address a wide segment of the regional economy reflects in larger numbers of members, in the case of ACStyria about 120 at the end of the public funding period 1999 and currently close to 190, against just 68 in the case of car e.V. That indicates a more utilitarian and ‘club’ character of IBs, whose memberships evolve through the gradual attraction of more partners that register to the initiative. But due to financial reasons they are also interested in increasing scale and welcome new entries. Memberships often evolve based on previous (weak) contacts and self-selection according to objectives of innovation and competitiveness—a good basis for important cluster effects to emerge.

Both investigated clusters include a mix of automotive service or production firms, R&D organizations and regional promotion agencies. But the IB car e.V. has relatively more knowledge-intensive technical service providers than the ET ACStyria, and it explicitly excludes large automobile assembly companies (OEMs) in order to prevent strong power asymmetries among members. The selective nature of IBs, however, contradicts to general objectives of cluster support to have a wide, yet targeted upgrading impact and ‘provide services that all firms merit access to, whether they are clustered or not’ (Enright and Flowes-Williams, 2001, p. 5). Thus, IBs may less than ETs reach actors ‘on the fringes of economic development’ (Rosenfeld, 2003, p. 366) putting ‘those that are not considered part of the “business community” [...] at a distinct disadvantage’ (Rosenfeld, 2003, p. 366).

Interesting differences between ETs and IBs, in principle, concern the determination of spatial and sectoral memberships boundaries relating to a major question raised in the discussion on cluster policies: ‘Which firms should be left out?’ How far upstream and downstream of the ‘core’ cluster activity should policies extend?’ (Martin and Sunley, 2003, p. 24). In this regard IBs can, less restricted than publicly funded ETs, develop the cluster according to the functional region depending on the engagement of actors that want to participate. The investigated automotive cases, however, do not support this hypothesis as also ACStyria, just as car e.V., has since its inception included some members located in other administrative regions, even foreign countries, due to a flexible strategy, too.

In general, however, the claim by Enright and Flowes-Williams (2001) that cluster promotion should be delivered by the governance level most closely matched to the geographical extent of the cluster may rather be fulfilled by non-political IBs than administratively bound ETs. The former may better address the functional ideal shape of a cluster that is defined ‘by the distance and time that people are willing to travel for employment and that employees and owners of companies consider reasonable for meeting and networking’, also influenced ‘by cultural identity, personal preferences, and social hierarchies’ (Rosenfeld, 2003, p. 361). Consequently, IBs are better positioned to admit major extra regional and international influences onto the cluster which supports to stay creative and innovative in a global-local context (Nauwelaers, 2003; EU Commission, 2002).

Similarly, ET policies, in contrast to more flexible IBs, tend to determine more accurately the sectoral reach of the initiative which potentially limits the range of included sectors. This could hamper synergetic potential and create risks of over-specialization (Bruch-Krumbein and Hochmuth, 2000). Consequently, IBs possess better potential than ETs to constitute complexes of interacting agents that are in line with ideal cluster features in terms of a functional entity that crosses administrative regional boundaries and official sector demarcations (Martin and Sunley, 2003), enabling ‘symbiotic interdependence based on synergism’ of dissimilar firms (Roelandt and den Hertog, 1999, p. 12).

4.2. Structures of finance and decision making

Addressing operational aspects of cluster promotion, ETs and IBs differ with respect to types of funding and routines of decision making which probably influences their effects. Major institutional features relate to the overall model of finance and organization, structures of decision making and control, and the motivation of cluster members (Table 2).

The most obvious difference between ETs and IBs is that the former rely – at least initially – predominantly on public money, the latter on private member fees. This simple distinction may have major implications.
Table 2 Qualities of explicit top-down (ET) and implicit bottom-up (IB) cluster promotion regarding structures of finance and decision making

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Qualities of ETs (e.g. official cluster policies)</th>
<th>Qualities of IBs (e.g. regional thematic associations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model of finance and organization</td>
<td>Public funding requires a well-prepared effort; possible attraction of additional external funds (e.g. EU) creates sizable budgets; stable finance for a thrust period, jeopardized by tightening public budgets; foreseeable transformation of finance from public to private model; organization based on key officials performing ‘soft’ tasks of integrated support</td>
<td>Private funds develop correlated to membership growth and provide flexible, yet volatile, finance with longer term perspective; lean budget requires efficient operation; organization based on key official(s) performing ‘soft’ tasks of integrated support</td>
</tr>
<tr>
<td>Decision making and control</td>
<td>Centrally coordinated decision making, putting activities in line with public objectives, apart from influences by most member firms; better control by public authorities regarding performance and achievements of funded activities</td>
<td>Strong direct involvement of members in decision making and planning of activities; main initiatives can actually emerge from the group of cluster firms; independence of political control</td>
</tr>
<tr>
<td>Motivation and participation of cluster members</td>
<td>High motivation of selected member firms to participate in cluster activities, but difficulties to really activate a majority of members</td>
<td>High motivation and active participation of most member firms in self-financed and conceptualized activities; strong identification with the initiative</td>
</tr>
</tbody>
</table>

Source: depiction by the authors.

Installing ETs requires a time-consuming preparation process, yet also creates a solid base for the effort, as in the ACStyria case. Here the option to attract additional external funds to the region in combination with internal investments has been widely used (e.g. from the European Regional Development Fund; EU project ACENET, SFG, 2001) and has created a sound financial base. Organizational transformation of ACStyria into a limited company and shifting from public to private finance in 1999, however, has caused some rupture (Tödtling and Tripl, 2004). A sudden drop of membership from 120 to about 40 in that year shows the negative implications, but may as well indicate a positive selection process (SFG, 2001, p. 5). Anyway, afterwards membership has risen higher than in the public funding period. The greater financial flexibility of IBs, in contrast, goes in line with the danger that members’ exit may quickly and unexpectedly reduce funds and put planned activities at risk, especially when the budget is kept lean as in the case of car e.V. The actual work organization does not differ much between ETs and IBs, at least in the investigated automotive cases, and complies with typical features of cluster promotion. The size of the coordinating team rather depends on the budget than the institutional model; yet public approaches tend towards higher volumes than private ones (Sövell et al., 2003) and bear dangers of being ‘captured by the bureaucracies that they create’ (Enright, 2003, p. 121).

Different modes of organization are associated with different structures of decision making (Table 2). The IB car e.V. is strongly influenced by its paying private members, not only the altogether eight representatives of companies and education organizations constituting the board but also many other firms that provide various inputs to activities. The lack of political supervision or control may have its positive as well as negative sides. Decision structures in ETs, in contrast, tend to leave less space for direct participation of a majority of member firms. Even among the five shareholders of the new ACStyria GmbH, the state promotion agency SFG continues to have the largest share, assisted by just the leading cluster companies. Continuous public control and the embedding of the ET scheme into overall regional political strategies, however, allow to monitor ‘from above’ whether the cluster initiative actually produces the promised (and politically marketable) achievements.

Modes of finance and decision making can be expected to also affect the motivation of actors to use...
offered services and attend cluster events (Table 2). According to our investigations, about 60–80% of the member firms of IB car e.V. quite regularly participate in cluster activities, which indicates a higher participation level than in the ET ACStyria that motivates up to 60% (statement by a lead coordinator that still needs to be verified by company interviews). Beyond this case international experience shows even lower participation rates especially of smaller firms in government support programs, ranging around just 10% (Enright, 2003, p. 120). In the Austrian case it seems like predominantly the largest industrial players of the cluster get involved. We expect IBs, rather than ETs, to create feelings of identification in relation to cluster activities, which definitely marks car e.V. ETs generally have more difficulties to raise active participation of large shares of target organizations due to ‘the atmosphere of mistrust between public and private actors that often prevails in regions’ (Nauwelaers, 2001, p. 106). There may be barriers to attendance due to feelings of remoteness, of cultural distance, of not really being concerned. As Newlands (2003, p. 530) puts it, ‘it is not obvious that shared values and norms can be purposively cultivated as opposed to developing organically’. Central objectives of cluster promotion are more difficult to achieve as cohesion between regional actors, including the cluster management, could be too weak.

4.3. Preferred target areas and support measures

ET/IB differences relate also to distinctions in constellations of actual clustering activities. This concerns issues of strategic orientation, preferences with respect to applied means of cluster support, and the variability of programs and instruments (Table 3).

As regards strategic perspectives, ETs can draw advantages from their strong link with political backgrounds, their focus on the cluster idea and a good embedding into wider programs of locality development (Learmouth et al., 2003; Solvell et al., 2003; Todtling, 2001). Accordingly, ACStyria purposely interacts with other public cluster schemes of the same region, in particular the metalworking cluster (yet without helping the latter to really take off; Todtling and Trippel, 2003). It is also linked to other public automotive initiatives in the country, forming the ‘Triple A’ Austrian Automotive Association together with cluster managements of the states of Upper Austria and Vienna. In general, ETs can be tuned to correspond to national priorities, but also often serve to constitute a region’s own industrial strategy and demonstrate independence from national policies (Benneworth and Henry, 2004). The orientation towards a conceptual ideal helps to expediently integrate different fields of promotion, like industrial, regional development, technology, and SME policies (Raines, 2002a; Benneworth

Table 3

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Qualities of ETs (e.g. official cluster policies)</th>
<th>Qualities of IBs (e.g. regional thematic associations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic orientation</td>
<td>Strong strategic focus regarding national and/or regional cluster goals; good integration into overall strategies of locality development; good connections to cluster strategies in other sectors of the same region and public initiatives of the same sector in other regions</td>
<td>Main focus on improving regional determinants of success of included firms and sectors rather than the regional economy as such; good connections to same sector industrial initiatives in other regions, but conflicts with same sector public approaches on the spot</td>
</tr>
<tr>
<td>Preferred means of cluster support</td>
<td>Broad set of measures enlarging the contact base; creating contacts that potentially entail formal co-operation; enriching of the cluster by attracting investors, supporting new firm formation and establishing infrastructure</td>
<td>Preference to effectuate functional, market-, cost- and innovation-oriented collaborations of members, rather than to proactively expand the overall regional cluster potential; support relies on strong cohesion of members</td>
</tr>
<tr>
<td>Variability of programs and instruments</td>
<td>Change of program and institutional features requires extensive preparation and coordination; more dependence on preset programmatic trajectories</td>
<td>Great programmatic and institutional flexibility and variability; instruments can be modified and new activities taken up quite independently</td>
</tr>
</tbody>
</table>

Source: depiction by the authors
et al., 2003). ETs base on a more holistic view of regional development than IBs, better complying with the ideal of balancing public and business profitability (Rosenfeld, 2003).

IBs like car e.V. prioritize to support the competitiveness of member firms by better embedding them in the regional collective, but less to strengthen the regional system as such. This egotistic perspective on company dynamics has its good sides, too, because there is less strategic fixation on just the local context and neglect of factors inside firms and outside the region, as ETs are accused for (Martin and Sunley, 2003). Vital factors of corporate development are probably more adequately addressed; firms are not misattributed as only determined by regional cluster aspects. Too much emphasis on cluster promotion in the sense of ETs may at times be detrimental as it leads to a regional lock-in situation, industrial uniformity and lack of diversity which inhibits innovation and the ability to positively react to radical technological shifts (Bruch-Krumbein and Hochmuth, 2000; Martin and Sunley, 2003).

The Aachen IB case, however, illustrates problems of incompatibility between same sector private and public cluster-related strategies. As car, by its nature, is not seen as ‘the’ official full cover automotive cluster initiative by public authorities, other efforts targeting this sector group have come up and partly compete for attention and attendance by firms. They are launched by superior political levels (VIA initiative of the state of North Rhine-Westphalia; Ache, 2002), Chambers of Commerce and Industry (Automotive Rheinland scheme), or regional actors of innovation oriented industrial promotion (implementation of the Automotive Innovation Centre Aachen). Constructive collaboration of car e.V. with these initiatives is hampered by conflicts of competence and private–public cultural barriers.

Apart from that, clustering measures implemented by ETs and IBs are to some extent quite similar as both comply with standard features of cluster promotion listed above (confirmed by Sölvell et al. (2003)). But there are distinctions regarding preferred or combined means of support because of differing contact related starting points and constellations of objectives (Table 3). IBs like car e.V. are mainly interested to intensify and effectuate functional linkages of members, whereas ETs rather engage in enlarging the contact network as such. As ACStyria shows, public cluster schemes cover a broader, more diversified portfolio of activities that also includes location marketing, labor qualification or infrastructure support (SFG, 2001; Hartmann, 2002). This can be criticized as well since public agencies may ‘saddle the cluster with expensive and ineffective support services that might be better provided by the market’ (Enright, 2003, p. 121). Yet, without doubt, ETs are generally better positioned to attract exogenous investors and foster new firm formation, fundamentally enriching the cluster’s synergetic and innovative potential (Sternberg, 2003). They can set up a regional ‘lighthouse’ infrastructure as part of their cluster activities, notably education and science organizations or technology incubators (Nolan, 2002). IBs rather leave such tasks to other agencies which is why they can operate with a smaller budget. Although hesitant to support the regional mushrooming of potential competitors of their member firms, they may actively contribute to the attraction of major customers to the locality (a visionary objective aspired by many car e.V. members). And due to the ‘club’ character and strong social cohesion of IBs, members have options of trustful mutual support hardly imaginable for ETs.

IBs seem to be advantaged when programmatic changes become necessary (Table 3). They are neither bound to the cluster concept nor to political prescriptions or restrictions of public funding. Offered services can more quickly be adapted to the changing needs of member firms as communication ways are short and response may be fast. This flexibility also applies to the institutional shape itself which can quite easily be changed when new chances come up (founding of an institutional appendix) or others vanish. ETs tend to stick to one programmatic trajectory once major decisions on cluster objectives have been stated, although ACStyria proves that constant evolution and adaptation is possible as well.

4.4. Effects of increased innovativeness and competitiveness

Eventually, summarizing over the previous three sections, collected arguments of institutional distinction provide reasons to expect that ETs and IBs also differ in yielding major clustering effects (Table 4). Implications may relate to the commonly claimed cluster advantages of agglomeration externalities and
Table 4
Effect related differences of explicit top-down (ET) and implicit bottom-up (IB) cluster promotion

<table>
<thead>
<tr>
<th>Support of</th>
<th>Effects of ETs (e.g. official cluster policies)</th>
<th>Effects of IBs (e.g. regional thematic associations)</th>
</tr>
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<tbody>
<tr>
<td>Agglomeration/localization</td>
<td>Benefits of ETs include economic agglomeration/localization economies, e.g., creating infrastructure, labor qualification, and</td>
<td>Benefits of IBs include regional thematic associations, which can enrich potential by attracting/fostering new firms,</td>
</tr>
<tr>
<td>economies</td>
<td>enriching of potential by attracting/fostering new firms</td>
<td>enriching of potential by attracting/fostering new firms</td>
</tr>
<tr>
<td>Socially embedded collective</td>
<td>Fostering a wider scope of new contacts including a range of coordinated activities, forming a base for more functional</td>
<td>Fostering and enabling functional and innovation-related collaboration based on good social coherence right from the start</td>
</tr>
<tr>
<td>learning and interaction</td>
<td>collaboration to emerge later on</td>
<td></td>
</tr>
<tr>
<td>Corporate competitiveness and</td>
<td>Positive short-term effects concentrated on some firms which exploit offered services to their benefit; longer-term effects to larger numbers of firms, and positive returns to public investment</td>
<td>Positive short- and long-term effects for large shares of member firms; higher overall efficiency relating to (public) costs</td>
</tr>
<tr>
<td>innovativeness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systemic cohesion of cluster</td>
<td>Impact on developing trust, collaborative attitudes and coherence regarding some members, high impact on identity</td>
<td>Good impact on developing trust, collaborative attitudes, identity, coherence among most members</td>
</tr>
<tr>
<td>members</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional economic development and</td>
<td>Good broader long-term regional effects based on a comprehensive integrated approach and positive signal value of the cluster label for internal and external regional marketing</td>
<td>Difficulties to exert major regional effects due to a strategy focused on members; less internal and especially external marketing value; regional impact relies on aggregate firms’ performance</td>
</tr>
<tr>
<td>innovativeness</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: depiction by the authors.

localization economies, on the one hand, and of socially embedded collective learning, on the other one, addressing either material or immaterial cluster qualities (Malmberg and Maskell, 2002; Maskell, 2001; Wolfe and Gertler, 2004). Looking at levels of aggregation, outcomes of ETs and IBs probably differ with regard to corporate competitiveness and innovativeness, systemic cohesion of the cluster members, and regional economic development as a whole, with effects stretching up to the national level (Angeles et al., 2001; Martin and Sunley, 2003; Raines, 2002c).

These issues, however, can only be addressed with considerable caution. When looking at the actual development of promoted clusters, no matter which institutional model forms the base, it is extremely difficult to tell whether certain achievements can be attributed to the promotion strategy or to numerous other factors that affect corporate and regional economic dynamics, including influential external ones. Anyway, there is hardly a deterministic relationship between policies and outcomes as ‘very similar policies can produce very different club goods tailored to local needs’ (Benneworth et al., 2003, p. 518). We have the problem how to evidently discern the effects we are looking for; empirical research has so far not been able to convincingly prove that clustering really fulfills stated aspirations (Martin and Sunley, 2003). It may, however, be possible to identify whether certain effects can be associated with cluster promotion at all, looking at individual and collective dimensions from a comparative perspective. Our own empirical research on the two automotive cases tries to solve problems of assessment by asking also a number of member companies, besides cluster coordinators, about perceived (net) effects of the initiative, leading to comparable sets of data and information for eV and ACS/ Styria. As company interviews have so far only been completed in the first case, the provided account on effects of the compared modes of cluster institutionalization is still tentative. Yet, findings may suffice to underscore our theoretical arguments.

Assumed advantages of ETs regarding the promotion of agglomeration economies (Table 4) are strongly supported by evidence. Different from IB car eV, ET ACS/ Styria has substantially enriched common regional assets by caring for workforce training,
In compensation, IBs seem to be advantaged in providing a good base for socially embedded interaction and learning and are more effective in activating functional relationships between firms and of firms with R&D partners. Thus, they better comply with a central objective of cluster promotion ‘to encourage transient relationships to solidify into more tangible and sustainable cluster assets’ (Benneworth et al., 2003, p. 518). Out of 17 interviewed car e.V. member firms all have increased their informational and informal contact base due to the initiative and about half of them have actually gained cooperation with R&D partners and/or suppliers in the cluster. ETs, in contrast, probably create a larger number and range of new contacts which, however, may not immediately be productive. Although ACStyria has raised collaboration among cluster members, too, success has not yet met coordinators’ expectations. A survey describing the situation at the end of the public funding period shows very limited internal linkages of the regional automotive sector and reveals that just below 8% of existing collaborations have emerged from some back-up by promotion agencies like ACStyria (Adametz et al., 2000, pp. 31–35).

The antagonism of ETs and IBs probably affects impacts of cluster promotion on the corporate level, with the latter bearing stronger short term real benefits to members than the former (Table 3). Although car e.V. had just been operating for three years at the time of our investigation, a third to half of interviewed company executives noted some (small) effects on their firm, mostly relating to higher marketing value, increased innovativeness, encouraged outsourcing, help to find qualified staff, and inputs to higher productivity and efficiency. Positive outcomes have as well been captured regarding collective assets in the cluster, indicated by realizations of a majority of respondents that trust, sense of belonging, personal friendships, spirit of collaboration and mutual motivation have grown, spiced up by some stimulus from better knowing about competitors in the group. Compared to quite skeptical views on the success of cluster promotion expressed by some researchers, these results are truly remarkable and indicate a high efficiency of the initiative. We expect that the ET ACStyria shows a different pattern of impact in these respects. Up to now it seems like the Austrian scheme has mainly benefited a few top players in the region (raising suspicion that they have exploited public investment for the sake of private returns).

On the aggregate level of regional development and restructuring effects, in turn, ETs tend to have the lead. Their integrated, wide reaching approach promises better synergies of various interacting instruments in promoting the advancement of the regional economy as a whole. Based on intense marketing efforts that take advantage of the popular cluster brand, the strong image-creating powers of a politically supported initiative have turned ACStyria into a worldwide renowned example of a successful cluster initiative (Hartmann, 2002; Sölvell et al., 2003; Tödtling and Trippl, 2004). The signal value of the notion has helped the scheme to gain its particular strength in attracting inward investments, as it evokes the image of a highly productive, knowledge-rich, entrepreneurial and socially progressive economy (OECD, 1999; Martin and Sunley, 2003). In general the inflationary use of the label, however, has already started to turn positive associations into the opposite. Car e.V., in contrast, has so far not achieved wide reaching impact, as may be true for IBs in general. Although a wide majority of our informants agree that the initiative has improved the position and visibility of automotive sectors in the region, none of them has noticed overall effects on the regional economy so far. But successful operation of numerous member firms, based also on cluster synergies, could in the future add up to wider regional implications. In that case the IBs in fact create major cluster advantages at no direct public cost.

5. Conclusions

When Martin and Sunley (2003, p. 28) state that "even cluster enthusiasts find it enormously difficult to point to any examples of deliberate cluster promotion..."
programmes that have been unambiguously successful, this may indicate that research has not looked at the right examples (and/or has not applied adequate methods of empirical evaluation). When cluster promotion is conceived more broadly results may be surprising. This article suggests that not only explicit top-down official cluster policies should be regarded when looking for positive clustering effects but also implicit bottom-up initiatives that are directly governed by groups of firms and neither rely on the cluster notion nor on public support. The latter could even be a more adequate institutional mode as ‘clustering and networking basically is a bottom-up, market-induced and market-led process’ (Roelandt et al., 2000; see also Enright, 2003; Formica, 2003). Evidence from two automotive initiatives in Austria and Germany shows that the implicit private as well as the explicit public approach produce cluster advantages to their members, such as increased exchanges of information, new collaborations, better visibility and image of the industry group, and impulses on competitiveness and innovativeness. Hence, both offer good options of regionalized innovation support.

But the most interesting results emanate from identified differences of both models which are attributed to distinct institutional implications. We cannot conclude, though, that the one is unequivocally superior to the other, or that the philosophy of private, market-led processes outclasses the philosophy of targeted public intervention. The nature of clusters as a multiperspectival approach (Benneworth and Henry, 2004) finds its expression also in the ways of actively promoting them, offering several similarly fruitful options. Therefore it has to be pointed out that patterns of effects are different and each type has its specific advantages. Explicit top-down cluster promotion appears to better address the material base and localization economies of a cluster, is more inclusive and expansive, and has wider regional economic impacts. Implicit top-down promotion suits better to support immaterial qualities of socially embedded interaction, creates stronger motivation among cluster members, and induces faster outcomes in terms of functional, innovation-related collaboration affecting firm performance. This division of advantages reminds of Newlands’ (2003) distinction of competitive processes in clusters to be stimulated on a macro-economic scale by public agencies while fostering co-operation requires decentralized measures.

Consequently, the question is not which institutional mode of cluster support should in principle be preferred but which type fits better to a region’s situation, preconditions and preferred objectives. Once again it can be confirmed that there is no universal ‘blueprint’ of best practice in cluster promotion to be applied to a large set of regions (EU Commission, 2002; Martin and Sunley, 2003). Institution building has to be ‘appropriate to the social, economic, legal and cultural conditions of different localities’ (Newlands, 2003, p. 530). Preference of either the explicit top-down or the implicit bottom-up mode can be discussed in relation to various dimensions, like the geographical scale of a cluster initiative, regional structural preconditions, life-cycle stages of a cluster, or sector orientation.

First taking up the issue of scale it may be stated that the larger the geographical scope of an initiative, the more appropriate seem to be public, conceptually settled forms of cluster support relative to private, less structured ones that function well mainly for smaller groups. The latter may, in turn, be the only option when the functional boundaries of a cluster and the comfortable interaction space of members – which we regard as general criteria determining the optimal spatial scale of clusters – fall far below the size of an administrative region.

Second, relating to regional preconditions: Where infrastructure is already quite developed and a set of ‘first mover’ companies exists with loose contacts to a sufficiently large number of value chain related firms and other organizations that are willing to deliberately activate co-operation (as marks the regional setting of care V., Germany), implicit bottom-up initiatives more adequately foster real cluster effects as they provide just the impetus that is missing. But where regional structures show a lack of material assets and entrepreneurs, and where most actors have so far been operating isolated from each other, explicit public cluster policies may be the better (initial) choice, also in terms of their higher internal and external signal value. Anyway, some researchers see a main role of cluster policies in concentrating on the formation of new firms and investing in education and support infrastructure (Breschi and Malerba, 2001), which is beyond the capacities of private associations.

Third, regarding cluster life-cycle phases, large strategic, comprehensive public efforts are probably the better way for improving cluster basics in raising
awareness and numbers of includable organizations. After foundations are laid potential ought to get further effectuated by a private promotion initiative. Cyclic developments also concern regional technology and innovation dynamics (Audretsch and Feldman, 1996), with a tendency of innovative activity to concentrate in early stages and to become more dispersed in mature ones. Thus, the creation of a good setting for major initial thrusts combining a few key players, supported by the set up of specialized providers of know-how and qualification nearby, is favored by a concerted explicit top-down public approach. Dispersion and prolifération could then better rely on a bottom-up institution. A time phase sequence of a first public funding period then turning into a more privately governed and financed state characterizes to some degree the evolution of the Austrian ACStyria scheme, apart from a still quite public character also of the new institution. Yet this examples also demonstrates the difficulties of public initiators to really 'let loose' after the funded initiation phase, which may generally obstruct a public–private succession in deliberate cluster promotion.

The fourth dimension of sector specific advantages of our two modes of cluster promotion can hardly be addressed here but requires more thorough comparative investigation and discussion of operational and value chain specialties in different sector groups. It can be assumed that sectors with higher propensities to interchanges of staff, spin-off developments and the use of external know-how (like information technology, knowledge intensive services) offer better options for private thematic promotion initiatives, while sectors lacking these characteristics (like food production, for private thematic promotion initiatives, while sec-

Tor Horst Bergman, 1998. Industrial Clusters: The New Geography of Production. SRE-Discussion 64, Department of Urban and Regional Development, Economic University, Vienna.


