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ABSTRACT

Large media clusters have emerged in a limited number of large cities, characterizing the geographical concentration of the global media industry. This paper explores the reasons behind the localization patterns of media industries, the effect of the rapid advancement of Information and Communication Technologies (ICT) on media clusters and the role of media cluster policies. One might draw the conclusion that with the developments of the ICT sector and the fact that there are no raw materials or physical goods that should be transported in the media industry; media firms could locate anywhere and the urban regions would no longer host any clusters of media firms. Various reasons are provided as to why strong tendencies of media firms to cluster in large cities should still be expected and why media clusters differ from other clusters. The paper concludes that it is the type and form of interaction and transactions that matter and new communication technologies are mainly compliments to the still essential face-to-face interaction in the media industry. Policy makers have promoted agglomeration in both large and small cities since they have recognized that some media industries are encouraging economic growth and employment creation. Approaches to cluster governance and motivations for cluster policies are highlighted in the paper. Furthermore, different topics of future research challenges connected to media clusters are presented.

Keywords: Clustering, media industry, media cluster policies, creative industry, Information and Communication Technology, Weightless Economy, regional development, agglomeration

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R11 - Regional Economic Activity: Growth, Development, and Changes

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I. Introduction

The global media industry is characterized from a geographical point of view by a heavy concentration¹ in a limited number of large cities, where large media clusters have emerged (Krätke & Taylor, 2004). “Media industries are highly clustered and the clusters are practically always in major urban areas” (Davis, Creutzberg & Arthurs, 2009, 203). These large ‘media cities’ are today connected by worldwide networks operated by a limited number of large global media firms operating on a global scale and controlling a global network of branch offices and subsidiaries, i.e. they are local and national nodes in global media networks. Global media firms today pursue strategies focusing on opening up new markets and increasing market shares, necessitating presence in the cities that have grown into large global media centres. Presence in these large cities allows large media firms access to the latest trends and developments in the general culture industry as well as to the latest technological developments affecting the media industry. Around the large media firms that function as anchors in the large media cities, there have emerged clusters of small and often very small, specialized media firms. These function as subcontractors and as project-oriented production forms for the large media firms. The clusters turn into creative urban milieus characterized by intensive and flexible forms of inter-firm networking. They allow global media firms to tap the globally distributed creative potential of entertainment and content production.

Where clustering of media industries takes place is, of course, a critical question. Krugman (1991) stresses that history matters, which implies that path-dependent processes generating industrial clustering might emerge at unexpected locations due to the individual decisions and actions by key economic agents, as well as to random factors. Media firms generally look for locations that can support their special types of business activities, i.e., i) the production and distribution of entertainment and content (Beck, 2002), ii) the acquisition, preparation, compilation and distribution of information (Beck, 2002), and the sales of advertisements to advertisers (Ferrando, et al., 2008). For this reason, the clustering of media firms occurs, in particular, in those locations that can accommodate a large degree of planned as well as chance and random encounter with both similar and different producers and customers, i.e. locations that can support the mediation, iteration and heuristic action, which is integral to the production in media industries. Such locations are mostly large cities.

Media clusters promote and improve production of entertainment and content by connecting producers through private and public partnerships, networks and projects, i.e. making media production more efficient. Previously, media companies spontaneously created clusters to gain individual and mutual benefit, but today national and regional development authorities and entrepreneurs are increasingly promoting and investing in the creation of media clusters to improve productive capabilities, spur economic development, and create financial gain.

Media clusters also stimulate media innovation. However, innovation in media industries is special since it is driven by innovation at three different connected and interacting levels of the media sector: i) the physical infrastructure level, ii) the software level, and iii) the content level (Benkler, 2006). It is important to observe that, while R&D drives infrastructure and software innovations, the spending on content innovations is normally not classified as R&D. Neither are content innovations connected to formal R&D institutions with the possible exception of the more technical needs in digital media. Content innovation generates experience

¹ Miller, et al. (2001) estimate, for example, that 70-90% of the total UK employment in different media industries is located in London.

goods² (Nelson, 1970), which create economic value not through improved production efficiency but by offering consumer experience, affect and meaning. What has stimulated the growth of the media sector in recent decades is the growing ability of media firms to generate content that is tradable and consumable and thus create economic value. It seems reasonable to assume that clustering of media firms increases their efficiency in creating content, i.e. to generate content innovations.

Clusters exist when there is a large enough concentration of media (and related) firms in a city or a metropolitan area. Several firms are normally gathered in a specific, often central location in the city, but the cluster may include other firms in the surrounding area. An important element of clusters is that the cluster firms share resources, such as labour, contract services, information and knowledge, and interact directly or indirectly for mutual advantage and benefit—although the degree of interaction among individual members may vary widely and may even be unintentional. It should also be noted that some cluster firms might also have significant interactions with players outside the cluster or in other locations.

Media clusters are a specialized form of cluster designed to produce mediated *content*, such as motion pictures, television programs/videos, broadcasts, audio recordings, books, newspapers, magazines, games, photography and designs, websites, and mobile content for customers often are based elsewhere. These clusters may have significant relations with other industries and clusters such as cultural industries (music and theatrical performance; museums and heritage sites; festivals), sports and entertainment activities (professional sports teams and venues and amusement parks), information and communication technologies (computers, software, telecommunications), and hardware manufactures (television and radio receivers, set-top boxes, game consoles, DVD players, etc).

This background raises questions of what media sector clustering looks like today and to what extent it differs from other types of clusters. At the fundamental level, media differ because they involve a complex interplay among cultural, economic, and political objectives. This creates a milieu in which far more complex objectives than merely promoting job creation and economic growth are present. In media cluster development, issues of national and regional identity, language, and culture play significant roles, as well as desires to promote domestic content production to counter foreign content.

Media clusters also typically do not represent pioneering involvement of government in media industries. Typically, there is significant government involvement in media prior to the emergence or creation of clusters, particularly in the areas of broadcasting, film and performance industries. Structural and behavioural regulation of broadcasting is universal and state support for cinema, public broadcasting, and the arts is common. In most cases, governments play a significant role in the development and promotion of audiovisual media because they rely on public spaces—airwaves and regulated distribution systems (cable, satellite, broadband).

Most cluster literature conceptualizes the internal configuration of clusters as providing the incentives for co-location and its benefits. These benefits are to varying degrees derived from flexibility, informal networks based on frequent face-to-face interaction, trust-based interconnections among some large and many small firms and their subcontractors, specialized local infrastructures and institutions, a common skilled labour pool, and the rapid diffusion of

² Experience goods have special economic properties because of the high uncertainty of demand, and thus the exceptionally vital role, in the development of markets, of quality signalling mechanisms, such as word-of-mouth in consumer networks, reviews of critics, and different recommendation systems.

knowledge and ideas (cf., May, Mason & Pinch, 2001). Many authors stress that perhaps the most important benefit a cluster brings is a particular information and knowledge advantage due to the potential for frequent face-to-face interaction that co-location generates. The information and knowledge is communicated through what Marshall (1927) calls ‘industrial atmosphere’, Grabher (2002) calls ‘noise’ and Bathelt, Malmberg & Maskell (2004) and Storper & Venables (2004) call ‘buzz’. The face-to-face interaction brings distinct information including persistent updates, planned and unplanned learning, and the development of similar interpretation schemes³, shared understanding of new knowledge and new technologies, local institutions, and similar cultural traditions and habits in the long-run. However, these benefits do not come free. Economic agents have to establish and invest and reinvest in links to other economic actors to build the necessary trust, which demands both time and economic resources (Karlsson, Johansson & Stough, 2005).⁴

However, co-location benefits seem not to be the only driving force in media clusters, where external forces and processes—not least in the form of large global media firms—are highly significant and promote reconfiguration of internal activities. Thus, the traditional view of why clusters work and what makes them successful may not apply fully to media industries. In media clusters, the external linkages of firms may not always be restricted to the local economic milieu. Because of competition becoming more global, and the need to serve demand elsewhere to be able to take advantage of economies of scale, some media firms extend the geographical scale and scope of their external linkages (Nachum & Keeble, 2003).

The location of media clusters within cities reflects different purposes and perceptions of company needs and cluster benefits. In some cases, clusters are located within industrial zones when they involve physical production and distribution. In other cases, they are located in science parks—especially when media technology is involved; some are located in incubator facilities and these are especially attractive to start-up digital media firms; others are located within free trade zones to take advantage of tax and export advantages. In less organized clustering, companies may be spread out across cities or provinces or located within neighbourhoods that provide specific amenities.

2. Media Clustering in “the Weightless Economy”

Technological development and fast structural adjustments have characterized industrial economies for more than 100 years, and still they feature pronounced structures. One structural characteristic of industrial economies is that economic activities tend to co-locate, i.e. cluster in space. This phenomenon has interested researchers during the whole 20th century (see, e.g. Marshall, 1920; Hotelling, 1929; Christaller, 1933; Schumpeter, 1934; Lösch, 1943; Dahmen, 1950; Perroux, 1955), but it was first with the contributions by Krugman (1991 & 1998) and Porter (1985 & 2000) that research on clusters really took off. While Porter (1985) mainly focuses on clusters from a nation state perspective⁵ and how they generate competitive

³ The development of similar interpretation schemes involves a substantial risk in the long term in the sense that the economic agents in a cluster might not correctly interpret the importance of, for example, new emerging technologies and continue to invest in the old established technologies for too long.

⁴ It is certainly a misunderstanding, when Bathelt (2005, 109) claims that “Participating in a cluster’s buzz does not require particular investments.”

⁵ In Porter (2000, 254) he goes even further and defines a cluster as “a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities. The geographic scope of a cluster can range from a single city or state to a country or even a group of

advantages, Krugman (1991) discusses clusters as something developing at the regional level due to specific centripetal forces inducing firms in individual industries to co-locate.

According to Krugman (1991), the geographic concentration of production is evidence for the pervasive influence of some kind of increasing returns. When many firms in one sector cluster together, there exists an industrial or sectoral cluster. Clusters are, generally speaking, non-random (Elison & Glaeser, 1997) geographical agglomerations of firms with similar or highly complementary capabilities (Richardson, 1972). Inside such clusters, one can identify several forms of direct and/or indirect interactions. Increasing returns are obtained when such interactions generate positive economic externalities for firms belonging to the cluster.

Economic geographers have accepted to a high extent the economic analysis of clustering processes but have at the same time stressed that social, cultural and institutional factors also play an important role for clusters to develop, grow and possibly decline and disappear (Martin & Sunley, 1997). Scott (1998b) claims, for example, that clusters can only create new knowledge and new products and continue to grow if they have linkages with external markets and utilise a mix of local and non-local transactions. Thus, the effects of local interaction and learning are much stronger if they are continuously supported by impulses from other regions and clusters (Bathelt, 2005). According to economic geographers (cf. Bathelt, 2005), clusters should be analysed along five dimensions: i) the vertical dimension, ii) the horizontal dimension, iii) the power dimension, iv) the institutional dimension, and v) the external dimension.

There is currently a strong belief in many countries and regions that clusters can be a major vehicle for economic development and growth. In particular, clusters can influence economic growth in three ways: i) by increasing the productivity of the firms located in the cluster through internal and external economies of scale, ii) by increasing the pace of innovation through rapid knowledge exchange, and iii) by stimulating the formation of new firms, i.e. entrepreneurship (Huggins, 2008).

One sector known for a strong tendency to cluster is the media sector⁶. There is today a growing body of literature dealing with media clusters and in particular with large media clusters (van den Berg, Braun & van Winden, 2001), sometimes characterized as ‘global media cities’ (Krätke, 2003). There are several obvious reasons to why media firms tend to cluster. One reason is that many of the media sector products, like films, are produced in the form of projects, which run for limited periods. Each such project needs to engage a large number of different specialists on a temporary basis. Only a relatively large cluster will offer a diverse enough supply of specialists to make such projects economically feasible.⁷ Another reason why media sector firms cluster is that many media industries are creative industries within or closely related to the cultural sector. The tendency of creative cultural industries to clusters has been documented in the literature in recent decades (Scott, 1997; Hitters & Richards, 2002; Mommaas, 2004).

neighboring countries.” One can question this kind of all-embracing definition for many reasons. The concept of proximity totally loses its meaning due to Porter’s fuzziness regarding the spatial boundaries of clusters.

⁶ In the literature one finds the term ‘new media’ which is a concept mainly launched by the ‘new media’ sector to distinguish itself, as a group of leading edge industries, from the traditional media sector (Backlund & Sandberg, 2002). Given the transformation in recent decades in all media industries, it does not seem meaningful to try to make a distinction between ‘new’ and ‘old’. The use of the term media sector here is intended to cover all media industries.

⁷ There are examples of attempts to run such projects outside clusters, such as Trolleywood in Trollhättan, Sweden, but such attempts are feasible only because of public subsidies.

A parallel process to the emergence of large media clusters in large cities has been the marked trend towards the globalization of a number of large media firms (Robins, 1995; Pratt, 2000). The growth of media firms, not least through mergers and acquisitions, has led to the formation of very large media groups, which not only occupy a prominent position in the cultural sector in individual countries, but are also creating increasingly global networks of branch offices and subsidiaries with presence in many large media clusters (Krätke, 2003). These large media groups tend to pursue a strategy that involves the integration and recombination of the media value chains at both national and global level. Another crucial strategy is the ambition to take advantage of diversification, i.e. the simultaneous or almost simultaneous distribution and exploitation of the same 'content' via different media, e.g. the print media, television programs and internet services. Furthermore, the globalization of media firms is related to the increased importance of intellectual property rights and in particular copyrights. Copyrights provide the mean for controlling information and entertainment products and ensuring that they can be exclusively exploited in a particular national market (Bettig, 1996).

In recent decades, the media sector has been strongly affected by technological changes. We can today observe that the developments within information and communication technologies (ICT) are stimulating the birth of new media services including the creation, manipulation and distribution of digital content (Gillespie, Ricardson & Cornford, 2001). An interesting characteristic of these new services, which include software, databases, electronic libraries, new media, videos, broadcasting, etc., is that they do not just embody knowledge – they are knowledge and behave as such (cf. Arrow, 1962). These new services represent what Quah (1999) calls 'the weightless economy'⁸, i.e., an economy whose products are non-excludable, infinitely replicable and electronically transportable costless through space, like knowledge in Arrow (1962). This observation might lead to the conclusion that the location of the production of media products is a non-issue, since there are no raw materials that should be transported to the producer and no physical goods that should be distributed from the producer to the customers. Media firms could locate anywhere and the urban regions would no longer host any clusters of media firms. So why do media firms continue to cluster?

At the same time as 'the weightless economy' develops, we can also observe tendencies of technology-related industry convergence (Rosenberg, 1963; Sahal, 1985; Dosi, 1988) in the emerging digital economy. However, we can also observe a breakup of old value chains (Ewans & Wurster, 1997) followed by a new structuring of value chains, where takeovers and strategic alliances play a significant role (Hagel III & Singer, 1999).⁹ There are today numerous claims that industries like telecommunications, computing and entertainment are converging and one day might evolve into one huge multimedia industry (Collis, Bane & Bradley, 1997; *The Economist*, 2000) – an industry that has received particular attention recently (Brail & Gertler, 1999; Egan & Saxenian, 1999). This convergence of the telecommunications, media and information technology sectors might even have been increasing in recent

⁸ Quah (1999) remarks that the weightless economy also can be described as the knowledge economy, the intangible economy, the immaterial economy or simply the new economy. Kling & Lamb (2000) suggest the use of the term information economy to include all informational products such as publishing, R&D, legal and insurance services, entertainment and teaching in all forms, and the term internet economy to address only those products whose development, production, sale or distribution is critically dependent upon digital technologies. Piazzolo (2001, 30) defines the digital economy as "an economy where both final output and intermediate input increasingly consist of information and where the modern (digital) ICT increasingly provides world-wide immediate access to any information made available."

⁹ One example of the break-up of value chains in the media sector is the increasing role of content intermediaries (Hess & von Walter, 2006).

years with the emergence of the Internet and with the increasing capability of existing networks to carry both telecommunications and broadcasting services (Knieps, 2003). Developments in digital technologies and software are creating a large innovative technological potential for the production, distribution and consumption of information services. Convergence, characterised as the ability of different network platforms to carry essentially similar kinds of services, may have very different faces: telecommunications operators may offer audio-visual programming over their networks; broadcasters may provide data services over their networks, cable operators may provide a range of telecommunication services, etc.

In the 1980s and early 1990s, some cyber prophets and technological optimists predicted that the emergence of the digital economy would kill distance and make clustering in urban regions superfluous (Cairncross 1997; Knoke 1996; Naisbitt 1995; Negroponte 1995; Toffler 1980) and at the same time eliminate the scale disadvantages of smaller and more peripheral regions.¹⁰ The basic idea was that the spread of the use of ICT has the potential to replace face-to-face activities that formerly occurred in central locations, which would strongly reduce or even eliminate agglomeration economies and hence make economic activities very 'foot-loose'. At the beginning of the 21st century, however, it has become clear that this picture is at least single-sided. New technologies are likely to remain grounded in existing urban regions, which imply that these regions will keep their locational attractiveness and that clusters will remain or even grow. Thus, the ICT has not rendered work and organisation 'space less' (Neff, 2005).

There is also increasing evidence that the digital revolution actually reinforces the position of leading urban regions (Castells 1989, 1996; Hall 1998; Wheeler et al. 2000). So why media firms do cluster, when the technological opportunities have seemingly reduced the necessity of proximity in operations between inter-linked firms? Actually, it seems as if the clustering tendencies are even more dominant in media industries than in many traditional industries. Ogawa (2000) shows, for example, that ICT development may not necessarily encourage the dispersal of economic activities due to the network and technology effects of ICT infrastructure supply. Cities are a means of reducing the fixed travel costs involved in face-to-face interactions. Even if, in principle, improvements in ICT could eliminate the demand for face-to-face interactions, and make cities obsolete, empirical results point in the direction that telecommunications are mainly a complement to face-to-face interactions (Gaspar and Glaeser 1998).

A major effect of the rapid diffusion of ICT is a dramatic reduction in transport and communication costs, which will alter the incentives for clustering of media industries as well as other industries. It is too early to observe the final results of the diffusion of ICT but it is possible to identify some possible effects (Venables, 2001), since ICT reduces:

- the search and matching costs in product markets but closeness by customers may still be essential, in particular for products with rich and fluent characteristics,
- the direct shipping costs since many products can be delivered in digital form,
- the control and management costs for geographically and organisationally fragmented operations,
- the cost of time in transit, i.e. the shipping to and communication with distant locations,
- the costs of personal interactions but knowledge spillovers are stimulated,

¹⁰ In 1964, McLuhan wrote that new technologies would lead to activities leaving the centre and going to the periphery to create a uniform 'global village', and in 1988, Bairoch suggested that one of the causes of the 'break-up of cities', i.e. urban sprawl, was the development of television.

- the costs of commuting and of travelling in agglomerations,
- the costs of replicating products, and
- the costs of relocation.

These effects are not specific for the media sector. However, due to the character of the media sector's products, ICT might have stronger effects on it than on other sectors. It is by no means clear how these factors will affect clustering in the media sector even if it is obvious that the ICT revolution makes it possible for media firms to go from a physical to a virtual value chain as well as to eliminate stages in the value chain (Benjamin & Wigand, 1995; Ghosh, 1998). This implies that it is an empirical issue to find out how the clustering in the media sector as a whole as well as its different industries is affected by the ICT revolution.

3. The Nature and Content of Media Clusters

In order to understand the impetus toward clustering among media firms one must be cognizant of the fact that media are undergoing tremendous structural and organizational changes caused by technological, economic, and social changes. These changes are provoked by developments in media industries that are different from other sectors of the economy. Deregulation of broadcasting and telecommunications, the growth of advertising and marketing activities of all kinds, and internationalization of media markets have made media industries grow faster than most other sectors of the economy

However, media activities tend to be concentrated in certain locations and in certain sectors that can be unequally promoted and developed in different locations. Media clusters include many small, specialized firms as well as establishments of large media corporations with a potential to generate external economies of scale. They facilitate a fast spread of new ideas and of creative impulses between the media firms and establishments present in the cluster.

Media are an important category for policymakers for economic and cultural reasons, but many tend to see them as tightly knit with other industries, such as arts and performance. Media sectors differ widely from those of other industries and among themselves, however, and the environments in which they operate and the processes in which personnel work vary widely between the advertising, television, film, music computer games and newspaper sectors. In some ways, the concern about media may be more on occupations than on companies, because of the part-time nature of employment and the heavy use of freelance employees, which leads to serial employment.

Although many media are represented in clusters, the music industry is not so strongly incorporated as other industries, but there is some co-location where video production and design services are available. Game production and animation has tended to cluster on its own or near software firms and clusters rather than with other media industries.

4. Are Media Clusters Different from Other Clusters?

The literature is today rich in relation to the cluster phenomena (see, e.g., Karlsson, Johansson & Stough, 2005, Eds.; Karlsson, 2008a, Ed. & 2008b, Ed.). Three analytically distinct forms of spatial industrial clustering have been identified (Gordon & McCann, 2000):

- The classical model of pure agglomeration, referring to job matching and service and information economies of scale and scope.
- The industrial-complex model, referring to explicit links of sales and purchases between firms.
- The network or club model, also referred to as the social-network model, which focuses on social ties and trust.

All these forms of industrial clustering have a common focus on the spatial concentration of similar firms, i.e. firms belonging to the same industry. Thus, clusters have a horizontal dimension, which through untraded interdependencies may generate a number of different static and dynamic external economic advantages (Harrison, Kelley & Gant, 1996), i.e., different kinds of increasing returns (Krugman, 1991). These external economies might concern superior accessibility to inputs, labour skills, and infrastructure but also collective visibility and reputation. It is in this connection important to observe that even if there are very limited vertical relationships between firms (i.e. input-output relations) there are many other reasons why clustering is an advantage for firms in an industry.

There can be no doubt that these forms of spatial industrial clustering also prevail within the media sector. However, one interesting question concerns whether the media sector in certain aspects is different and thus exhibits special traits and possibly other clustering tendencies than industries in general. One such special trait is the specific characteristic of media products, such as their public goods character, the clear scale economics in media production and particular in media distribution, the high degree of product differentiation, the advertising-content demand interdependence, and the existence of network externalities (Rosse & Dertouzos, 1978 & 1979; Owen & Wildman, 1992).

Media refers to economic activities directed towards entertaining and informing, normally seeking to reach and influence a large audience. According to a traditional definition, it involves communication between a sender and typically large numbers of receivers (audience), where the relationship between them is one-directional and impersonal (Vogel, 1990). However, the existence of letters to the press, web-based debates, phone-in-programmes, chat-pages, blogs, etc. shows that this definition is somewhat too strict. The output of the media activities has to be distributed to the widest possible audience, in order to maximise the returns on the investment incurred in the course of production, making the distribution function a critical determinant of economic success (Vogel, 1990).

An important and fundamental characteristic of many activities in the media sector is its creative activities. There is a constant need for creativity and innovation in product design and development. Each output is a “one-off” item, which must be experienced by consumers as new or different, if only minimally. Thus, the creation of media output is heavily dependent upon talent, typically a single individual or a small group of people: the writer in books, the actor(s) in film, the musician or conductor in music, the copywriters and designers in advertising, etc.. It is well known that creative activities only develop in specific milieus characterised by diverse activities and competencies with synergetic potential, instability and uncertainty, great tolerance, and critical mass (Andersson, 1985). Such milieus are normally found only in large cities.

Another important characteristic of media products is that they are rapidly evolving products, which implies that important external advantages and stimuli are derived from the incentives of the media firms involved to generate competing goods and services (Maskell, 2001; Malmberg & Maskell, 2002). Firms in media industries, which are creative industries, cannot reproduce their earlier products since their ability to compete depends upon their ability to generate new products that their customers find visually and functionally novel and superior to the earlier products. This implies that it is critical for firms in media industries to actively monitor the products of their competitors, and transform and improve their own products accordingly. Presence for a media firm in a cluster with other media firms nearby makes it easier to formally and informally monitor and study the products of these other firms. This kind of monitoring is an important part of the creative process, which stimulates innovation, imitation and competition¹¹ (Britton, 2007). Innovation in media industries is often incremental and requires new combinations or applications of existing tacit and/or codified knowledge building upon past creative successes and an expanding skill base (Wolfe, Davis & Lucas, 2005).

Scott (1999, 811), based upon studies of different cultural industries, remarks that the spatial clustering of (media) producers facilitates “unstable, finely grained, frequent and mediated face to face contact” and moreover that mediation, iteration and heuristic development involves “not only concrete practices and technologies, but also the emotive content of products”. Thus, learning in media industries is the result of a trial, feedback and evaluation process, which occurs when firms and individuals exploit new technologies and meet new expectations of clients (Teece & Pisano, 1998). Such learning-by-doing activities create increasing returns within a cluster through knowledge spillovers.¹² Against this background, it is not difficult to understand the recent emphasis that localized innovation policies not only should focus on the R&D-based generation of innovations. There is also need in a broader sense to accelerate learning and the creation of new product varieties through systemic improvements and the reduction of information and transaction costs, furthering of trust-based cooperation, the supply of services, and the improvement of the capacity for collective action (Laranja, Uyarra & Flanagan, 2008).

A third important characteristic of the activities in important parts of the media sector is that they are organised as intra- and inter-firm projects with a limited time span, which can be described as project-based temporary production networks.¹³ This solution to the problem of organizing and coordinating production is in the literature known as flexible specialization (Piore & Sabel, 1985) and is very common in the media sector (Starkey, Barnatt & Tempest, 2000; Sydow & Staber, 2002; Mossig, 2004; Ferriani, Corrado & Boschetti, 2005). The flexible specialization model makes it possible for the leading media firms to use the freelancers and the different small firms in the media cluster as a reserve labour pool and to reduce risks by relying to a high extent on short-term contracts (Christopherson, 2005 & 2006). Project-

¹¹ Competition in media markets is achieved by means of differentiated products (Rosse & Dertouzos, 1978). To avoid the head-to-head competition in homogenous markets, media firms engage in Hotelling-type competition to distinguish their content products (Hotelling, 1929). The maximum number of differentiated products in monopolistically competitive markets is determined by exogenous variables, such as market size, distribution of taste groups, size of entry barriers, operation costs, etc., which are difficult for the individual media firms to influence (Mankiw & Whinston, 1986; Waterman, 1989/1990).

¹² However, this observation does not imply that media firms do not seek information and knowledge from other regions by other means including the Internet.

¹³ There is rich literature on networks of firms and their relationships and the different scales over which such networks may operate and be facilitated by new technologies (Castells, 1996; Karlsson, Johansson & Stough, 2005).

based production is true for film production, music production, book production, software development, etc. and it has been proposed that such networks, so called project-based enterprises, are the archetypical form of the emerging new media industries, as well as of many industries in the cultural sector¹⁴ (Grabher, 2002; Pratt, 2002). Thus, the single talented individual or small group of people is part of a larger production network using a varied supply of specialists. The development and continuous updating of software, for example, demand the employment of large in-house as well as out-sourced teams of designers and managers, preferably with good opportunities for frequent face-to-face communication (Cusumano, 1991; Cusumano & Selby, 1996). Hansen, Vang-Lauridsen & Asheim (2005) stress that in the entertainment sector, which is part of the media sector, production systems often are based upon the assembling of new teams of actors, writers and other specialised workers for each new project. Carefully selected staff from different firms¹⁵, which, for a limited period, dedicate some or all their time to the tasks specified for the project, constitute such inter-firm projects. These inter-firm projects are based upon a rigorous division of labour within the production chain, i.e. vertical disintegration, and a specialisation in small areas of production.

Overall, the media production system is characterised by many different specialised functions and dense inter-firm relationships, in which geographical proximity increases the efficiency of transactions, information exchange and inter-active learning between producers thus enhancing the core competencies of the localised firms (Scott, 1998a; Bathelt & Boggs, 2003; Picard, 2010). Many projects in the course of time may create a strong social basis for the transfer of tacit knowledge via face-to-face contacts but will function only if the local skilled labour pool is large enough. Only large regions contain a large potential local demand, and the variation in skills, competencies and services that are needed to host this kind of flexible production system, and to generate the necessary learning effects (Arthur, 1990 & 1994). Thus, we should expect strong tendencies for the media sector activities to cluster in large dense regions where geographical proximity makes it possible to reduce transaction costs through more efficient transactions and information exchange.¹⁶ It is also well known that many major metropolitan centres, such as London, Los Angeles, New York, Paris and Tokyo possess media clusters.

A fourth important characteristic of the media industry is the existence of a group of large global media oligopolists (McChesney, 1999) and of strategic alliances between such oligopolists. One common picture of industrial clustering is the co-location of many small firms in the same locality. Recognising the importance of large global actors in the industry makes it necessary to think differently about media clustering. Obviously, large anchor media firms may play a critical role for the clustering of small and medium-sized media firms. Today large media firms play a strategic role in the production and delivery of media products, which implies that corporate structure, strategy, management, and behaviour can have a significant influence on industrial clustering of media firms.

To discuss the role of global media oligopolists for the clustering of media firms it is necessary to discuss some important characteristics of these firms (Chan-Olmsted & Chang, 2003):

- They offer dual, complementary media products of content and distribution.
- They rely on dual revenue sources from consumers and advertisers.

¹⁴ For the cultural industries Scott (2000) uses the concept “multi-faceted industrial complexes”.

¹⁵ These firms are overwhelmingly made up by small businesses, micro-businesses and self-employed free lancers, which can be described as dependent entrepreneurs (Burton-Jones, 1999).

¹⁶ Media activities are typically concentrated in small districts of large cities.

- Most media content products are non-excludable and non-depletable public goods, whose consumption by one individual do not exclude another individual to consume it but instead adds to scale economies in production.
- Many media content products are marketed under a windowing process in which a specific content is delivered to consumers via multiple outlets sequentially in different periods.
- Media products are highly subjective to the cultural preferences and existing communication infrastructure of each geographical market and are often subject to regulatory control in different countries.

There are several reasons including cost and risk reduction for these large media corporations not to produce all content in-house, but instead either outsource part of the content production to sub-contractors or to do it in the form of individual projects within project companies set up for each individual project. It is well established that costs may be reduced through outsourcing of production to sub-contractors (Williamson, 1975 & 1985). However, numerous empirical studies give evidence that strong control over sub-contractors may require frequent face-to-face contacts and inspection of products, and hence the sub-contractors need to cluster in the same location as the large corporation to get the needed geographical proximity (cf., Scott, 1988a).

A fifth important characteristic is that the firms in media clusters reveal a number of common characteristics (Scott, 1996; Brail & Gertler, 1999; Egan & Saxenian, 1999; Bathelt, 2001). Most of the firms in these clusters are fairly young--but often serve older, larger, established media firms. Often they have only existed for a few years. They are normally small in terms of employment. The local growth processes of many of the media clusters are driven by innovative regional start-ups. They have often been started by teams of entrepreneurs rather than by individual entrepreneurs and they have relied heavily on owner capital. These clusters emerge in inner cities rather than in sub-urban locations (Storper & Christophesen, 1987; Eberts & Norcliffe, 1998; Brail & Gertler, 1999).

5. Challenges in Understanding Media Clusters and Their Functioning

One problem with the analyses of urban media clusters is that the 'traditional' basic arguments explaining clustering, which go back to the work of Marshall on industrial districts from the turn of the 19th to the 20th century only provides a partial explanation. And this holds even if we consider works in this tradition from the late 20th century, such as Porter (1990), Krugman (1991), Enright (1996) and Fischer (1998, Eds.), who analyze the conditions under which spatially concentrated industrial clusters emerge. Certainly, the conceptualization of clusters and clustering processes differ somewhat between the different approaches but one thing they have in common is a focus on some kind of intra-regional ties. Some authors, for example, launch the hypothesis that if there is a close networking between firms and between firms and regional organizations in a certain region, the competitiveness and development of this region will be promoted. Intra-regional networking is assumed to have the following positive effects:

- Networking enables firms to use a common pool of resources (skilled labour, infrastructure, services from input suppliers and supporting organizations, etc.),

- Networking helps firms to exchange information and knowledge and to generate innovations through “knowledge spillovers” (cf., Bramanti & Maggioni, 1997),
- Networking helps firms to be in close contact with clients or users and their special requirements, and
- Networking facilitates a division of labour within a cluster so that highly specialized firms can combine and pool knowledge and competencies.

It also seems obvious that intra-regional networking is advantageous under certain specific circumstances, namely:

- In clusters with a large number of small and medium-sized firms, where a flexible cooperation with other firms may substitute the advantages of large organizational size, at least partially (Almeida & Kogut, 1997);
- In clusters with a high rate of technological change and innovation, i.e., in knowledge-intensive clusters (Feldman, 1994; Gehrke & Legler, 1998);
- In clusters where customized goods and services are supplied and where contacts between supplier and customer are particularly important (Scott, 1988b).

Many of these conditions are found to a very high degree in urban media clusters, which are characterized by a high degree of intra-regional networking even if the focus is much more on creativity and design than on innovation. This is natural since many media industries are involved in the production, distribution and consumption of symbolic products that also are experience goods, where imaginative creativity plays a critical and strategic role (Mommaas, 2004). However, precise definitions of networks and networking are hard to find. The appeal of these concepts seems to stem exactly from the fact that they encompass important intra-regional relationships, which are difficult to summarize under precise definitions. Networking capacity at a very basic level can be seen as the disposition of economic actors within a cluster to communicate and collaborate to achieve mutually beneficial ends. Yet, we know that the networks of urban media cluster to a high extent go far beyond the border of the cluster, and in many cases can be characterized as truly global. Obviously, there are limits to the capacity of the ‘traditional’ view of clusters to increase our understanding analytically and empirically of urban media clusters.

Thus, urban media clusters can never be studied successfully without also considering their inter-regional, national and international or perhaps rather global connections and the general effects of an increasing globalization. One important aspect of globalization is the continuous scaling-up of markets and the increasing growth of trans-national financial and economic networks (Sassen, 1994; Waters, 1995). However, the globalization process is characterized also by the fading of national cultural identities, increasing geographical mobility, worldwide migration, ethnic hybridization and apparent cultural homogenization (Zukin, 1995). Some authors now argue that due to the rapidly advancing globalization, economic structures and flows increasingly are becoming dis-embedded from regional contexts and that regional embeddedness is losing its importance (see, e.g., Thurow, 1996). On the one hand, these authors have one aspect right. Today an increasing share of the firms act on a global level and the most globalised companies including global media firms are becoming key actors, whose strategies will increasingly determine the possibilities for development in certain regions.

On the other hand, these authors have not fully understood what globalization implies for firms and regions. The increased importance of global links does not imply that the intra-regional links in clusters lose their importance and this is true for the media sector as for most

other sectors. What is important for urban media clusters is that they succeed in combining high quantity and high quality intra-regional networking with high quantity and high quality global networking. Certainly, successful urban media clusters need to preserve strategic positions in the organizational structures and networks of global players but this is impossible if the intra-regional networking is not of a high quantity and quality. The critical challenge for urban media clusters is to secure enough synergies between the global and the intra-regional networks. Urban media clusters that successfully secure these synergies might be characterized as global media clusters (cf., Sassen, 1994). Successful global media clusters are those whose networks incorporate an adequate supply of quality knowledge, creativity and design resources, along with the ability, willingness and openness of local firms in cooperation with global firms to make use of external global sources of inspiration, information, knowledge and creativity with a clear focus on developing new superior media products.

The networking logic involves three interrelated organizational principles: flexible specialization, networking and competitive collaboration. Here, then, we see why clustering is advantageous generating three primary benefits (Scott, 2000a): i) a reduction of transaction costs, ii) an accelerated circulation of capital and information, and iii) reinforcement of transactionally based modes of social solidarity. Thus, the assets of comparative advantage in a global context of increasingly ubiquitous forms of codified and scientific knowledge the advantages of proximity associated with i) the exchange of information, goods and services, ii) face-to-face contacts, iii) incremental innovation, and iv) the exchange of tacit knowledge (Amin & Graham, 1997). Thus, clusters are a source of dynamic learning that reinforces, and is reinforced by the agglomeration of firms in the same sector. Clustering becomes important in this respect because of: i) the presence of 'quasi-mobile' human capital, ii) the presence of informal contacts between local economic actors that create a certain 'atmosphere', and iii) synergy effects stemming from shared experiences, which creates common representations and beliefs (Hitters & Richards, 2002). However, clustering of media firms becomes vital also for another reason. A substantial share of the output from the media sector is cultural products, whose demand is characterized by high volatility. To balance this and to reduce risks, production very often is spread out over networks of many different firms. Thus, it is vertically and horizontally disintegrated (Scott, 2006) and only large cities have traditionally been able to sustain such networks, although there is a growing dependence of media firms on virtual networks supplemented with regular regional or global physical networking opportunities (Picard, 2008).

Large cities represent a diversity of human activities and interests that continually create streams of public goods, which sustain the workings of what Scott calls 'the creative milieu'. Socialization dynamics ensure the preservation and development of local knowledge under the exposure of global information and knowledge flows. Infrastructures, such as schools, colleges, universities and training centres secure a continuous supply of skilled, and specialized labour and public-private partnerships promote urban renewal and certain technological, creativity and innovation schemes. Large cities also offer 'institutional thickness' (Amin & Thrift, 1995), overlapping webs of supporting organizations, such as financing organizations, chambers of commerce, local and regional authorities, marketing, innovation and business support agencies that 'create synergy, and a collective sense of identity and purpose within a cluster' (Bassett, Griffiths & Smith, 2002). These features, and the fact that media production requires the overlapping skills of a highly differentiated workforce (cf., Pratt, 1999), imply that full-blown media clusters normally only are present in large cities.

Urban media clusters with both strong intra-regional and strong global networks have the potential to become worldwide forerunners. Whereas strong intra-regional networks facilitate competitive and creative production, global networks provide inputs of external knowledge and access to distant markets and reduce the risks urban media clusters from becoming inflexible. Therefore, a combination of strong intra-regional and strong global networks offers the most favourable conditions for an enduring ability and capacity to secure the long-term competitiveness of urban media clusters (cf., Storper & Harrison, 1991; Freeman, 1995; Marcusen, 1996; Freeman & Soete, 1997; Ernst, 1999).

The media value chain is continuously changing not least due to organizational and technological changes including an increasing digitalization but also due to changes in transport costs and distribution systems. Driver & Gillespie (1993), in their study of printed magazines in the UK, show that the creative tasks of conception, design and editorial as well as the preliminary production stage of typesetting and reproduction remained firmly tied to London while the printing of magazines was decentralized from London. Seen from a general perspective, this implies that functions within the media sector are not only out-sourced but often also relocated from media clusters to other locations nationally but increasingly also internationally, i.e. off-shored. However, many media functions continue to be clustered irrespectively of technological changes and reductions of transport costs and some media functions might over time even become more clustered. To understand the development of media clusters, the potential need for media cluster policies and what type of media cluster policies to implement, it is necessary to understand the underlying forces, which over time

- Change the media value chains in terms of in-sourcing and out-sourcing of functions and the functions making up these value chains,
- Change the organization of media firms including mergers and acquisitions and multinationalization, and
- Influence the tendency of functions in media value chains to cluster and to relocate respectively.

These changes reduce the importance of physical location for many media production and distribution activities. However, it is in this connection important to stress that the implications of the digital revolution for spatial relationships simply cannot be predicted from the technology itself, because, as Castells (1989, 21) says

“... the newly emerging forms of the informational mode of development, including its spatial forms, will not be determined by the structural requirements of the new technologies seeking to fulfil their development potential, but will emerge from the interactions between its technological and organizational components, and the historically determined process of the restructuring of capitalism.”

Against this background, we might now raise the critical question: where is clustering in the media economy to take place in the future? If we disregard those clusters that have been created due to political decisions, clustering of producers in the new media field should occur “where new communications technologies are insufficient to capture the full range of human expression ... clustering of producers will ... occur in particular places, namely those that afford a large degree of chance and random encounter with both similar and different producers, and users.” (Pratt 2000, 429)

Thus, the digital revolution will not mean the end of geographical clustering, not even of media industries. Instead, it is the type and form of interactions and transactions that matter and the need for formal and informal face-to-face communication remains essential and critical. New communications technologies and media cannot substitute all aspects of human interaction. This is particularly true “in the practices of learning, innovating, contracting, employment, as well as socializing, eating, relaxing ...” (Pratt, 2000, 434). However, the new communications and media technologies have enabled the establishment of new kinds of private and public networks to be created (Sheller, 2004). Irrespective of the advances in technologies, geographical proximity still facilitates untraded interdependencies (Storper, 1997) and since the digital technologies have particular advantages in handling routine information and to keep in contact and set up meetings, they might create more room for face-to-face interaction.

6. Media Clusters, Media Policies and Media Cluster Policies

Policies concerning media industries are implemented at both the national and the regional level. At the national level policy goals, such as freedom of expression and diversity of expression, policymakers have been concerned about the effects of media structure and ownership (Hendriks, 1995). The political discussions have concerned not least mergers between newspapers and the diversification of newspaper companies into radio and TV broadcasting activities. The result has been a diverse set of policy measures including special tax regulation, subsidies, the acceptance of price cartels, and (cross-) ownership regulation that vary over time and from country to country. What is interesting with this experimentation with different policy measures is that policymakers have shown little interest in the underlying economic theory and contributions in media economics¹⁷, which explains the development of market structures in the media sector and the strategic behaviour of media firms. Another important issue in the national policy debate in recent years has been the so-called digital divide, i.e. the unequal access to information among different social and economic groups in society (Perrons, 2004). Media industries are also affected by the national infrastructure and innovation policies. However, content innovations are mainly unknown in innovation policy circles and they do not fit easily into traditional innovation policy frameworks (Davis, Creutzberg & Arthurs, 2009). This is problematic in a time when media industries function as growth industries and when the creative abilities in media industries might play a strategic role in stimulating creativity and innovation in other industries not least in terms of their design capabilities (Vinodrai, Gertler & Lambert, 2007; Potts & Cunningham, 2008). Media policies at the regional level have had a different focus. Here the target has tended to be toward generating new employment and regional economic growth, and to rejuvenate old industrial sites often in central city locations.

There is evidence that national media policy may drive regional agglomeration more than regional policy and economic benefits. National policies, namely those related to broadcasting, are particularly significant in terms of promoting centralization or regionalization of media services and production. Because media are used to promote economic and cultural goals, policy choices may in some cases conflict if agencies involved pursue separate objectives.

¹⁷ Media economics centre around examinations of the interactions among media firms due to their strategic behaviour, the structural development of the media business environment, and the public policy towards media markets with a focus on how this results in the performance of media markets and media firms.

Some policies may promote only economic or cultural goals, and these can create tensions where clusters are involved.

It is important to recognize that the corporate, operational, and production locations often differ for the same media firm. They may agglomerate functions in different locations to obtain different benefits. Corporate offices may be located near suppliers in the financial industry, whereas production may be located near other producers to access shared resources.

For the most part and because of well-established legacy media that tend to produce the greatest economic value and employment tend to be left outside of cluster analyses and policymakers' interests in clusters. Newspaper, magazine, and printing enterprises are rarely considered part of clusters by policymakers. Newspaper houses, for example, tend not to be moved by redevelopment authorities to be part of new clusters, but those authorities may move their production and distribution activities to other types of industrial parks to make way for other redevelopment efforts at their original location.

The ability to use media industries for policy purposes varies because of their differing market structures. Film has a more national than regional structure, while television typically has a national or regional structure (and in some cases, local structure) based on the location of public and commercial broadcasters; and advertising typically has a local, regional, and national structure.

The location of media agglomeration is not always about costs and benefits. Clearly, there are locations in which low real estate costs, tax incentives, etc. provide advantages, but location is often more about operational needs and labour. Thus, agglomeration will occur in high cost locations when beneficial for face-to-face interaction in making deals, when labour markets require it, or when other facilities are unavailable.

It must also be recognized that some functions and productions are more geographically mobile because they are less dependent on external resources and personnel. Such activities are more likely to be relocated to low cost agglomeration locations and others require infrastructure-led planning for digital television, cable, and broadband services.

The impetus for development of media clusters differs depending upon location conditions. Its purposes may be to attract existing firms to a location to benefit from their activity; it may be to benefit by supporting the development of new media industries in the location, it may be to redevelop existing locations, where media firms are already present, and/or it may be to redevelop other quarters.

In general, there is recognition that some media industries are currently leading industries for economic growth and employment creation. Consequently, policy makers have promoted agglomeration in both large and small cities and regions. Agglomeration in large cities follows different patterns in that subsectors and firms tend to have more opportunity to spread. In some cases micro agglomerations of specific sectors—advertising or television production, for example—may appear, whereas in others these may be more co-located. The extent of the spread depends upon geography and particular urban dynamics such as population density and transportation systems.

The reasons for the widespread pursuit of media clusters vary and it is often difficult to determine whether the fundamental dynamic is intended to be city transformation or media in-

dustry development. Media clusters can be created to help transform and extend inner city spaces—in which case they often involve residential redevelopment, shopping, and entertainment development—or they may be created specifically to gain benefits from media developments.

Media clusters may have some linkages to educational institutions but this is not always the case. Unlike high tech and emerging technology clusters where such linkages are crucial, many media do not rely upon research activities in educational institutions. Consequently, educational institution involvement in clusters tends to be limited to cases where newer digital media are involved or where technical training is required.

The emergence or creation and operation of media clusters is complex because the concept of media itself is complicated by the wide diversity of media in terms of characteristics and methods of production. This is particularly true where some firms work is characterized as project based and other firms are engaged in continuous operations. Nevertheless, it is clear that beneficial locations, skilled labour forces, and supportive cultural and/or industrial policies are all needed for media clusters to achieve success.

Media firms may not need to be directly in the cluster location to benefit from it; they may be located on its fringes or nearby. This is particularly in cases of large urban agglomerations where firms can still benefit if they are in nearby micro-agglomerations.

The globalization process in recent decades has fundamentally changed the conditions for policy makers (Karlsson, Johansson & Stough, 2010). While policymakers at the national level have lost many of their traditional policy instruments due to deregulation and the emergence of supra-national organizations such as the European Union, local and regional autonomy has been revived (Hitters & Richards, 2002). Cities and regions hosting urban media clusters are today facing the concrete consequences of economic and cultural globalization including an increasing competition between cities and regions in general and of course between those hosting urban media clusters (Karlsson, Johansson & Stough, 2009, Eds.). The increased mobility of capital and the diminishing importance of purely physical location factors imply that cities and regions hosting urban media clusters must carefully follow the development of their clusters as well as the global developments in the media sector and be prepared, when motivated, to take necessary actions to support the development of ‘their’ media clusters. In doing so, however, the actual cities and regions have to take into account the shift to the new business logic in the global information economy, where firms increasingly work in network relations (Castells, 1996).

Before delving into basic motivations for cluster policies, it might be useful to consider three different approaches to cluster governance (cf., Koch & Fuchs, 2000):

- The *market approach* is based on the assumption that market processes are an efficient co-ordination mechanism that will guide the development of a cluster’s industrial structure in the right direction. The actions and decisions of independent economic actors will direct the development of the cluster and deliberate cluster policies are considered useless, counterproductive or too costly compared with their benefits.
- The *hierarchical approach* emphasizes the need for political intervention or intra-organizational control to guide the development of clusters, which market forces are unable to provide. Political interventions, using regulatory, planning and/or fiscal instruments or vertical integration of different economic actors are the main instruments for coordinating the development of clusters.

- The *network approach* stresses the importance of cooperative relations between autonomous economic actors in the cluster instead of the invisible hand of the market or the visible hand of the public sector. Instead, private economic actors, and public actors are bound together by network links, which are used to co-ordinate the development of the cluster. According to this approach, there is room for a special type of cluster policy interventions, namely policy actions aiming to stimulate and support co-operation networks.

There are two basic motivations for cluster policies in market economies. The first basic motivation can be found in traditional static economic welfare theory (Karlsson, 2008). Industrial clustering signals the existence of positive externalities, technological and/or pecuniary, which are not fully exploited automatically. Thus, externalities are a form of market failures and generally are taken as a motivation for political interference (often under the naïve assumption of the existence of perfect policy measure without distorting effects). However, political interference is associated with its own costs and these costs must be balanced against the benefits of better exploitation of the positive externalities.

The second basic motivation for cluster policies is dynamic and comes from endogenous regional growth theory, which emphasizes the importance of local and regional factors and actions in creating and sustaining local and regional economic development (Johansson, Karlsson & Stough, 2001, Eds.). However, in this case it is less obvious what the practical implications are, and how cluster policies should be designed and implemented (Karlsson & Stough, 2002).

Besides the general problem of deciding when cluster policies should be implemented, there is the second problem which is related to the type of policies in each of the two basic cases that are suitable for media clusters with their very specific characteristics. Generally speaking, one could claim that there is little evidence in the literature regarding whether policy interventions towards clusters are possible and if they can generate value by increasing the effectiveness of existing clusters or by speeding up the process of cluster development or by initiating new clusters (Ketels, 1993). But certainly, the literature is rich in cluster policy recommendations. One example is provided by Power and Scott (2004, 9-10), concerning places that want to develop the cultural economy, since there is a strong overlap between the cultural economy and the media economy. These recommendations also apply for the media economy:

“Policy-makers thus need to pay attention to three main ways of promoting collective competitive advantage, which, on the basis of the modern theory of industrial districts can be identified as (a) the building of collaborative inter-firm relations in order to mobilize latent synergies, (b) the organization of efficient, high-skill local labour markets, and (c) the potential of local industrial creativity and innovation.”

The current experience is that policy actions to promote clusters have resulted in an exceedingly diverse range of outcomes (Burfitt & MacNeill, 2008). One general conclusion that might be drawn from the more general literature is that it is not enough to stimulate local networking, localized learning and agglomeration economies. There is certainly also a strong need to support the development of global pipelines (Bathelt, Malmberg & Maskell, 2004). This is probably in particular important for media clusters, which are dependent on extra-local links to stimulate creativity but also to be able to market the products over many markets. A simple classification of clusters policies could be in policies directed to influence the general preconditions of clusters on the one hand, and in policies involving active cluster manage-

ment on the other. The first group of policies includes urban and regional planning, investments in material and non-material infrastructures, development of cluster relevant educations, etc.

An active cluster management by local and/or regional authorities on the other hand involves a number of critical steps and demands (Westrick & Rehfeld, 2003):

- A first success to demonstrate the benefits of cluster management for policy makers as well as most of the firms in the cluster
- Professionalization, routines, and institutional change, especially in local and regional development agencies
- A sustainable institutional setting that demonstrates the benefits to the firms in the cluster as well as potential entrants to the cluster so that the firms in the cluster over time become ready to pay for the cluster management services themselves
- That the cluster management in the long run is able to establish a learning capacity in order to manage rearrangement and adoption of new routines to secure cluster sustainability.

It appears that a number of demands or conditions would be useful where media clusters, specifically, are involved:

- Requiring public media firms to spend portion of production budgets in the region of the cluster
- Requiring that some actual production take place rather than firms using the cluster merely as secondary office meeting to meet some minimum national diversification requirements
- Requiring broadcasters to spend a percentage of their budgets with domestic independent producers
- Creating terms of trade conditions that allow independent producers to maintain intellectual property rights in their productions because merely outsourcing does not provide sufficient capital accumulation in independent firms for further production.
- Ensuring that tax and labour cost incentives are appropriate to attract and maintain firms into clusters
- Providing facility subsidies within clusters to create studios and editing spaces that are available to all participants
- Creating some incentives for exportable content rather than content primarily to meet domestic needs
- Ensuring that policy goes beyond merely allocation of production resources to emphasize quality or competitiveness vis-à-vis other national and international content.

7. Challenges for future research

There exist many research challenges connected to media clusters including the need for a better comprehension of the social and economic processes of development that characterize urban media clusters. In particular, four topics of major interest for researchers as well as policy makers are evident:

1. *Defining the media economy.* Researchers must continuously work with the definitions of the media economy (cf., Gibson & Kong, 2005), since there are many *ad hoc* definitions around and since ongoing technological and structural changes continuously change the borders of the media economy and its relations to other sectors in the economy and to the consumers. There are at least four different approaches, which to a certain extent need to be applied simultaneously: i) the sectoral approach¹⁸, ii) the labour market and organization of production approach (cf., Scott, 1996 & 2001), iii) the occupational approach (cf., the creative class approach a la Florida (2002), and iv) the convergence of formats approach (cf., Gibson & King, 2005). Without proper definitions, it is meaningless to discuss and analyze clusters.
2. *Evaluation of the impact of change on cognitive processes characterizing urban media clusters.* The central element of analysis here is the set of cognitive processes, which are the basis of the development path for urban media clusters conceived as creative clusters (cf. Landry & Bianchini, 1995). The relevance of tertiary activities at the urban level was identified decades ago (cf. Jacobs, 1969), however, without realizing, at the time, the prospects of new information, multimedia and telecommunications technologies. This makes the urban media clusters potential entities of analytical studies as a possible motor of economic development associated with the category of immaterial assets, which present unique creative characteristics, but which are also characterized by a variety of modes of distribution and consumption (cf. Crane, 1992).
3. *Evaluation of the impact of post-industrial society and globalization processes emerging in urban media clusters.* Large cities containing media clusters are today dominated by tertiary activities and the development processes that have led to this situation are not only characterized by a decline of some factors, a rejuvenation of some factors and a growth of new ones. They are also characterized by a change of the units of economic analysis themselves, which increasingly have concurrent dimensions at the local and the global level. Urban media clusters in some dimensions can be compared with traditional industrial districts. They must be seen as local systems capable of producing global products. Cultural and media economics contents integrate with those of urban economics and find their synthesis in the urban media cluster as a unit of analysis.
4. *Evaluation of the value-creation mechanisms in urban media clusters.* The evaluation here should not be done only from an economic point of view but also from a socio-cultural point of view due to the strong links between media industries and cultural industries. In particular, value-creation in urban media clusters is connected closely to the existence in the city of specific resources able to activate individual but also collective creative processes for the creation of media products but also for the creation of a cluster identity, i.e. of symbolic capital (cf., Peacock, 1992).

As far as urban economists and geographers are concerned, three interesting research perspectives are opened up: i) the most suitable *organizational structures* supporting the development of urban media clusters; ii) feasible *formulas of government* for urban media clusters, both as sources and local competencies in the management mechanisms (both cluster and city

¹⁸ It should in this connection be observed that there are strong overlaps between some definitions of the media sector and some definitions of cultural sector, see e.g. the following definition of the cultural sector by Pratt (1997, 1958): "... performance, fine art, and literature; their reproduction: books, journal magazines, newspapers, film, radio, television, recordings on disc or tape; and activities that link together art forms, such as advertising. Also considered are the production, distribution and display processes of printing and broadcasting, as well as museums, libraries, theatres, nightclubs, and galleries."

management!) and as city promotion instruments (city and cluster marketing!); and iii) the likely *birth of new leading economic actors in the urban media cluster*, in particular, in advanced tertiary activities.

To pursue the above research agenda it is important to return to previous contributions in complex economics and the studies of economic and inter-organizational networks for the analysis of urban media clusters, because their variety of organizational forms can be seen as constituting a valid example of complexity. The urban media cluster is a network of formal and informal direct and indirect links or perhaps rather a system of networks or a network of systems related to the network of the information city (Castells, 1989).

The individual networks of the individual actors in the urban media cluster can be thought of at the aggregated level as a macro-network organization to which the analytical categories of strategic management can be applied. Thus, it is possible to introduce the concept of 'media cluster management', which implies the potential of the creation of a cluster 'management' able to govern complexity in the macro-network organization. However, this 'management' does not need to be formal or even informal. There are various institutional mechanisms by which economic activities are coordinated in a cluster (cf. Fuchs, 2002), including networking among economic actors without formal or informal centralized coordination (Hage & Alter, 1997). A point of topical interest here is to turn to theoretical configurations, which either deal with the study of the evolution and sustainable development of media clusters applying analogies to eco-biological models, or to apply the concept of product or industry life cycle to the media cluster from the perspective of strategic management.

Finally, it is important to apply research perspectives on urban media clusters that focus on the one hand on firm growth in the clusters and on the other hand on the role of entrepreneurship for the continuous renewal of such clusters. A focus on growth of incumbents and new firm entry is critical, since rapid firm growth and new firm entry are two critical signals of a successful cluster (Porter, 1998). It is in this connection important to examine also the potential for the emergence of new leading economic actors in the clusters, since many small economic actors are dependent on the large leading actors as customers for their services (Scott, 1996 & 2000b). A complementary focus to the growth and new entry focus is a focus on productivity and innovation, since clusters are expected to generate a higher rate of productivity growth (Henderson, 1986) and a higher rate of innovation (Baptista & Swann, 1998). However, also firms in urban media clusters are affected by the negative effects of success in the form of congestion and competition in input and output markets resulting in increasing land prices, rents and wages and salaries. This will over time lead to a shakeout of firms from the cluster, where those firms with the lowest potential to bear the increasing costs will adapt by sliming their operations, going out of business or relocating their operations (or part of them) to the outskirts of the city or even to other locations with lower costs. If the negative effects of clustering increase more rapidly than the positive ones, this of course might lead to a slowdown in firm and productivity growth and in the rate of net entry and innovation.¹⁹ Thus, the negative effects might lead an urban media cluster to stagnate or even to go into a declining phase of its life cycle (Swann, Prevezer & Stout, 1998, Eds.).

¹⁹ Pandit, Cook and Swann (2002) find evidence that clusters can become congested to the extent that they deter entry.

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