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**The Rise of a New Cultural Products Industry
Cluster in Germany: The Case of the Leipzig
Media Industry**

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1 Introduction: Clustering Processes in Cultural Products Industries

Over the past decade, a variety of studies have shown that other sectors in addition to high technology industries can provide a basis for regional growth and income and employment opportunities. In addition, design-intensive, craft-based, creative industries which operate in frequently changing, fashion-oriented markets have established regional concentrations. Such industries focus on the production of products and services with a particular cultural and social content and frequently integrate new information technologies into their operations and outputs. Among these industries, the media and, more recently, multimedia industries have received particular attention (Brail/ Gertler 1999; Egan/ Saxenian 1999). Especially, the film (motion picture) and TV industries have been the focus of a number of studies (e.g. Storper/ Christopherson 1987; Scott 1996). For the purpose of this paper, cultural products industries are defined as those industries which are involved in the commodification of culture, especially those operations “that depend for their success on the commercialization of objects and services that transmit social and cultural messages” (Scott 1996, p. 306).

Empirical studies on the size, structure and organizational attributes of the firms in media-related industry clusters have revealed a number of common characteristics (Scott 1996; Brail/ Gertler 1999; Egan/ Saxenian 1999). Most firms in these industries are fairly young, often existing for only a few years. They also tend to be small in terms of employment. Often, regional clusters of specialized industries are the product of a local growth process which has been driven by innovative local start-ups. In their early stages, many firms have been established by teams of persons rather than by individual entrepreneurs and have heavily relied on owner capital. Another important feature which distinguishes these industries from others is that they concentrate in inner-city instead of suburban locations (Storper/ Christopherson 1987; Eberts/ Norcliffe 1998; Brail/ Gertler 1999). In this study, I provide evidence that the Leipzig media industry shows similar tendencies and characteristics as those displayed by the multimedia and cultural products industry clusters in Los Angeles, San Francisco and Toronto, albeit at a much smaller scale.

Cultural products industries are characterized by a strong tendency towards the formation of regional clusters despite the fact that in some sectors, such as the multimedia industry, technological opportunities (i.e. internet technologies) have seemingly reduced the necessity of proximity in operations between interlinked firms. In fact, it seems that regional concentration tendencies are even more dominant in cultural products industries than in many industries of the ‘old economy’. Cultural products industries have formed particular regional clusters of suppliers, producers and customers which are interlinked within the same commodity chains (Scott 1996; Les-

lie/ Reimer 1999). These clusters are characterized by a deep social division of labor between vertically-linked firms and patterns of interaction and cooperation in production and innovation. Within close networks of social relations and reflexive collective action, they have developed a strong tendency towards product- and process-related specialization (Storper 1997; Maskell/ Malmberg 1999; Porter 2000).

In the context of the rise of a new media industry cluster in Leipzig, Germany, I discuss those approaches in the next section of this paper which provide an understanding of complex industrial clustering processes. Therein socio-institutional settings, inter-firm communication and interactive learning play a decisive role in generating regional innovation and growth. However, I will also emphasize that inter-firm networks can have a negative impact on competitiveness if social relations and linkages are too close, too exclusive and too rigid. Leipzig's historical role as a location of media-related businesses will be presented in section 3. As part of this, I will argue the need to view the present cluster of media firms as an independent phenomenon which is not a mere continuation of tradition. In section 4 the start-up and location processes are analyzed which have contributed to the rise of a new media industry cluster in Leipzig during the 1990's. Related to this, section 5 will discuss the role and variety of institutions which have developed in Leipzig and how they support specialization processes. This will be interpreted as a process of re-embedding into a local context. In section 6, I will discuss how media firms have become over-embedded due to their strong orientation towards regional markets. This will be followed by some brief conclusions regarding the growth potential of the Leipzig media industry.

2 Localized Economic Clustering, Social Relations and the Problem of Openness

Traditional approaches to industrial location and clustering have focused on the role of transportation costs, economies of concentration and other kinds of traded interdependencies. This is still visible in the work of Krugman (1991) who views regional clustering as a consequence of the strategy of industrial firms to maximize economies of scale while minimizing transportation costs. Based on the assumptions of increasing returns, factor mobility and the existence of transportation costs, Krugman (1991; 2000) has developed a simple model of how industries concentrate in certain regions and how specialized economic clusters develop over time. According to this model, consumer goods producers have an incentive to locate large facilities close to major consumer goods markets; that is, regions where many customers live and work. Suppliers, in turn, have an incentive to be near the consumer goods producers who are their customers. This results in an agglomeration process through which the number of people in a core region and the demand for consumer goods increase.

This provides an incentive for even more firms to move their facilities to this particular region and will further strengthen the industrial cluster.

Although Krugman's (1991) analysis draws heavily on Marshall's (1927) classic economic analysis of industrial localization, he does not incorporate Marshall's notion of 'industrial atmosphere'. In his view, technological spillovers between nearby firms are not as important as the combined effects of economies of scale and low transportation costs. Recent contributions by Storper (1995; 1997), Malmberg/ Maskell (1997), Maskell/ Malmberg (1999), Lawson (1999) and others have pointed out the inadequacy of such a view in understanding the processes behind regional specialization and concentration. In emphasizing 'localised capabilities' and 'untraded interdependencies', they have shown that socio-institutional settings, inter-firm communication and interactive learning play a decisive role in regional innovation and growth processes (for an overview, see Gordon/ McCann 2000; Bathelt/ Glückler 2001).

Malmberg/ Maskell (1997) argue that a firm's competitiveness is based on a set of product- and process-related competencies, which are unique to the market, as well as the ability of the firm to strengthen these competencies through learning and subsequent adjustments. Such competencies can, in part, be based on what Maskell/ Malmberg (1999) call 'localised capabilities'. They encompass specialized local resources, skills and shared trust, norms, routines and other local institutional structures. In some instances, firms use local resources and existing competencies to specialize their production. This, in turn, has an impact on existing local supplier relations since it requires adjustments in the products and processes of these firms. Over time, the combined effects will shape the labor market, the existing organizational routines and best practices within the region and will serve to develop the localised capabilities even further. Firms within the same commodity chain strengthen their competence through continuous interactive learning.

According to Storper (1997), regional clusters are a particularly good basis for cumulative technological learning, collective action and problem-solving due to the role of 'untraded interdependencies', such as homogeneous goals and attitudes and generally accepted rules and conventions. Untraded interdependencies serve as a prerequisite for complex, technologically-sophisticated innovation processes which involve a distinct social division of labor between various actors and firms. The goals of such interactive innovation processes are not pre-determined but are constantly being shaped and redefined by the firms involved, as influenced by the outcomes of prior actions. This means that conventions and relations are only preliminary in character, being continuously restructured in close communication with all actors involved. Adjustments of conventions and relations require the co-presence of the respective actors and firms, which is most efficiently conducted in a localized context (Storper 1997). As a consequence, territorial production systems (i.e. technology districts) can

develop which are characterized by close inter-firm interaction, proximity and systematic interactive learning (see also Morgan 1997).

This will result in a particular regional competence (Lawson 1999) or regional competitive advantage (Porter 2000). Those firms and regions with the most sophisticated skill levels, know-how and research activities in a particular technology field have the best opportunities for further knowledge creation in this field. This serves as an incentive for specialized suppliers, producers and customers to relocate some of their facilities to these regions and stimulates cumulative regional growth. In order to keep the knowledge base as a vibrant source of competitiveness, it has to be constantly renewed and adjusted in ways which do not allow for its wide geographical diffusion (Maskell/ Malmberg 1999).

In contrast with Krugman's (1991; 2000) model, industrial clustering is not merely based on cost considerations and economies of scale. A large body of literature suggests that complex innovation processes rely heavily on intensive supplier-producer-user interaction and corresponding learning processes (Lundvall 1988; Gertler 1997). As such, innovations must be viewed as a result of social relations and reflexive behavior and not of individualistic endeavors. Granovetter (1985) has pointed out that economic activities are embedded in structures of social relations. This means that firms cannot be analyzed as independent entities but that they are closely interconnected in communication and adjustment processes with their suppliers, customers and institutions (Grabher 1993). At least partially, they establish close, long-term relations with important suppliers and core customers based on reciprocity and trust.

A number of studies have also pointed out the disadvantages associated with intensive, long-term network relations between firms (for a survey, see Bathelt/ Glückler 2001). If these linkages are too close, too exclusive and too rigid, such social relations can in fact pose a threat to the competitiveness of a firm or a group of firms. In the following review of five different approaches, I will discuss the importance of open networks in this context.

(a) *Strength of weak ties*. In his classical work on the 'strength of weak ties', Granovetter (1973) has shown that close, strong ties between economic actors in a network are an important source for efficient communication and adjustments in social relations. In the case of a commodity chain, strong ties between firms allow for a fast diffusion of incremental innovations throughout the production network. Granovetter (1973) has illustrated that such strong ties are rarely able, however, to bridge the gap between different networks. They cannot ensure openness in an existing system of social relations. If strong ties develop between two formerly separate networks, they will eventually merge into a single network. This is because strong ties will cause the formation of further strong and weak ties. On the contrary, certain loose couplings, so-called local bridges, allow a network to source new knowledge

from outside that is absent within the network (Grabher 1994). Granovetter (1973) argues that weak ties at the periphery of a network are especially important for the diffusion of breakthrough innovations, which would otherwise be slowed down by strong ties in the network core.

(b) *Over-embeddedness*. In an empirical study of the organization of production in New York's textile industry, Uzzi (1997) has tried to provide evidence for the advantages of embedded structures to the firm. He found that close social relations of suppliers with their customers are only positive to a certain extent. The study reveals that close, long-term customer relations are usually advantageous since they enable both, the customers and suppliers, to benefit from learning processes and to react quickly to market changes. According to Uzzi (1997), close customer relations will thus enhance an individual supplier's probability to survive in the market. This changes, however, if other suppliers are also closely linked with the same customers. The more suppliers are embedded in close customer relations with the same customers, the more likely an increase in a firm's probability of market failure occurs (Uzzi 1997). This phenomenon of over-embeddedness is related to lock-in effects. It is, in part, associated with coordination problems that can arise when the number of network actors becomes too large (Hellmer et al. 1999).

(c) *Blind confidence, gullibility and lock-in*. Kern (1996) has suggested that the threat of technological lock-in and collective failure within a production network is related to the role of trust in social relations. Notably, trust provides an important basis for the development of network relations in highly-competitive, technologically-sophisticated markets and is a prerequisite for transaction-specific investments. Over the long-term, however, the development of too much trust can cause structures of blind confidence and gullibility to spread within a network. As a result, traditional problem-solving strategies, including those that are in need of change, may remain unaltered. Blind reliance on network actors might cause a lock-in into an inefficient technological trajectory. Kern (1996) emphasizes that attempts to consciously open network relations for the influx of external information, as well as maintaining a certain amount of distrust with respect to traditional solutions, are important to ensure competitiveness within a network.

(d) *External linkages and innovativeness*. The milieu school is also aware of a similar problem. In his conceptualization, Maillat (1998) defines the milieu as a territorial production system, consisting of a variety of material, labor market, technology and information linkages developing within a particular commodity chain. This resulting network of social relations forms an integral component of existing socio-institutional structures and is thus necessarily embedded. The affiliation to the same production systems and its technological traditions stimulates cooperation between the actors and promotes interactive learning processes and collective problem-solving (Bramanti/ Ratti 1997). This is because norms, routines, shared trust and a unique tech-

nology culture evolve over time which create a basis for collective action. Given these characteristics of a milieu, Maillat (1998) poses the question as to what distinguishes a stagnant from a creative, innovative milieu and which forces enable a milieu to grow. To answer this, he examines the internal processes and external relations which are needed to ensure a milieu's success. To maintain the flow of important information about market trends and new technologies within the milieu, the actors need to establish systematic linkages with external information sources. The success of the milieu actors to advance innovation processes thus relies on their capability to acquire specialized information and resources from external sources.

(e) Super-clusters and the importance of heterogeneous transactions. In his book on the role of regions in the world economy, Scott (1998) discusses a problem similar to that of over-embeddedness and openness. In his analyses of the performance of localized production systems, Scott (1998) emphasizes the role of two forces in influencing the degree to which a social division of labor and clustering processes take place. These are the level of (localized) external effects and the amount of (spatial) transaction costs. If production and innovation processes do not benefit from localized external effects, such as information-spillovers in innovation processes and advantages from shared socio-institutional settings, the respective producers do not locate close to one another. Industrial clusters can therefore not be established. This changes when localized external effects become important. In this case, particular spatial clusters develop (Scott 1998). The size of these clusters depends on the extent and mix of spatial transaction costs.

If transaction costs are very low inter-firm linkages are not limited to particular localities and include transactions over large distances. The resulting industrial clusters would be interconnected but remain small. In the case of very high transaction costs, intraregional linkages are quite dominant. The resulting industrial clusters would not be connected with others and also be relatively small. This is because the internal markets would not be large enough to induce high growth. The spatial configuration of production, however, changes drastically when a hybrid structure of spatial transaction costs exists. According to Scott (1998), super-clusters would then develop because external transactions transfer growth impulses to the localized production system which, in turn, disseminate through internal transactions networks. This implies that the performance of localized production systems depends on the right mix of local and non-local transactions and that strong growth can only result if external markets are linked to the production cluster (see also Scott 1996).

All of the approaches discussed suggest that embeddedness is not only associated with positive economic impacts but can, in certain instances, have negative consequences on a firm's success. Industrial clusters, where firms are embedded in tight

networks of social relations, can be quite innovative and competitive. If, however, such structures are characterized by blind confidence, over-embeddedness, self-reliance and the neglect of external knowledge and markets, dramatic effects can be the consequence. This does not only pose limitations on the regional growth processes but also bears the risk of collective failure and, as a result, regional decline. In his examination of consumer goods clusters in Germany, Schamp (2000) also emphasizes the role of influences external to a regional production network. Such linkages support the regional growth process. If, however, external linkages are too strong they threaten the existence of the cluster in the long term. Overall, the literature reviewed suggests that there has to be a particular mix of both, internal and external, social relations to ensure continued growth and reproductivity within an industrial cluster.

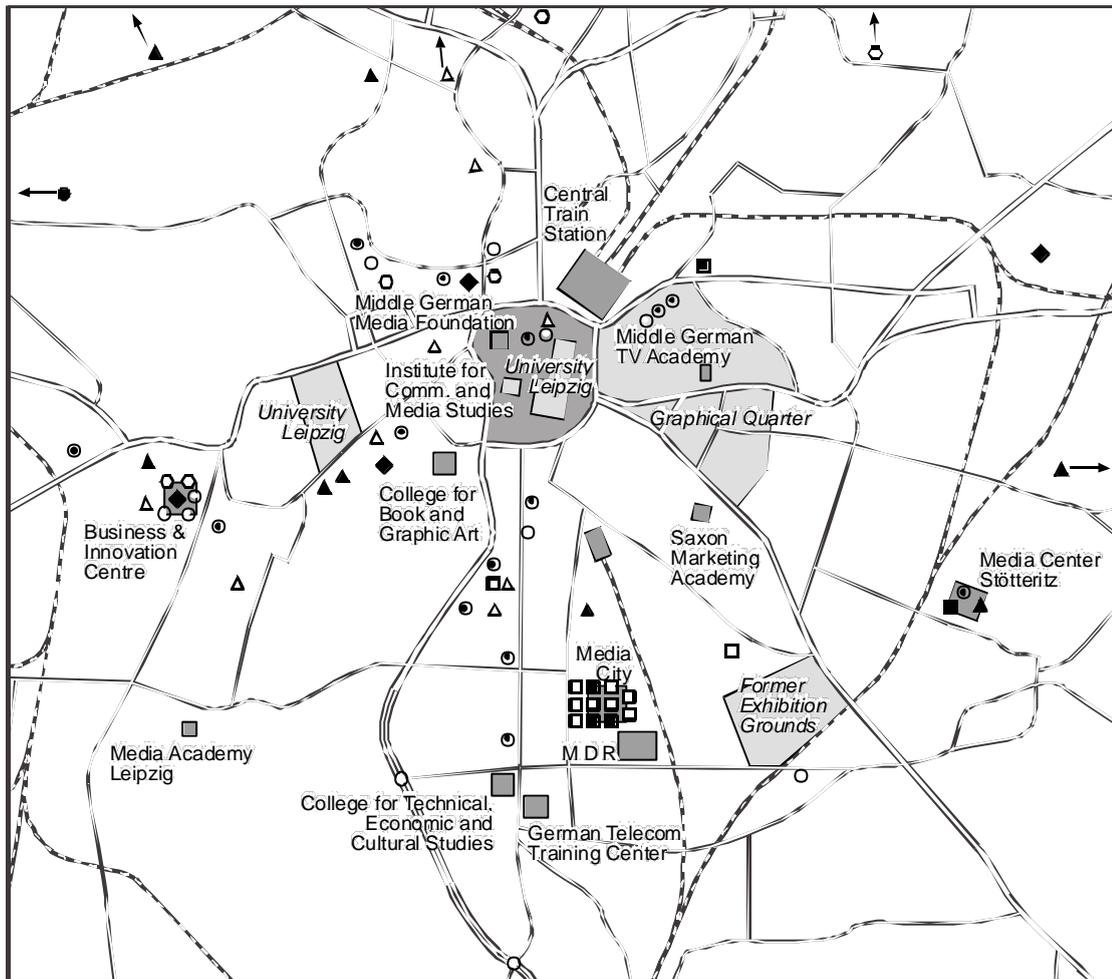
In the following sections, I argue that the recent growth of the Leipzig media industry is not embedded into traditional industrial structures and institutional settings. The growth of this sector after the German unification has been related to local start-up processes and the establishment of branch facilities. These firms are interconnected with one another and, in particular, with the region's most important actors, i.e. the *MDR (Mitteldeutscher Rundfunk - Middle German Television and Broadcasting Service)* and the new Leipzig convention center. I demonstrate that the media firms have benefited from the formation of localized capabilities, such as intensive regional customer and labor market relations, the development of a local market and a distinct local identity. At the same time, however, this strong orientation towards local customers is interpreted as an indication of local over-embeddedness. This has seemingly become problematic since it limits growth prospects in the media industry.

3 Disembedding: Economic Structures in Post-*Wende* Leipzig and Their Historical Burden

Already in the Middle Ages, Leipzig was an important trade and service center, which developed into a leading location for trade fairs in Europe (Schmidt 1994; Gormsen 1996; Grundmann 1996a). Originally, trade fairs took place in the city's core, the impacts of which are still visible in the city structure. To ease the transport of goods to and from the trade fairs, major roads were connected by a network of through-roads built between the houses in the inner-city which were wide enough for the passing of horse-drawn vehicles. Later, when the trade fairs became too big to be hosted within the downtown area, exhibition grounds were established in the South of the city (Figure 1).

With the establishment of the *DDR (Deutsche Demokratische Republik - German Democratic Republic)* after World War II as a socialist state under Soviet control, significant economic restructuring and expropriation activities took place (Haase 1984).

Figure 1. Selected Firms and Institutions of the Leipzig Media Industry.



Survey Firms 2000

- Film/TV Production
- ⊙ New Electronic Services
- ▲ Communications/PR/Marketing
- ◆ Graphics/Design

Survey Firms 2001

- Film/TV Production
- New Electronic Services
- △ Communications/PR/Marketing
- ⊕ Hardware/Software



As a consequence, the former Leipzig trade fairs and exhibitions were relocated and organized in West German cities, i.e. Hanover and Frankfurt. Both cities have developed into major centers of international trade fairs and exhibitions in the post-war period, taking over these functions from Leipzig. The city remained, however, an important trade center in Eastern Europe due to its annual *Leipziger Messe* (Leipzig trade fair). The *Leipziger Messe* became a decisive institution in East-West trade relations (Grundmann 1996b). It was the single most important event for firms from Western Europe and the COMECON countries to present their products, exchange ideas, prepare contracts and conduct business.

With the dismantling of the communist regimes in Eastern Europe after the German unification, such a trade fair was no longer needed and Leipzig declined in impor-

tance as a marketplace for the East-West trade. In order to enhance the attractiveness of the city as a location for trade fairs and exhibitions, a new technologically-advanced convention center was built in Leipzig's North to replace the outdated traditional convention facilities (Grundmann 1996b). Investments into the new convention center, which is located close to the airport and has 100,000 m² of indoor and 30,000 m² of outdoor exhibition space, totaled DM 1.3 billion. Despite early successes in attracting regional exhibitions, the new convention center has not yet hosted any major international trade fairs and has not become profitable (*Frankfurter Rundschau* 2000). Leipzig's prospects in regaining its position as a major trade fair and exhibition center in Germany are not that great. This is especially true given the activities of other German cities to improve their convention infrastructure (Bode/ Burdack 1997). Hanover has for instance received large federal and state investments to extend and restructure its exhibition grounds and convention facilities for the World Exposition EXPO 2000 (Diez/ Kramer 2000). Similarly, Frankfurt is in the process of expanding and modernizing its exhibition infrastructure.

Before World War II, Leipzig also played a leading role in the German book-trade and printing and publishing industry (Baier 1992; Sagurna 1999; 2000). During the 19th century, the city became a major center for large booksellers, publishers and printing offices and, as such, gained international importance in these businesses. Along with this, a large number of supporting services and formal institutions of the German book-trade, such as the *Deutsche Bücherei* (German National Library) and the *Börsenverein des Deutschen Buchhandels* (Association of German Book-Traders), were concentrated in Leipzig. In the 1930's, there were more than 800 publishers and booksellers with over 3,000 employees. Most of the firms were located in the *Graphisches Viertel* (Graphical Quarter), a relatively small area of 1.2 km² in the Eastern part of the city, adjacent to the downtown area (Denzer/ Grundmann 1999; Figure 1). The local production system was that of an 19th century industrial district (Boggs 2001).

In the post-war period, Leipzig lost its dominance in the book-trade and printing and publishing industry and firms relocated to other cities in West Germany. Important formal institutions also left. The *Deutsche Büchermesse* (German Book Fair) and *Deutsche Bücherei* (*Deutsche Bibliothek*) were for instance transferred to Frankfurt. Even though Leipzig was still an important location of the printing and publishing industry of the *DDR*, it was not able to retain its status as a national and international center of these industries (Denzer/ Grundmann 1999). The controversy which arose in Frankfurt when the *Börsenverein des Deutschen Buchhandels* discussed ideas to relocate parts of their activities back to Leipzig (Göpfert 2001; Reckmann 2001) exemplifies that those cities which benefited from the post-war developments in Leipzig are not willing to give up any of the functions they gained from Leipzig.

In the area of electronic media, such as the radio, TV and film industry, Leipzig does not have a strong tradition and has never played an important role (Sagurna 1999; 2000). The *DDR* radio, TV and film sector, characterized by a rigid hierarchical organization, was centered and concentrated in East Berlin-Potsdam. Actors, technicians and other media personnel were attracted to East Berlin from other regions of the *DDR* as a result. This is still visible in today's structure as Potsdam-Babelsberg develops into an important center of the German film industry (Krätke/ Scheuplein 2001). Despite Leipzig's lack of tradition in this industry, a new media cluster developed in the city during the 1990's around the activities of the *MDR*. This cluster is much smaller than that in Potsdam-Babelsberg but still significant. The *MDR* was established in 1991 as a public broadcasting service of the *neue Länder* (states of the former *DDR*) Saxony, Saxony-Anhalt and Thuringia (Reiter 2000). With its main office located in Leipzig, the *MDR* employed about 2,050 individuals in the region in 1998 (*Mitteldeutscher Rundfunk* 1999). In addition, there were about 1,000 to 1,500 freelance consultants who worked for the *MDR*. With its establishment, the *MDR* rapidly became the most important institution in supporting the establishment of film and TV-related media branches in Leipzig.

Similar to that which took place in other regions of Saxony and Saxony-Anhalt, large parts of Leipzig's manufacturing activities were terminated or dramatically downsized after the unification (Kowalke 1994; Tzschaschel/ Wollkopf 1996; Oelke 1997). The number of employees in Leipzig's manufacturing/ mining/ construction sector decreased from 115,000 in 1991 to 59,000 in 1997 (Table 1). These numbers do not even fully reflect the extent to which manufacturing was restructured. In July 1999, a mere 19,000 people were employed in Leipzig's manufacturing sector (*Statistisches Landesamt des Freistaates Sachsen* 2000). Most of the reduction in Leipzig's overall workforce was due to the decline of this sector, forcing many people to move to West Germany cities where the prospects of obtaining employment were better. Between 1988 and 1993, the population of Leipzig decreased from 530,000 to 495,000 (Schmidt 1994). In the post-*Wende* period, most start-up activities in Leipzig have concentrated in the service sector.

The media industry is one of the few economic sectors which have experienced economic growth during this period and has served to stabilize the local economy. This has occurred despite the fact that the institutional settings for the development of a new media cluster in Leipzig have not been supportive. Recent growth in the media industry has not been related to Leipzig's traditional industrial and institutional structures. The formation of this media industry cluster has not resulted from a renewal process of pre-existing industries. This process has not been embedded into historical structures and traditional social relations. In this respect, the development in Leipzig contrasts sharply with that in North American media industry clusters, such as Los Angeles and Toronto (Storper/ Christopherson 1987; Scott 1996; Brail/ Gertler

1999). In the next section of this paper, I discuss in more detail the start-up and location processes that have occurred in this industry and develop a typology of start-up firms. This is based on the results obtained from a survey of 34 firms conducted in Leipzig in July 2000.

Table 1. Number of Employees in Leipzig by Economic Sector, 1991 and 1997 (Source: Statistisches Landesamt des Freistaates Sachsen 1999).

Economic sector	- Number of employees -	
	1991	1997
- Agriculture/ forestry	1,952	841
- Manufacturing/ mining/ construction	115,302	58,909
- Wholesale and retail trade/ transport/ broadcasting services	49,573	42,587
- Finance/ insurance/ other services	62,403	75,786
- Public administration/ utilities/ health and social services	68,457	66,078
Total	297,687	244,201

4 Genesis of a New Media Cluster in Leipzig

According to Bentele et al.'s (1998; 2000) analysis, the Leipzig media economy consisted of 1,063 firms in 1998 and 1,500 firms in 2000. The media activities included in their study involved two segments of media branches (Table 1): (A) electronic and new media segment: TV/ film/ radio, PR/ marketing, hardware/ software, data processing, interactive media; (B) print and other media segment: telecommunications (infrastructure), trade fair/ exhibition supplies, publishers, printing/ reproduction, newspapers/ journals, as well as media research/ educational institutions, media clubs/ associations and cultural amenities. One problem of this classification of the media industry is that it is rather broad including even media institutions and media clubs. In addition, not all firms listed belong to the media industry (i.e. firms in hardware, software, data processing). The study shows nonetheless that the Leipzig media industry has grown significantly and has become an important component of the local economy.

According to the number of full-time and part-time employees, TV/ film/ radio (3,800), telecommunications (3,400), publishing (2,700), cultural amenities (2,700) and printing/ reproduction (2,300) were the most important branches of Leipzig's media industry in 1998 (Table 2). Bentele et al. (1998) estimate from their postal survey that the Leipzig media sector employed about 21,000 permanent employees and 11,800 free-

lance consultants. In their recent study, they present evidence for ongoing growth in media industries (Bentele et al. 2000). According to this, the media sector had 25,600 permanent employees and 14,600 freelance consultants in 2000, amounting to about 16% of the regional labor force. Some observers suggest that this is enough to induce further agglomeration and growth of the local media industry in the future (e.g. Schubert 1999; Müller 2000). Due to changes in the sampling methodology, it is difficult however to compare the results from 1998 with those from 2000.

Table 2. Number of Employees in the Leipzig Media Industry by Branch, 1998 (Sources: Bentele et al. 1998; 2000).

Branch of the media industry	- Estimated number of employees -	
	<i>Full-time and part-time</i>	<i>Freelance</i>
	(A) Electronic and new media segment	
- TV/ film/ radio	3,800	5,000
- PR/ marketing	1,500	3,700
- Hardware/ software	1,800	300
- Data processing	700	200
- Interactive media	400	100
Subtotal	8,200	9,300
	(B) Print and other media segment	
- Telecommunications (infrastructure)	3,400	100
- Trade fair/ exhibition supplies	550	50
- Publishing	2,700	1,300
- Printing/ reproduction	2,300	100
- Newspapers/ journals	200	200
- Media research/ educational institutions	500	400
- Media clubs/ associations	450	50
- Cultural amenities	2,700	300
Subtotal	12,800	2,500
Total 1998	21,000	11,800
Total 2000	25,600	14,600

4.1 Survey

Of the people permanently employed in the media industry, about 60% worked in the more traditional print and other media branches, which have stagnated or declined in recent years. The growing segment of electronic and new media branches accounted already for 40% of total employment. This segment consisted of more than 8,000 permanent employees and 9,000 freelance consultants in 1998 (Table 2). The latter media branches were the basis for our survey conducted. The branches included in this study are: film/ TV production, new electronic services, graphics/ design, PR/ marketing (Table 3). The local telecommunications branch was not included because it focuses on the telecommunications infrastructure.

A list of 85 media firms to be included in our survey (target sample) was obtained from the city's media industry directory (*Stadt Leipzig* 1997; 2000). A fundamental problem of this firm directory is that it is based on self-classification. Specifically, firms were simply asked to identify the branches of the media industry in which they operate. The directory is not very exact as a consequence, requiring correction during the interview process, but still provided an important data base for the preliminary identification of media firms. Of the firms in the target sample, 34 agreed to participate in the survey, resulting in a 40.0% response rate. The distribution of sample firms by media branch is shown in Table 3. In these firms, more than 50 interviews were conducted in July 2000 using a structured questionnaire. It should also be mentioned that another survey of more than 30 media firms which included 50 interviews was conducted in March and April 2001. Detailed results from this survey will be available in autumn 2001.

Table 3. Survey Statistics of the Leipzig Media Industry, 2000 (Source: Survey Results).

Category	- Firms -	
	Number	Share (%)
- Target sample	85	100.0
. Responses	34	40.0
. Rejections	51	60.0
- Sample population	34	100.0
. Film/ TV production	6	17.6
. New electronic services	15	44.1
. Graphics/ design	4	11.8
. PR/ marketing	9	26.5

The questions asked, which were mostly open, revolved around four topic areas: (i) the variety of products/ services produced and the type and locations of customers approached, (ii) the start-up/ location processes and the role of institutions therein, (iii) the content and frequency of supplier and customer relations, (iv) personal opinions about the future prospects of the local media industry.

4.2 Start-up Processes and Location Activities

When analyzing the process of firm formation in Leipzig's media industry, activities in the media industry appear to be a recent trend. Most of the firms in this sector are quite young, being established in the 1990's. According to the year established, three distinct periods of firm formation can be distinguished (Table 4). Bentele et al.'s (2000) postal survey of 719 firms in Leipzig's media economy shows a similar classification of different periods with similar rates of firm formation.

Table 4. Media Firms in Leipzig by Start-up Period (Source: Survey Results).

Start-up period	- Survey firms -	
	Number	Share (%)
1989 - 1991	12	35.3
1992 - 1994	4	11.8
1995 - 1997	6	17.6
1998 - 2000	12	35.3
Total	34	100.0

The first stage encompasses the immediate post-*Wende* period from 1989 through 1991. One third of the survey firms (12 of 34 firms) were established during this first boom period. This stage was characterized by optimistic entrepreneurs looking for new challenges, some of whom had just lost their jobs due to economic restructuring in Leipzig. The next stage from 1992 through 1997 was characterized by a substantial decline in entrepreneurial activities, with an approximate 50% reduction in the annual firm formation rate (Bentele et al. 1998; 2000). This stage of decline is reflected in our survey results. Only 10 of 34 firms (30%) were established within the two three-year period 1992/1994 and 1995/1997 (Table 4). This is probably related to the fact that the original market projections had proven too optimistic. The new *Länder* were still in a structural crisis with a continued decrease in manufacturing, high unemployment rates and stagnant or even shrinking markets in many sectors (Kowalke 1994). In this stage, strong incentives for entrepreneurial activities were absent.

In recent years from 1998 through 2000, start-up activities in Leipzig's media industry increased again to levels of the post-*Wende* period. From 1998 through 2000, another third of the survey firms were founded. This wave of start-up activities can be attributed to the fact that Leipzig's media industry had evolved beyond its infant stage and had developed a significant size. It has been continuously growing, albeit at a modest pace. The media industry and its dominant firms and institutions became established, encouraging further growth in the respective industries. Bentele et al. (2000) also point out that a number of firms (almost 15% of their survey) had already been established under the DDR regime during the post-war period. These were primarily firms in the print media segment (e.g. journals and printing offices) which was not included in our survey. These early start-ups did not just continue to exist in their original form after the unification. Although sometimes the same people were employed as before, these firms were re-established in a different form.

The young age of the firms explains why most of the firms are still rather small in terms of employment (Table 5). Two thirds of the firms surveyed had less than 10 employees in 2000. The average number of permanent employees per firm was 7, plus an additional 6 freelance consultants. In Bentele et al.'s (2000) survey, small firms were also typical of the media industry: 245 of 620 responding firms (39.5%) had only 1 or 2 employees in 2000. Similar tendencies have been reported for other regional clusters of multimedia and media-related industries, such as those in North America (Scott 1996; Brail/ Gertler 1999; Egan/ Saxenian 1999). Most firms in these clusters are rather young and small.

Table 5. Media Firms in Leipzig by Number of Employees, 2000 (Source: Survey Results). Note: The MDR (2,050 employees) is not included in this table.

Employment class	- Survey firms -	
	<i>Number</i>	<i>Share (%)</i>
1 - 5 employees	15	45.5
6 - 10 employees	9	27.3
11 - 20 employees	9	27.3
Total	33	100.1

In order to understand the growth process in the Leipzig media industry, Bentele et al. (1998; 2000) have conducted a location analysis of the media industry by asking their survey firms to indicate the most important factors in their location decisions. Among the location factors identified by Bentele et al. (2000) are: (1) existing telecommunication infrastructure, (2) proximity of customers, (3) labor cost, (4) helpful administrative agencies, (5) telecommunication cost, (6) traffic infrastructure. These factors highlight some of the views of Leipzig's media entrepreneurs of locational

preferences. In fact, Leipzig has a highly sophisticated digital telecommunications infrastructure which is not found in many German cities and which played an important role in early start-up decisions (Tambour 2000). The combined location factors quoted are not sufficient, however, to understand the high firm formation rate in the region. Some of the factors listed, such as labor costs, are of little importance in new media branches. Further, other factors quoted, such as traffic infrastructure and proximity of customers, are just as good, or even better, in many other German cities. In addition, most of the media firms in Leipzig were founded by people from the local area who might not have been fully aware of the opportunities in other places and regions.

To provide a better understanding of the underlying social and economic processes, it is helpful to integrate start-up processes into an evolutionary economics framework (e.g. Nelson/ Winter 1982; Dosi 1988; Nelson 1995) and view firm formation as part of a path dependent, yet contingent development process. Bentele et al. (2000) themselves found that 84% of the firms included in their survey were founded within the Leipzig region. They were not established as branches or subsidiaries of firms from other regions. Decisions were primarily based on questions regarding, for instance, whether to take the risk to start up a new firm, how to get start-up financing and which market segments to approach in which manner. Three quarters of the firms interviewed in this survey, were established by people born in Leipzig who had lived there throughout their entire life or by people who had studied or worked in Leipzig for many years. Many of these entrepreneurs pointed out that they enjoyed the lifestyle of the area. One founder indicated that Leipzig was the place of choice in establishing his firm as he did not want to live anywhere else. Also founders who had moved from cities in the old *Länder* (states in the former Federal Republic of Germany) to Leipzig displayed a great deal of satisfaction with the cultural amenities, the people living here and 'the feeling the city had to it'.

For most firms, the question of where to locate was seemingly not a primary concern. In fact, the decision regarding the location of the new business was usually a given once the start-up decision was made. In general, start-up decisions are often influenced by the experience a founder has accumulated while working in a particular technological field or during his training in a specialized work area. This has also been the case in Leipzig. Local start-up decisions were based on close information and communication linkages with other people from the former jobs, firms in the same area or supporting institutions. With respect to those firms from other German regions that established branches in Leipzig, the situation was somewhat different. They had often compared the economic basis of operating a business in Leipzig with that in other cities and regions (e.g. in terms of the market potential and access to market areas). In most cases, however, there was an additional subjective compo-

ment involved. Specifically, the decision-makers had ‘the feeling that Leipzig is the right place’.

Regardless of whether the firms were started up by founders from Leipzig or whether facilities had been established as branches from other regions, most managers and executives seemed to be quite pleased with the locational attributes of Leipzig. In Bentele et al.’s (2000) postal survey, 81% of the respondents (524 of 650 firms) indicated that they were very or overwhelmingly pleased with the locational conditions in Leipzig, while only 19% (126 firms) indicated that they were not very pleased. There are a number of factors which might have contributed to this positive evaluation. Firstly, most of the firms included in that survey had a successful start phase of their business activities. Secondly, the people working in these firms were satisfied with the local lifestyle and community spirit. Most firms are still quite small though and have a limited effect on the local labor market (Table 5).

4.3 Types of Start-up Firms

According to the interviews conducted with representatives from local institutions and media firms, at least six types of start-ups firms can be distinguished in Leipzig’s media industry. They are important firm segments in understanding the genesis of Leipzig’s media industry. It should be noted that there might be other segments which were not identified in the survey, as it is likely not possible to derive a complete firm classification from a sample of 34 firms. Since the sample firms were chosen randomly, the major groups should, however, be represented in the sample. Additional information about the characteristics of start-up companies was acquired through other studies (i.e. Bentele et al. 1998; 2000) and 20 additional interviews with experts from local institutions, such as local planners and policy makers from the City of Leipzig and representatives from the new convention center, local banks, University of Leipzig, MDR, Media City and Business & Innovation Centre.

(Type 1) Euphoric local start-ups. The largest group of firms in Leipzig’s media industry can be classified as euphoric local start-ups. The founders were often born in Leipzig and have lived and worked here for most of their lives. They have a strong community spirit and would not have started a new venture elsewhere. Their decisions to conduct start-ups in Leipzig cannot be regarded as classical location decisions where the city was compared to other potential locations. At least 14 of 33 firms fall into this category. These firms were founded by optimistic entrepreneurs who wanted to realize market opportunities they had identified within their local environment. The founders of these firms were fairly young, mostly within their early 30’s or even 20’s.

The founder of one internet design firm mentioned that he was thrilled by the prospect of being his own boss and trying to fulfill his own ideas. He was quite willing to

take the risks involved in this entrepreneurial step. Another founder emphasized that the new economic system offers a great deal of freedom and opportunities to earn money. He felt that the former system did not support or stimulate innovative potentials. A third venture in the area of new internet services (e.g. internet games and radio) was established by a group of friends who had originally worked for different firms. They were bound together through their preference for the same bars and clubs and their identification with a particular lifestyle. The founders were engaged in a number of different ventures. One of them involved organizing innovative socio-cultural events in Leipzig (such as an on-line internet version similar to the game *Scotland Yard*, where a number of players try to catch an unknown opponent, i.e. *Mister X*, through London's transportation networks). At the time of our interview, their ideas had, however, not yet crystallized into a well-defined product portfolio but were still fairly open and experimental in character. In the case of this firm, as well as two others, the group of founders was interestingly composed of a mix of people from East and West Germany. It seemed that those from West Germany did not just contribute prior knowledge to the start-up firms, but they seemed to bring entrepreneurial spirit. They developed a culture of open discussion, frequent brain-storming, etc. within these firms, a climate which supports the development of innovative products and services.

(Type 2) Local university spin-offs. Another group of start-ups was also a result of what Malecki (1991) would call technology-push rather than market-pull factors. They are classified as university spin-offs because the founders applied product-related know-how which they acquired during their university or college education in developing a production program and establishing their new venture. A number of type 1 start-ups can be considered as university spin-offs since their founders had studied in Leipzig and benefited from this knowledge when they started up their own firms. In the survey, 2 firms were identified which were established by people from West Germany who had originally moved to Leipzig in order to study at university. Their start-up idea was directly related to the area they had specialized in at the university. These people stayed because they liked the city, the local people and the thriving atmosphere in the growing media industry.

(Type 3) Forced entrepreneurs from Leipzig. Not all of the start-ups in Leipzig are a product of visionary entrepreneurs who were in the search of new business directions. In 3 cases, the founders were 'forced' into self-employment due to an actual or foreseeable loss of their jobs within the region. Prior to this, they had no intention of starting up their own business and engaging in entrepreneurial activities. They established their business in the areas of public relations, marketing and web page design. These are market segments which do not have high entry costs and do not require much start-up finance.

Although one founder was in his early 30's when starting his firm, founders in 2 other cases were already in their 50's. Additionally, the entrepreneurs who fell into this category did not take high risks when they started their firms. From the interviews conducted, it seemed that they had limited know-how and entrepreneurial experience in their field. They also appeared to be operating in isolation and did not have close contacts with institutions, customers and competitors. According to the founders, achieving high growth rates in sales and employment was not a primary goal. Rather, the intent was seemingly to establish a secure economic basis for their retirement. These firms were among those with the lowest sales figures in the sample and had less than 5 employees. It can be concluded that these firms are not very innovative and are unlikely to become a source of high growth in the future. In fact, the opposite may be true as their existence over the longer term appears questionable.

(Type 4) Split-offs of former state-directed firms. Especially in the area of film and TV production, some new firms were created as split-offs from former state-directed media firms (*Kombinat*). In our survey, 2 firms of this type were identified. The founders had been in the film and TV business for a long time and had acquired experience during the *DDR* regime. With the unification, those founders interviewed seemed a bit skeptical about the prospects of working for people from the old *Länder*. Rather than looking for a job in the West German media industry, they preferred to establish their own business with people they had already known and worked with. Leipzig was the city of choice because of the opportunities related to the establishment of the *MDR*.

Since start-up costs for equipment in the film and TV industry are much higher than in other branches of the media industry, these firms required substantial external finance. One firm was able to convince a West German partner to invest into their new venture. They were, thus, able to acquire expensive equipment in the early stages. Despite problems associated with the original partner withdrawing his money, the firm managed to stay in business. The firm, which is embedded into the local media industry through subcontracting relations, has developed into one of the larger start-ups in terms of sales and employment. It is part of a network of firms whose participants benefit from reciprocal subcontracting arrangements and frequent information flows and whose actors have known one another since the 1980's.

(Type 5) MDR-related establishments from West Germany. Another identifiable group of new firms in the film and TV business are related to the *MDR* activities in Leipzig. They were established as subsidiaries of existing firms from West Germany and, more recently, firms originating from East Germany (e.g. Potsdam-Babelsberg close to Berlin). In our survey, 6 of 33 firms are of this type. They established branches in Leipzig or relocated part of their activities to the region to acquire contracts from or offer services to the *MDR*. In some cases, the *MDR* had asked professional film teams, technicians, cutters, reporters, news agencies and other media specialists from other regions to establish a branch in Leipzig and had offered future

contracts to attract specialized firms. Type 4 and type 5 firms played an important role in the development of the media industry since they brought professional expertise and specialized experience into the region which did not exist previously. Due to the combined effects of the *MDR* and film and TV firms, a network of specialized activities and competencies began to develop which became a trigger for type 1 start-up activities from within the region.

Along with the activities of the *MDR* and the growing network of media businesses in Leipzig, a number of public and private radio stations were established (Schubert 2000). These include *MDR*, *Radio PSR*, *Antenne Sachsen*, as well as local stations, like *Radio Energy Sachsen*, *Radio Leipzig 91.3*, *Oldie fm* and *Radio Blau*. In addition, foreign broadcasting services (i.e. *BBC* and *Radio France International*) and large German media conglomerates, such as Kirch and Ufa, have begun to establish small facilities for radio and TV production in the Leipzig region.

(Type 6) Other branch establishments from West Germany. There are also other media firms establishing branches in Leipzig which were not directly related to the *MDR* and its TV and film activities. In our survey, 4 of 33 firms belonged to this segment. The firms established their business in the area of new electronic services, graphics, public relations or marketing. Of these firms, 3 mentioned that the rationale behind their location decision was not specifically related to the local market but that the city allowed for easy access to all East German market areas, because of its central location. Firms of this category chose Leipzig as their location due to three reasons: (i) the already existing media industry and its growth potential, (ii) the city's central location and good access to other regions in the new *Länder*, (iii) Leipzig's amenities as a metropolitan area (e.g. labor market, cultural amenities).

In the next section, I will investigate how the genesis of the Leipzig media cluster has been influenced by educational programs, incubator facilities and other local institutions and *vice versa*. I argue that this can be viewed as a process of re-embedding which has a positive effect on the local labor market and further start-up activities.

5 Re-Embedding: Educational Programs, Incubators and Other Institutions

Already in 1990, the *Förderverein Medienstadt Leipzig*, a local initiative to support Leipzig's development into a media cluster, was founded by local planners, politicians and members of institutions (Schubert 2000). This initiative was established to coordinate public activities and promote the vision of Leipzig as a media cluster comprised of a dense network of media-related businesses and institutions. The rationale behind this concept was to encourage the establishment of a new economic basis in Leipzig (i.e. in the media industry) rather than to subsidize old industries which had

lost their international competitiveness during the post-war period. A policy program was formulated in which goals for future developments were outlined (Baier 1992).

Originally, it was planned to resurrect Leipzig's tradition as the major center of the German book-trade and printing and publishing industry and to use this as a basis to develop a new electronic and multi-media sector. For this, the traditional locations of the print media in the *Graphisches Viertel* were supposed to become the center of Leipzig's new media sector. Even though the program of the *Medienstadt* turned out to be quite successful, it failed to re-develop the *Graphisches Viertel* into a core of the new media branches (Denzer/ Grundmann 1999). This was due, in part, to the decision of the *MDR* to establish its new activities in the South of the city in Leipzig-Connewitz (Figure 1). The *Graphisches Viertel* was neither able to grow into a center of traditional media branches nor did it develop into a significant location of the flourishing electronic and new media industry. This is a good indication that the genesis of Leipzig's media industry is indeed a new development which is not strongly embedded in traditional structures of social relations. There were some institutional structures and facilities in Leipzig which already existed prior to the German unification, such as educational and local radio programs. They played some role as a prerequisite in the initial stages but were by no means decisive for the clustering process.

New institutional structures develop, however, to support the growth of the media industry. Special training programs and institutions of higher education shape the local labor market and create specialized skills in media professions. Graduates from such institutions establish a basis for further firm formation which is, in turn, supported by financial funds which provide start-up money. Start-up decisions are also assisted by incubator organizations which provide space, services and institutional support for new firms in particular branches of the media industry. Overall, a dense network of institutional support is developing within the region which provides a distinct institutional thickness (Amin/ Thrift 1995). This will likely serve to strengthen the firm formation processes in the future. With respect to the work of Maskell/ Malmberg (1999) and Storper (1997), this can be viewed as a process of intensifying specialized capabilities wherein local conventions and relations evolve. According to this, Leipzig is developing a favorable institutional setting for further start-up activities in the media industry.

5.1 Labor Market, Higher Education and Training Programs

A variety of education and training programs which contribute to a specialized local labor market have been established by different institutions in Leipzig (Sagurna 1999; 2000). The University of Leipzig has an Institute for Communications and Media Studies which trains about 2,600 students in various media related technologies and activities. The *Hochschule für Technik, Wirtschaft und Kultur (HTWK - College for*

Technical, Economic and Cultural Studies) offers programs in information, media and reproduction technology and economics. Furthermore, there are a number of other higher education institutions with specialized training programs in the area of media technology, such as the *Hochschule für Graphik und Buchkunst* (College for Book and Graphic Arts), *Fachschule der Deutschen Telekom* (German Telecom Training Center), *Fernsehakademie Mitteldeutschland* (Middle German TV Academy), *Medienakademie Leipzig* (Media Academy Leipzig) and the *Sächsische Akademie der Werbung* (Saxon Marketing Academy).

The graduates from these institutions create a specialized knowledge base in a wide variety of media-related fields. The students are able to gather practical experience during their studies and conduct research projects together with local media firms, especially in the area of film and TV activities and multimedia and internet applications. Many students also have part-time jobs or work during semester breaks in the media industry to finance their studies. In this way, they are able to gain practical experience and apply theoretical knowledge to real world problems. The local media firms can also benefit from this exchange since it provides them with access to external knowledge, international technology trends and data bases.

Most local media firms do not appear, however, to capitalize on this opportunity in a systematic manner. Only few of the firms interviewed are aware of the opportunities in acquiring external know-how through continuous contacts with the local training institutions and their graduates. This could become especially important since some of the entrepreneurs (at least some of those interviewed) are self-made specialists whose formal education was often not specifically related to media activities.

5.2 Financial Support

The growth of the media industry in Leipzig has also been supported by government programs and the provision of monetary funds (Sagurna 1999). Many of the firms interviewed stated that they started up their businesses with aid of financial support from the European Social Fund of the European Union. People who were unemployed received additional support from the unemployment office to attend training courses for future entrepreneurs in multimedia technologies. These courses addressed such questions as to how to establish and run a new business, where and how to apply for financial support in the start-up phase and so on. The development of the film and TV sector in Leipzig also benefited from state policies and programs, such as Saxony's *Filmförderung* to provide financial support for film festivals (DM 25 million per year). In addition, the *Mitteldeutsche Medienförderung* (Middle German Media Foundation) of Saxony, Saxony-Anhalt and Thuringia was established in Leipzig in 1998 as a foundation to enhance the efficiency and competitiveness of the regional film and TV industry.

5.3 Media City Leipzig

In 2000, the *Media City Leipzig* was opened up as an incubator and technology center with 36,000 m² of office, workshop and studio space for TV and film-related firms (Schubert 1999; *Media City Leipzig* 2000). The facilities provide office space for about 70 firms and 500 employees (Müller 2000; Sagurna 2000). About 10 of the firms are subsidiaries of the *MDR*. Located in Leipzig-Connewitz adjacent to the *MDR* (Figure 1), the *Media City* consumed investments of over DM 100 million and was established with heavy financial support from the state of Saxony (DM 70 million). Throughout our interviews, it was pointed out that the *MDR* had put pressure on some of his subcontractors and suppliers to relocate into the new facilities of the *Media City*. In some cases, this seemed to have been a prerequisite for further contracts from the *MDR*. Some of the media firms interviewed pointed out that they were not very pleased with this business conduct and that rents for office space in the *Media City* were much higher than that in other areas of Leipzig.

Despite this criticism, the *Media City* has the potential to develop into an important incubator center for future growth, innovations and new start-ups in the Leipzig media industry. Due to the proximity between the media firms and the *MDR* establishments, there are many opportunities for social interaction, information exchange and interactive problem-solving between the people involved. Such interactive business practices would only develop, however, if the tenants of the *Media City* cover a wide range of activities with respect to TV and film production. One interviewee emphasized that only then could the development of communication and synergistic effects be stimulated. He was also aware that an agglomeration of similar types of businesses would result in fierce, price-based competition.

5.4 Other Institutions

In addition to the education and incubator facilities mentioned, a large number of smaller institutions and business centers exist which also support the local media industry in Leipzig (Schubert 1999; 2000). The *Medienhof Leipzig-Stötteritz* (Figure 1), for instance, is a media center which hosts more than 20 firms, primarily in traditional media branches.

Another incubator center for young firms and new services, is the *Business & Innovation Centre Leipzig (BIC Leipzig)* in Leipzig-Plagwitz. The *BIC Leipzig* was established by local institutions, especially the City of Leipzig, the industry association and a local bank. It was opened in 1999 and rents out a total of 6000 m² of office and laboratory space at low cost. The rent is in fact subsidized by the city as one interviewee mentioned. The *BIC Leipzig* has a general office infrastructure and additional services which it offers to its tenants (i.e. business consulting and financial support). The incubator center also hosts the *Unternehmensgründerbüro*; an agency which

gives special advice to start-ups in the areas of finance, technology, patenting and marketing. In 2001, the *BIC Leipzig* had a total of 30 tenants, primarily in the areas of communication, marketing, design and new electronic services (*Business & Innovation Centre Leipzig 2001*).

Furthermore, the *Sächsische Landesmedienanstalt* (Media Academy of Saxony), which regulates and controls all mass media in the state of Saxony, will be relocated to Leipzig in 2005. There are also media clubs where professionals from the media industry come together after work to exchange ideas and discuss certain topics and trends. While some of these clubs are quite open to guests, there is one which primarily limits participation to media people who have known one another for a long time. It is likely that the regular guests of this club also prefer to conduct business with one another. Such close circles, however, bear the risk of technological lock-in and are an expression of local over-embeddedness. In the next section, the potential problems of over-embeddedness related to the dominance of a regional customer orientation which severely limits the growth prospects of the media industry will be discussed.

6 Over-Embedding: Local Customer Orientation Versus Isolation

The *MDR* and its activities have become the major driving force behind the growth of the media industry in Leipzig. At the end of the year 2000, the *MDR* opened its new modern TV headquarters in Leipzig-Connewitz, built in the shape of a ten-story TV screen. This building has office space for more than 1,000 employees and is situated right beside the old exhibition grounds where the former slaughter-house used to be located (*Mitteldeutscher Rundfunk 1999; Reiter 2000; Figure 1*). One of the old exhibition halls has been rebuilt into a modern film studio. Apart from that, most of the former exhibition grounds are not being used and some exhibition halls have only been rented out to temporary businesses.

The *MDR* is the largest local customer of the film and TV industry and has attracted many related service providers and suppliers (Sagurna 1999; 2000). Throughout the 1990's, the local activities of the *MDR* continuously expanded. Film studios were built and subsidiaries established to carry out specialized tasks. As one executive of the *MDR* pointed out, the strategy employed was to spin out functions into separate subsidiaries and subcontract other functions to local suppliers and services. The goal behind this strategy was to establish a local supply and support sector for TV and film production and to cut costs. In addition, suppliers and service providers from other regions were required to establish branches in Leipzig or relocate their offices to the area to keep their contracts. As a result of this policy, the *MDR* is no longer forced to rely on contractors located in different regions. Due to the increasing agglomeration of film and TV-related businesses, about 70% of the *MDR*'s production contracts are

with suppliers and service providers from within Saxony, Saxony-Anhalt and Thuringia (Reiter 2000). This has, in turn, stimulated further start-up and relocation activities. The activities of the *MDR* have thus stimulated and directed the development of the local media industry in many different ways: (i) as an important institution which defines rules and formats in the film and TV business, (ii) as a customer which attracts other media firms and stimulates start-up processes, (iii) through its policy to favor local subcontractors, suppliers and service providers.

Thus far, the genesis of Leipzig's media industry appears as a success story of industrial clustering based on a process of re-embedding. The establishment of the Leipzig media industry was a process by which new supplier-producer-customer relations, specialized labor market linkages and corresponding institutional settings have developed. This has contributed to the establishment of localised capabilities (Maskell/ Malmberg 1999) and untraded interdependencies (Storper 1997).

There are, however, severe limitations to this growth process. Many media firms have very limited economic success which is indicated by overall sales and growth rates in sales. About 40% of the respondents (9 of 24 firms) had annual sales of less than DM 300,000 and less than 40% had sales of more than DM 1,000,000 (Table 6). This distribution in sales also confirms with the results of Bentele et al.'s (2000) survey wherein 20% of the firms indicated that their sales were even less than DM 65,000. Obviously, a large proportion of Leipzig's media firms have sales just enough to pay off costs. They do not earn a reasonable profit which, in turn, would stimulate further investments.

Table 6. Media Firms in Leipzig by Sales, 2000 (Source: Survey Results; Bentele et al. 1998). Note: 10 of 34 firms did not release sales information.

Sales category	- Firms in the July 2000 survey -		- Bentele et al. 1998 survey (n = 314) -
	<i>Number</i>	<i>Share (%)</i>	<i>Share (%)</i>
Less than 100,000	-	-	22.4
DM 100,000 - < 300,000	9	37.5	18.2
DM 300,000 - < 800,000	5	20.8	21.4
DM 800,000 - < 2,500,000	9	37.5	19.2
DM 2,500,000 and higher	1	4.2	18.8
Total	24	100.0	100.0

A reason for this can be found in the strong orientation towards local customers and the focus on small, often local market segments. A large number of the media firms included almost exclusively sell their products and services to the regional market.

They have hardly any external linkages to other market regions and distant customers. More than 60% of the media firms interviewed (19 of 31) sell more than two thirds of their products and services within the Leipzig region (Table 7). The number of firms with substantial sales in other market regions is relatively low. This seems to be a similar trend to that identified by Brail/ Gertler (1999) who estimate that the firms in Toronto's multimedia cluster derive 62% of their sales from regional customers. Closer analysis, however, reveals important differences between the Toronto and Leipzig cases. The Toronto economy consists of a large number of fast growing customer industries which access large national and international markets.

Table 7. Media Firms in Leipzig by Regional Sales Share, 2000 (Source: Survey Results).

Regional sales share	- Survey firms -	
	<i>Number</i>	<i>Share (%)</i>
Less than 33.3%	8	25.8
33.3% - < 66.7%	4	12.9
66.7% - 100.0%	19	61.3
Total	31	100.0

In the case of Leipzig, the orientation towards the regional market is problematic because there is only a limited regional growth potential. There are only a few large customers which grow at a limited pace. The *MDR* has, for instance, completed its investment activities in the region and will, thus, not continue to grow at the same rate as in the past. Due to financial irregularities in 2000, the *MDR* also revised its strategy to spin out functions to external suppliers and reintegrated some tasks in-house. In addition, the *MDR* is not very strong in the application of multimedia technologies and does not stimulate innovation activities in this field. Further, Leipzig's new convention center has problems competing against its powerful competitors in West German cities, especially Frankfurt and Hanover. Therefore, contracts from the new convention center are lower than was originally expected. This is a problem for some specialized media firms in the area of PR/ marketing, exhibition and related film/ TV services. Finally, there is a lack of demand from the regional manufacturing sector which has not recovered from its previous blow associated with the German unification. Overall, this corresponds with Scott's (1998) and Maillat's (1998) views that a missing link to external markets and customers limits regional growth prospects. The strong orientation towards the regional markets bears the risk to encouraging the development of social relations which are characterized by over-embeddedness and stagnation.

7 Preliminary Conclusions

The analysis carried out in this paper discusses the case of a newly established cultural products industry cluster in Germany's new *Länder*, that of Leipzig's media industry. According to Bentele et al.'s (2000) estimation, this sector consisted of 1,500 firms with about 25,600 permanent employees in 2000. I have demonstrated that the growth of the media industry is not a mere continuation of Leipzig's pre-war tradition in the book-trade and printing and publishing industry. The growth of the media industry cluster should rather be viewed as a process of re-embedding, but where new structures of a media segment have evolved which are fundamentally different from the previous ones. Leipzig's media industry is a new cluster of electronic and new media firms which have been established after the German unification during the 1990's.

In the literature, it has been argued that an emphasis on the role of traded interdependencies and the use of traditional location factor analysis is not sufficient to explain such a clustering process. Successful industrial agglomerations are embedded in tight networks of suppliers, producers, customers and institutions. Therefore, firms within such clusters have to be conceptualized as economic actors in networks of social relations (Granovetter 1985). The evidence presented about the growth of Leipzig's media industry clearly supports this view. It is not possible to explain the start-up processes in Leipzig without an evolutionary perspective which focuses on the underlying social and economic processes. I have shown in which ways new media firms have established linkages with their customers, how they have shaped the local labor market and how this process has contributed to and benefited from the formation of specialized media-related institutions in Leipzig. Localised capabilities (Maskell/ Malmberg 1999) and untraded interdependencies (Storper 1997), such as the development of media-related qualifications, transaction-specific investments in particular producer-user relations and conventions about TV formats have enabled firms to develop common grounds for cooperation.

Overall, however, the growth of Leipzig's media industry only has a relatively minor impact on the local labor market. Most firms are quite small with only a few employees and modest sales. In many cases, firms do not generate a reasonable profit but earn just enough to pay off their operating costs. I suggest that this strong orientation towards local customers can be interpreted as a reflection of local over-embeddedness. This is a problem similar to that identified by Scott (1998) and Maillat (1998) in their analysis of the performance of localized production systems. Scott (1998) has pointed out that a hybrid structure of local and non-local transactions is necessary to transfer growth impulses into an industrial cluster which can then disseminate through the cluster network. In the case of Leipzig, the local and regional market is clearly limited. The TV/ film-related producers primarily rely on contracts from the *MDR*. Additional contracts from the new convention center and local manu-

facturers are also quite limited. It is therefore difficult for media firms to establish local customer relations which could serve as focal markets to test products, learn from failures and make product improvements.

From the analysis conducted, Leipzig does not yet have the potential to grow into a major agglomeration of the media industry in Germany. Cologne, Berlin-Babelsberg, Munich, Frankfurt-Wiesbaden and Hamburg still have a competitive advantage over Leipzig. Nonetheless, this new cultural products industry cluster is extremely important within the local economy. Although the actual number of jobs created in Leipzig's media industry is still relatively small, these jobs have stabilized the otherwise shrinking labor market to a great extent.

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References

- Amin, A./ Thrift, N. (1995): Living in the Global. In: Amin, A./ Thrift, N. (Eds.): *Globalization, Institutions, and Regional Development in Europe*. Oxford, New York: Oxford University Press, pp. 1-22.
- Baier, H. (Ed.) (1992): *Medienstadt Leipzig: Tradition & Perspektiven* (Leipzig's Media Industry: Traditions and Perspectives). Berlin: Vistas.
- Bathelt, H./ Glückler, J. (2001): *Wirtschaftsgeografie: Ökonomische Beziehungen in räumlicher Perspektive* (Economic Geography: Economic Relations in Spatial Perspective). Stuttgart: UTB- Ulmer. Forthcoming.
- Bentele, G./ Polifke, M./ Liebert, T. (1998): *Medienstandort Leipzig II: Eine Studie zur Leipziger Medienwirtschaft 1998* (Leipzig as a Location of the Media Industry II: A Study of Leipzig's Media Economy 1998). Leipzig.

- Bentele, G./ Liebert, T./ Polifke, M. (2000): *Medienstandort Leipzig III: Eine Studie zur Leipziger Medienwirtschaft 2000* (Leipzig as a Location of the Media Industry III: A Study of Leipzig's Media Economy 2000). Leipzig.
- Bode, V./ Burdack, J. (1997): Messen und ihre regionalwirtschaftliche Bedeutung (Regional Impacts of Trade Fairs). In: Institut für Länderkunde (Eds.): *Atlas Bundesrepublik Deutschland: Pilotband*. Leipzig: Institut für Länderkunde, pp. 70-73.
- Boggs, J. (2001) *Path Dependency and Agglomeration in the German Book Publishing Industry*. Paper Presented at the Annual Meeting of the Association of American Geographers, New York (NY).
- Brail, S. G./ Gertler, M. S. (1999): The Digital Regional Economy: Emergence and Evolution of Toronto's Multimedia Cluster. In: Braczyk, H.-J./ Fuchs, G./ Wolf, H.-G. (Eds.): *Multimedia and Regional Economic Restructuring*. London, New York: Routledge, pp. 97-130.
- Bramanti, A./ Ratti, R. (1997): The Multi-Faced Dimensions of Local Development. In: Ratti, R./ Bramanti, A./ Gordon, R. (Eds.): *The Dynamics of Innovative Regions: The GREMI Approach*. Aldershot, Brookfield: Ashgate, pp. 3-44.
- Business & Innovation Centre Leipzig* (2001): *Präsentation des Business & Innovation Centre Leipzig* (Presentation of the Business & Innovation Centre Leipzig). Paper Presentation. Leipzig.
- Denzer, V./ Grundmann, L. (1999): Das Graphische Viertel - ein citynahes Mischgebiet der Stadt Leipzig im Transformationsprozeß: Vom Druckgewerbe- zum Bürostandort (The Transformation of Leipzig's Graphical Quarter: From Printing and Publishing to Modern Office Functions). In: *Europa Regional* (Vol. 7, No. 3), pp. 37-50.
- Diez, J. R./ Kramer, J. (2000): EXPO 2000 - eine ökonomische Bilanz für die Region Hannover (EXPO 2000: Economic Impact on the Hanover Region). In: *Geographische Rundschau* (Vol. 52), pp. 25-31.
- Dosi, G. (1988): The Nature of the Innovative Process. In: Dosi, G./ Freeman, C./ Nelson, R. R./ Silverberg, G./ Soete, L. L. G. (Eds.): *Technical Change and Economic Theory*. London, New York: Pinter, pp. 221-238.
- Eberts, D./ Norcliffe, G. (1998): New Forms of Artisanal Production in Toronto's Computer Animation Industry. In: *Geographische Zeitschrift* (Vol. 86), pp. 120-133.
- Egan, E. A./ Saxenian, A. (1999): Becoming Digital: Sources of Localization in the Bay Area Multimedia Cluster. In: Braczyk, H.-J./ Fuchs, G./ Wolf, H.-G. (Eds.): *Multimedia and Regional Economic Restructuring*. London, New York: Routledge, pp. 11-29.
- Frankfurter Rundschau* (2000): Leipziger Messe bleibt bei Rot (Leipzig's Trade Center Still Suffering). July 22, page 12.

- Gertler, M. S. (1997): The Invention of Regional Culture. In: Lee, R./ Wills, J. (Eds.): *Geographies of Economies*. London, New York, Sydney: Arnold, pp. 47-58.
- Göpfert, C.-J. (2001): Leipzig will Hauptsitz des Börsenvereins werden (Leipzig Wants to Become the Headquarter of the Association of Book-Traders). In: *Frankfurter Rundschau*, May 12, page 25.
- Gordon, I. R./ McCann P. (2000): Industrial Clusters: Complexes, Agglomeration and/ or Social Networks. In: *Urban Studies* (Vol. 37), pp. 513-532.
- Gormsen, N. (1996): *Leipzig - Stadt, Handel, Messe: Die städtebauliche Entwicklung der Stadt Leipzig als Handels- und Messestadt* (Leipzig's Development as a Trade and Exhibition Center). Leipzig: Institut für Länderkunde.
- Grabher, G. (1993): Rediscovering the Social in the Economics of Interfirm Relations. In: Grabher, G. (Ed.): *The Embedded Firm. On the Socioeconomics of Industrial Networks*. London, New York: Routledge, pp. 1-31.
- Grabher, G. (1994): *Lob der Verschwendung. Redundanz in der Regionalentwicklung: Ein sozioökonomisches Plädoyer* (Redundancy in Regional Development). Berlin: Edition Sigma - Bohn.
- Granovetter, M. (1973): The Strength of Weak Ties. In: *American Journal of Sociology* (Vol. 78), pp. 1360-1380.
- Granovetter, M. (1985): Economic Action and Economic Structure: The Problem of Embeddedness. In: *American Journal of Sociology* (Vol. 91), pp. 481-510.
- Grundmann, L. (1996a): Die Leipziger City im Wandel - zwischen der Tradition als Messe- und Handelsplatz und aktueller Innenstadtentwicklung (Leipzig's City: Traditional Functions and New Developments). In: Grundmann, L./ Tzschaschel, S./ Wollkopf, M. (Eds.): *Leipzig: Ein geographischer Führer durch Stadt und Umland*. Leipzig: Thom, pp. 30-55.
- Grundmann, L. (1996b): Die Leipziger Messe - Standort- und Funktionsverlagerung im tertiären Sektor (Leipzig's Exhibition Grounds). In: Grundmann, L./ Tzschaschel, S./ Wollkopf, M. (Eds.): *Leipzig: Ein geographischer Führer durch Stadt und Umland*. Leipzig: Thom, pp. 156-177.
- Haase, H. E. (1984): Die Wirtschaft der DDR (Economic Structure of the German Democratic Republic). In: *Geographische Rundschau* (Vol. 36), pp. 632-638.
- Hellmer, F./ Friese, C./ Kollros, H./ Krumbein, W. (1999): *Mythos Netzwerke: Regionale Innovationsprozesse zwischen Kontinuität und Wandel* (The Networking Myth: Continuity and Change in Regional Innovation Processes). Berlin: Edition Sigma - Bohn.
- Kern, H. (1996): Vertrauensverlust und blindes Vertrauen: Integrationsprobleme im ökonomischen Handeln. In: *SOFI-Mitteilungen* (No. 24/1996), pp. 7-14.
- Kowalke, H. (1994): Wirtschaftsraum Sachsen (Economy Structure of Saxony). In: *Geographische Rundschau* (Vol. 46), pp. 484-490.

- Krätke, S./ Scheuplein, C. (2001): *Combining Tools For Identifying Geographical Clusters: Two Cases in Brandenburg*. Paper Presented at the Annual Meeting of the Association of American Geographers, New York (NY).
- Krugman, P. (1991): *Geography and Trade*. Leuven: Leuven University Press/ Cambridge (MA), London: MIT Press.
- Krugman, P. (2000): Where in the World is the 'New Economic Geography'? In: Clark, G. L./ Feldman M. P./ Gertler, M. S. (Eds.): *The Oxford Handbook of Economic Geography*. Oxford: Oxford University Press, pp. 49-60.
- Lawson, C. (1999): Towards a Competence Theory of the Region. In: *Cambridge Journal of Economics* (Vol. 23), pp. 151-166.
- Lundvall, B.-A. (1988): Innovation as an Interactive Process: From User-Producer Interaction to the National System of Innovation. In: Dosi G./ Freeman C./ Nelson R./ Silverberg G./ Soete L. (Eds.): *Technical Change and Economic Theory*. London: Pinter, pp. 349-369.
- Maillat, D. (1998): Vom 'Industrial District' zum innovativen Milieu: Ein Beitrag zur Analyse der lokalen Produktionssysteme (From Industrial Networks to Innovative Milieus: Towards the Analysis of Territorial Production Systems). In: *Geographische Zeitschrift* (Vol. 86), pp. 1-15.
- Malecki, E. J. (1991): *Technology and Economic Development: The Dynamics of Local, Regional, and National Change*. Burnt Mill: Longman/ New York: Wiley.
- Malmberg, A./ Maskell, P. (1997): Towards an Explanation of Industry Agglomeration and Regional Specialization. In: *European Planning Studies* (Vol. 5), pp. 25-41.
- Marshall, A. (1927): *Industry and Trade. A Study of Industrial Technique and Business Organization; and Their Influences on the Conditions of Various Classes and Nations*. 3rd Edition. London: Macmillan.
- Maskell, P./ Malmberg, A. (1999): Localised Learning and Industrial Competitiveness. In: *Cambridge Journal of Economics* (Vol. 23), pp. 167-185.
- Media City Leipzig* (2000): *Media City Leipzig: Zentrum für elektronische Medien* (Media City Leipzig: Center of New Electronic Media Branches). Leipzig.
- Mitteldeutscher Rundfunk* (1999): *Geschäftsbericht 1998* (Annual Report 1998). Leipzig.
- Morgan, K. (1997): The Learning Region: Institutions, Innovation and Regional Renewal. In: *Regional Studies* (Vol. 31), pp. 491-503.
- Müller, S. (2000): Newcomer Leipzig im Kommen (Newcomer Leipzig). In: *Die Welt*, May 2.
- Nelson, R. R. (1995): Evolutionary Theorizing about Economic Change. In: *Journal of Economic Literature* (Vol. 23), pp. 48-90.
- Nelson, R. R./ Winter, S. G. (1982): *An Evolutionary Theory of Economic Change*. Cambridge (MA): Harvard University Press.
- Oelke, E. (1997): *Sachsen-Anhalt* (Saxony-Anhalt). Gotha: Perthes.

- Porter, M. E. (2000): Locations, Clusters, and Company Strategy. In: Clark, G. L./ Feldman M. P./ Gertler, M. S. (Eds.): *The Oxford Handbook of Economic Geography*. Oxford: Oxford University Press, pp. 253-274.
- Reckmann, J. (2001): Kommentar: Schnapsidee (Commentary: Crazy Idea). In: *Frankfurter Rundschau*, May 12, page 25.
- Reiter, U. (2000): Der MDR in der Medienstadt Leipzig (The Role of the MDR in Leipzig). In: Grunau, H./ Kleinwächter, W./ Stiehler, H.-J. (Eds.): *Medienstadt Leipzig: Vom Anspruch zur Wirklichkeit*. Leipzig: Monade, pp. 37-40.
- Sagurna, M. (1999): Medienstandort Sachsen - Bestandsaufnahme und Perspektiven (Saxony's Media Industry - Present State and Future Perspectives). In: Altendorfer, O./ Mayer, K.-U. (Eds.): *Sächsisches Medienjahrbuch 1998/1999*. Leipzig: Verlag für Medien & Kommunikation, pp. 12-19.
- Sagurna, M. (2000): Der Medienstandort Leipzig im Freistaat Sachsen (Leipzig's Role Within Saxony as a Media Location). In: Grunau, H./ Kleinwächter, W./ Stiehler, H.-J. (Eds.): *Medienstadt Leipzig: Vom Anspruch zur Wirklichkeit*. Leipzig: Monade, pp. 22-30.
- Schamp, E. W. (2000): Decline and Renewal in Industrial Districts: Exit Strategies of SMEs in Consumer Goods Industrial Districts of Germany. In: Vatne, E./ Taylor, M. (Eds.): *The Networked Firm in a Global World: Small Firms in New Environments*. Aldershot: Ashgate, pp. 257-281.
- Schmidt, H. (1994): Leipzig zwischen Tradition und Neuorientierung (The City of Leipzig Between Tradition and Re-Orientatation). In: *Geographische Rundschau* (Vol. 46), pp. 500-507.
- Schubert, D. (1999): Media City - Leipzig: Bestandsaufnahme und Ausblick (Media City Leipzig: Present State and Future Perspectives). In: Altendorfer, O./ Mayer, K.-U. (Eds.): *Sächsisches Medienjahrbuch 1998/1999*. Leipzig: Verlag für Medien & Kommunikation, pp. 20-23.
- Schubert, D. (2000): Die Stadt Leipzig und die Medien als Wirtschaftsfaktor (The City of Leipzig and the Economic Importance of Media). In: Grunau, H./ Kleinwächter, W./ Stiehler, H.-J. (Eds.): *Medienstadt Leipzig: Vom Anspruch zur Wirklichkeit*. Leipzig: Monade, pp. 33-36.
- Scott, A. J. (1996): The Craft, Fashion, and Cultural-Products Industries of Los Angeles: Competitive Dynamics and Policy Dilemmas in a Multisectoral Image-Producing Complex. In: *Annals of the Association of American Geographers* (Vol. 86), pp. 306-323.
- Scott, A. J. (1998): *Regions and the World Economy: The Coming Shape of Global Production, Competition, and Political Order*. Oxford, New York: Oxford University Press.
- Stadt Leipzig (1997): *Branchenhandbuch Medien: Region Leipzig 1997/98* (Firm Directory of the Media Industry in the Leipzig Region 1997/98). Leipzig.

- Stadt Leipzig* (2000): *Branchenhandbuch Medien: Region Leipzig 2000* (Firm Directory of the Media Industry in Leipzig 2000). Leipzig.
- Statistisches Landesamt des Freistaates Sachsen* (1999): *Erwerbstätige im Freistaat Sachsen: Stand 1994 - 1998* (Gainful Employment in Saxony 1991 - 1997). Kamenz.
- Statistisches Landesamt des Freistaates Sachsen* (2000): *Sozialversicherungspflichtig Beschäftigte im Freistaat Sachsen: 30. Juni 1999* (Employees in Saxony 1999). Kamenz.
- Storper, M. (1995): The Resurgence of Regional Economics, Ten Years Later. In: *European Urban and Regional Studies* (Vol. 2), pp. 191-221.
- Storper, M. (1997): *The Regional World. Territorial Development in a Global Economy*. New York, London: Guilford.
- Storper, M./ Christopherson, S. (1987): Flexible Specialization and Regional Industrial Agglomerations: The Case of the US Motion-Picture Industry. In: *Annals of the Association of American Geographers* (Vol. 77), pp. 260-282.
- Tambour, F. (2000): Telekommunikationsinfrastruktur und wirtschaftlicher Aufschwung in Leipzig (Telecommunications Infrastructure and Economic Growth in Leipzig). In: Grunau, H./ Kleinwächter, W./ Stiehler, H.-J. (Eds.): *Medienstadt Leipzig: Vom Anspruch zur Wirklichkeit*. Leipzig: Monade, pp. 54-55.
- Tzschaschel, S./ Wollkopf, M. (1996): Leipzigs Weg ins dritte Jahrtausend (Leipzig's Path Into the Third Millennium). In: Grundmann, L./ Tzschaschel, S./ Wollkopf, M. (Eds.): *Leipzig: Ein geographischer Führer durch Stadt und Umland*. Leipzig: Thom, pp. 10-29.
- Uzzi, B. (1997): Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness. In: *Administrative Science Quarterly* (Vol. 42), pp. 35-67.

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