Specialization as strategy for business incubators:
An assessment of the Central German Multimedia Center

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Abstract

The literature on business incubators (BIs) mainly discusses findings of incubators that do not restrict themselves to specific sectors (diversified incubators). There is a strong disregard of the possible benefits arising from the concept of a sector-specialized business incubator (SBI), although this concept has become more important in recent years. In Germany, about 19% of the incubators can be characterized as being specialized. Since 1999, nearly one-third of all new BIs in Germany opened with a sector-specific focus. This study attempts to approach this research question by examining the advantages and deficiencies of this concept and to address them with empirical observations from an SBI in the city of Halle (Germany), which has an explicit sector-focus on the media industry (MI). We identify key benefits arising from such an incubator concept: (1) high-quality premises and equipment, (2) improvement of service and consultancy offerings and (3) image effects for the location. We also find deficiencies of an SBI especially regarding internal networking activities and promotion of linkages to universities. Furthermore a negative working climate impedes interaction. This study offers implications for firms, incubator managers and local policy-makers who are concerned with the instrument of an SBI.

Keywords: Business incubators; Specialization; Media industry; Success factors; Local technology policy

1. Introduction

Evaluating the effectiveness of technology and innovation policy measures that aim to promote the formation and development of young or newly established firms has been the subject of intense academic and policy discussions. Within this area, business incubators (BIs) and science parks are instruments that have attracted a great deal of attention in the past (see Siegel et al., 2003; Hackett and Dilts, 2004; Phan et al., 2005 for recent reviews). Through the provision of a favorable business environment, BIs focus on compensating for the resource deficits of young and newly founded innovative firms to ensure entrepreneurial stability, sustainable economic growth and long-term business survival.

Cities and municipalities, in particular, show a high commitment to establishing these support facilities, thereby shaping local technology policy. This permits them to actively contribute to the improvement of location factors and the stimulation of endogenous growth processes. In Germany, the unimpaired enthusiasm of local policy-makers has led to the current number of over 400 BIs—by far the largest and one of the densest populations in Europe (European Commission, 2002). The vast majority of incubator organizations, in Germany and elsewhere, are characterized by a wide range of technology fields, resulting in a highly diversified tenant structure. Explicitly focusing solely on one sector or technology is an exception, but is increasingly perceived as an alternative by decision makers. As a recent study of the European BI landscape by Aerts et al. (2007) shows, many BIs in Europe specialize in one or a limited number of sectors. Because of the growing complexity of innovation projects and start-up ventures, such a concentration of competence highlights an interesting situation and might be an important strategic option for local authorities. For the firms, a sector-specialized business incubator (SBI) location might contribute to their success, as SBIs offer specific instead of more general resources (Phan et al., 2005).
In the strategic management literature, authors such as Porter (1980) or Aaker (2004, 2005) already have detailed the advantages and weaknesses of market focus strategies for the individual firm. They point out that concentrating efforts on one or few narrow defined market segments may lead to competitive advantages. Regarding the long tradition of incubator/incubation research it is surprising that the instrument of an SBI, as a market focus strategy of BI organizations, has been largely neglected in the literature. In particular the location-specific advantages for tenant companies and challenges arising from this concept for the incubator management seem to be rather unexplored areas. Thus empirical evidence so far is limited. Only a few authors explicitly address the particular aspects of an SBI. For instance, von Zedtwitz and Grimaldi (2006) recently argue that industry focus can constitute an important competitive dimension for a BI, because of a more professional incubator management and potential for synergies. Hansen et al. (2000) conclude from their research that the advantages of being linked are greatest if the tenants are related. Multiple case study research by Chan and Lau (2005) reveals that tenants must be clustered in the same sector for sharing of knowledge and technical resources to take place. Also, Tötterman and Sten (2005) find for Finish BIs that too much diversification impedes communication and exchange relationships. The authors recommend tenants should be selected that have something in common. However, Aerts et al. (2007) do not find a statistically significant effect on tenant failure rates for European BIs supporting specific sectors.

In Germany, in the last 10 years 57 BIs with an explicit sector-focus have been established whereas, in the previous 14 years (1983–1996), the number was only 17. Nowadays, nearly 19% of all German BIs can be classified as being specialized, focusing primarily on biotechnology and medical engineering. In recent years a growing number of incubators have specialized in the media industry (MI). According to PwC (2006) the MI is a sector that is accepted as having strong growth potential and various important multiplier effects. Media-specialized BIs have been set up mostly in large cities like Berlin or Hannover. One of these media-specialized incubators is the newly opened Central German Multimedia Center (MMZ) in Halle, Germany.

The central question this article tries to answer is the following: to what extent is a specialized BI an appropriate tool to meet the specific requirements of a particular sector (in this case the MI)? In addressing this issue, this article attempts to contribute to the incubator/incubation literature by investigating the main advantages and disadvantages of adopting a specialization strategy for the different actors, especially for the tenant companies. To examine whether this concept has been beneficial for the different stakeholder groups, the requirements of the local MI will be compared with the specific design of the MMZ.

The article is structured as follows. In the next section, the concept of BIs, as it is understood in Germany, is briefly introduced. As a second step a review is provided of the central question this article tries to answer. After the 3–5 years, the tenant companies are expected to leave the incubator, but as Sternberg (2004) notes, this depends on the availability of potential tenants.

2. Business incubators and technology centers in Germany

2.1. How do business incubators work?

As highlighted by Hackett and Dilts (2004), nowadays business incubation is seen more as a process, than as solely the provision of physical infrastructure. This change in perception is also emphasized in the definition of the UKBI (2004):

Business Incubation is a unique and highly flexible combination of business development processes, infrastructure and people designed to nurture new and small businesses by supporting them through the early stages of development and change.

As part of this process, BI and technology centers in Germany offer three components of business support (see Tamásy, 2001, 2002). First, they provide spatially concentrated, low-priced (to some degree, below market) and flexible rental space (office and manufacturing space, laboratories, etc.). Flexible refers to both growing and shrinking. Collectively shared facilities and services (conference rooms, secretarial support, IT and presentation infrastructure, etc.) charged through allowance or a moderate user fee, constitute the second element (Tamásy, 2002). Just like inexpensive rental space, these measure focus predominantly on the reduction of early-stage fixed costs, leading to economies of scale by means of shared operational costs. The third component comprises a variety of managerial services and business assistance, in fields such as marketing, accounting, human resources or legal matters (Tamásy, 2002). This also includes access to a wide network of specialized service providers, financial institutions (e.g. banks, venture capitalists), public and private research facilities (e.g. universities) and political institutions. The incubator takes the position of an intermediary, helping the tenants to establish formal or informal contacts and to gain access to resources and knowledge (Tamásy, 2001). After 3–5 years, the tenant companies are expected to leave the incubator, but as Sternberg (2004) notes, this depends on the availability of potential tenants.

It has to be mentioned that the links to universities and other research organizations, even though they exist, are far less pronounced than is the case for the concept of science parks, such as in the UK (e.g. Westhead and Storey, 1994) or in Sweden (e.g. Löfsten and Lindelöf, 2001).
Only a minority of the German BIs and technology centers maintain formal linkages with higher education institutions (Tamásy, 2001; Sternberg, 2004). Of course there are exceptions where there are strong linkages with local universities, particularly if the incubator is situated in close proximity to a technical university (e.g. the technology centers in the cities of Dresden or Dortmund). But as, for example, Sternberg (2004) reports, in most cases these linkages are missing or rather loose, especially in rural areas.

In Germany, there is a difference between the concepts of BI and technology centers in two aspects. The first is explicitly concerned with the successful start-up of newly founded firms. There are no or few restrictions regarding technological competence and innovativeness. The second concentrates on the growth and development of young innovative firms (not necessarily start-ups), especially small- and medium-sized enterprises (SMEs). Here, innovativeness is one of the main selection criteria. The German umbrella concept of a “Technologie- und Gründerzentrum” has to be understood as a combination of both constructs, thereby not restricting themselves to one target group or another.

2.2. Business incubators and science parks—a review of empirical evidence

Observing the impact of being located in a science park or BI, no final conclusion is possible as to whether BIs or science parks are effective and efficient tools for the promotion of young or newly founded firms. Although recent empirical studies portray an ambivalent picture, studies investigating the performance differences between firms located on and off science parks or incubators show that on-park firms have higher survival rates (Ferguson and Olofsson, 2004), higher growth rates in terms of employment and sales (Colombo and Delmastro, 2002; Löfsten and Lindelöf, 2002) and a wider market distribution (Löfsten and Lindelöf, 2003) than comparable off-park firms.

Even though the level of interaction with academic institutions, particularly local universities, seems to be generally low, on-park firms exhibit a higher degree of cooperation propensity in innovation processes (Colombo and Delmastro, 2002; Lindelöf and Löfsten, 2004; Fukugawa, 2006). Following Rothaermel and Thursby (2005), who investigate the impact of knowledge flows between a university and a technology incubator on incubator firm performance, the absorptive capacity of the tenants appears to play a crucial role in the transfer and transformation of university knowledge into competitive advantages for the incubator firms. Furthermore, in the context of university–tenant linkages, there seems to be a distinct tendency that informal relationships are more often a source of information and knowledge acquisition than more formalized connections (Monck et al., 1988; Westhead and Storey, 1994; Vedovello, 1997; Bakouros et al., 2002).

Negligible differences between on- and off-park companies are found, when innovation activities are examined. Colombo and Delmastro (2002) investigate the innovative activity of firms located on/off Italian science parks based on various input and output measures (e.g. R&D intensity, patent activity) and find only small differences between the two groups. This confirms research by Westhead (1997), who finds no significant differences for innovation measures (e.g. R&D expenditures, patent or copyright applications) between tenant companies and off-park firms in UK science parks. For Swedish science parks, Lindelöf and Löfsten (2004) report that, regarding the outcomes of innovation processes, technological innovations (measured through product development) occur more often outside science parks. In contrast to this result, Squicciarini (2007) finds a higher patent activity for Finnish on-park firms.

In terms of support components, tenant companies judge flexible, inexpensive space and service facilities to be most valuable for their development (e.g. Sternberg, 1990; Westhead and Batstone, 1998; Abduh et al., 2007) but, contrasting with this, Peña (2004) identifies management training and assistance as the only significant variable to explain growth of new ventures being incubated in Spanish BIs. Mian (1996) especially focuses on university technology BIs and concludes that particularly university-based inputs, such as image/reputation, access to laboratories or recruiting of students, are highly valuable components for the incubator firms.

The often emphasized argument that networking opportunities between the tenants leads to synergies, R&D agreements and innovations, does not hold as, for instance, Bakouros et al. (2002), Bøllingtoft and Ulhøi (2005) and Chan and Lau (2005) show. Phillimore (1999) finds that in addition to intensive relationships with the local university, innovation networks within the science park community are established. McAdam and Marlow (2007) recently showed that tenant companies might be reluctant to share information within the BI community because ideas and business secrets might be stolen by other tenants. This important aspect, especially the necessary conditions to establish links within the BI, will be discussed in detail in Section 3.1.3.

3. Understanding specialized incubators—a multidimensional view

When establishing new BIs local decision makers increasingly take into account the possibility of focusing this incubator on a specific sector. As Table 1 shows, the share of new German SBIs among the total number of BIs opened has risen considerably in recent years. Since 1999, nearly one-third (32.58%) of all new BIs or technology centers in Germany specialized in one or a few complementary sectors.

On the basis of the key principles of BI functionality, supplemented by findings of BI research, the mechanisms that determine the potential benefits of an SBI will be
3.1. Advantages of the SBI concept

3.1.1. Availability of specialized equipment and premises

The provision of physical infrastructure, i.e. flexible rental space, and collectively shared facilities (see Section 2.1) are core components of the BI support mechanisms (Aerts et al., 2007). Previous research reveals that, from the viewpoint of the firms, these “hardware” components (Sternberg, 2004) are seen as the most important location advantages of BIs (e.g. Mian, 1996; Westhead and Batstone, 1998; Tamásy, 2002; Chan and Lau, 2005).

Most BIs offer a number of more general facilities and equipment because as, for example, Tamásy (2002) reports for German BIs, more specialized facilities (e.g. laboratories and measuring instruments) imply high investments and operational costs and are therefore rarely offered. But in certain cases more standardized premises of a diversified incubator are insufficient to satisfy the needs of the tenant companies. Some sectors largely depend on highly specific and sophisticated equipment and premises. Technology intensive industries are heavily reliant on some R&D core resources (Lindelöf and Löfsten, 2004). For example, biotechnology, biochemistry or pharmaceutical firms without the appropriate and, in most cases, extremely expensive facilities and laboratories (e.g. mass spectrometer, centrifuge, specific cooling system, hothouse) cannot conduct their R&D or can hardly do any business. Specialization allows the incubator management to provide exactly these, often mandatory, facilities and equipment. This clearly shows that the incubates benefit from customized premises.

Research proposition 1 (P1). Sector-specialization of a BI helps to provide high-quality premises and equipment according to the specific needs of the tenant companies.

3.1.2. Sector-specific knowledge and know-how

The vast majority of BI studies show that a high proportion of the managerial, consulting services and business assistance offered are used only to a minor extent. They are considered by the tenants to be unimportant for their development (e.g. Westhead and Batstone, 1998; Tamásy, 2001; Abduh et al., 2007). This seems to be determined by the quality of the advisory skills of the management team that are often described as being insufficient (Chan and Lau, 2005). This is highly dependent on limited staff capacity (Monck et al., 1988) and on the heterogeneity of the tenant structure, which confronts the management with a variety of different problems, and is also specified by the different development stages of the tenants (Kulicke et al., 1993; Chan and Lau, 2005).

Ideally, the incubator management team has extensive technology-related know-how, an excellent education in business management and superior knowledge regarding the basic conditions and specific of the relevant market segments (Haapasalo and Ekholm, 2004). In addition, so-called “soft” skills, sufficient time and a dense network, comprising preferably all relevant participants would be desirable. Given the profile above, it is almost impossible to provide appropriate tailor-made support according to all individual needs. Therefore Tötterman and Sten (2005, p. 503) raise the issue: “How can incubator staff, with general business know-how, assist entrepreneurs who face some product- or industry-specific issue that their own expertise is not capable to solve?”. It is not feasible to provide the required sector-specific knowledge (especially in terms of market structure, competitive environment, particularities of finance, knowledge of relevant support programs) for a mix of heterogeneous sectors with the same high-quality standard (Tamásy, 2001).

An SBI strategy provides an opportunity for reducing this heterogeneity difficulty and the resulting problems of non-acceptance and low quality. Because management is able to concentrate all efforts on the needs of one specific sector, it will develop the necessary sector-specific knowledge and expertise to provide exactly the support that is essential for this sector (von Zedtwitz and Grimaldi, 2006). Managing resources and expertise, including business experiences, are key factors in identifying, combining and exploiting the economic potential of the resource endowment of the firm (Barney, 1991; Mahoney, 1995). If the incubator management is capable of providing profound expertise in specific business fields, this may add enormous

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<th>Table 1</th>
<th>Number of incubators opened in Germany per incubator type</th>
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<td>Time period</td>
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<td>Diversified</td>
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<td>Specialized</td>
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value to an SBI location, accelerates the incubation process and lead to faster solving of problems and a shortening of the tenants’ learning curve (Smilor, 1987). We therefore suggest that the customized consulting offerings and sector-specific knowledge of the SBI management team are highly valuable resources for the tenant companies.

Interestingly, recent research by Peters et al. (2004) found that this customizing process of coaching offerings seems to take place more or less automatically over time because the incubator management learns the firms’ needs through interactions.

Regarding the selection process of an SBI, there appears to be another advantage concerning the SBI management. Often the management does not possess sufficiently sophisticated technology and marketing-related knowledge to enable them to select firms that have a weak resource base, but are promising in terms of market potential (Hackett and Dilts, 2004). If management does have the accumulated sector-specific knowledge, it should make better selection decisions because of its higher capability to estimate the innovative potential of new products and ideas. A third point concerns the subsidy dependency of most BIs. A concentration on service offerings, which are really demanded and needed (service rationalization), could be useful in achieving self-supporting organization (diminishing subsidy dependency). Since the arguments relating to selection and cost structures cannot be investigated empirically in this article, we focus our attention on the first aspect and state the following research proposition:

Research proposition 2 (P2). Sector-specialization of a BI allows for service rationalization and leads to a high quality of consulting/training offerings and increases the probability of getting professional and helpful advice and business support.

3.1.3. Networking and synergies

Networks constitute a critical intangible resource (Debrezion and Amesse, 1991; Uzzi, 1997; Lindelöf and Löfsten, 2004). An important aspect of the value-added contributions of a BI location is therefore seen in their potential to foster cooperative interactions and synergies between the tenants (see, for example, Hansen et al., 2000; Bollingtoft and Ulhøi, 2005; McAdam and Marlow, 2007). Networking within the BI provides the opportunities to circulate useful information and knowledge, to work on and acquire certain projects jointly and to establish mutual contract agreements. Spatial proximity facilitates the transfer of knowledge and the exchange of experiences. Well, that is the best-case scenario; reality is much more difficult. The decisive key factor in inducing and establishing networking relationships between incubator firms is not just the fact of being in close proximity (see Chan and Lau, 2005; Bollingtoft and Ulhøi, 2005; Tötterman and Sten, 2005). Rather, some overlap of core competencies, knowledge and market focus is needed. In this context, Chan and Lau (2005) find that incubator-initiated events cannot fulfill a bridging function resulting from barriers of communications and cooperation. Tamásy (2001) highlights the need for a good working climate in the BI community, which determines the frequency of cooperation (including informal contacts). Partially overlapping knowledge bases between the firms (Mowery et al., 1998) seem to be crucial to initiate exchange relationships and mutually fruitful learning processes. In other words, if the firms have something in common, i.e. they belong to the same sector, cooperative agreements within the BI are more likely to occur. Following Tötterman and Sten (2005) a certain tenant suitability is needed for conversation and resource combination within the BI. For instance, using the same or similar equipment, partially provided by the SBI, might create the basis for communication (e.g. because of the possibility of requesting and providing assistance when technical problems arise) and future collaboration agreements. The same might be true for university linkages, regarding the increased potential for connection possibilities (e.g. doing joint research and consulting advice).

Taking another perspective, a more social or psychological one, it is important not to neglect the aspect of being part of a very specific community of entrepreneurs, sharing similar objectives, problems and experiences (Bollingtoft and Ulhøi, 2005; Abdah et al., 2007). The more homogeneously these are distributed within the tenant population, the more likely is psychological support among the incubatees. In a more diversified BI this support might also occur, but probably to a much lesser extent than is the case for an SBI.

Research proposition 3 (P3). Sector-specialization of a BI increases the probability of networking arrangements between the tenant companies and the probability of getting support. This is dependent on the complementarities of the firms.

3.1.4. Image considerations and community-related effects

Being associated with a BI can lead to image and marketing benefits for the incubator firms (Smilor, 1987). That is a highly valuable intangible resource, especially for newly founded or young firms, which do not possess any reputation and must develop legitimacy in the market (see Westhead and Batstone, 1998; Ferguson and Olofsson, 2004; Studdard, 2006; McAdam and Marlow, 2007). Furthermore, enhancement of the image of the whole location (particularly the city) is one important region-specific objective of BIs and science parks (Siegel et al., 2003).

In this respect it has to be mentioned that the growing BI population in many countries has led to an area-wide supply of these business support initiatives (European Commission, 2002). In Germany almost every major city has at least one facility (e.g. in the urban area of Berlin over 20 BI locations can be identified). As Sternberg (2004, p. 451) states, for Germany, being located in a BI “is no longer the sensation it was in the mid-eighties”. To attract
attention, meaning “to stand out from the crowd” with a publicity effect, requires accentuation via an incubator-specific image. Focusing support activities on one sector, accompanied by an offensive communication strategy that is not limited to municipal or regional borders, might be an effective tool to enhance the nationwide perception of the SBI as well as the respective city or the entire region in which the incubator operates. Additionally, this might influence the location choice of firms and might, therefore, attract firms from other regions (Westhead and Batstone, 1998; Sternberg, 2004), which in turn contributes to the long-term survival of the SBI.

The more a BI attracts attention, the higher might be this signaling effect. That means the probability that a positive image is attributed to the tenant companies rises. It seems therefore reasonable to assume that, with the specific identity or profile of the SBI, it is easier for a company to obtain the image benefits associated with an incubator location and acquire credibility.

Research proposition 4 (P4). Sector-specialization of a BI leads to a high trans-regional visibility of the BI and the city and leads to high image benefits for the tenant companies.

3.2. Disadvantages of the SBI concept

Despite the advantages, it is essential not to neglect the disadvantages and pitfalls arising from an SBI concept. The strongest argument against specialization might be the insufficient availability of new firms or nascent entrepreneurs of the respective sector in the respective region (Aerts et al., 2007). Given the limited number of new innovative ventures overall, an additional restriction might lead inevitably to a lack of demand and under-utilized capacities for these BI locations. That is why Tamásy (2001) discourages specialization. Recent empirical findings show this situation of demand constraints—referring to the marginal entrepreneurial activity of high-technology firms—endures (Niefert et al., 2006). Furthermore, regarding the limited mobility of firm founders, the locally available potential becomes even more important. These two aspects have to be taken into account when an SBI strategy is pursued. Otherwise, under-utilization and the downgrading of admission criteria, resulting in image losses, might be the result.

There are also disadvantages for the individual tenants, resulting from a narrowly defined tenant structure. First, the work climate in the incubator may be fierce, because the tenants are competitors within the same local market (Tötterman and Sten, 2005). Findings from McCAdam and Marlow (2007) show that tenant firms are often careful about sharing information, leading to secrecy and barriers to effective networking. This problem might be intensified in an SBI, due to the same or similar competitive focus of the tenants. Secondly, the opportunities for cross-fertilization with other technology or business fields are rather limited. That means the knowledge bases might overlap to an extent, where cooperation is not fruitful, because all tenants possess nearly the same knowledge.

Research proposition 5 (P5). Sector-specialization of a BI leads to a poor working climate in the BI and decreases the probability of cross-fertilizations.

4. Method and data

The objective of this study is an assessment of the benefits of an SBI. These potential benefits were shown in the previous section and research propositions were formulated. To determine, whether the benefits can be realized, a single case study on an SBI in Halle (Germany) that focuses explicitly on the MI was carried out (MMZ). This study is based on a research project that was concerned with the MI in Saxony-Anhalt, especially in the region of Halle (see Rosenfeld et al., 2008).

A qualitative research method was chosen because BIs in general are still a relatively young phenomenon, and there is only limited theoretical knowledge concerning SBIs in specific. Therefore qualitative research methods are suitable because of the required insights into complex social processes that cannot be examined using exclusively quantitative methods (see Voss et al., 2002; Eisenhardt and Graebner, 2007). A deep understanding of the interactions and actors involved in the SBI and its environment is essential. According to Woodside and Wilson (2003), gathering such information is the principal objective of case study research. As Yin (1994) points out, using multiple methods and exploiting a variety of data sources, cases studies provide rich empirical evidence of a particular phenomenon. Moreover, a single case study allows for insights with a greater depth of observation than multiple case studies (Voss et al., 2002).

To gather information and collect the data about the MMZ and the incubated firms, 37 face-to-face expert interviews were conducted over a period of 6 months (June–December 2006). The interview-technique is a commonly used, sometimes additional, method in business incubation research (e.g. Monck et al., 1988; Chan and Lau, 2005; von Zedtwitz and Grimaldi, 2006). Also, to collect background information, several documents were analyzed, including information from the MMZ website and promotional material (e.g. brochures from the local development agency and the MMZ).

The expert interviews were done in two waves, both on the basis of a structured interview guide. The interview guide was adjusted to the different groups of interviewees. It was pre-tested and afterwards some minor changes were carried out. No pre-formulated answers were given in the interviews, in order to uncover the deep nuances of responses (see e.g. Woodside and Wilson, 2003). The interviews lasted about 2 h each (in some cases recorded by tape) and were conducted by two researchers, to ensure a common approach in the interviews (Voss et al., 2002). While the first wave considered mainly the incubator
management and 10 tenant companies, the second one focused primarily on selected participants in regions’ media industry, e.g. faculty representatives of local universities and other training institutions, local authorities, local economic development officials and other media firms not located in the incubator. Where additional information was required or further questions emerged, the interviewees were contacted by phone.

For the characterization of the local MI in Section 5.1 it is also necessary to identify and characterize the boundaries of the media economy. Unfortunately, there is no generally accepted definition of the MI in the literature. Following Rosenfeld et al. (2008) we used data from the establishment file of the German Social Insurance Statistics (see Fritsch and Brixy, 2004 for a description). Its structure is based on the German classification of economic activities and provides information on all establishments with at least one employee. Table 2 shows the fields that were included in our examination and thus our statistical definition of the MI.

A disadvantage of the data source is that only employees participating in the German social insurance system are recorded. Therefore freelancers, self-employed persons and start-up firms consisting only of the owner are not considered. Because these forms of employment play a significant role in the MI, the data from the statistics was supplemented by the results of our qualitative research.

5. Case study—the central German multimedia center (MMZ)

5.1. The development of the MI in Halle—the origin of the MMZ

The city of Halle (230,000 inhabitants) is located in East Germany, in the federal state of Saxony-Anhalt. Until German reunification the region of Halle was a domain of traditional industries (machine engineering, chemicals and mining). From the beginning of the 1990s, the region was confronted with a far-reaching structural transformation, leading to an unemployment rate that was significantly above the German average (2005: Halle: 21.5%, Germany: 11.7% according to the Bundesagentur für Arbeit). Until the end of the 1990s the MI had only slight importance (apart from some regional-oriented newspapers and book publishers). Only 10% of the currently existing media firms in Halle were established before 1990 (Wiener and Lukanow, 2005).

The establishment of the sound broadcasting division of the Mitteldeutscher Rundfunk (MDR) in 1998, a regional public broadcast service, can be seen as an initiating event for the development of the local MI. Since that time, local authorities have started several activities to support the development of the MI in Halle. Subsidies have attracted numerous film productions and multimedia firms (Rosenfeld et al., 2008). Moreover the development of the MI in the region was stimulated by the policy of the MDR to increase the share of production contracts with local suppliers (Bathelt, 2005). Many media firms that are located in Halle have strong relations to the MDR television, which is their most important customer. Furthermore, start-up activities were stimulated. There was a significant rise in the number of start-ups in the MI (13 foundations annually in the period 1990–1998; 31 foundations annually in the period 1999–2004) (Wiener and Lukanow, 2005). Nowadays, with eight radio stations overall, Halle is a considerable center of radio broadcasting. Film production and TV-related business became the other main focuses of the MI in Halle. Several of these companies have specialized in post-production for motion pictures and TV broadcasting, making Halle a considerable center in these fields (Rosenfeld et al., 2008).

Despite these developments, the effect of the MI on the local labor market remains limited so far. In 2006 the MI sector employed around 2000 people, only 1.83% of the local labor force, which is slightly below the German average (1.96%). The majority of the employees (52.4%) are in the traditional print media sector, while the fields of the MI with high growth potential have not reached a sustainable size. In particular, there are few firms dealing with new media and software activities (19.2% of the employees are employed in this segment of the MI in Halle, whereas in Germany this segment accounts for 52.4% of all media employees). Moreover, the economic success of the media firms, as indicated by overall sales, remains modest. About 84% of media firms in Halle generate turnovers of less than one million euros (Wiener and Lukanow, 2005).

The origin of the MMZ can be traced back to the year 1998, when the concept of the media city Halle emerged. Within this concept, local authorities, based on the experiences with BIs, came up with the idea of an SBI, focusing especially on the promotion of the audio-visual sector of the MI. Table 3 provides some key facts about the MMZ.

Despite the improved endowment with crucial location factors, the MMZ was considered to be a useful political measure to profile the city as well as the entire region as a
nationwide competence center for the media economy. According to local authorities, the MMZ should induce a kind of local creative/entrepreneurial milieu leading to innovation activities and new start-up firms, particularly in the MI.

5.2. Research findings and discussion

This section presents the empirical findings from the MMZ case study. To compare the empirical results of the case study with the theoretical advantages and disadvantages, we adopted the same structure as in Section 3.

5.2.1. Availability of specialized equipment and premises

The interviewees underlined the vital importance of the provision of media-specialized facilities and equipment for the media firms. The MMZ offers several TV, film and sound studios, equipped with state-of-the-art technology, as well as post-production facilities (e.g. cutting rooms and broadcasting facilities) with flexible leasing conditions. The tenants judge these facilities as very important because the whole production process can be realized at one location. There is a highly specialized sound studio, especially designed for movie dubbing, supported by the state government of Saxony-Anhalt with five million euros. This studio is Dolby 5.1 certified and meets the THX standard. Both standards are required for movie- and DVD production. Furthermore, the MMZ has adopted a new leading edge audio technology called IOSONO that was incorporated in the incubator-owned movie theater. This is expected to be the future standard in movie sound technology.

From a resource-based perspective of the firm (see e.g. Rumelt, 1984; Wernerfelt, 1984; Barney, 1991; Grant, 1991) these two points (studio and audio technology) are of particular importance. Within this framework, the individual firm is understood as a bundle of various resources and capabilities. But not all resources serve as a basis for competitive advantages. The resource-based view argues that resources must be valuable, rare, imperfectly imitable and non-substitutable in order to have the potential to create superior performance and competitive advantages (Barney, 1991). Like the majority of BIs, the MMZ endows the tenant firms with a bundle of more generalized resources, i.e. equipment and facilities (e.g. conference rooms, exhibition spaces, basic IT and presentation infrastructure). Of course, as indicated in our interviews, these resources are valuable for the firms, particularly for start-up firms that hardly posses any of those resources. In the words of Barney (1991, p. 105), “they enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness”. However they are neither subject to inimitability, rareness or non-substitutability. Concerning the studio and IOSONO, it is much more likely that these are really unique resources, which are not being offered elsewhere, (e.g. in another BI or by specialized service providers), and may therefore serve as a source of competitive advantage for the firms. This finding seems to confirm our Research proposition 1 and the presumption of Phan et al. (2005), where the authors suggested that a BI/science park location may be of greater value to the tenant firms if it offers specific (and not available elsewhere) rather than more general resources.

A more general point concerns the flexibility of rental space, which is regarded as constitutive in the BI concept (see e.g. Tamás, 2002). The occupation of nearly 100% of available space does not allow for much flexibility. If a business grows within the MMZ, in the short run it will not be possible to rent additional office space. These concerns were expressed in several firm interviews. This is also the reason for rejecting requests by prospective tenants and might also limit the stimulation and fostering of entrepreneurship in the local MI.

As for instance Why (2001) argues, there is a need for science parks to move towards the city centers in order to respond to the current patterns of work and lifestyles and to involve the surrounding community. This is also a typical issue for the MI, media firms prefer a location that does not isolate them from the surrounding community. This is also a typical issue for the MI, media firms prefer a location that does not isolate them from the surrounding community (e.g. restaurants, shopping centers, recreation facilities or cultural amenities) (Leslie, 1997; Searle and de Valence, 2005; Rosenfeld et al., 2008). A rural location or a location on the periphery of a city would not be appropriate. Several tenants emphasized the needs to participate in city
life. The inner city location of the MMZ tries to provide this high-quality environment. It allows for the requirement of proximity to a dense urban network or milieu. Clearly the MMZ meets this sector-specific demand.

5.2.2. Sector-specific knowledge and know-how

The supply of business support and management coaching are core elements in the incubation process (e.g. Smilor, 1987). As argued in Section 3.1.1, an SBI strategy allows for service rationalization. The MMZ offers only a minimum of business consultancy services at the moment, but provides media-specific information, assistance with public support programs and guidance in the founding process. Other requests, not managerial assistance, that go beyond the MI-related knowledge of the management—e.g. information on more general support programs—are re-directed to the local economic development agency in Halle.

This is exactly, where the advantages of an SBI—rationalization, customization and quality improvement of consulting offers—are most evident. The majority of the media-firm managers either hold an academic degree in business administration or have other business experience (Rosenfeld et al., 2008). In most cases, the managers of the interviewed tenant companies possess the knowledge (e.g. marketing, accounting, human resource management, etc.) to run a business in the MI environment without the help of the incubator staff. Accordingly, the MMZ staff focuses their support activities on the required fields (see above). Not only is the incubator management capable of providing tailor-made business support, it is also capable of providing high-quality sector-specific knowledge and know-how. The general manager of the MMZ has a distinct media-related background, because she was formerly the head of the Central German TV Academy (FAM). Furthermore, the management is employed on a full-time basis, meaning the MMZ is a managed science park (Westhead and Storey, 1994). This secures the necessary time budget to take care of the tenants’ problems.

These findings suggest that the combination of comparatively homogenous problems of the tenants, on the one hand, and the market-segment expertise of the MMZ management, on the other hand, according to our Research proposition 2, improves considerably the quality and effectiveness of advice. This was stated clearly in the interviews. Interestingly, most tenants did not even expect any business support activities from the MMZ because the need for support in this field is marginal. Rather, the highly specialized premises of the MMZ (see Section 5.2.1) were rated most importantly in the interviews (not the low rents). However, all interviewed incubatees were satisfied with the services provided by the MMZ. According to the tenants’ statements, the MMZ offers exactly those components that are really needed with a high-quality standard.

5.2.3. Networking and synergies

Due to the fragmentation of the local MI, media firms are greatly dependent on formal and informal network relationships. Several studies mention the importance of vertical and horizontal networks for the development of a regional MI (see e.g. Scott, 2000; Oakey et al., 2001; Searle and de Valence, 2005). Considering the employment relations in the MI, this point becomes even more important, because these relations are characterized by a high share of part-time, temporary and freelance work contracts (Rosenfeld et al., 2008). Therefore flexibility, mobility and short-term availability of labor are of vital importance for the media firms. For example, informal contacts play a crucial role in transferring labor between the firms. Critical functions of the MMZ are therefore to strengthen communication and interaction (both formal and informal) between the incubatees, to induce a beneficial cooperation culture within the MMZ as well as initiating external network arrangements (e.g. with other firms, policy, academic institutions).

The tenant structure of the MMZ is based on a well-balanced mix of independent media-related start-up companies and of existing businesses that have relocated to the MMZ. The latter bring in their start-up experience, provide contact opportunities and may be a source of valuable information (e.g. media-related). It is expected that master-apprenticeship relations will evolve between the companies. This tenant mixture is appreciated by the companies. This finding matches similar results of previous research of network relations within BIs, where the combination of large established firms and start-ups was found to be fruitful (e.g. Hansen et al., 2000; Bollingtoft and Ulhøi, 2005; Chan and Lau, 2005). In some cases labor was transferred between the tenants.

As indicated in Section 3, overlapping knowledge bases seem to be necessary in order to establish network relations between the incubatees (e.g. Mowery et al., 1998; Chan and Lau, 2005). Furthermore, recent research has highlighted the context of social norms and structures in shaping the patterns of knowledge and resource sharing within the BI community (Tötterman and Sten, 2005; Bollingtoft and Ulhøi, 2005; McAdam and Marlow, 2007). Our research reveals that, although there exists the essential overlap of knowledge bases within the MMZ community and potential cooperation partners do know about mutual valuable competencies, networking activities, exceeding the normal level of technical assistance, hardly take place. In this respect, the SBI concept does not differ from more diversified BIs (see Sections 2.2 and 3.1.1).

As pointed out in the theoretical section, there might be the problem of competition between the incubatees due to sector specialization (see Section 3.2), which might restrict networking and synergies (Tötterman and Sten, 2005). In the case of the MMZ, none of the interviewed incubatees mentioned this point. Surprisingly, our investigation discloses that the establishment of internal cooperation agreements in the MMZ is prevented particularly due to a selection process by the incubator management. The more established and somewhat better known companies are preferred, whereas the smaller and younger firms feel
disregarded, when important incubator-related decisions have to be made (e.g. decisions about marketing events). Remarkably, these concerns were also expressed by the more established companies. This results in a considerably negative working climate, making trustful and reciprocal relationships less likely. But as research shows, trust and reciprocity are crucial determinants for the stability and performance of network/cooperation agreements (see e.g. Uzzi, 1997; Cooke and Morgan, 1998). In this respect, Törrtman and Sten (2005) argue that the incubator management must develop a strong community within the BI, and must be concerned with trust building between the incubatees, in order to facilitate internal networking. In the MMZ, there is only a slight chance of getting social or emotional support from another individual because personal contacts are rare.

Despite these barriers, a certain self-dynamic has developed in the MMZ, reflected in informal meetings and discussions between the tenants without the presence of the MMZ management. As also Törrtman and Sten (2005) find, tenant companies participate frequently in this kind of networking activity. However, considering internal inter-firm networking relations and synergies, our study reveals no evidence of the advantage of the SBI concept. Rather the disadvantages (negative climate, no cross-fertilization) seem to outweigh the benefits (enhancement of communication and cooperation) of sector-specialization on this point. This refers to Research propositions 3 and 5.

A similar conclusion can be drawn from the investigation of the MMZ–university linkages. In line with other findings (e.g. Massey et al., 1992; Vedovello, 1997; Bakouros et al., 2002), it can be stated that geographical proximity (in this case being located in the same building) does not necessarily facilitate incubator–university links. Indeed the MMZ facilitates the recruitment of highly skilled labor with a media-related background because as has been mentioned, the faculty of Media- and Communication Science of the local university (MLU) is present in the incubator (see Table 3). But beyond recruiting graduates, neither formal nor informal connections (e.g. usage of equipment) can be observed. One reason for this finding seems to be the fact that the MMZ has only recently been founded. In the context of Allen’s (1988) BI life cycle framework, the MMZ is just at the beginning of its development stage. Although the ties that could bind exist, obviously it takes some time to utilize them.

5.2.4. Image considerations and community-related effects

The image benefits of a BI location are regarded as highly valuable resources for tenant firms (Westhead and Batstone, 1998; Ferguson and Olofsson, 2004; Studdard, 2006; McAdam and Marlow, 2007). Because locations of the media are in many cases locations that may appear in the media, for media firms the image of their city/region is also of great importance (Batbelt, 2005; Rosenfeld et al., 2008). The MMZ has to play a significant role in generating these possible location-related image benefits, considering both the tenant companies and the city or region, since the MI is a relatively new sector in the region of Halle. Starting with the second aspect, the study shows that currently the MMZ is able to generate only marginal demonstration effects. This can primarily be traced back to the delay of construction works, accompanied by construction noise, dust exposure and less positive articles in local newspapers.

However, it is conceivable that the MMZ will make a substantial contribution to the enhancement of the trans-regional importance of Halle as a location of the MI. Therefore, it has to succeed to induce a kind of atmosphere in favor of the local MI. First steps have been undertaken—the MMZ is actively engaged as the initiator of the Network of European Media Regions. Under the leadership of the MMZ, this network (comprising different regions like Piedmont, Catalonia or Turku) will play a key role in marketing (e.g. promoting international cooperation agreements of local media firms) and doing lobby work for the local MI in the context of EU policies. A rough indicator of the image advantages of an SBI strategy for the respective city/region, might be the influence on the location choice of firms (Westhead and Batstone, 1998; Sternberg, 2004). The interviews showed clearly the rising perception of the MMZ since, without the decision to concentrate all efforts on these sector-specific needs, many firms would not have settled down in the MMZ or the city of Halle (see Research proposition 4).

Considering previous research on BIs in Germany, where it has been found that the majority of tenants originate locally and it is therefore not likely for a BI to attract founders/firms from other regions (see Tamásy, 2002; Sternberg, 2004), our findings suggest an image benefit resulting from a specialization strategy, because tenants are attracted nationwide.

Especially because of the local novelty of the MI (see Section 5.1), it is essential to promote its integration into the wider, more general economic and political landscape of the city/region. A clearly positive assessment can be made regarding this point. Here the MMZ takes over a basic function, acting as a regional intermediary. Thus, for example, the monthly meeting MMZ-Vision brings together representatives of regional enterprises and organizations that do not belong to the fields of media (e.g. municipal authorities and local policy-makers) and actors of the local MI, particularly managers. Thereby, ideas and knowledge are exchanged, e.g. the possibilities of enhancing the public image. The MMZ contributes to the better integration of the incubator residents and of the local MI as a whole.

Whereas the MMZ satisfies expectations concerning the visibility/image of Halle as a location for the MI, the image benefits for the incubatees still remain limited. Although the expected image benefits of the MMZ were one of the decisive factors when choosing this location, the interview partners did not report a perceived reputation improvement. So far (having in mind that the MMZ is a
Table 4
Summary of the key findings

Mechanism primarily connected to the SBI-concept

Benefits
- Highly specialized equipment and premises increases attraction and reduced costs for the firms (especially sound-studios with THX and IOSONO)
- Visibility of Halle as a location for the MI has been increased (lobby work, marketing)
- Rationalization of services and consulting offers
- High quality of advice provided to the firms (expertise of the incubator management)

Deficiencies
- Currently only marginal image effects/reputation gains for the tenant companies
- Physical proximity to university and overlapping competencies do not improve industry–university-linkages (only recruitment of graduates)
- Negative working climate in the MMZ due to incubator management's preference of the more prominent companies
- Insufficient provision of more general knowledge and information (cooperation needed)
- At present no formal internal networking (e.g. cooperation agreements) between the tenants is taking place

More general findings of the MMZ evaluation

Benefits
- Attractive location in the city-center with a high-quality environment
- Low rents
- Full time manager

Deficiencies
- Flexibility limitations due to full occupation (restricts also the stimulation effect)

fairly young BI) there are no image benefits for the incubated media firms. This is contrary to other findings (see e.g. Ferguson and Olofsson, 2004 or Studdard, 2006). Therefore we found no evidence supporting the second part of Research proposition 4. An SBI strategy does not increase image benefits for the individual firms. What has been achieved so far is the perception of the MMZ as a symbol of the connectivity of the local MI, because several tenants could be regarded as ‘flagships’ of the local MI scene. The MMZ is considered to be a ‘role model’ (Sternberg, 2004) for other local media firms.

Table 4 summarizes the key findings of the empirical section.

6. Implications and further research questions

A growing number of BI initiatives choose to focus their activities on one specific sector and its particular needs. But the benefits arising from specialization have not yet been explored in detail. This article tries to extend the understanding of the benefits of business incubation by explicitly focusing the research on an SBI. Building on empirical evidence of BI and science park research, the theoretical section reveals the basic mechanism that leads to potential advantages and disadvantages of sector specialization. To answer the central question, that is to investigate what are the benefits and deficiencies for the different stakeholders (companies, incubator management, region) a case study of an MI specialized BI was conducted. The empirical work reveals that SBIs include several mechanisms that add value to the tenant companies. Specifically regarding the specialized equipment and the sector-specific consulting services and knowledge provision, there seem to be exceptional advantages for both the incubator management (rationalization, cost reduction) and the tenant companies (quality and efficiency of advice, tailored premises) resulting from the SBI. Additionally, the image effect of an SBI (e.g. media presence, word-of-mouth-processes), not only for the firms but also for the whole region, seems to be an enormous advantage. The results also show that not all supposed benefits could be fully captured. When internal networking activities in particular are considered (inter-firm and university-firm), this concept does not fulfill our expectations. We have no indications of the superiority of the SBI strategy on this point. The analysis suggests the following set of implications, distinguished in relation to the different stakeholder groups.

6.1. Implications

From the firms’ viewpoint, we suggest that potential tenants must be conscious of the trade-off when making the decision to locate either in a diversified BI or an SBI. On the one hand, although some deficiencies have been revealed, the study shows that SBIs offer valuable resources and might provide beneficial business environments that firms should take into account, especially if they need sector-specific support components. Since in our study there are also tenant companies that do not benefit notably from the specialized facilities (e.g. game development companies, film production companies and TV- and movie-related service providers benefit most), we state that firms that need a broader spectrum of BI support are probably better off choosing the diversified model.

This also points to some functions and responsibilities of the SBI management. First, before making the final selection decision, management should advise and clarify exactly what the benefits and drawbacks of the particular SBI location are for each applying firm. On the one hand, this might be achieved through official presentations of the SBI management staff. But, on the other hand, and probably more important, firm specific in-depth discussions are needed. This is fairly important, because the value-added contribution of the SBI might differ remarkably between firms of one sector. Further, the need for an actively engaged management team is highlighted. Second, in this study the tenants of the SBI, though they belong to the same sector, serve different market segments and do not consider themselves to be competitors. We have to
admit this might be an exception. It seems likely that tenants of an SBI will be competitors, maybe within a narrowly defined market niche (Töttterman and Sten, 2005). Therefore, the SBI management has to make constant efforts to induce and secure a constructive and fruitful working climate. We suggest that selection decisions should be made according to possible linkages between the applicants and the actual tenant companies of an SBI. In doing so, there is great potential to establish upstream–downstream linkages within the SBI community, thereby reducing the likelihood of conflict.

From the local policy maker’s perspective, it has to be stated that before an SBI is set up, the local pre-conditions have to be examined carefully. Feasibility studies by independent experts can estimate the potential future effects emanating from the incubator probably more realistically than local authorities/politicians normally could. What is needed is not only the ex-ante quantification of entrepreneurial potential of the respective sector but also an estimate of whether there are enough potential tenants who definitely need the specific resources (e.g. equipment). Further questions concern the matching of the SBI with regional strengths and the future growth potentials of the target sector. Ignoring the traditional strengths of a location, or focusing on shrinking sectors, might result in what is called “incubator vulnerability” by Aerts et al. (2007, p. 265). This also implies that the establishment of an SBI must take into account several sector-specific incubator organizations, such as universities with relevant courses, related research organizations or major enterprises, to have a sufficient number of spin-offs and spin-outs. Neglecting this point may lead to great disappointment, irreversible investment costs and image losses for the whole idea of business incubation. Once the SBI has been set up, regional governments can support it by the promotion of linkages between universities and the SBI (e.g. joint seminars with managers from tenant companies), which might reduce information deficits of nascent entrepreneurs and stimulate start-up activities in the respective sector by university graduates.

Policy-makers often use BIs as a marketing instrument, at least in Germany, in order to demonstrate their engagement in local innovation/technology policy (Mitsch, 2000). The image of an SBI is a highly valuable resource and probably one of the most important factors determining long-term success. Therefore, especially at the beginning of the life cycle, the responsible individuals have to act carefully regarding communication strategies to prevent any mistakes that could endanger the public image of the SBI.

6.2. Limitations and future research questions

As few efforts have been undertaken to assess the advantages and disadvantages of an SBI strategy, little is known about this research topic. There are number of questions remaining unanswered. Therefore, we propose the following research agenda.

First, of course, our research design is constrained by its case study nature (e.g. Johnston et al., 1999), in particular by the focus on the MI. Comparisons with other SBIs and generalizations are difficult. The results presented are therefore restricted by this method. Given these limitations, it is necessary to collect data from multiple SBI organizations in order to understand the basic mechanisms outlined in this article more deeply. Therefore, it is insufficient to restrict examination to the BI/SBI comparison. Analyses have to be extended within the SBI sector. The concept of SBIs might not be suited to every sector. Especially the question of whether mechanisms differ between different sectors deserves further investigation. For instance, in the MI the provision of specific market-related knowledge by the MMZ was rated unimportant by the tenants, due to the qualification levels of the employees. In other sectors that rely more on natural or engineering science, for example biotechnology or medical engineering, this SBI component might be of much greater relevance.

Second, due to the local novelty of this specific instrument and the rather short period of operation of the MMZ, experiences as well as reliable and quantifiable data are at this stage of development not available. Tenant- and region-related effects could not be measured yet. Researchers concerned with the diversified/specialized continuum should focus on the long-term performance comparison of both the incubator organizations (e.g. number of graduates, surviving businesses, incubation time) and the incubates (e.g. employment growth, innovative- ness, creditworthiness, reputation), in order to assess differences in effectiveness and value-added contributions to the incubates between these two incubator types.

Third, more work is needed to find out how much specialization is actually beneficial, since there are also disadvantages from a narrowly defined tenant structure. Moreover, there exists a rich literature on the success factors of BI projects, but it would also be highly interesting to determine if there are specific factors contributing to the success of an SBI. Do they differ? In this context, Peters et al. (2004) raise the question of how the ability of a firm to differentiate itself from competitors (i.e. building unique resources) can be achieved if each tenant firm has the same access to the valuable resources of the BI. Further, more detailed, research is clearly needed to get a complete picture of the particularities of SBIs and how they can contribute to the success of incubation processes.

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