

"Agglomeration or aggregation?: assessing the success of networking strategies within the cultural industries sector.

**GENERATING LOCAL ECONOMIC NETWORKS: A
CONSIDERATION OF THE LOCATIONAL AND
ORGANISATIONAL DYNAMICS OF SHEFFIELD'S CULTURAL
INDUSTRY SECTOR.**

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MPhil Thesis**

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ABSTRACT

This thesis investigates the development of territorially defined networks of innovative small and medium sized enterprises within the cultural industry sector (CIS). It considers whether these networks provide the basis for enhanced local economic competitiveness, whether they improve the innovative capacity of a locality and whether they stimulate local job creation. Promoted by the local authority under the assumption that a dense clustering of cultural industries are linked together through complex networking patterns, this thesis examines the locational and organisational characteristics of Sheffield's CIS.

Theoretically this investigation is set within the context of three inter-related academic debates, drawn upon either implicitly or explicitly within Sheffield's cultural industry policy. Firstly, neo-Schumpeterian theorists propose that driving economic growth are those industries that are the most innovative in their technological and organisational dimensions. Secondly, the notion of flexible specialisation is deployed to illustrate how small firms frequently offer the most adaptable responses to specialised patterns of production and consumption. Thirdly, the concept of new industrial districts is evoked to characterise how innovative and flexible enterprises frequently aggregate in distinct spatial clusters (Piore and Sabel, 1984). Proponents of the new industrial district thesis proclaim that sustaining such industrial clusters is a set of complex organisational networks between inter-related firms. Firms utilise their close spatial proximity to one another to reduce transaction costs, to exchange information and to share common support structures.

This thesis analyses whether strategic interventions in Sheffield's CIS have been correct to draw upon the theoretically grounded assumption that the creation of a cluster of associated industries will lead to inter-firm networking. It asks whether the networking hypothesis actually applies to the cultural industries or whether the attraction of cultural industries has merely produced an aggregation of relatively unconnected businesses, or businesses that are connected to quite different networks. While the former outcome suggests that networking strategies offer a realistic approach of encouraging local economic development, the latter outcome suggests that business activity in the cultural industries is more of a chaotic concept than proponents of networked production have proposed. I conclude that although networking patterns in Sheffield's CIS are pronounced these networks operate only at the lower level of the industrial system and are rarely used to enhance the innovative capacity of individual firms.

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GLOSSARY OF TERMS

ACT	Action for Business in Culture Ltd
CBA	Cultural Business Audit
CIDU	Cultural Industry Development Unit
CIQ	Cultural Industries Quarter
CIQDA	Cultural Industry Quarter Development Agency
CIS	Cultural Industry Sector
CoC	Chambers of Commerce
CoE	Census of Employment
DEED	Department of Employment and Economic Development
ERDF	European Regional Development Fund
fte	Full-Time Equivalent
GLC	Greater London Council
MNC	Multinational Corporation
NCPM	National Centre for Popular Music
NID	New Industrial District
R&D	Research and Development
SIC	Standard Industrial Classification
SME's	Small and Medium Sized Enterprises
SRB	Single Regeneration Budget
TEC	Training and Enterprise Council

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CHAPTER ONE: INTRODUCTION

This thesis traces out the locational and organisational dynamics of Sheffield's cultural industry sector (CIS). Summarising the theoretical literature it begins from the proposition that a number of small and medium sized enterprises (SME's) based around a number of new industrial sectors have often clustered in discrete spatial aggregations. With regard to the organisational nature of these clusters it is suggested that businesses utilise their close spatial proximity to associated industries to form a variety of inter-firm networks. Particularly important consequences of this close proximity are reduced transaction costs, the increased capacity of firms to meet informally to exchange information and ideas and the ability to share common support structures. In turn, collaborative inter-firm relationships are argued to provide the impetus for firms to become increasingly innovative and in turn these innovative firms enhance the competitiveness of the locality within which they are located. *As Huggins suggests, '...typically, it is argued that the existence of established inter-firm networks is one of the key reasons why a number of the most successful localities and regions throughout the world have become or remained more industrially competitive than those which have not adopted such an approach'* (1998, p814).

As a consequence of these propositions it appears that there is a compelling case for local sectoral activity that helps to bring together SME's in a collaborative manner. This introduction, with the overall aim of outlining a rationale for a local approach to sector studies, is divided into four sections.

- (i) An introduction to how endogenous economic growth has been increasingly encouraged through the use of sector-based strategies.
- (ii) An analysis of the CIS. It is held that individual firms within the CIS are bound together by complex networks of products and technologies, and that this sector represents a profitable economic sphere.
- (iii) A brief analysis of why Sheffield has been chosen as a case study location.
- (iv) An outline of the subsequent chapters.

(I) AN INTRODUCTION TO SECTOR BASED STRATEGIES PROMOTING ENDOGENOUS ECONOMIC GROWTH

Commentators proclaiming the possibilities that exist for localities to enhance their own economic competitiveness have drawn heavily on the theoretical work of Porter (1990). The

main thrust of Porter's argument in *The Competitive Advantage of Nations* is that, even in the context of a global economy space does matter and that competitive advantage is created and sustained through a highly localised process. Whereas for Porter the most important spatial division is the political entity of the nation state, other theorists have translated Porter's ideas into a more regionalised or localised context. It is equally plausible in the following quotation, therefore, to change the emphasis from the national to the local.

'Creating competitive advantage in sophisticated industries demands improvement and innovation - finding better ways to compete and exploiting them globally, and relentlessly upgrading the firm's products and processes. Nations [localities] succeed if industries in their national [local] circumstances provide an environment that supports this sort of behaviour. Nations [localities] succeed where the national [local] environment uniquely enables firms to perceive new strategies for competing in an industry. Nations [localities] succeed where national [local] circumstances provide an impetus for firms to pursue such strategies early and aggressively (pp67-68).

They state, therefore, whether at a local or a national level is able to foster competitive advantage through the encouragement of innovation in product, technological or organisational form (Haughton and Thomas, 1992). Innovations, it is held, are the key to long-term economic growth. As I shall demonstrate in the theoretical review the firms most frequently producing these innovations at a local level tend to be SME's. Organisationally these firms are increasingly proclaimed as flexible to changing patterns of production and consumption, while spatially they tend to develop in spatial clusters characterised by processes of inter-firm collaboration. This close spatial association not only increases local competition, but allows for a greater flexibility in accessing a wider range of specialist expertise to meet customer needs, in sharing risks and costs and in receiving common support services. Although the competition emerging in such aggregations may result in a high death rate of firms, it also forces survivors to become more innovative and competitive than elsewhere. Overall, therefore, these arguments point to the ability of local agencies to attract a group of industries to locations where inter-firm networks can encourage a position of collaborative competition.

In encouraging the development of close associations between inter-related firms, local economic policies are increasingly adopting sector-based approaches. As Haughton and Thomas remark, *'The sectoral approach in local economic policy is potentially central in establishing the critical mass for collaborative activities to take place in a locality, for identifying non-input-output forms of potential collective support facilities, and generally*

facilitating inter-firm collaboration' (1992, p.103). Sheffield, along with many other cities responding to a period of economic restructuring and industrial decline, has been keen to discover a new series of economic sectors upon which its future economic competitiveness may be built. As the decline of Sheffield's steel industry revealed, there are clearly limits to resolving local problems solely on the basis of one economic sector. The CIS forms one such sector hitherto largely ignored as economically profitable at all.

I turn now to offer an introduction to the cultural industries sector. I firstly define the inter-related nature of this sector, and secondly explain why this previously unacknowledged economic sphere can in fact provide a basis for the development of endogenous economic growth.

(II) INTRODUCING THE CULTURAL INDUSTRY SECTOR

(i) Defining the Cultural Industry Sector

In its broadest sense, the CIS is a notoriously difficult sector to define. There are no precise definitional boundaries as to what industries can be contained within the notion of 'culture', while this boundary has itself been subject to continual modification. The main sub-sectors of the CIS, however, are generally considered to include the performing arts, the music industry, the literature and book market, film, television and radio production, and the entertainment industry. A more lengthy and quantifiable definition of the CIS will be contained later within this report (Pratt, 1997, Scott, 1998).

This definition of the CIS has recently been broadened in two particular, but inter-related directions. Firstly, the CIS is now characterised by the 'popular' as well as the 'high' arts. Wynne (1992, p.1), for example, defines the culture industry as '*including all forms of activity associated with what is traditionally understood as art and popular culture*'. Secondly, the CIS involves not just original artistic production, but also the reproduction of this artistic production across a variety of different forms of media and its availability in commodity form. The notion of the multimedia, for example, has risen in importance to describe a set of industries that cross the divide between the cultural product industries and the high technology sector (Scott, 1996, 1998). Therefore, as Pratt proposes, it has become increasingly unhelpful to use empirical cultural product categories to classify industries that are in fact bound together by complex networks of products and technologies. As Pratt concludes, '*The success of the industrial district is the production ensemble, the combination of different industries that*

provides the scope to mix, match, and if necessary, create new products' (Pratt, 1997b, p.1956).

What is important, therefore, is not so much what constitutes the CIS (definitions produced by local authorities, for example, vary dramatically according to the sub-sectors within which each particular locality is predominant), but why a number of seemingly diverse industries can be classified as part of a collective sector. This grouping makes economic growth strategies based around the cultural sector an increasingly effective policy tool. Moreover, and as shall be theoretically demonstrated in the literature review, these cultural sub-sectors are bound by their tendency to engage in flexible methods of production and to frequently develop in spatial clusters.

However, if the CIS is to be regarded as a suitable sector in encouraging endogenous economic growth it is important that not only are individual cultural producers networked through a set of common inter-relations, but that the CIS represents a profitable economic sphere.

(ii) The Economic Importance of the Cultural Industry Sector

'In recent years...there has been a growing appreciation of the fact that the arts are not a minor backwater in economic terms, but a significant generator of income and employment. Furthermore, it is now recognised that the cultural industries comprise one of the fastest growing sectors in the economy'(Throsby and Thompson, 1994, cited in O'Brien and Feist, 1995, p.17).

Until recently the CIS had been largely ignored in terms of its economic potential. Culture, especially in its more traditional interpretation as 'high' art, was regarded as a not-for-profit activity whose primary benefits were social and educational rather than economic. Even when a more 'popular' definition of culture has been adopted '*...the accepted wisdom remains that cultural industrial production is both ephemeral to developed economies and/or dependent upon more productive parts of those same economies'* (Pratt, 1997a, p1953).

Perhaps the seminal report to document the economic importance of the cultural sphere was produced by Myerscough (1988). This report evaluated the economic importance of the 'arts', a term with a wider definition than that of the cultural industries alone. Myerscough calculated that the arts were a significant and expanding economic sector, producing a direct annual turnover of £10 billion and providing employment for over half a million people within the

UK. In addition, he stated that indirectly the arts could provide spin-offs in other ancillary industries, stimulate tourism, act as a catalyst of urban renewal and provide a valuable business asset for a region.

Myerscough's analysis reveals that assessments of the economic importance of the arts can generally be classified according to one of two separate types of analyses. Firstly there are those analyses that measure the indirect impacts of the cultural industries, and which have effectively re-legitimised not-for-profit arts activity. Rather than focusing on the economic benefits of cultural products themselves, these analyses explore the economic activity generated by arts and culture in terms of their secondary impacts on retail and tourism, and their ability to attract inward investment.

A second approach, more in accordance with the theoretical literature documented here, has been to undertake a direct economic analysis of the cultural industries, identifying its immediate outputs in terms of employment and business formation rates. Although these direct economic analyses adopt somewhat divergent descriptions of the sub-sectors that constitute the CIS, each has revealed that the cumulative effects of the cultural industries create certain positive economic impacts (*Bassett, 1993, Wynne, 1992, Crewe and Forster, 1993; Cultural Trends, 1993; O'Brien and Feist, 1996*). Pratt (1997a) has suggested that the media and cultural industries are one of only three industrial sectors with the potential for economic and employment growth over the next decade and that nationally in 1991, the cultural industries employed 4.5% (972,000) of all UK employees (CoE, 1991).

(III) THE REASONS FOR INVESTIGATING SHEFFIELD'S CULTURAL INDUSTRY SECTOR

Sheffield currently represents a 'peripheral' industrial economy, undergoing a dramatic period of economic decline in response to the loss of its traditional steel-producing base. Whereas in the 1960's local economic policies to enhance the position of peripheral economies encouraged the transfer of high growth activities from congested urban areas to generally lagging peripheral areas, the focus today is on the promotion of the endogenous innovation potential of all regions. Consequently, Sheffield has been keen to discover a new series of local economic sectors upon which its future competitiveness may be built. The cultural industries formed one of these sectors. In fact Sheffield, adopting a cultural industry policy in the late 1980's, was one of the pioneering local authorities to have experimented with the CIS.

(IV) AN OUTLINE OF THE SUBSEQUENT CHAPTERS

Chapter two offers a **Theoretical Review** of the academic debates that underpin the emergence of spatially concentrated and innovative networks of SME's. The CIS is cited as an economic sector representative of these networking patterns. Technologically the cultural industries utilise the new knowledge-based technologies characteristic of a potential long-wave transition from an industrial to an informational age. Organisationally, the cultural industries frequently engage in new models of industrial orders subsumed under the heading of flexible specialisation. And spatially the cultural industries tend to cluster in distinct spatial agglomerations, theoretically referred to as new industrial districts.

This chapter concludes by stressing how the discovery of these networked spaces has attracted the attention of policy-makers as a potential means of promoting the endogenous economic competitiveness of particular areas.

Having outlined this theoretical framework, **Chapter three** introduces the **Research Design and Methodology** that forms the investigative basis of this study.

The first part of this section introduces the two precise research hypotheses to be tested. The first hypothesis proposes that the clustering of firms in a given industrial sector does not represent a static grouping, because such clustering heightens the scale and efficiency of transactions and information exchange between cultural producers. The second hypothesis proposes that there is less networking at the higher, more specialised level of the system, because innovation is a peak activity and is too secretive or specialised to be the subject of networking arrangements. By contrast, it suggests that there is more networking at the lower level of the system, because general support networks create an essential capacity or potential for innovation.

These hypotheses are divided into a series of more workable research questions. Only once it has been determined that an aggregation of associated firms has developed in a distinct spatial concentration can the explanatory hypotheses be tested. Therefore the first research question asks whether Sheffield's cultural industry policy has been successful in establishing an aggregation of cultural businesses. Assuming that this policy has been successful, the second question asks whether the existence of such an aggregation has encouraged the inter-firm networking arrangements that are believed to enhance the future competitiveness of a locality.

The second part of this section outlines the research methodologies used to answer these questions. The first question requires a quantitative analysis of secondary data, utilising economic indicators to determine the number of businesses and the number of people employed within Sheffield's CIS. The second question requires a more qualitative analysis, using questionnaire and interview procedures to determine the exact nature of networking relations within this locality.

Given the policy-orientated nature of this investigation, it is necessary before answering the research questions to identify an area that has actively pursued a cultural industry policy. **Chapter four** therefore introduces a **Policy Review**, outlining the evolution of those policies that have, either explicitly or implicitly, drawn upon the theoretical insights described in chapter 2. Using Sheffield as a case study location this chapter concludes that Sheffield's cultural policy fits within the evolutionary framework of cultural industry policies and that its policy has created a favourable environment within which the formation of a cluster of cultural industries may prosper.

Chapter five presents the **Research Analysis** stemming from an empirical analysis of the two research questions outlined in chapter three.

In response to the first research question this analysis identifies that an aggregation based around the media industries has formed in the area of Sheffield defined as the Cultural Industry Quarter (CIQ).

In the second section, adopting a specific networking taxonomy (Crewe, 1995), I largely confirm the initial explanatory hypotheses. Sheffield's CIS is characterised by a variety of formal, informal and institutional networks and these networks primarily operate at the lower level of the system offering general business support rather than assisting product innovation.

Chapter six offers a **conclusion** to the findings obtained from the research analysis and outlines a number of policy recommendations with a view to enhancing networking relations within Sheffield's CIS and increasing their innovative capacity.

CHAPTER TWO: LITERATURE REVIEW

The Theoretical Debates Underpinning the Emergence of Endogenous Growth Strategies

This literature review starts from the premise that a new and innovative wave of economic growth will emanate from those areas within which there are spatially concentrated networks of SME's, using flexible production technologies and characterised by extensive local firm linkages. This contention draws upon a number of theoretical debates including long-wave economic theory, the flexible specialisation thesis and the notion of new industrial districts. When combined, these theoretical debates prove of relevance to public strategies seeking to encourage endogenous economic growth. As Simmie concludes, it is *'important to seek explanations as to why this [spatial innovation] is so not just out of intellectual curiosity but also as the bases for various public and planning policies whose specific objectives or unintended consequences are to stimulate local and regional economic growth'* (1997, p1).

This chapter is divided into five parts. Evidence will be provided to illustrate that,

1. The contemporary economy is witnessing a new wave of economic growth based on technological innovations.
2. SME's appear well suited to take a pioneering role in this new round of technological innovation. Their competitive advantage is founded on the fact that these firms offer a highly adaptable system of production.
3. These SME's tend to locate alongside similar firms in industrial complexes in order to benefit from the inter-firm linkages that close proximity allows.
4. A variety of inter-firm linkages can be identified. A taxonomy will be offered to distinguish between these.
5. The theoretical issues raised in points 1-4 can prove of value to local economic policy makers wishing to revitalising the local economy on the back of endogenous and sustainable growth strategies.

The cultural industries are cited as an example of an innovative economic sphere that is characterised by such trends. Shapiro et al suggest that the cultural industries are an illustrative sector of these changes because, *'Not only are the culture industries de-differentiating from each other, but industry in general is de-differentiating from the culture industries'* (1992, p.192).

I: THE RISE OF A NEW AND INNOVATIVE WAVE OF ECONOMIC GROWTH

Economic theorists argue that the Western world is today witnessing an historical restructuring of industrial capitalism. Within Britain, two recessions at either end of the 1980's have accelerated the collapse of the existing local industrial base of many cities, and have ushered in a new economic transition. Based on data obtained from the Census of Employment, for example, Frost and Spence (1991), have calculated that between 1981 and 1987 manufacturing employment within Britain has declined by 4.5% and that, by contrast, the service industries have witnessed an employment increase of 9.4%.

A growing body of neo-Schumpeterian thought proposes that economic growth in the contemporary period is driven by a new set of industries that are innovative in their technological, organisational and spatial dimensions. These new industries, it is proposed, promise to counter the negative effects that have been caused by the loss of employment in traditional manufacturing sectors.

A number of cyclical explanations have been postulated to detail this contemporary economic transition. Based upon the works of Kondratiev (1935) and Schumpeter (1942) these accounts argue that although the capitalist system of production undergoes periodical crises, it will continually survive through the initiation of new economic cycles. Kondratiev described these cycles in terms of 'long-waves' of economic development, which occur approximately every fifty years as the economy retrogresses from prosperity to recession, and to depression, before finally recovering.

Schumpeter expanded upon Kondratiev's earlier descriptive analyses by offering a causal explanation for these cycles. He suggested that innovation is the main dynamism of capitalism, and that in particular, science and technology are the key influences in driving economic change. As Malecki observes, *'It is the growth and accumulation of useful knowledge and the transformation of knowledge into final outputs via technological innovation, upon which the performance of the world capitalist economy ultimately depends'* (1991, p.89). To date there have been four Kondratiev waves, and as Preston and Hall (1988) illustrate, each of these can be matched with the major innovations of the past three centuries (see table 2.1).

Table 2.1 The Chronology of Kondratiev's Waves

	First Wave	Second Wave	Third Wave	Fourth Wave
Date	1787-1845	1846-1895	1896-1947	1948-2000(?)
Key Innovation	Power Loom; Puddling	Bessemer Steel; Steamship	Alternating Current; Electric Light; Automobile	Transistor; Computer; CIT
Key Industries	Cotton, Iron	Steel, Machine Tools, Ships	Cars, Electrical Engineering, Chemicals	Electronics, Computers, Communications, Aerospace, Producer Services
Industrial Organisation	Small factories, Laissez-faire	Large factories, Capital Concentration, Joint Stock Company	Giant factories, Fordism, Cartels, Finance Capital	Mix of large Fordist and small subcontracted factories, Multinationals
Labour	Machine minders	Craft labour	Deskilling	Bipolar
Geography	Migration to towns	Growth of towns on coalfields	Conurbations	Suburbanisation, Deurbanisation, New Industrial Regions
International	Britain, Workshop of the world	Germany, US competition, Capital export	USA, German leadership; Colonisation	US hegemony, Japan challenge, Rise of NIC's, NIDL
Historical	European Wars, Railways	Opening up of N. America, Global transport and communication	World Wars, Mass consumption, Great Depression	Cold Wars and Space Wars, Global village, mass consumption
Role of State	Minimal army/police	Early imperialism	Advanced imperialism; Science and education	Welfare state; Warfare state; Organised R&D

(Hall and Preston, 1989)

There is a belief, therefore, that technology and innovation could be the key to the next Kondratiev long wave and to a new period of economic growth. Castells (1989), for example, argues that we are today witnessing a transformation of the world economy as significant as the industrial revolution of old. It may be even he suggests, the transition from the industrial to an informational era. Indeed, many commentators propose that the current technological innovations represent the start of the fifth Kondratiev cycle, based upon the innovative role of the new electronic and knowledge-intensive industries. A major trend may be emerging as a result of the need to have a command over the creation, application and communication of knowledge.

Many cultural industries, I believe, are characteristic of this new wave of technological innovation. Christopherson and Storper (1987) propose that the design-intensive activity within the cultural industry sector is the equivalent of R&D in the manufacturing industry. The multimedia industries, for example, utilise not just the informational technology behind the production of today's most valuable innovations, but also provide many of the innovative ideas behind their initial invention.

This distinction is important (Hall, 1998). Invention refers to the production of new knowledge in the form of a new product or method of production. Innovation draws reference to the activities needed to translate a new idea into commercial practice. Innovation can be defined as, '*...the commercially successful exploitation of new technologies, ideas or methods through the introduction of new products or processes, or through the improvement of existing ones (European Commission, 1996, cited in Simmie, 1998b, p.35)*. It is the companies or areas that are able to combine both invention and innovation that are the most competitive. Within the multimedia industry the aim is to combine the artistic creativity inherent in traditional cultural product industries with the new media and technological innovations characteristic of the high-technology sector.

II: SMALL FIRM LED ECONOMIC GROWTH AND THE FLEXIBLE SPECIALISATION THESIS

'The IT revolution is not a one-off conversion. Growth will come in new products, knowledge-intensive products, more differentiated than mass produced with more of their value in design...In the high-technology industry, whoever pioneers production will have a decisive influence on future patterns of trade, with others finding it hard to catch up'.

Searjeant (1986), quoted in Aydalot and Keeble, 1988)

One of the weaknesses of long-wave theory is that it often neglects the on-going nature of innovation occurring within each of these fifty-year cycles. It is important for their survival, therefore, that industries remain at the leading edge of the new technology and continually modify products as technological innovation allows it and as the nature of demand requires it. The way in which firms develop arguably owes as much to the organisation and structure of the industries dealing with the new technology as upon the technology itself. However, not all firms possess the ability to generate and exploit new knowledge and to remain competitive. Two variants of the Schumpeterian model are particularly influential in accounting for the origins of these continual innovations. Recovery periods, it is argued, are driven by groups of

innovations that are developed either by individual enterprises using smaller firms (the Schumpeter 1 model), or as a result of systematic research and development in larger companies (the Schumpeter 2 model).

Until recently these models have been used to show that in comparison to locally-orientated firms, multinational corporations (MNC's) exercise an disproportionate impact on the world economy and hinder the prospects for endogenous economic growth. It is estimated, for example, that somewhere between 25% and 40% of all world trade consists of purely internal transfers between MNC's. (Froebel, Heinrichs and Kreye, 1980; Amin and Robins, 1991). Yet whereas larger corporate firms in the economy used to behave self-sufficiently (researching and innovating internally), that is all changing. In order to remain innovative, large firms outsource more of their production and services to supplier firms. New kinds of subcontracting and customer-supplier relations have arisen between large corporations and dynamic smaller firms and also among the latter themselves. This is so much the case that Harrison remarks that, *'the large vertically integrated corporation is viewed as a dinosaur, unable to compete in a 'post-industrial' world characterised by continually fluctuating consumer demands, heightened international competition, and the need for more flexible forms of work and inter-firm interaction'* (1991, p.477).

It was claimed during the 1980's that we had entered an era of small firm led economic growth and development, with SME's capable of acting as the seedbeds for cutting-edge technological innovation. As a consequence, local, regional and central governments have increasingly devoted much attention towards encouraging small firm creation and towards fostering endogenous growth not tied to the vagaries of a handful of influential international companies. It is claimed that small firms exert a favourable contribution to job generation that is disproportionate to their size. The total number of businesses in the UK is estimated to have grown by 54% (1.3 million) between 1979 and 1984. Of these new businesses, over 99% are defined as small businesses (employing 100 people or less) (Keeble 1997). Cooke (1998) similarly confirms a large increase in the both the number of units and people employed in small firms and a concomitant decline in the number of units and people employed in large firms. He calculates that between 1983 and 1993 firms of less than 50 employees collectively increased their share of all business units in the UK from 47.4% to 89.2% (representing an increase of all UK employment in SME's from 9.6% to 24.3%). By contrast firms of more than 1,000 employees represented only 0.2% of all business units in 1993 in contrast to 2.2% of all units in 1983 (15.8% of all UK employees in comparison to 30.8%).

It is difficult, however, to make any firm conclusions from the statistics in terms of the role of SME's in generating innovation. It is useful here to distinguish between radical and incremental innovations. Radical innovations are discontinuous events that are usually the result of long-term R&D investment. Incremental innovations, by contrast, involve continuous improvements to a product and constitute the innovations that SME's most frequently engage with. However, these incremental innovations do not have dramatic effects and are consequently difficult to record in economic analyses. Keeble's (1997) national analysis of over 1,000 SME's in the UK did, however, conclude that over 50% of these companies had produced an innovative product in the past three years.

Those proclaiming the merits of SME-led growth propose that SME's provide arguably the most adaptable flexible system of production. Griffiths defines the contemporary industrial organisation of companies as follows. '*...Production is undertaken using more flexible patterns of working time and labour deployment (involving the erosion of demarcation boundaries between skills and jobs among 'core' workers; increased use of part-time and temporary contracts; increased use of contracting to peripheral firms; increased application of new programmable technologies; etc) and orientated towards more differentiated projects targeted towards a market carefully segmented into 'niches' by the market research industry, the advertising industry and 'lifestyle' publications.* (1993, p.42). In this context SME's represent specialist production units able to frequently change their products to match changing demand and able to develop and respond to new innovative techniques and products. As I shall later demonstrate, this is not to deny the very real importance of globalising trends or the innovative potential of MNC's, but it does offer a path towards innovative local economic development not tied to the fortunes of multinational companies.

The theoretical framework describing the production changes that favour small firm growth was initially proposed by the Regulation School of Marxists and involves a paradigmatical shift from standardised mass production, characteristic of the 'Fordist' era, to a new regime of flexible accumulation, labelled as post-Fordist. Associated with this transition has been the increasing fragmentation of markets, an acceleration of product turnover, an enhanced competitiveness between companies based on the need to generate and exploit new knowledge, and a need to be constantly flexible to changing patterns of consumption.

While by no means complete, I wish to outline two typical characteristics of this transition.

- (i) A transition from economies of scale to economies of scope

The new regime of accumulation witnesses a transition from economies of scale to a new system based on economies of scope (Harvey, 1989a). In the Fordist era the leading companies, using Henry Ford as their role model, typically produced goods in accordance to his famous quip that the consumer could have any colour car they liked, so long as it was black. In the post-Fordist era firms have moved to new smaller batch production customised to the more sophisticated demands of the contemporary market. In contrast to economies of scale, economies of scope comprise not only a quantitative aspect, but also a qualitative one. Customised production represents higher 'value-added', implying that the total number of units produced can be smaller and that production can still be as efficient as traditional manufacturing production.

(ii) A transition from vertical integration to vertical disintegration

Just as small firms can be viewed as significant innovators and engines of economic growth they can also be seen as subordinates to MNC's. In the Fordist era a system of vertical integration prospered, in which each stage of the production process was undertaken within the same corporation. This system has been increasingly replaced by vertical disintegration, in which a number of company operations are moved out to SME's operating in the external market.

So pervasive are these changes that Castells and Hall (1994, p.23) proclaim that, '*Flexible specialisation replaces standardised mass production as the new industrial form best able to adapt to the variable geometry of changing world demand and versatile cultural values*'. However, as Sayer remarks, '*the trouble with concepts like Fordism, post fordism and flexible specialisation is that they are overly flexible and insufficiently specialised*' (Sayer, 1989, quoted in Asheim, 1996, p.45). He continues, '*capitalist industry has always combined flexibilities and inflexibilities, and what are possibly emerging now are new permutations of each rather than a simple trend towards greater flexibility, period*' (ibid). Illustrating this transition with regard to the cultural industry sector, I conclude that although the CIS has certainly shown moves towards flexible production methods it is by no means clear whether this can be regarded as a complete shift from Fordism to flexible specialisation.

Illustrating the Flexible Specialisation Debate with Reference to the CIS

Lash and Urry (1994) have characterised the cultural industries as '*post-Fordist avant la lettre*', because even at the height of Fordism the cultural industries appeared more flexible in their production methods than most other sectors. As they state, '*Our claim is that ordinary*

manufacturing industry is becoming more and more like the production of culture. It is not that commodity manufacture provides the template, and culture follows, but that the cultural industries themselves provided the template' (1994, p. 123). Wynne (1992) similarly labels the cultural industries as *'the quintessential industry of the nineties'*.

Returning to the concept of 'economies of scope', the CIS represents a flexible production system within which competitive practices depend upon a greater specialisation of products with a heightened range of flexibility in production design. Thus for Scott, *'in the cultural products industries the elements of fashion, style and fad and the pressure on producers to individualise their outputs accentuates this tendency to flexible specialisation'* (1994, p.82). Furthermore, as Montgomery proposes, *The future of the SME's in these industries will depend on their ability to react to market trends, to cater for niche markets and to create new markets. In other words, their modus operandi will have to be one of flexible specialisation'* (1995, p.164).

Drawing reference to the notion of vertical disintegration, Montgomery suggests that the cultural industry *'...has moved rapidly from being an almost entirely in-house sector to a classic 'post-fordist' economic structure, complete with sub-contracting, core-periphery employment models and a rapid growth in the numbers of small and medium enterprises...'* (1996, p.159). It is implied that whereas much of the distribution of cultural products remains in the hands of international players, most of the origination and production of this material is carried out by very small businesses or individuals. These companies undertake the most risk-prone parts of the cultural production process and are able to respond to patterns of niche consumption and product customisation. The whole sector is therefore highly project-based, reliant on a permanent pool of freelances and micro organisations available at short notice to undertake work on a sub-contracting or partnership basis. Scott declares that, *'Developing a multimedia title is much like making a motion picture. It entails a series of project-driven organisational and labour tasks in which teams of workers, subcontractors and skilled freelancers...are brought together under the management of a producer. On completion of the project, the teams invariably break apart, only to be recomposed in ever-changing combinations of personnel on other projects'* (1998, p.138).

Christopherson and Storper (1987) have argued that in a bid to reduce transaction costs Hollywood's film industry became characterised by the process of vertical disintegration. Since the 1940's, they argue, the practices of vertical integration originally characterising the Hollywood studio system have given way to a period of flexible specialisation, whereby lower revenue productions are transferred to independent producers.

However, it is possible to challenge the permanence of vertical disintegration within the CIS. Askoy and Robins (1992), for example, suggest that it is possible to adopt the arguments of the globalisation thesis to directly contradict the findings of Christopherson and Storper. They suggest that oligopolistic control never ceased to be a distinguishing feature of Hollywood, and calculated that in 1990 the top five major companies earned 70% of total box-office returns. SME's, they declare, are seemingly unable to compete with MNC's in transmitting cultural goods to a wide-world audience. The majors frequently use the independents for the more risky elements of the production process while remaining the dominant players through their control of distribution channels. Overall, therefore, '*...a picture emerges wherein it was simultaneously possible for the production/innovation/creation type of activity to be carried out by a large number of small independent firms, whereas the scale of financial commitment required for distribution/transmission/diffusion led to increased integration and subsequent concentration*' (Sadler, 1997, p.1924).

In a similar vein, Cornford and Robins (1992) argue that set against the perceived opening up of British TV companies to independent producers, what has actually been taking place is a strategic organisation of the sector in the context of the increasing globalisation of the entertainment industry. The situation in other cultural sectors is different still. The clothing and furniture sectors continue to be dominated by small firms co-ordinated by the market, while publishing largely remains an in-house activity (Shapiro et al, 1992).

Given these contrasting debates, I believe that the flexible specialisation thesis is best seen as an option open to small firms that enable them to spearhead a process of continuous economic transformation. Smaller business enterprises, I suggest, are seemingly better equipped to take part in the transition from rigid to flexible organisational forms.

III: INTER-FIRM LINKAGES WITHIN INDUSTRIAL COMPLEXES

This section introduces a spatial dimension to the flexible specialisation thesis and outlines the emergence of networks of linked clusters of SME's in discrete spatial settings. A group of theorists labelled as localists propose that despite the significant globalising tendencies characterising the contemporary economy, specific locales are becoming important production nodes in promoting the new flexible and innovative industries characteristic of the post-fordist era. Empirically it is suggested that the most dynamic and competitive examples of restructuring have occurred in local production units, defined as industrial districts.

Pyke and Sengenberger define an industrial district as an *'Industrial system...composed of (generally) independent small firms, organised on a local or regional basis, belonging to the same industrial sector, the individual firms tending to specialise in a particular production phase, organised together, and with local institutions, through relationships of both competition and co-operation'* (1992, p.3). The exact spatial scale of the industrial district is elastic. It is arguable that good contacts can be sustained over a matter of hundreds of metres or tens of kilometres. The most frequently cited examples of industrial districts include Silicon Valley in California and the Scientific City in Southern Paris (both characterised by high technology industries), the Third Italy in the region of Emilia Romagna based around textiles, leather goods and ceramics and Baden Wurttemberg in Southern Germany specialising in automotive components and textile machinery.

As with the notion of flexible specialisation, however, there is no universally agreed definition of an industrial district. They can be seen either as a network serving to link local firms, as constituting a strong division of labour or, on the contrary, as an informal structure of co-operation and mutual assistance. Consequently a number of different theories have been proposed to account for the rise of these districts. These will be described in more detail below. For now, however, I wish to stress the substantial common ground uniting these theories.

The most distinctive features uniting these accounts are centred upon the notions of transaction costs and agglomeration economies. Transaction cost analyses point to the significance of production linkages in the development of new products. In making continual modifications to manufacturing products and processes firms seek to minimise the costs of their links to suppliers in other areas and maximise the opportunities for face-face contacts with them. Transaction costs analyses therefore refer to external economies and to the efficiency of the production system obtained through the localisation of industry.

However, while transaction costs explain the efficiency of the industrial system of a district, they do not explain the advantages of an agglomeration. The notion of agglomeration economies has therefore been evoked to address the more qualitative aspects of territorial concentration. Essentially agglomeration economies are more territorially rooted than are more functional external economies. Camagni and Rabelloti, for example, state that *'what most uniquely differentiates a system area from the more generic inter-company agreement is the former's relevance of historical, cultural and environmental factors versus the latter's straightforward functional integration'* (cited in Asheim, 1996, p.56). The notion of agglomeration economies has, however, expanded over time. Whereas standard agglomeration

theory conceptualised local economies as collections of atomistic competitors, aware of one another solely through formal customer and supplier relations, modern industrial district theory emphasises the interdependence of firms and the importance of sustaining collaboration among the actors within the districts. This results in the paradoxical occurrence of collaborative competition.

Before considering the different variants of the new industrial district model I wish to outline Scott's (1998) definition of agglomeration economies. He states that agglomeration economies flow from,

- The co-presence of many differing kinds of producers offering specialised services in flexible response to needs as and when they arise
- The learning effects that are engendered by the constant interaction of producers within transactional networks
- The emergence of local pools of labour with agglomeration-specific skills and forms of habituation
- The cultural and institutional infrastructures that invariably come into being in and around industrial districts.
- The collective benefits and untraded interdependencies emanating from these conditions that in turn are important foundations of the competitive advantages of industrial regions.

The Marshallian School

Empirical verification for the flexible specialisation thesis first came from the claim that the most dynamic and competitive examples of contemporary industrial restructuring have shared many of the characteristics of the craft communities which Marshall wrote about at the turn of the century. The main feature of Marshallian districts was the concentration of a large number of locally orientated SME's, benefiting from the economic advantages that stem from the close geographical proximity of like-minded companies. These arguments were used to explain the economic renaissance of craft orientated SME's in the north and central areas of Italy (the Third Italy).

In the ideal-type industrial district, (that have subsequently been identified as few and far between) each small firm specialises in one or a few phases of a complete production process. Firms co-operate with one another through the sharing of information, equipment and personnel, only to then compete fiercely for a share of the next market opportunity. Marshall suggested that these districts were able to sustain their competitiveness because of a distinct

'industrial atmosphere'. This notion stems from the common pool of infrastructure, services and know-how from which each individual firm in the district might draw in the acquisition and transfer of skills in the labour force. Thereby, as Asheim states, *'by defining agglomeration economies as social and territorial embedded properties of an area, Marshall abandons the pure logic of economic mechanisms and introduces a sociological approach in his analysis'* (1996, p.381).

The Institutional School

However, in describing contemporary industrial agglomerations the Marshallian School suffers from a number of limitations. The 'Institutional School' has therefore modified the Marshallian perspective to produce the 'new industrial district' (NID) thesis. Once more, the paradigmatic industrial district to which the Institutionalists draw reference is the region of the Third Italy, which in the 1960's and 1970's witnessed a remarkable growth of employment and output in its design intensive and craft based industries (Piore and Sable, 1984). In accordance with the theoretical issues discussed thus far, the Institutionalists attached greater importance on the transition from mass production to small batch production. Moreover, as outlined below, the Institutional School has advanced two further lines of thought. These involve an acknowledgement of the socio-cultural institutional forms that often make such a transition possible and the informal inter-firm ties within industrial districts that go beyond formal contractual arrangements.

Firstly, the Institutionalists identified the importance in the development of industrial districts of an **institutional** as well as an **industrial** atmosphere. Unlike Marshall's work, implying the existence of ideal free-market conditions, the Institutional School proclaims the advocacy of institutions to support the industrial district. Institutional mechanisms, it is argued, can both create a physical milieu and can also integrate policies relating to labour markets, education, training and production. This institutional atmosphere represents a group of factors labelled in terms of their 'institutional thickness' (Amin and Thrift, 1992), including a strong institutional presence, a high interaction among networks of institutions and an awareness among firms that they are involved in a common industrial enterprise. Place remains of critical importance because firms tend to gravitate towards those localities that have the best institutional milieu to support their own specific needs. As Amin and Thrift declare, *'...the bases for competitive advantage are often intensely local, hinging on a unique social, cultural and political milieu, the invisible but indispensable scaffolding that structures that district and generates the intangible 'something in the air'* (1992, p.97).

Secondly, the Institutionalists attach great importance to the notions of untraded interdependencies and embeddedness (Granovetter, 1985). These notions, expanding the sociological perspective of the industrial district thesis, highlight the informal ties that depend upon mutual trust and loyalty and which advance beyond contractual relationships. Trust is built through continual contacts, informal deal-making and mutual help in times of stress. As Harrison proclaims, *'If trust can best be built up through learning about the idiosyncrasies of the actors, and if this requires repeated interaction, then such interaction is likely to be facilitated by personal contact, and that contact is in turn enhanced by geographical proximity'* (1991, p.477).

The Institutional School therefore proclaim the NID's are *'...definitely more than old wine in new bottles'* (Harrison, 1991, p.469). Local economies are conceptualised not as collections of atomistic competitors, but as interdependent systems of firms operating under the seemingly incompatible conditions of collaborative competition. Collaboration is built on trust, but because the ownership of production remains in private hands, firms continue to trade with other firms both inside and outside of industrial districts in order to remain competitive. As Harrison concludes, *'Collaboration, for firms, means a trade off between access to greater resources against the potential for loss of valuable proprietary information to competitors'* (1991, p.478).

The Californian School

There are, however, several different variants of the NID thesis. These accounts stress that most industrial agglomerations occur in situations far removed from the industrial district model of development described by the Institutionalists. Two of the most influential of these accounts emanate from the Regulation School and the Californian School. These both point to the weaknesses of the flexible specialisation thesis and state that to be dynamic and innovative, firms operating in local environments simultaneously need to interact with global networks. The Regulationists do not perceive of any opportunities under these circumstances for institutions to foster endogenous economic growth, stating that despite evidence of formal vertical disintegration, SME's remain under centralised control and are dependent on contractor:subcontractor relationships. By contrast, the Californian School is more positive about the implications of industrial districts, addressing the networked rather than the hierarchical relationships between the firms within them.

Essentially, the Californian School seeks to offer a corrective to the polarised accounts of the localists and the globalists. The Institutionalists they state, embrace a localist perspective and

ignore the forces of globalisation and oligopolistic control and fail to consider that NID's are not always based on traditional craft production. Therefore, while not denying the very real local spatialities described by the Marshallian and Institutionalist Schools, they suggest that it is increasingly naïve to assume a total return to a method of production based upon local industrial units. As Amin and Thrift note, *'We want to take the emergence of new localised industrial complexes seriously, but we want to set them firmly within a context of expanding global corporate networks'* (1995, p571).

The Californian School is equally careful, however, not to advance the more extreme theories of globalisation. Castells (1989), for example, has claimed that we are witnessing *'...the development of an advanced technological infrastructure that scatters its elements across undifferentiated locations and interconnected secretive spaces...'* and proposes that the role of place is rendered increasingly inconsequential.

The notion of the *'local-global interface'* can be used to offer a corrective to these polarised views. This is been defined as *'...the nexus between the forces which increasingly expose more firms to international, competitive markets and the structures and strategies which they adopt to compete successfully in those markets; and the local conditions, regulations and regimes which enable parts of, or whole, firms to export competitively into those international markets'* (Simmie, 1997, p.21). The main observation stemming from this account is that local economies are being forced to face both inwards, to develop their own innovative capacities and outwards, to compete in global markets. Amin and Thrift outlining the same processes similarly label contemporary industrial concentrations as *'neo-Marshallian nodes in global networks'* (1992, pp. 102-03).

Storper (1993) illustrates these local-global tendencies with reference to a number of different NID's, including California's high-technology industries, Hollywood's motion picture industry and Paris' *haute couture* sector. Scott (1998), meanwhile, has recently considered California's emerging multimedia industry in a similar manner. It is interesting to note, therefore, how many of the cited examples come from the cultural industry sector, a sector that has traditionally relied on the importance of face to face contacts. For Pratt, *'In the case of the cultural industries, the spatial and/or organisational grouping of record companies, publishers, fashion outlets, printers, and recording and video facilities makes perfect sense. Such interaction, already an ingrained part of life in the 'cultural quarter' becomes emphasised as technological convergence occurs'* (1997a, p.29). Recent developments in digital technology and in production and reproduction processes have meant that the boundaries between what were once seemingly distinct disciplines are now being breached.

Consequently, as Pratt concludes, *'At a time of convergence both within cultural industry technologies and within cultural industry content, intuitively one might expect that an advantage would be had by closer (spatial and organisational) integration of R&D, production and market' (ibid).*

In summary, despite the different versions of the NID thesis each of these debates has been influential in drawing attention to how small firms can adapt more effectively to technological and organisational change, and how the small firm sector has consequently engaged in locally orientated expressions of inter-firm linkages. I turn in the next section to consider these inter-firm linkages in more detail.

IV: INTRODUCING A NETWORKING TAXONOMY

'in network modes of resource allocation, transactions occur...through networks of individuals or institutions engaged in reciprocal, preferential, mutually supportive actions. Networks can be complex: they involve neither the explicit criteria of the market nor the well-organised routines of the hierarchy...In network forms of resource allocation, individual units exist not by themselves, but in relation to other units. These relationships take considerable effort to establish and sustain...Benefits and burdens come to be shared...Complementarity and accommodation are the cornerstones of successful production networks'.

Powell (1990, p78, cited in Cooke and Morgan, 1993, p 544)

Proponents of the new industrial district thesis proclaim that what sustains or creates the industrial clusters described thus far is the existence of a set of complex organisational networks between inter-related firms. Networks have been defined as *'...consist[ing] of two or more firms pursuing common objectives or working towards solving common problems through a period of sustained interaction'* (Huggins, 1998, p.815). Cooke and Morgan (1994), moreover, suggest that the competitiveness of organisations is intrinsically based on collaborative processes involving a wide social constituency of expertise including not only relations with other firms, but also with technical institutions, trade associations, and training and enterprise bodies.

This section introduces a schema to describe the various networking features that characterise contemporary industrial districts. Numerous such taxonomies have attempted to define the

multitude of theoretically prescribed inter-firm networks. Yeung (1994, p.475), however, suggests that this has led to the notion of networking becoming a 'chaotic conception'.

'Anyone reading through what purports to be network literature will readily perceive the analogy between it and a 'terminological jungle in which any newcomer can plant a tree. This indiscriminate proliferation of the network concept threatens to relegate it to the status of an evocative metaphor, applied so loosely that it ceases to mean anything' (Hohria, 1992, p.3, cited in Yeung, 1994).

To help counter these difficulties, I have chosen to adopt a widely accepted schema to ensure that my findings remain consistent with a range of other empirical investigations. Based on an approach advanced by Crewe (1995) three different types of networks are identified.

(i) Formal networks

This strand of networking, referred to inter-changeably as 'formal', 'hard' or 'traded' networking, involves firms joining together to co-produce, co-market, or co-operate in product and market development. Formal networking therefore relates to quantifiable and contractual structures and to arrangements such as strategic alliances, joint ventures and sub-contractual links (Cooke and Morgan, 1993). Joint ventures represent perhaps the most intensive form of inter-firm collaboration and entail the deepest form of organisational interdependence, and are often encouraged by long-run and co-operative subcontracting relationships.

However, these formal inter-firm networks, based upon the co-presence of many different kinds of producers offering specialised but closely related services, do not themselves constitute a formally networked economy. Crewe (1995) instead proposes that only when these networks are combined with a variety of formal collective associations does the complex represent a truly integrated system. Collective associations can be defined as formal structures developed by a group of firms to support like-minded businesses and to encourage inter-firm relationships.

(ii) Informal networks

Firms can also be connected through a series of informal (but cumulatively important) networks that engender continuous interactions with associated producers. These collaborations, referred to inter-changeably as 'informal', 'soft' or 'untraded' networks are based upon firms joining together to solve common problems, share information, or acquire new

skills. Granovetter (1985), as illustrated earlier, acknowledges the importance of untraded interdependencies. These are defined as informal arrangements that are not fully codifiable, but which nonetheless enhance innovation and local intelligence. Durkheim, meanwhile, talks of a 'non-contractual basis of contact', based on confidence, solidarity and trustworthy behaviour among a group of actors. With time, it is held that *'Informal social linkages often act as a precursor for more economically embedded ties'* (Huggins, 1998, p.818).

Taken together, the combination of formal and informal networks reveals how the seemingly paradoxical practices of inter-firm competition and collaboration may in fact become mutually inclusive within spatial agglomerations.

(iii) Institutional Networks

In this particular investigation I argue that these networking arrangements are further encouraged by a series of policy initiatives providing support to collective sets of industries, labelled as institutional networks. These networks can be defined as the engagement by businesses, primarily at a local or regional level, with public and public-private sector organisations providing support through labour training, business advice and product development. Examples of institutional networking mechanisms include Business Links, Training and Enterprise Councils, Chambers of Commerce and a variety of sector-based agencies. These institutions have two roles (Huggins, 1997). Firstly, to create partnerships and communications networks between themselves and other local institutions. Secondly, to act as the catalyst for new networks, primarily involving other businesses. If successful, these networks are key instruments in stimulating innovation and local economic development.

Summary

I propose that when these networking forms co-exist, they indicate that an industrial agglomeration is characterised by a dense collective order. Over time this collective order can provide the essential foundations for enhancing local economic competitiveness. Scott's analysis of Hollywood's concentration of multimedia industries, for example, documents an advance from institutional and informal alliances based on information exchange to more dynamic and formal alliances based on innovation and product development. The clustering of inter-related economic activities increases the static efficiency of transaction and information exchange between producers and, once secured, enables a more dynamic set of processes revolving around learning and innovation to come into play. As Scott concludes, precisely because of this, the encouragement of a networked agglomeration is *a '...legitimate and*

pressing objective of public policy' (1998, p.317). Huggins (1997) similarly proposes that a progression may be witnessed from the provision of networks providing knowledge functions to those enhancing product innovations. *'Within this model it is argued that networking becomes increasingly sophisticated and therefore powerful, with information networks as the most simplistic and innovation networks being both the most interactive and difficult to implement'* (Huggins, 1998, p.815).

V: LOCAL ECONOMIC POLICIES: INCORPORATING THE THEORETICAL DEBATES

The discovery of networked spaces has attracted the attention of policy makers as a potential means of promoting and sustaining the competitiveness of local, regional and national economies through endogenous rather than exogenous growth strategies. Although it is not always easy to emulate the networking paradigm, this thesis agrees with the conclusion reached by Cooke and Morgan (1993). This states that, if they produce real outcomes, such approaches are surely better than policies of local economic development that attempt to attract routine branch plants.

These endogenous growth strategies appear especially important for past centres of Fordist production that have become economically peripheral during the latest bout of economic restructuring. Simmie (1997) suggests that the prospects for peripheral localities relying on exogenous growth strategies are unfavourable. Central to this belief is the recognition that with only so much inward investment to go around, not everywhere can succeed on the back of a few mega-companies.

Urban economic development strategies have therefore begun to consider the importance of locally-based knowledge communities, skills clusters and innovation networks. Such policies advocate the ability of institutions to support the transformative potential of industrial districts and carry far reaching planning implications. Physical planning, for example, might unlock the potential for the development of industrial districts. Such strategies may also imply the integration of policies relating to labour markets, education and training, and production. Overall, therefore, it is important for policy-makers to establish some form of trade-off between the co-operative support that their policies may offer to firms with the economic competitiveness that is created by the vigorous local competition between spatially proximate producers.

Sector based strategies

Moreover, as identified in Chapter 1, local economic policies are increasingly acknowledging the fact that endogenous economic growth can be promoted not only in certain localities, but also within certain economic sectors. Crewe, for example, suggests that '*Strategic, sectoral intervention by progressive authorities can enhance the competitive advantage of industrial agglomerations and ensure those external economies which may be by-passed under pure market conditions*' (1995, p.259). Such sector-based strategies are characteristically concerned with a segment of the economy defined in terms of a specific product or a closely related group of products. They seek to identify the necessary inter-relationships between production processes and to manage them as an integrated unit. The development of a critical mass of businesses within a given economic sector is held to enhance the competitive advantage of a locality, to protect jobs, to support and train the unemployed, to strengthen local industries and skills, and to stimulate new investment.

In earlier local economic policies, the sectoral approach was conceived primarily in response to the collapse of traditional manufacturing sectors. An interesting development, however, has been the recognition of the applicability of this approach to other economic sectors. Paralleling the collapse of the manufacturing sector, for example, has been the growth of certain new economic spheres, including niche manufacturing sectors, financial services, computer and informational industries and the media and cultural industries. Developing such sector-based networks requires local authorities to obtain knowledge of the trends, problems and opportunities in particular sectors, and to establish a variety of collective agencies to support businesses within them.

CHAPTER 3: RESEARCH DESIGN AND METHODOLOGY

This chapter is divided into three sections. The first section considers the explanatory hypotheses and research questions emanating from the discussions outlined in chapters one and two. The following two sections outline the research design and methodologies used to answer the research questions. Section two outlines the methodology used to determine whether an aggregation of cultural industries has developed within a case study area that has been the focus of a cultural industry policy. Section three discusses the methodology used in an evaluative study of the networking patterns of businesses within this case study area.

1 RESEARCH HYPOTHESES

Hypothesis 1:

A cluster of cultural producers does not represent a static grouping of individual firms, but is instead characterised by a variety of networking and synergetic effects. This is because the clustering of inter-related economic activities increases the efficiency of transactions and information exchange between cultural producers.

Hypothesis 2:

If product innovation represents the highest and most specialised level of interaction in a cultural production system there is less networking at this level of the system, because innovation is a peak activity and is too secretive or specialised to be the subject of networking arrangements. By contrast, if general information channels represent the lowest level of interaction in a cultural production system, there is more networking at this level of the system, because general support networks create an essential capacity or potential for innovation.

Both hypotheses are based on the assumption that a cluster of cultural industries has been developed in a case study location. Within this location it is assumed that the local authority has actively encouraged a cultural industry policy as a means of promoting endogenous economic growth and that this policy is based on the assumption that networking arrangements will follow from the creation of a cluster of cultural industries.

To test these hypotheses it is first necessary to identify an area that has actively pursued a cultural industry policy and to ascertain its success in promoting a growth cluster of cultural industries. Only once it has been determined that an aggregation of associated firms has developed in a distinct spatial concentration can the explanatory hypotheses be tested. Bearing these points in mind, these hypotheses are divided into two broad research questions.

II RESEARCH QUESTIONS

(i) Has Sheffield's Cultural Industry Policy Been Successful in Developing an Aggregation of Cultural Producers?

This first research question considers the **locational dynamics** of Sheffield's CIS and seeks to determine whether an aggregation of cultural businesses has been developed. Furthermore, it assesses whether local economic policies have created an enabling institutional environment for the formation of such an aggregation and whether the core areas and sub-sectors that have risen to prominence within Sheffield's CIS correspond to those promoted by Sheffield's cultural industries policy.

The broad research question is therefore broken down into a more workable set of research questions.

- (i) How, and with what success, has Sheffield City Council's cultural policy created conditions favourable to the development of a cluster of cultural industries?
- (ii) What is the economic growth potential of Sheffield's CIS in terms of employment?
- (iii) Within what sub-sectors of the CIS has economic growth been most pronounced?
- (iv) Are there any geographical locations within Sheffield within which growth in these sectors has been most concentrated?

(ii) Does the Existence of a Clustering of Cultural Producers Foster the Inter-Firm Networks Believed to Enhance Local Competitiveness?

The second research question, framed in the knowledge that some form of cluster of cultural industries has indeed been developed within the areas and sub-sectors promoted by Sheffield's cultural industry policy, considers the **organisational dynamics** of these cultural businesses. It determines whether businesses within this aggregation engage in inter-firm networks and whether these networks have enhanced their own (and the area's) economic competitiveness.

The overall aim is to determine whether Sheffield's strategic interventions have been correct to draw upon what largely remain theoretically grounded assumptions and whether the networking paradigm is an appropriate basis for long-term development. If networking relationships can be identified this would suggest that these strategies offer a realistic approach of encouraging local economic development. If they are not identified, however, this would suggest that business activity within Sheffield's CIS is more of a chaotic concept than proponents of networked production have proposed.

The two more specific research themes formulated to answer this second research question are closely related to the overall explanatory hypotheses. I ask,

- a) Has the clustering of inter-related cultural producers increased the number of transactions and exchanges between cultural firms?
- b) To what extent have the networks that may have been established enhanced product innovation?

To investigate these questions an appropriate classificatory schema is sought. As illustrated in the literature review, a number of different types of network have been theorised. I have adopted one of the most widely accepted schemas to ensure that my findings remain consistent with a range of other empirical investigations scrutinising the networking concept.

This schema, based upon the work of Crewe (1995) and outlined more extensively in the literature review, distinguishes between three types of network; formal, informal and institutional. **Formal** networks involve firms joining together to co-produce, co-market and co-operate in product or market development. **Informal** networks involve firms joining together to solve common problems, share information, or acquire new skills. And **institutional** networks are defined as the association of businesses with public and public-private sector organisations that provide support through labour training, business advice and product development.

III RESEARCH METHODOLOGY

The research questions outlined above will be analysed using two separate research methodologies. Having analysed the evolution of Sheffield's cultural industry policy through secondary data sources in order to determine whether the policy environment is favourable to the development of a clustering of cultural industries, the first question requires a largely quantitative analysis. Economic indicators are utilised to determine whether an aggregation of

cultural industries has begun to emerge within Sheffield and to identify the geographical areas and industrial sectors within which growth has been most pronounced. The second question, focusing on the organisational dynamics of businesses operating within Sheffield's CIS, requires a more qualitative analysis. Interview and questionnaire procedures are used to determine the exact nature of the networking relations occurring between businesses within this area.

(A) Methodology for Research Question One

The first research question will be investigated using two statistical data sources. The first source is the Census of Employment, providing information on employment levels within Sheffield's CIS. The second source is the Cultural Business Audit, produced by Sheffield City Council, providing more detailed information on the city's main cultural quarter. These two statistical sources will be augmented with information from various forms of previously documented literature and from personal interviews.

A (i) The Census of Employment

'the first problem that one encounters in any attempt to study the multimedia [cultural] industry is to identify its essential features in terms of its sectoral structure and representative products. This is a particularly difficult task, because the boundaries of the industry are extremely fluid and its outputs are constantly changing in form and substance. The task is all the more perplexing for there is as yet no official designation of the multimedia industry in the Standard Industrial Classification'

Scott (1996, p138)

As the above quotation illustrates, one of the fundamental prerequisites in determining whether cultural businesses have become aggregated in a particular locality is to provide an adequate description of the CIS that can be quantified using a reliable statistical indicator. In comparison to other sectors, the measurement of the cultural economy is known to be methodologically problematic. This is because the CIS has only recently been identified as a profitable economic sphere and only a limited amount of information has been collected on the cultural economy in terms of its size, turnover and workforce. Moreover, because the CIS does not represent a generic category in a classificatory sense, it is a notoriously difficult sector to define in statistical terms.

A number of reports examining the economic impact of the CIS suggest that employment data is the most accurate indicator available (Cultural Trends, 1993; O'Brien and Feist, 1996; Pratt, 1997). Employment data, it is argued, provides perhaps the greatest degree of detail of the cultural sector by both industrial activity and location. Employment data is gathered through the Census of Employment (CoE), a highly regarded source of official data which, in terms of its size, coverage and response rate represents the most complete statistical indicator available at the national level (Robson et al, 1994).

The advantage of the CoE in evaluating the economic impact of the cultural industries is that it disaggregates different forms of employment into a vast range of categories, referred to as 'standard industrial classifications' (SIC's). Although substantial problems persist with these classifications, the SIC provides the most valuable economic taxonomy of the cultural industries to date. The 1980 revision of the SIC, adopted in most analyses of the CIS, divides all forms of employment into ten broad occupational divisions, each denoted by a single digit, 0-9. These divisions are then divided into classes (2 digits), groups (3 digits), and activity headings (4 digits). The 4 digit activity headings represent the greatest disaggregation of the SIC and provide the level of detail required for this study in order to adequately define the CIS.

In this investigation, Census of Employment data is gained through the on-line statistical package NOMIS. Besides providing national and regional data sets, NOMIS can be used to identify employment trends at a localised ward-level scale. NOMIS will be used for the following purposes:

1. To determine changes in employment in Sheffield's CIS over a given time period. As illustrated below, the period between 1984 and 1991 is chosen as the temporal period for investigation.
2. To determine whether the most significant of the SIC's within Sheffield's CIS relate to the industrial sectors most actively promoted by Sheffield City Council.
3. To determine, using ward-level data, whether Sheffield's CIS is concentrated within any particular area of the city.

Defining the CIS using the Census of Employment

To analyse these questions it is important to offer a precise definition of which SIC's comprise the cultural sector. This raises two general issues.

- a. There is no universally accepted definition of the cultural sector based on SIC's. Consequently, a comparison of different definitions in respect to the same sample population may yield dramatically interpretations of the economic importance of the CIS. I therefore outline the most suitable definition for this investigation.
- b. SIC's are increasingly bearing the mark of their own history. Although this leads to their periodic revision and the ability to make more precise categorisations of the CIS, the different revisions of the SIC do not allow for comparisons to be made over time.

a. Defining Sheffield's Cultural Industry Sector

One's adopted definition of the CIS represents an accumulation of a number of separate employment classifications. Consequently the framing of these definitions becomes a highly significant and contentious task and may impact significantly on any calculated outputs of employment levels within the cultural sector. For example, analysts may exclude from their definition of the CIS forms of employment that other commentators regard as cultural and, by contrast, may include other forms of employment that others do not regard as cultural at all.

Each of the reports examining the economic impacts of the cultural industries through CoE data vary dramatically in their exact definition of the CIS. O'Brien and Feist (1996) and the Cultural Trends Report (1993) offer relatively straightforward definitions, whereas Pratt's (1997) analysis represents arguably the most extensive definition of the CIS. The SIC's used in each of these reports are listed in table 3.1.

Table 3.1 Definitions of the Cultural Industry Sector using the 1980 SIC Revision

Cultural Trends (1993)

<i>SIC</i>	<i>ACTIVITY HEADING</i>
9711	Film production, distribution and exhibition
9741	Radio, television and theatre
9760	Authors, composers, account artists
9770	Libraries, museums and galleries

O'Brien and Feist (1996)

This definition utilises the same classifications adopted in the Cultural Trends report, but also includes the following classifications.

- 3452 Gramophone records and pre-recorded tapes
- 4751 Printing and publishing of newspapers
- 4752 Printing and publishing of periodicals
- 4753 Printing and publishing of books

Pratt (1997)

This definition includes all the classifications adopted by both O'Brien and Feist and Cultural Trends, but also includes the following classifications.

- 8380 Advertising
- 2552 Printing ink
- 2591 Photographic materials
- 3276 Printing book binding
- 3443 Radio and electronic capital goods
- 3453 Active components and subassemblies for consumer goods
- 3454 Electronic consumer goods
- 3733 Photographic and cinematographic equipment
- 4920 Musical instruments
- 4930 Photographic processing laboratories
- 4751 Other printing and publishing
- 6530 Retail distribution of books and stationery
- 6630 Night clubs

From an investigative perspective, Pratt's classificatory system appears the most noteworthy of these analyses. Firstly, Pratt's is the only account to use the CoE to develop a longitudinal analysis of the CIS as opposed to presenting a static picture of events. He assesses how employment patterns within various sub-sectors of the CIS have changed over time, thereby determining the impact of the sector in relative as well as absolute terms. Secondly, Pratt explicitly states that his schema, pitched at a national level, acts as a tool for fostering comparative studies on the CIS. As such, the findings gained from his analysis can act as a comparative base for analysing circumstances at lower spatial scales in light of the national picture.

Thirdly, Pratt's classificatory schema suggests that economic sectors can be analysed not only according to the final products that are produced, but also according to the entire production

cycle. Extending the focus beyond cultural production and consumption Pratt divides the CIS into four main categories including not just original cultural production, but also the processes of infrastructure, reproduction and exchange that feed into this. The broad argument behind Pratt's definition of the CIS is that non-artistic occupations play a vital role in the sustenance and support of the cultural industries. Fourthly, Pratt's analysis is important for acknowledging the inter-related nature of this economic sector. It has become increasingly unhelpful, Pratt declares, to use empirical cultural product categories (such as books, records, film and television) to classify industries that are bound together by complex networks of products and technologies.

Despite its strengths, however, Pratt's analysis is not particularly suited to analysing the economic success of cultural industry policies. Such policies tend in accordance with the analyses by Cultural Trends and O'Brien and Feist, to focus primarily on the original production and subsequent consumption of cultural goods. Specific elements of the CIS within Pratt's definition, such as the production of printing ink and the retail distribution of books and stationery are clearly quite unrelated to the goals of many cultural policies. Sheffield's cultural policy, I believe, is no exception. For example, Sheffield City Council's Department of Employment and Economic Development (DEED) defined the cultural industries as consisting of the following sectors;

The performing arts	Film and video
Cinema exhibition	Broadcast TV
Radio	Recorded music
Publishing	Graphic Design

(cited in Blanchard and Betterton, 1992),

Focusing primarily on the original production of cultural goods, therefore, I suggest that the classificatory definitions offered by Cultural Trends and by O'Brien and Feist best describe Sheffield's CIS. I also stress that collectively these two definitions do not exclude any SIC's contained within the 1980 SIC revision that I would additionally use to define Sheffield's cultural sector.

b. Revising the Standard Industrial Classification

An instant observation to be made with respect to all three classificatory schemas is that the classifications contained within the 1980 SIC revision and upon which each is based, are

increasingly bearing the mark of their own history and are unable to detail the full complexity of the CIS. For example, although the CIS includes a significant proportion of service-related industries, the antiquity of the SIC means that manufacturing occupations are meticulously subdivided whereas the services tend to remain poorly categorised. Moreover, despite Pratt's argument that the different sub-sectors of the CIS are in fact highly inter-related the SIC's also appear insensitive to making distinctions between the various cultural sub-sectors. For example, given an increase in technological convergence amongst the CIS, the SIC contains no category specifically designated towards the multimedia. Furthermore, the entertainment industry is also conspicuous by its absence.

In accounting for similar weaknesses across all industrial sectors, the SIC was revised in 1992. I analyse this revision in order to adopt a better classificatory definition of the CIS. The 1992 Revision of the CIS has brought it more in line with the SIC divisions of the US Census. I therefore draw reference to Scott (1998) who, using the US Bureau of the Census to examine employment in the Californian multimedia industry, offers one of the best quantifiable definitions of the CIS to date (Table 3.2).

Table 3.2 Scott's Definition of the CIS

<u>SIC</u>	<u>DESCRIPTION</u>
22	<i>Textile mill products</i>
23	<i>Apparel and other textile products</i>
25	<i>Furniture and fixtures</i>
27	<i>Printing and publishing</i>
31	<i>Leather and leather products</i>
3652	<i>Prerecorded records and tapes</i>
391	<i>Jewellery, silverware and plated ware</i>
394	<i>Toys and sporting goods</i>
731	<i>Costume jewellery</i>
781	<i>Advertising</i>
782	<i>Motion picture production and services</i>
792	<i>Motion picture distribution and services</i>
8712	<i>Producers, orchestras, entertainers.</i>

The main advantages of Scott's classification for the purposes of this investigation are twofold. Firstly, Scott's analysis is considered from a policy perspective, thereby considering those sub-sectors of the CIS that tend to be promoted within cultural policies. Secondly, the inclusion of

a SIC relating to entertainment is important for enabling practices based around cultural consumption to be included within a definition of the CIS. This is significant, because as I identify in the next chapter, cultural policies are increasingly based on the inter-related nature of cultural production and cultural consumption. Using the 1992 SIC in relation to Sheffield's CIS I do, however, make a slight alteration to Scott's model. The inclusion of the fashion, jewellery and textile industries, for example, is arguable, because these industries are not considered particularly significant within Sheffield City Council's definition of the CIS.

Table 3.3 shows the classifications contained within my definition of Sheffield's CIS. Of course the 1992 SIC revision still has many flaws. It is still not possible, for example, to

Table 3.3 Definition of Sheffield's CIS Using 1992 SIC Revision

SIC	Description	SIC	Description
9211	Motion picture and video production	2213	Publishing of journals and periodicals
9212	Motion picture and video distribution	2214	Publishing of sound recording
9213	Motion picture projection	2215	Other publishing
9220	Radio and television activities	2221	Printing of newspapers
9231	Artistic and literary creation	2222	Other printing
9232	Operation of arts facilities	2231	Reproduction of sound recording
9233	Fair and amusement park activities	2232	Reproduction of video recording
9234	Other entertainment activities	2233	Reproduction of computer media
9251	Library and archive activities	7420	Architectural/engineering services
9252	Museum activities	7440	Advertising
2211	Publishing of books	7481	Photographic activities
2212	Publishing of newspapers		

consider the inter-related nature of the CIS. The multimedia industry, perhaps the most innovative sub-sector of the CIS cannot be categorised, straddling as it does the boundary between cultural product industries and the high-technology sector. In relation to Sheffield's cultural industry policy, it would also be useful to be able to place the field of graphic design within a particular SIC.

It should also be noted that the 1992 SIC revision does not allow for comparisons to be made over time. The 1992 SIC revision is therefore not comparable with the 1980 revision, making

a longitudinal comparison of employment within the various sub-sectors of the CIS extremely problematic. As there has only been one Census since 1992 (in 1996) the results gained from an analysis of the 1992 SIC Revision will represent only a snap shot of the here and now.

For this reason, when analysing the research questions outlined earlier the 1980 SIC revision will be used to consider changes in cultural employment between 1984 and 1991 and to assess how Sheffield's CIS may have grown overall. The 1992 SIC revision will then be used to provide a more current analysis of the particular industrial sub-sectors and geographical locations that are dominant within Sheffield's CIS today.

Another general weakness of SIC data not addressed by the 1992 SIC revision is that in considering only full-time employment, the CoE is unable to detect wider changes in the labour market, including the growth of multiple job holdings, part-time working, fixed-term contracts and self-employment. The cultural occupations appear to have been very much subject to these trends and the resulting employment figures gained for the CIS may therefore underestimate the true extent of this sector. Furthermore, given the time constraints characterising SME's, it is to be expected that small cultural producers do not always complete the forms upon which this census data is based, thereby further underestimating the full impact of the CIS.

The conclusion to be drawn from these points is that, despite its obvious advantages as a means of analysing employment figures, the CoE can never truly reflect the full scope and complexity of the CIS. Given these weaknesses I also felt it necessary to augment this information with supplementary forms of data providing a more specific in-sight into Sheffield's CIS.

A (ii) Local Business Directories

Local business directories will be utilised to estimate the numbers of businesses working within Sheffield's CIS. Although these directories cannot be used to construct an accurate time-series analysis of data, they will provide a more accurate, if somewhat static indication of local employment in the cultural sector.

In 1994 and 1995 Sheffield City Council produced a Cultural Business Audit (CBA), providing information on the industries in the area designated as Sheffield's CIQ, including information on the number of employees in each business and the industrial classification to which each firm belonged. Assuming that CoE data reveals Sheffield's CIS to be concentrated

in the ward within which the CIQ is located, this survey will supplement this data to determine the percentage of the cultural businesses within these wards that are specifically located in the CIQ.

Although comparisons may be made between these two data sources, some words of caution need to be expressed. Firstly, it should be noted that in an economic sphere as volatile as the CIS, even a one or two year difference between the timing of surveys may cause considerable disparities. Secondly, the CBA, unlike the CoE, acknowledges part-time forms of employment. It may therefore emphasise the economic impact of the CIS more strongly than does CoE data. Thirdly, the CBA may have political undertones, acting as an instrument to encourage the continued financial support for strategies based around the cultural sector.

Notwithstanding these limitations, I believe that when combined, these two data sources will enable the principle characteristics of Sheffield's cultural business aggregation to be identified.

B Methodology for Research Question Two

The research methodology deployed to focus on the organisational dynamics of Sheffield's cultural industries was restricted to those businesses contained within Sheffield's CIQ. These firms, displaying the closest forms of geographical proximity, and supported by area-based policies offering collective forms of cultural support were believed to be the industries most likely to engage in inter-firm relations. Moreover, as identified in response to the first research question, the vast majority of the businesses operating in the cultural sub-sectors promoted by Sheffield's cultural policy were located in this area.

This second research question was analysed using two primary forms of data collection.

1. A questionnaire analysis of the networking characteristics and organisational dynamics of the businesses located in Sheffield's cultural industry aggregation.
2. A series of more in-depth interviews with individuals framing Sheffield's cultural industries policy, with organisations offering institutional support to cultural businesses, and with firms in the CIQ itself.

B (i) Questionnaire surveys

Sampling Procedure

A mailed questionnaire survey of Sheffield's cultural industries was carried out at the beginning of 1999. The first task was to identify a sample of cultural businesses. This reduced survey costs and targeted my questionnaire towards firms engaged in the industries promoted as part of Sheffield's cultural industry policy. The sample was weighted in favour of four significant factors:

1. **Firms locating in close proximity to other firms in the cultural industries sector.** These firms potentially locate near to associated businesses to benefit from the networking relationships that such proximity may foster. As an analysis of my first research question will reveal the one area in Sheffield in which cultural businesses locate near to associated firms is Sheffield's CIQ.
2. **Firms in cultural sectors that have been promoted by cultural industry policies.** These are the sectors between and within which it is anticipated that collective support mechanisms can be offered and that networking opportunities can be developed. In Sheffield these include the sectors of music, film, television, design, and the new media.
3. **Firms that can be characterised as SME's.** Another aspect of Sheffield's cultural industry policy has been its desire to target its attention towards the development of SME's. These firms are held to display the potential capacity for providing endogenous economic growth and are able to respond in a flexible manner to continually changing technologies and consumer demands.
4. **Firms that are engaged in innovative and knowledge intensive production processes.** It is these companies that are believed to be the most progressive and that best enhance the long-term economic competitiveness of the locality. It should be noted, however, that there is no universally accepted methodology for identifying innovative companies.

Choosing a sample was rendered problematic because of imperfect information available about the firms in the area. The CBA, for example, is now five years old, a significant period of time given the relative volatility of the cultural industries sector. To counter this problem, information on the businesses within the CIQ was obtained from two web-pages; the CIQ website and the WiredWorkplace Project.

Questionnaire Collection

It transpired that of the 140 businesses engaged in cultural production within Sheffield's CIQ the vast majority fulfilled the sampling criteria. After a short pilot questionnaire had been successfully conducted a total of 71 questionnaires were dispatched.

Each questionnaire was sent with a covering note stressing the nature of the questionnaire and a statement of confidentiality. The majority of the questionnaires (over 70%) were distributed by electronic mail. This high percentage can be accounted for by the fact that the CIS represents a technologically innovative sphere that uses the Internet as part of its daily business operations.

Where it was not possible to distribute the questionnaire in this manner, postal surveys were sent. In both cases a reminder was sent to non-respondents one week after the original questionnaire distribution, and this was followed-up a week later still by a telephone call to encourage a response.

Questionnaire design

The pilot questionnaire revealed that companies are generally reluctant to answer questionnaires that are either too long or that contain too many open-ended questions. The questionnaire was therefore restricted to 20 questions, of which only six were open-ended. To encourage a rapid response most questions simply involved ticking boxes, although the open-ended questions were considered necessary to prevent the interviewee being channelled according to the line of thought of the interviewer and to ensure the provision of both qualitative and quantitative information.

The questionnaire was split into three sections. Section One asked some general questions about the firm and their reasons for locating in the CIQ. Section two considered how the firm has used the support networks available to the cultural industries. Section three, the more substantive part of the questionnaire, was concerned with the networks that had been established between the business and other firms in Sheffield engaged in cultural activities. A distinction was made to businesses between formal or contractual relationships and more informal networks based on the sharing of information and knowledge.

In total, 28 questionnaires were received, giving a response rate of 41%. Out of these responses 8 companies expressed that they would be prepared to engage in a further interview to discuss some of their responses in more detail.

Evaluation of questionnaire design and method

Two problematical issues, neither of which is critical, at least deserve acknowledgement.

Firstly, a number of respondents indicated that businesses within Sheffield's CIS have been saturated with requests for information about their business practices. This accounts for why the questionnaire response rate was relatively low. Although it is not possible to undertake extensive statistical analyses on a sample of this size, this response is certainly sufficient for a number of general observations to be made. It is interesting to note that a simple six-question survey distributed by a businessman in the CIQ asking firms about their use of Internet facilities received only a 44% response rate. This is despite that fact that the survey was financed by funds from the ERDF and promised real benefits to businesses in the quarter (Jennings, 1995).

Secondly, given the nature of the questionnaire I am aware that there may be a certain bias amongst respondents. I suspect that the firms replying to the questionnaire are those most likely to express an interest in establishing inter-firm networking relationships.

B (ii) Interview Procedures

The questionnaire analysis was augmented by a number of more in-depth interviews. These took place with three separate groups of individuals who collectively represent the key players in the development of networking relationships within the CIQ.

1. Representatives from the key organisations that provide support networks to the CIS. These include Sheffield TEC, Sheffield Business Link, the local CoC and various sector-based support agencies.
2. Representatives from the City Council, who implement the cultural industry policy and who provide the vision behind the creation of a cluster of cultural producers.
3. Representatives from the business community itself. Contact was made with several questionnaire respondents who indicated that they would be prepared to discuss their responses in more detail.

Each of these interviews was designed to progress from formal questioning to a more informal and conversational discussion. While formal questions enabled the key factual matters to be identified, the more unstructured questions allowed for issues to be raised that may have previously remained overlooked.

CHAPTER 4: A CONSIDERATION OF THE REALTIONSHIP BETWEEN INDUSTRIAL POLICY AND CULTURAL POLICY

Although the literature informing cultural policy has tended to remain largely separate from the theoretical debates discussed thus far, policies based specifically upon the cultural industries represent an interesting exception. This chapter seeks to outline the evolution of those policies that have, either explicitly or implicitly, drawn upon the theoretical debates pertinent to the networking paradigm discussed in chapter 2. This review identified the cultural industries as a profitable and innovative economic sector that displays networking tendencies and which develops in distinct spatial concentrations. Consequently, it was concluded that local government policies that build upon the cultural strengths within their locality and that attempt to develop clusters of cultural industries offer a potential means of promoting local economic growth.

Given the policy-orientated nature of the overall investigation, the aim of this chapter is to determine whether Sheffield's cultural industry strategy fits within the evolutionary framework of cultural industry policies. Crucially, if its strategies are seen as typical of cultural industry policies more generally it may be concluded that a favourable climate has been created for the development of a cluster of cultural producers. This chapter will offer a descriptive outline of the visions encouraging the development of a clustering of cultural industries, an assessment of the policies attempting to translate these visions into reality and an analysis of the outputs of these policies.

This chapter is divided into two sections. The first section, addressing a gap in the literature, outlines the evolution of cultural industry policies. From this framework it is anticipated that the strategies of individual localities can be evaluated. The chronological resume presented in this chapter is illustrated in Figure 4.1. This summarises not only the temporal evolution of cultural industry policies, but also considers how policies based around local cultural production interact with a wider cultural agenda. This section is divided into three parts:

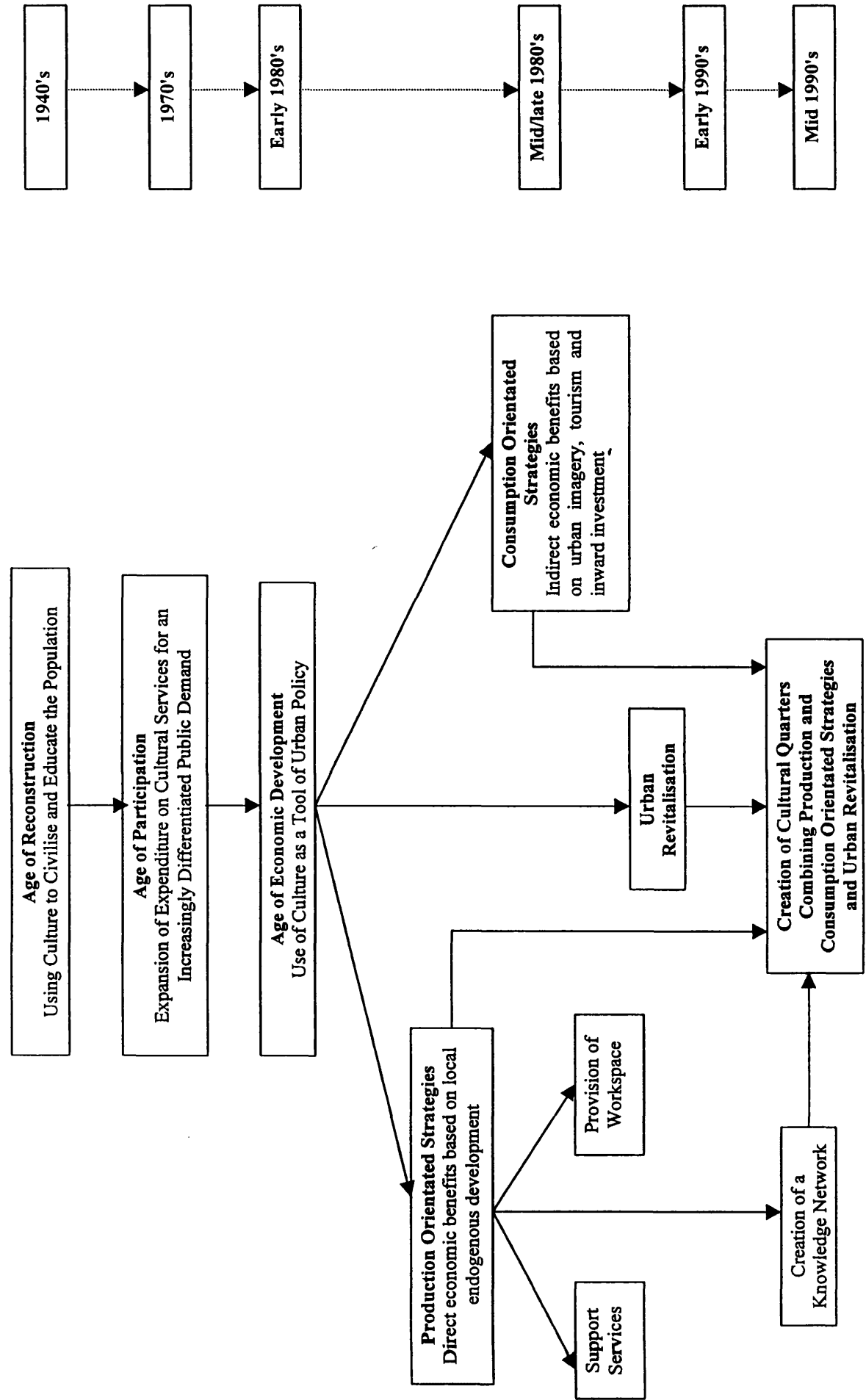
- (i) It is argued that contemporary cultural policy is currently responding to a so-called 'age of economic development' (Bianchini and Parkinson, 1993). However, as I suggest, this categorisation overly generalises the present situation, which in fact consists of two distinct strands of cultural policy. Cultural production strategies, stemming from the pioneering works of the Greater London Council in the early 1980's form the first strand, aiming to diversify the local economic base, to create

employment opportunities and to maintain a city's creative skills base. These policies generally attempt to create synergy or crossover effects by developing a clustering of cultural producers. They are implemented by a series of policy measures helping to create a physical milieu and integrating policies relating to labour markets, education, training and research and development.

- (ii) The abolition of the GLC and the metropolitan boroughs in 1986, however, brought about a second strand of cultural policy. These strategies, advocating cultural consumption, sought to boost an area's cultural status and identity, to increase visitor expenditure and to improve access to cultural resources. Although the indirect economic benefits stemming from activities based upon cultural consumption are widely held to offer a panacea for growth, they do little to promote endogenous economic development and are far removed from the ideals expressed in the GLC strategy.
- (iii) Throughout the 1990's the differences between these approaches are slowly being reconciled. Contemporary cultural policies increasingly focus upon the development of a critical mass of cultural facilities in distinct spatial quarters. Within these locations a local base of cultural production acts as a tool for fostering the consumption based ambitions of urban tourism and simultaneously serves the additional goals of urban renewal and revitalisation.

The second section of this chapter places Sheffield's cultural industry policy within this framework. Sheffield is interesting because, drawing widely upon the ideals advanced by the GLC, it represents one of the longest running cultural industry strategies in the UK to have focused on the promotion of local cultural production in a distinct cultural quarter. I conclude that this policy has indeed created a favourable environment within which the formation of a cluster of cultural industries is strongly encouraged. This chapter therefore acts as a prelude to the research analysis presented in chapter five that offers an assessment of impact rather than an evaluation of policy, considering how the formulation of these strategies is translated to what is happening at the ground level. I will ask whether an aggregation of cultural industries been developed and whether this policy has been correct to assume that this clustering will encourage the development of inter-firm networks.

Figure 4.1 Locating Strategies based upon cultural production within the evolution of cultural policy



I: THE EVOLUTION OF CULTURAL INDUSTRY POLICIES: THE AGE OF ECONOMIC DEVELOPMENT

It is commonly held that strategies based around the cultural industries form part of a much wider cultural policy agenda. As a starting point, therefore, I consider how cultural policies have evolved through time and place cultural industry policies within this generalised schema.

Bianchini and Parkinson (1993) have defined a common trajectory in the evolution of Western European cultural policies. Their schema identifies three broad phases. The first, between the late 1940's and the late 1960's is labelled as the 'age of reconstruction'. The main rationale for implementing cultural policies in this period was related to the perceived value of the 'high' arts as a means of civilising and educating the population, with little attention being paid to the potential benefits that cultural resources could provide in terms of local economic development. The second phase, during the 1970's and the early 1980's, is defined as the 'age of participation'. A decline in working hours and an associated increase in the proportion of disposable income spent on leisure activities led urban governments to expand their expenditure on cultural services and to cater for an increasingly differentiated public demand (Bassett, 1993). Again, the cultural sphere remained largely unidentified as a profitable economic sector during this era.

The third phase, from the mid 1980's to the early 1990's, is categorised as the 'age of economic development'. Coinciding with mounting pressures on the financial resources of local government, cultural policies were increasingly regarded as tools to compensate for job losses in traditional economic sectors. The contribution that the arts could make to urban policy was heightened and the scope of local government in the cultural sector was expanded. However, the 'age of economic development' is characterised by two seemingly diverse strategies. This produces a continuum with a pure producer-orientated approach at one pole and a pure consumption-orientated approach at the other (Williams, 1996). This does not represent a weakness with Bianchini and Parkinson's framework, but it does imply that the cultural industries are a notoriously difficult set of policies to categorise, often sitting uneasily alongside the dominant cultural agenda.

(i) Cultural Production: Developing the Cultural Industries as a Means of Promoting Endogenous Economic Growth

During the early 1980's, in response to a dramatic period of economic decline and large scale losses in their traditional industrial bases, a number of primarily Labour controlled

metropolitan authorities began to analyse the trends, opportunities and threats facing particular industrial sectors within their locality. These investigations identified a range of potentially profitable economic sectors not previously regarded as influential at all. For some localities the cultural industries were one such sector offering a fertile terrain for public sector investment.

The most influential authority in this respect was the Greater London Council (GLC), which between 1981 and its abolition in 1986 actively promoted the economic capacity of the CIS. The primary policy outputs to emerge from their discussions were contained within the *London Industrial Strategy (1985)*. This strategy represented the first concerted realisation that the cultural sector could deliver direct forms of employment and provide the platform for local economic regeneration. Until this date, suggests Bianchini, *'Public cultural policies tended to have a relatively marginal impact on the consumption of cultural commodities and services, since they have traditionally been directed at activities which could rarely be commercially viable'* (Bianchini, 1989, cited in Wynne, 1992, pp. 61-62).

Significantly, these policies were heavily influenced by the wider theoretical debates pronouncing the possibilities of local endogenous growth based upon flexible methods of production and the growth of SME's. The pioneering works of the GLC, for example, drew explicitly on the notion of flexible specialisation developed by Piore and Sable (1984), arguing that *'the alternative of flexible specialisation [is] beginning to make an impact on the periphery of the cultural industries'* (London Industrial Strategy 1985, p.179). Urban Cultures Limited similarly pointed to the innovative and flexible role of SME's in the cultural sector. They concluded that, *'The role of planning is to foster initiative, innovation and risk-taking. This means not only encouraging economic development within the cultural industries but encouraging wider strategies for the city's public realm and seeing parts of the city as areas for cultural and small business experimentation'* (1994, p.68).

To illustrate how these visions have been translated into policy recommendations table 4.1 outlines the GLC's main proposals for action. These aimed at a general level to advance the wider cultural agenda and, more specifically, to encourage and sustain the development of a set of inter-related local cultural producers. As the Industrial Strategy states, *'Interventions of this kind have more than a strictly economic significance. They can also build on the identity of a sub-sector and create the conditions for greater co-operation, sharing of skills and experiences which are essential if small units are not to become totally dependent on and subordinate to the much more powerful, multi-sectoral companies'* (Greater London Industrial Strategy, 1985, p.186).

Table 4.1 Greater London Council's Proposals for Action

1. To support the campaign for a 2p rate to be spent by all local authorities on support for culture and arts, using the money raised for investment in local cultural industries
2. To consult with London libraries on improving their service and expanding their role as distributors of video and locally produced material
3. To support local cultural retail outlets offering an alternative to High Street multiples
4. To support training schemes, whereby levies on producers could be used to provide training schemes particularly geared towards minority groups
5. To support strategies whereby the taxation on the advertising revenue of the major producers and distributors could be ploughed into creating new cultural jobs
6. To support moves to integrate the different cultural functions at a national level under a single Ministry of Culture.

Source: Greater London Council (1985)

The GLC's approach was subsequently imitated by a number of other metropolitan authorities, including those in Sheffield, Manchester, Birmingham, Liverpool and Newcastle. Overall, it is possible to summarise the policy interventions stemming from the various cultural industry policies introduced in the 1980's into three distinct strands. The first involved the attraction of a critical mass of local cultural businesses into cities through the provision of suitable workspace facilities, which would create employment opportunities, maintain a city's creative skills base and ensure that cities were not tied to the vagaries of international competition. The second line of policy involved the creation of local cultural industry development agencies providing common services and ensuring the promotion of networking through the creation of local forums. I also include here a third line of policy, which although chronologically gaining greater recognition in the mid-1990's, increasingly forms a distinct part of policies based specifically on cultural production. This intervention involves the development of creative links between cultural product industries and educational and scientific establishments in order to enhance the wider knowledge-based network.

(a) Providing adequate workspace for cultural activities

Wynne (1992) argues that an effective cultural industry policy will develop suitable managed workspace for cultural producers, acknowledging the networked forms of business interaction which may result when small firms co-operate in sharing a building and its services. Local

policy-makers therefore need to be aware of the type of premises available to small businesses and the need for flexible letting arrangements. The potential re-use of redundant industrial buildings forms a central strand of this line of policy intervention.

(b) Offering collective business support services

As cultural clusters expand, various networks of sector based support have been established to sustain the competitive nature of a locality and as a way of acknowledging that micro-enterprises do not have the time, resources or skills to become proficient in every aspect of business operations. As Bianchini and Parkinson remark, *'The geographical distribution of production, distribution, marketing, management and training infrastructures in the cultural industries...is an important factor affecting the ability of provincial cities to successfully implement production-orientated strategies for the cultural sector'* (1993, p.28). For example, in 1984 the GLC established the Cultural Industries Unit. This assisted a variety of London-based independent cultural enterprises with financial assistance and access to services such as management consultancy, marketing and advice on the introduction of new technology. As the London Industrial Strategy (1985) states: *'Our second line of intervention has centred on support for what can loosely be described as common services. Where there are a large number of small units in a sector, functions such as marketing and management advice can be provided more efficiently at the level of the sector than the individual enterprise'* (Greater London Council, 1985, p.187).

Wynne's (1992) recommendations for providing collective support to firms in the CIS include;

- An adequate financial and business development strategy linked to advice, loans and grants
- The need for service centres focusing on management, marketing, trend forecasting and new technology
- A training strategy to feed in new personnel and to create ladders of opportunity within each industry, and
- The need to link local activities to the wider sector economy at the national and international levels.

(c) Encouraging creative links with universities and the high-technology sector

Cultural industry policies have increasingly sought to provide the means through which cultural firms can network with other educational and scientific organisations in order to

enhance their own competitiveness. Such policies are based on the assumption that the CIS forms part of a wider knowledge network and that *'In the inter-urban competition game, being a base for knowledge-intensive firms and institutions, such as universities, research centres or the cultural industries has acquired a new strategic importance'* (Landry and Bianchini, 1995, p.1). In many cultural industry quarters, for example, Universities, Science Parks and clusters of cultural industries all exist in close proximity to one another.

If translated into reality these three policy strands collectively offer a number of potential benefits. They will,

- Enhance product development by generating new ideas and concepts
- Promote business development by providing information on how to run and grow SME's
- Encourage market development by assisting companies on winning contracts and networking
- Promote skills development through the provision of training schemes
- Market the area as a business location
- Promote the area as a site for inward investment and general profile raising.

(based on Wynne, 1992)

(ii) Cultural Consumption: The Political Decline of Cultural Industry Policies and the Rise of Strategies Based on Cultural Consumption

The continued promotion of the initial round of cultural industry policies was, however, shortly taken over by events. Local government reforms resulted in 1986 in the abolition of the GLC and the other metropolitan borough councils. The most significant upshot of this was that a new rationale was required to sustain a political interest in recognising the economic value of cultural activities. This rationale came now, not from Labour controlled urban authorities, but from a Conservative and market-orientated central government. The economic objectives of cultural policy were increasingly seen as a means of creating attractive cultural images to private investors in a period of intense urban competition for scarce new investment rather than as a means of promoting local economic growth.

These changes were so pervasive that the original definition of the cultural industries could no longer be maintained (British American Arts Association, 1989). Despite a continued recognition that 'cultural' activities offered considerable economic advantages, it is held that by focusing exclusively on the productive side of the cultural sector the diverse dynamics

shaping cultural activities within any particular locality would be denied. As Bianchini remarks, *'Where they existed at all, policies to support...production skills and infrastructures for the local cultural industries have a relatively minor role in terms of both budgets and status'* (1996, p.6).

Consequently, Bianchini and Parkinson suggest that the direct impact of cultural policies in the 1980's on the generation of employment and wealth has been relatively modest in comparison with its indirect role in constructing positive urban images, developing tourism, attracting inward investment and strengthening one's competitive position vis-à-vis other cities. This approach is typified by a civic boosterist agenda (Paddison, 1993, Loftman and Nevin, 1995), whereby cultural facilities are seen to strengthen the wider economy through multiplier effects and by acting as a soft location factor. The new cultural agenda tends to resonate more easily with the language of the rising interests of property developers, providing the umbrella for a range of policies linking cultural production and consumption to the rebuilding and the re-marketing of cities. So pervasive has this change been that while I wish to promote the direct economic benefits that the cultural industries can provide in terms of endogenous economic growth, it is often impossible to separate this goal of cultural policy from more recent policy aims. (see Griffiths, 1993,1995; Montgomery, 1990,1995; Bassett, 1993; and O'Connor and Wynne, 1997).

(iii) Towards a Reconciliation of Production and Consumption Based Strategies: The Development of Cultural Industry Quarters

Despite the emergence of policies based upon cultural consumption overall cultural agendas are increasingly moving towards a position where the seemingly disparate aims of production and consumption orientated strategies are being gradually reconciled. This transition is based on an awareness of the weaknesses of purely consumption-based strategies and an acknowledgement that production and consumption based strategies need not be mutually exclusive.

(a) The weaknesses of purely consumption orientated approaches

Despite the powerful images evoked by consumption based strategies this branch of cultural policy has come under increasing attack. My stance towards solely consumption-orientated strategies is highly critical. I agree, for example, with Cherry's critique of Bianchini and Parkinson's (1993) documentation of the role of cultural policy in urban regeneration, suggesting that the examples cited by the authors constitute little more than *'...unashamed*

civic boosterism for local political prestige under the guise of economic regeneration' (Cherry, 1995, p.285). Indeed the fundamental problem of many consumption based cultural policies is that they display too uncritical an acceptance of their success, which often depends upon variable factors over which cities have limited control, and which do not promote sustainable endogenous economic growth. Consumption-based cultural projects are typically tied to the economic fortunes of individual entrepreneurs, while the quality of jobs they provide tend to be part-time and low-skills based.

Boyle and Hughes' (1991) documentation of Glasgow during 1990, the year in which the city was designated 'European City of Culture' is thought provoking. It suggests that the economic impacts secured from obtaining this prestigious title could have been longer lasting had practices based upon cultural production been pursued with as much vigour as those based on cultural consumption. Equally evocative is Zukin's analysis, *Loft Living* (1982). Zukin's account of New York's SoHo district demonstrates how under a policy ethos of 'free-enterprise' the workspaces of artists were jeopardised as the district underwent a process of gentrification. As O'Connor and Wynne (1996, p.56) remark, *'Zukin's study clearly demonstrates the dangers of developing consumption orientated urban cultural policies, which are not balanced by the objective of encouraging local cultural production'*.

Reconciling production and consumption based strategies within distinct cultural quarters

Given these weaknesses *'It is likely'*, as Greenhalgh et al (1992 p.130) proclaim, *'that the social/critical role of arts activities will re-emerge in the 1990's, as the recession reveals many of the most ambitious development schemes to have been little more than debt-ridden, property-based speculations'*. It is increasingly suggested, therefore, that projects based around cultural consumption are most successful when developed alongside an expanding base of local economic production and that these two processes are invariably friendly to one another. The task today is to move from a position where the GLC-type cultural industry strategy and a more United States style consumerist strategy are not solely considered in isolation. *'It might be said'*, concludes Griffiths (1995, p.256), *'...that the mark of an effective and creative cultural planning strategy lies precisely in the degree to which these dilemmas have been identified and transcended'* (Griffiths, 1995, p.256).

Wynne (1992, p15) argues that *'the relatively high value added nature of the production process in the cultural industries, requires that the cultural producer retains as close a link as possible to the point of cultural consumption'*. It may be possible, therefore, to build on a

production base by developing greater outlets for the consumption of these products. The sites of consumption may simultaneously provide the venues within which future innovative ideas may be forged and invaluable face-to-face contacts with other cultural producers may be made. They may also act as visitor and tourist attractions, providing a greater range of job opportunities and thereby representing economic development opportunities in themselves.

These arguments, based as they are on close proximity and cultural exchange, lend themselves to the development of distinct cultural areas or quarters, defined as geographical areas containing the highest concentration of cultural and entertainment facilities in a town or city (Wynne, 1992, p.19). Indeed in recent years a number of city governments have begun to base their cultural industry strategies on the development of these distinct quarters. Examples include Dublin's Temple Bar, Sheffield's Cultural Industries Quarter, Cardiff's Media City, Birmingham's Media Quarter and Glasgow' Merchant City. Their development is based on an historical understanding that *'Traditionally the various forms of cultural industries have involved face-to-face contact and enjoy agglomeration economies, both in production and consumption. These economies tend to cause them to cluster in cities, generally in their centres'* (Hall (1996a, p.109). Whereas certain localities such as Glasgow have incorporated cultural production facilities into strategies initially focusing on cultural consumption, other cities such as Sheffield have operated in reverse adding cultural consumption strategies to a previously production orientated approach. The effect, if both strategies are effectively combined, is potentially the same.

Generally located in city centre locations, these area-based strategies have simultaneously served the very important process of urban regeneration. Cultural activity is therefore seen here, not as a form of economic investment, but as a means of promoting civic identity, revitalising public life and rediscovering the city for its inhabitants. Overall, it is argued that a critical mass of cultural facilities, when located alongside other commercial, retail and residential facilities brings positive benefits that can have both economic and social benefits.

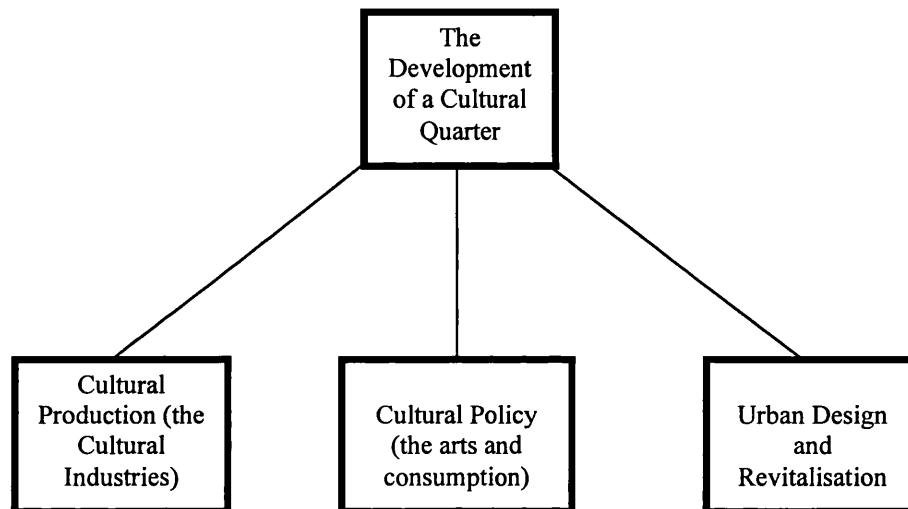
SUMMARY

- Policies framed around the cultural industries have often drawn, either implicitly or explicitly, upon the theoretical debates identified in Chapter 2. This was illustrated with reference to the pioneering works of the GLC that have encouraged the clustering of small cultural firms.
- It is not possible to outline policies based upon local cultural production without reference to the wider goals of cultural policy. Over time policies based upon cultural production

have been increasingly reconciled with those based on cultural consumption, frequently leading to the development of cultural quarters. As summarised in figure 4.2, the overall development strategy for a cultural quarter involves a combination of three separate, but inter-related policies which collectively represent many of the different strands of cultural policy described in the chronological framework above.

Figure 4.2 The Development Strategy for a Cultural Industry Quarter

(based on Montgomery, 1990)



II SHEFFIELD'S CULTURAL INDUSTRY POLICY:

Creating a Favourable Policy Environment for the Development of a Cluster of Cultural Industries

'The CIQ has over the last few years established a solid basis of activity in these sectors with growing levels of interaction, co-operation, networking, exchange, and technological and other types of business transfer. The close proximity of these activities to each other has contributed to the[ir] survival'.

SCIQ Draft Action Plan (1997, p.37)

The GLC approach outlined in the first section to this chapter has subsequently been imitated by a number of other metropolitan authorities, including those in Sheffield, Manchester, Birmingham, Liverpool and Newcastle. Using Sheffield as a case study location this section concludes that Sheffield's cultural policy fits within the evolutionary framework of cultural industry policies and has created a favourable environment within which the formation of a cluster of cultural industries may be created and sustained. In particular, institutional mechanisms have favoured the establishment of a physical milieu and the integration of policies relating to labour markets, education, training and research and development.

Perhaps the most significant reason for focusing on Sheffield is because its cultural policy has vigorously advocated the growth potential of local cultural production, and because this policy has been pursued for a relatively long period of time. Of course, there are a number of specific factors that remain peculiar to each city's cultural strategy, which require an understanding of the cultural infrastructures, the pattern of economic restructuring and the nature of local political control within each of these cities. As such, the development of broad generalisations between different cultural strategies should be avoided.

This section is divided into three parts.

- (i) An outline of the objectives of Sheffield's cultural industry strategy. Its policy goals are based upon the GLC model, and have been introduced as a tool to promote endogenous economic growth through the development of a critical mass of cultural activities within a distinct spatial agglomeration. This policy has assumed that the development of a critical mass of cultural facilities (both production and consumption orientated) provides opportunities for networking.

- (ii) An analysis of the origin of these policies and an introduction to the CIQ, the area which has been the focus of this cultural strategy.
- (iii) An investigation of how this strategic vision has been translated into more workable policy goals and the outputs that have been achieved. Policies linked to infrastructure provision, education and training, and research and development will be assessed. These policies have recently been reiterated within *The Sheffield CIQ Strategic Vision and Development Study (1998a)*. This study is now City Council policy and recommends that the primary task of Sheffield's cultural industry policy today is to sustain the critical mass that has been created and to ensure its long-term economic competitiveness.

(i) The Objectives of Sheffield's Cultural Industry Policy

The overall objectives of Sheffield's cultural industry policy have been summarised by Oatley (1996, see table 4.2). As demonstrated below, these goals reflect the situation outlined in figure 4.2 which describes how policies pay simultaneous attention within distinct spatial areas towards strategies of cultural production, cultural consumption and urban revitalisation.

Table 4.2 The Objectives of Sheffield's Cultural Industry Policy

1. Local economic regeneration

- Growth of information/entertainment/communication businesses
- Collaboration between SME's in growth markets
- Stimulus for inward investment
- National and international growth centre

2. Access to training, business advice, support, networks, industry-related base

- Social regeneration and economic diversification
- New skills, experience development
- Application across multiple sector

3. Revitalisation of city centre

- Cultural diversity
- Increase business/visitor levels

- Raise the profile and image of the city

4.Re-use of derelict land and buildings

- Physical regeneration
- Diversification of the urban environment
- New leisure and cultural focus
- Sense of productive community and dynamic place

The diversity of these policy goals is illustrated through the following quotation:

'Working in partnership with the cultural industries, the City Council aims to assist with the creation of a critical mass of home grown employment and business opportunities and economic functions which can deliver to the city a new job rich growth sector, a national visitor destination based on cultural tourism, a regional business centre of excellence linking cultural and creative industries, a new city centre residential community and a unique 'all hours' commercial activity zone based on cultural production, cultural tourism and cultural education and training'.

Sheffield City Council (1998b)

These broad aims are similarly reflected in the fact that Sheffield City Council's Cultural Industries Development Team is not contained within any specific local authority department, but draws upon a wide range of departmental interests.

However, Sheffield's cultural policy is unique from many other contemporary cultural strategies in two significant respects. Firstly, many cultural policies are only slowly appreciating the importance of local cultural production as a means of enhancing their local economic base. Sheffield, by contrast, having already established a significant base of cultural producers, is only now slowly moving towards the development of consumption-based cultural strategies. Crucially, the fundamental dynamic behind the development of a cultural industry cluster was that synergy and crossover effects could result from the bringing together of a critical mass of businesses and cultural producers. As Paul Skelton, head of the Cultural Industries Partnership Team states,

'The establishment of a cluster of cultural industries is based on the ASSUMPTION [my highlights] that businesses gain added value from developing collaborations,

sharing resources, developing new products, or exploiting new opportunities through regular networking with related businesses and organisations' (Oatley, 1996, p.173).

Secondly, the initial goal of creating a local cultural production base has never been abandoned and in fact provides the springboard for implementing the rest of the city's cultural agenda. For example, the existence of arts museums, restaurants and other specialist sites of consumption provide places where people can meet and network and create a social space for the exchange of ideas upon which local cultural producers thrive. In turn, the development of internationally recognised sites of cultural consumption dramatically enhance the image of an area, while the goals of urban renewal create an attractive environment that encourages businesses to locate or to remain within the locality.

(ii) The Evolution of Sheffield's Cultural Industry Policy: A Response to Economic Decline.

Having analysed how the objectives of Sheffield's cultural strategy are reflective of the general evolution of cultural industry policies, I turn to consider exactly how this policy was formulated. I outline how this particular strategy developed, determine the cultural sub-sectors upon which Sheffield's policies were focused and identify the areas within which cultural development was promoted.

Sheffield's cultural industry policy formed a central part of the economic development strategy developed by the local authority during the 1980's in response to a dramatic period of economic restructuring. The cultural industries, it was proposed, formed an economic sphere with the potential to counter the job losses in Sheffield's traditional industries. During the 1970's and 1980's, Sheffield suffered major economic decline. Until the late 1960's its international reputation in the steel industry made Sheffield a relatively prosperous place and for nearly two centuries the 'Made in Sheffield' brand name was successfully exported around the world. However, the City's workforce and culture proved to be too heavily tied to the fortunes of the steel-making industries. According to Skelton (1996), the 1970's represented a watershed decade. The combined impact of external competition from Japanese steel-makers and an internal energy crisis brought ten years of job loss and restructuring to the steel industry, culminating in a 13 week national steel strike in 1980. In only three years, between 1980 and 1983 the steel and engineering sectors lost over 20,000 jobs (Tweedale, 1995).

'The days when Sheffield and Rotherham were the epitome of steel cities are long gone. In Sheffield, the socialist local authority now employs three times the numbers working in steel;

only Sheffield Forgemasters in the private sector now employs more than Bassetts, the liquorice allsorts maker' (Tweedale, 1995, p. 361).

As a consequence, the manufacturing industries for perhaps the first time in 150 years became a minority form of employment in the local economy and after 1981 the city's unemployment rate became, and has subsequently remained higher than the national average.

Sheffield's sector-orientated local economic strategy commenced in 1980 when the new Department for Employment and Economic Development (DEED) introduced a policy recognising the need to diversify the city's economy and to ensure that it was never again tied to the fortunes of just one industry. DEED, according to Betterton and Blanchard (1992), was the first initiative of its kind in the United Kingdom. One of its prerequisites was to make a realistic assessment about what was most economically distinctive and promising within the area, culminating in the identification of business opportunities and training needs around a new set of economic sectors. The cultural industries, incorporating the fields of music, film, video, radio, television, design, photography and the performing arts, or what are collectively referred to as the post-electronic media industries, represented perhaps the most unconventional and high-risk of these. In a sense, however, DEED were only really drawing upon the city's inherent advantages. The cultural industries, for example, were recognised as having high levels of popular involvement, an expanding pool of young and innovative micro companies, a track record of successful city artists and links to a UK growth centre with access to world markets. In a more qualitative sense, as Skelton suggests, '*...the creation of a vibrant cultural industry cluster is a natural extension of the city's great tradition of creating and making' (1996, p.89).*

Developing a Critical Mass of Cultural Industries in a Distinct Geographical Quarter

DEED declared that its aims could be best achieved through focusing on a distinct spatial quarter. This geographical location would create the critical mass of industries that can lead to inter-firm associations, would provide an arena in which various policies can collectively enhance the cultural image of a city, and would offer a practical means of delivering collective cultural support facilities. By focusing development in a confined spatial area, Sheffield's area-based policy offers the additional benefit of promoting urban renewal by redeveloping a formerly derelict part of the city centre.

Figure 4.3: The Location of Sheffield's Cultural Industry Quarter

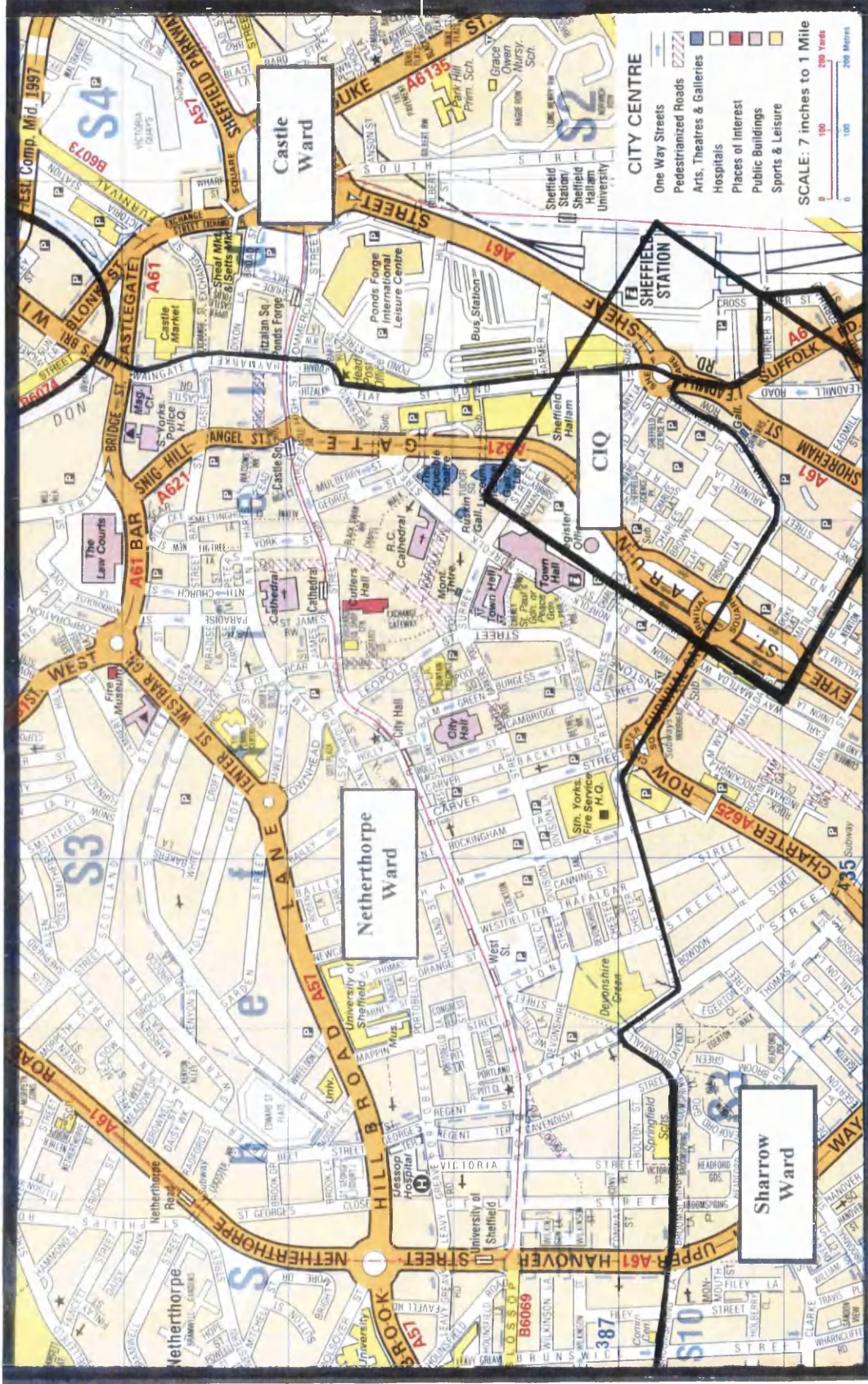
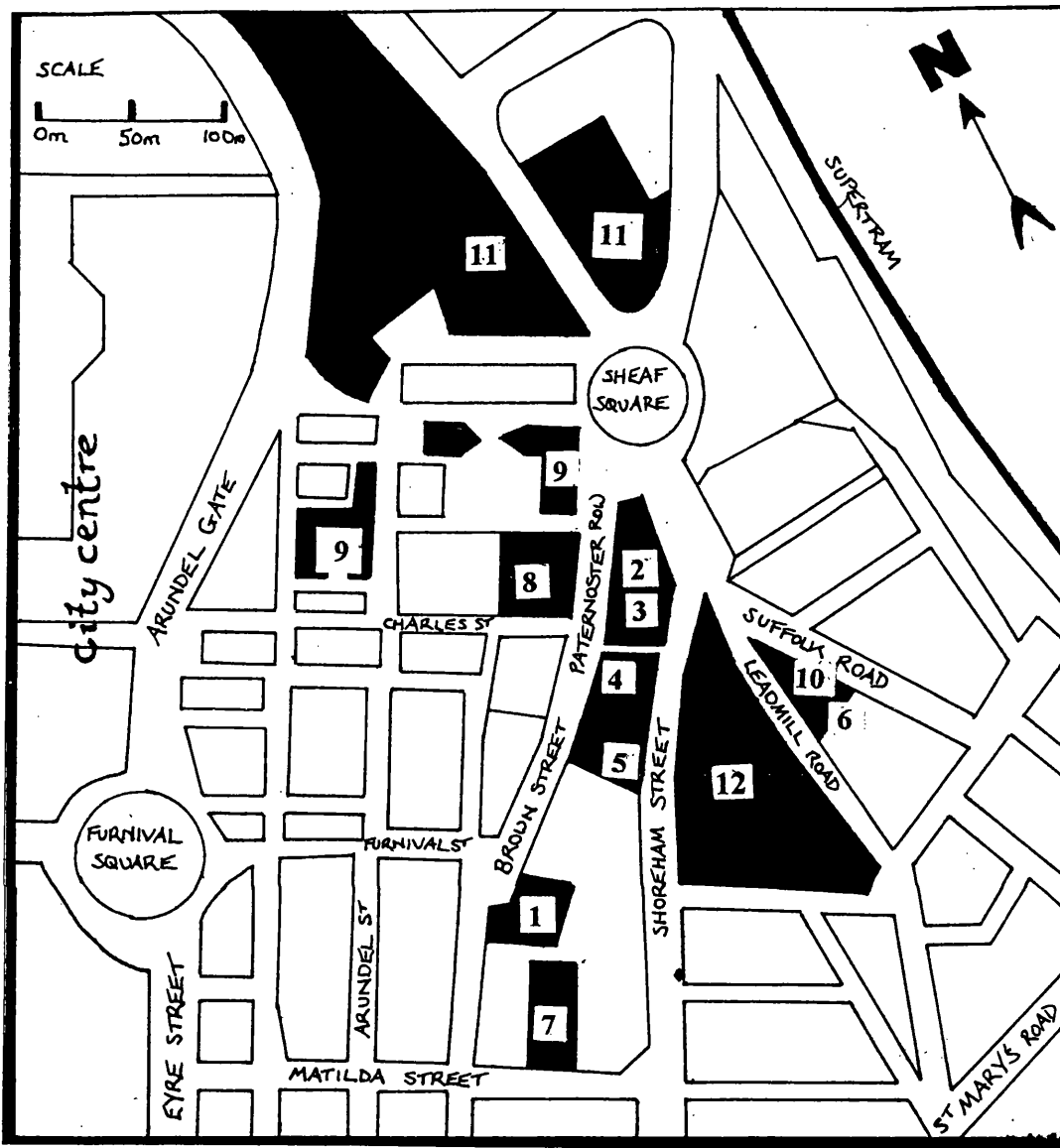


Figure 4.4: Sheffield's Cultural Industry Quarter



1. Audio Visual Enterprise Centre
2. The Showroom
3. The Workstation
4. Site Gallery
5. Red Tape Studios
6. The Leadmill
7. Yorkshire Artspace Society
8. National Centre for Popular Music
9. Sheffield Science Park
10. Scotia Works
11. Sheffield Hallam University
12. Leadmill Road Bus Depot

Since the late 1980's the area promoted by Sheffield City Council for cultural development has popularly been referred to as Sheffield's Cultural Industries Quarter (CIQ). The CIQ is defined as the area between Eyre Street, Charles Street, Leadmill Road/Suffolk Road and St Mary's Road (see figures 4.3 and 4.4). By the early 1980's all of this area was in steady decline. In its early twentieth century heyday it had been home to a tightly packed network of skilled metal workers, competing and trading with one another (Sheffield City Council, 1997b) and the last traces of this industry remain in the area to this day. However, the demand for hand-made cutlery has since declined and the area's location on the edge of the city centre led these struggling industries to relocate on sites further out of the centre, where land was cheaper and access easier. The essential aim of the city's area-based cultural strategy, therefore, is to recapture the past prosperity of the locality by producing another critical mass of industries, but based instead on a new and innovative economic sphere characteristic of the knowledge-based era.

(iii) Policies Introduced to Sustain the Strategic Vision

'We recommend that policies recognise the contribution which the creative industries can bring to the regeneration, physically, economically and culturally of inner urban areas. This in practical terms might involve training schemes, enterprise development, property development, support for studio complexes and managed workspaces and even venues.

(Urban Cultures Limited, 1994, p.71).

This section investigates how this strategic vision has been translated into more workable policy goals and the outcomes that have been achieved from these. I distinguish between three strands of practical policy support. These include the provision of efficient and cost effective workspace, a structured education, training and business support service, and the establishment of connections with the scientific and educational establishments of the wider knowledge network.

3a The provision of cultural infrastructure and workspace.

Given that most companies engaged in local cultural production operate at a micro scale, it is important that premises are available at affordable prices and situated close to other cultural amenities. Cheap space reduces risk and encourages experimentation. Sheffield City Council has indeed instigated a number of infrastructure projects to provide workspaces that combine suitable working conditions with a range of common support services. Therefore, *'... by using a careful letting policy, the Council has encouraged the development of cumulative economic*

advantage' within which interactive communications between various companies in this cultural industry cluster are enhanced (Sheffield City Council, DEED, Dec 1989/Jan 1990).

Although not specifically part of Sheffield's cultural industries strategy the Leadmill and Yorkshire Arts Space Society (YASS), developed in 1982, provided one of the earliest cultural artspace within Sheffield offering community training and support for the young and unemployed. Housed in a former cutlery works, the YASS currently homes 32 tenants, including printers, photographers, artists and craftspeople. Over the next few years YASS formed a steering group in partnership with the Council to produce a plan to renew the area through the utilisation of empty council buildings. Between 1986 and 1991 this partnership was successful in accessing funding through Urban Programme Grants and the European Regional Development Fund (ERDF).

The first significant action by Sheffield City Council in the cultural industry field was the opening of the Red Tape music studios in 1986 (figure 4.5). Red Tape became the UK's first municipal recording studios, providing professional and community access training and rehearsal facilities. Building upon the success of this initiative, Sheffield City Council, in 1988, designated an area of largely derelict council owned buildings as a Cultural Industries Quarter and launched several infrastructure projects to encourage its success.

To consolidate activity and to satisfy local demand, the Council followed Red Tape by developing the Audio-Visual Enterprise Centre (AVEC). AVEC provides managed workspace for fifteen commercial music, recording, photographic, design, film and video companies as well as offering a training centre, studio-space and business support. According to Matthew Conduit, in 1993 the estimated turnover of the 14 production based companies based in AVEC was over £65 million.

Following this success another formerly derelict garage was turned into the showpiece of this production orientated cultural quarter. The Workstation (figure 4.6) was opened as a cultural business and training complex in 1993, and *'represented a new stage in the regional development of high-quality managed workspace in the media-related industries'* (Skelton, 1996, p.89). The Workstation represents Britain's largest media and culture centre, catering for businesses in the fields of film and video, sound, radio, photography and design. The Workstation provides 75,000 square feet of floorspace, housing over 35 companies in a managed workspace environment that offers a multi-functional reception, exhibition space, conferencing and business support, equipment and facilities hire, and technological advice. The success of this project can be gauged from the fact that 60% of the workspace within the

Unit was let within its first year (Granville, 1994). Furthermore, an analysis of the tenants currently occupying the Workstation reveals how it is dominated by a diverse range of innovation based cultural industries. Of the 44 tenants, 27% are engaged in the film and television sector, 25% in graphic design, 16% in the audio-visual industries and 16% in media technologies. Matthew Conduit (cited in Granville, 1994, p.16), declares that *'If you look at AVEC and the Workstation as a functioning base, I don't know anywhere in the country that can offer the same range of facilities that we can here'*. The ethos at the Workstation, therefore, is to create a lively, creative business environment within which cultural organisations can interact with and support one another.

Outlining the net outcomes of these cultural production initiatives, the CIQ Business Audit (1995) calculates that 250,000 square foot of managed workspace has been established to date. This provides homes for 140 micro to small companies whose collective annual turnover is £20 million, and which provide 1,300-1,400 full-time equivalent (fte) jobs. Capital investment in the seven major projects implemented in the area totals £3.5 million, with the public sector contributing £7 million, mainly from the Urban Programme, ERDF and the National Lottery (a leverage ratio of 5 to 1). Largely as a consequence of these infrastructure projects it is held that *'a critical mass in terms of cultural business functions has been achieved'* and that *'The growth of music and media related industries is assured in the medium term'* (Sheffield City Council, 1995b).

New sources of funding, largely obtained through National Lottery monies, continue to fuel the infrastructure development of the CIQ. Having established a critical mass of cultural producers, however, this funding has primarily been directed towards projects based around cultural consumption. Three developments, all assisted by public monies, have been particularly significant. Firstly, *The Showroom* (figure 4.7), funded by a National Lottery grant of £3.3 million, has been developed as the largest specialist movie-house outside of London. Secondly, *Site Gallery* (figure 4.8) has been developed as a centre for contemporary photography, providing exhibition space and educational resources. Thirdly, and representing the jewel in the CIQ's crown, is *The National Centre for Popular Music (NCPM)* (figure 4.9). Opened only this year, the NCPM is a visitor attraction based around the British Music Industry which it is hoped will eventually become a serious academic and research centre. This development, secured through £1,585,000 from the National Lottery and a further £1,885,000 from the ERDF, can confidently claim to represent a truly national if not international tourist attraction.

The outcomes of these cultural consumption policies can be gauged through visitor levels. Existing visitor capacity in the CIQ is currently 120,000 per annum. The Leadmill Complex, meanwhile, attracts audiences of 300,000 a year, the Showroom 75,000 and the Republic Club 350,000. Estimated forecasts, moreover, propose that the NCPM will attract 400,000 visitors a year.

The development of Sheffield's CIQ is far from over. For example, there are ambitious plans to transform the Leadmill Road Bus Depot into a performing arts and business centre, with a theatre, concert hall, jazz café, shops, offices and workspace. A further plan proposes to turn the Scotia Works site into a mixed-use cultural centre. Funding is expected from The Arts Lottery, the ERDF and English Partnerships. Importantly, both of these projects represent a continued commitment to infrastructure projects based around both cultural production and cultural consumption, believing that when combined the opportunities for interactions between cultural producers will be significantly enhanced.

Consequently, the CIQ Strategic Vision proposes that 20 years after the initiation of Sheffield's cultural policy in 2007, capital investment in the area will have reached £150 million. Furthermore, 1 million square foot of floorspace will have been developed, while four hundred companies will reveal an annual turnover in excess of £100 million, providing 3,500 fte jobs and 250,000 training places every year. Visitor levels will also have exceeded 1.5 million visitors.

3b. Business support strategies

Sheffield's CIQ Draft Area Action Plan (1997b, p.37) states that;

'The Action Plan will seek to bring business support service providers together to ensure that companies are aware of the comprehensive services that are available in addition to exploring additional programmes of support which enable companies to compete, in addition to exploring synergy across traditional industries and the new growth sectors that are emerging'.

Figure 4.5: Cultural Production Infrastructure - Red Tape Studios



Figure 4.6: Cultural Production Infrastructure - The Workstation



Figure 4.7: Cultural Infrastructure - The Showroom



Figure 4.8 Cultural Infrastructure - The Site Gallery



Figure 4.9: Cultural Infrastructure - The National Centre for Popular Music



Figure 4.10: Knowledge Network - Sheffield Science Park



Figure 4.11: Knowledge Network - Sheffield Hallam University



Running alongside the building-based projects outlined above, Sheffield City Council has also adopted a more people-based approach to their cultural industry policies recognising that cultural industries operate in clusters supported by dense informal networks of shared information, skills and equipment. Central to this has been the provision of business support, the identification of training and skill needs, the facilitation of the networks that could lead to enhanced economic competitiveness, help and advice in the licensing and patenting of products and the provision of financial support. The aims of these support mechanisms are threefold. Firstly, to develop networks between the various support organisations in order to focus the support offered. Secondly, to encourage firms to network with other organisations in order to gain vital business support. Thirdly, to provide a level of support that encourages subsequent networking between these various firms to adopt new technologies, enter new markets and develop partnerships and joint ventures. As Paul Skelton, leader of the Cultural Industries Development Team at the City Council stated,

'The best results come when you pack as many cultural businesses as you can get in to a small geographical area, backed up with a lot of support services', creating 'a pressure cooker effect'.

Organisations within the CIQ have increasingly benefited from a range of support programmes and facilities focused upon their needs. The Cultural Industries Development Unit (CIDU) is the most influential mechanism implemented thus far to address these issues. The CIDU was set up by Sheffield TEC and City Council with ERDF and SRB funding in partnership with Business Link and the private sector in the CIQ (the latter organised through the Cultural Business Network). The Unit was piloted in 1997-1998 and as my interviews revealed, was successful in supporting 270 businesses across the city and in securing funding for 48 new enterprises. After a successful pilot period, which has now run its course, the aim is for the CIDU to become an independent body called Action for Business in Culture Ltd (ACT) which, having secured funding, is anticipated to have life from May 1999.

The aims and objectives of the ACT Ltd Business Plan are:

- To commission research on the organisations, individuals, markets, support services, distribution channels, new technology and alliances which add value to the creative sector
- To offer training and industry specific seminars to raise the knowledge base and skills of cultural practitioners
- To set up a Fund to inject money into start-up companies
- To act as a mediator with the education and training sector

- To advocate for a sector where the creation of wealth is a more appropriate output than the creation of jobs, given the freelance nature of many projects
- To provide an overview of each cultural sector and encourage the creation of strategic alliances and partnerships to avoid duplication of effort.

(O'Donovan and Evans, 1998)

The other new vehicle for implementing the vision and strategy for the CIQ is the Cultural Industries Quarter Development Agency (CIQDA), which unlike the city-wide focus of the CIDU relates specifically to businesses within the CIQ. The CIQDA, approved in 1998, will work with ACT to champion the CIQ, facilitate development, mobilise resources, organise events and promote the quarter. Given their recent introduction, the main outcome to emerge from these strategies thus far has been their very establishment rather than an evaluation of their achievements.

The CIQ is also characterised by a vast range of more specific cultural support targeted at particular sub-sectors of the CIS. In the media sector, training is provided through Forge FM and Community Radio Association (radio), Sheffield Independent Film and Television (video production), Red Tape Studios (music production), Site Gallery (photography and electronic media and arts) and Sheffield Hallam University's Northern Media School (film, video, radio and journalism). Outlining their success Skelton suggests that, '*All the organisations operating in these sectors have already acquired the professional expertise and operational experience to deliver the business support necessary to stimulate SME's in growth sectors*'. Given the multitude of these agencies it is once again difficult to assess their individual outcomes, although my own questionnaire analysis reveals that most firms had expressed contact with at least a few of these organisations.

3. Creating a wider knowledge network

One of the fundamental issues emerging from the 1998 CIQ Strategic Vision and Development Study was the need to encourage creative links between firms in the CIQ and the educational and scientific establishments that form part of an overall knowledge network. It is held that by exploring the inter-relations within this wider network the media industries can become more competitive and can identify new market opportunities for growth.

As stated in Sheffield's CIQ Strategic Vision (1998a, p.2),

'The partners aim to transform the CIQ in the next decade into an internationally recognised centre for cultural production and consumption. We are confident that this can be achieved, through the convergence of emerging science/technology-based businesses, educational services and cultural industries. These are the basic industries of the knowledge age. '

What is particularly significant about the sub-sectors upon which Sheffield's cultural industry policy is based is the fact that they are characterised by innovative technological and organisational practices. Moreover, an on-going process of technological convergence has meant that these seemingly disparate sub-sectors in fact exhibit increasingly strong commonalities. Consequently the potential opportunities for developing synergetic relationships with one another and with wider scientific and educational institutions are strong.

The key elements of Sheffield's information growth network include:

- The development of a new Cultural Industries Quarter
- New growth industries based on new technologies
- Sheffield Science Park and Technology Centre
- Enhancement of computer centres
- Networking for research and development
- Indigenous diversification
- Technology transfer
- Cable and satellite links
- Construction of a new conference centre
- Creation of the national design centre

(Sheffield City Council, 1990)

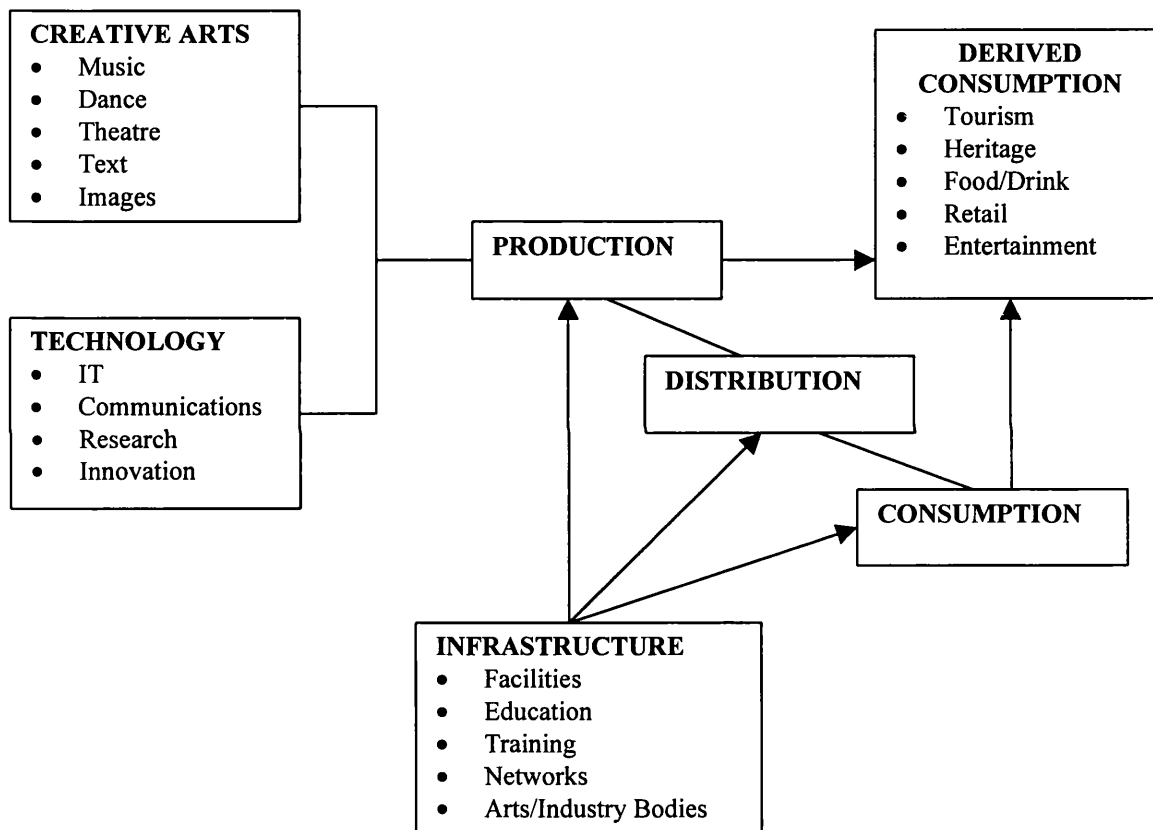
Assessing the outcomes of these policy visions, I propose that networking possibilities within the CIQ have indeed been significantly enhanced due to the close spatial proximity of Sheffield Science Park and Sheffield Hallam University (SHU). Sheffield Science Park (figure 4.10) was developed to encourage the agglomeration of technology industries through the provision of workspace and associated technological support centres, while the development of Sheffield Hallam University (figure 4.11) represents a further attempt to transform this area into a bastion of the informational and skills-based age. The Northern Media School based at this University, for example, is regarded as a highly significant networking facilitator, while SHU's Cultural Campus is a European centre of excellence for teaching and research in the creative arts, media and communications technologies. SHU is also the site of the UK's first Future's Institute. Within the wider knowledge based network there is, therefore, a strategic fit

between the emerging cultural industries, Sheffield Hallam University's research and educational interests, Sheffield Science Park and the area's traditional craft skills.

My analysis in the next chapter reveals that firms within the CIS have strong contacts with both these educational and scientific establishments and that these contacts serve a variety of purposes.

Chapter Summary

Figure 4.12 The Sheffield's Cultural Industries Policy: An Holistic Approach



(Diagram based on a flow chart contained within the 1998 CIQ Strategic Vision)

This chapter can be summarised with reference to figure 4.12 which, based on Sheffield's cultural strategy, offers an illustration of a policy-orientated cultural industries quarter. Starting from the left of the diagram cultural industry strategies are based on the promotion of certain core cultural sub-sectors. As part of an area-based policy, firms within these sub-sectors are assisted by support mechanisms, based on infrastructure provision, collective business support and the use of technological applications. Each of these mechanisms feed

into the development of a local base of cultural production. This production base, however, is increasingly connected to a series of strategies based upon cultural consumption, which may also enhance local economic prosperity through more indirect means.

Overall, this model represents a networked community within which cultural product industries interact not only with associated firms but also with support institutions, with organisations in educational and scientific fields and with sites of cultural consumption. If this network can be encouraged through policy, as I have illustrated is the case in Sheffield, it can potentially lead to the development of a clustering of cultural industries and to endogenous and sustainable economic growth.

CHAPTER FIVE: RESEARCH ANALYSIS

This chapter is divided into two sections. Section 1, based on the awareness of Sheffield's enabling institutional environment as discussed in chapter 4, outlines whether a cluster of cultural industries has developed in Sheffield. Section two considers the extent to which businesses within Sheffield's CIS are networked, and whether this networking provides opportunities for enhancing economic competitiveness.

A: A QUANTITATIVE ASSESSMENT OF EMPLOYMENT WITHIN SHEFFIELD'S CULTURAL INDUSTRY SECTOR

This section of the analysis responds to the first research question and determines whether Sheffield has developed an aggregation of cultural industries.

The aims of this chapter are threefold.

1. To determine whether Sheffield has developed a cultural industry cluster and to assess the **growth potential** of this aggregation in light of national employment changes in the CIS and overall employment changes within Sheffield.
2. To determine whether an aggregation of cultural industries has developed in particular **sub-sectors** of the CIS and whether these sub-sectors correspond to those promoted in Sheffield's cultural industry policy.
3. To assess whether an aggregation of cultural industries is concentrated within particular **geographical areas** of Sheffield, and whether these locations correspond to those that have been promoted in Sheffield's cultural industry policy.

These aims will primarily be investigated through the use of two statistical surveys; the CoE and a more localised cultural business audit. This information will be augmented with information from the existing documented literature and with personal opinions gained from my own interviews.

Three overall findings are reached. Firstly, it is concluded that the cultural industries do not constitute a truly significant economic sector in terms of employment figures. Moreover, the rates of employment change in this sector compare unfavourably to national employment

changes in the CIS and to overall employment changes within Sheffield. However, the second conclusion offered is that when the overall notion of the CIS is disaggregated several of its sub-sectors have in fact performed well. Moreover, these sub-sectors correspond to those promoted by Sheffield City Council as part of its cultural industry policy. Thirdly, the majority of the cultural industries identified within Sheffield are located within the area upon which Sheffield's largely area-based cultural policy has focused; namely the Cultural Industries Quarter.

In conclusion, therefore, this section suggests that some form of cultural aggregation has developed within the CIQ. It subsequently acts as a prelude to the next section, which discusses whether Sheffield's cultural aggregation is sustained through a variety of inter-firm networks.

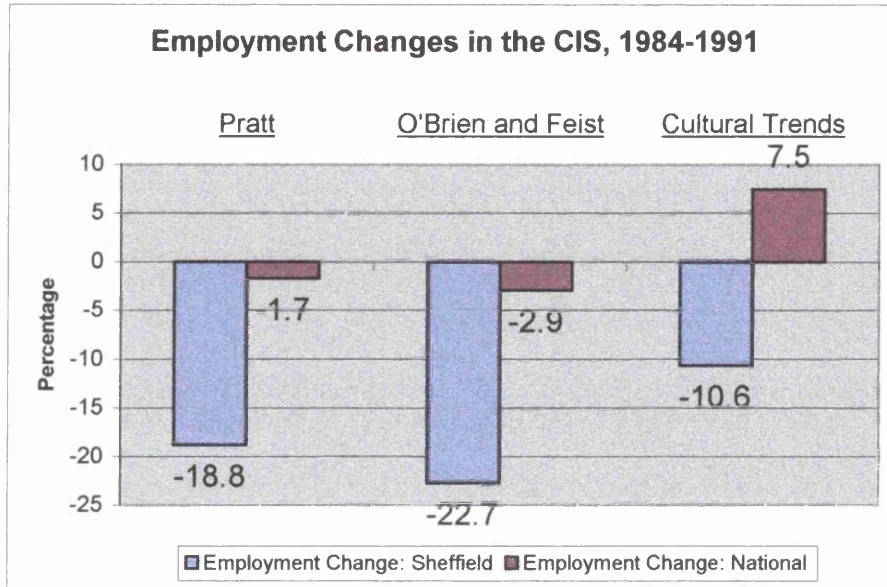
I: OVERALL EMPLOYMENT LEVELS WITHIN SHEFFIELD'S CIS

Figure 5.1.1, based on data gained from the CoE, illustrates how employment levels in Sheffield's CIS have changed between 1984 and 1991 in comparison to the national rates of change in the cultural sector. Pratt's (1997) analysis, providing employment levels at a national scale, has been particularly useful in enabling these city-wide trends to be compared to the national picture. The three different sets of results contained in figure 5.1.1 are based upon the differing classifications of the CIS identified in Chapter 3. As previously stated, despite the classificatory shortcomings of the 1980 SIC Revision upon which these figures are based, it is necessary to use this revision if temporal comparisons are to be made.

The period between 1984 and 1991 is chosen because it covers the nearest census dates to fall both before and after the introduction of Sheffield's cultural industry policy. It should be noted, however, that Sheffield's cultural industry policy was initiated only in 1988 and that the 1991 Census figures therefore consider the impact of this policy only three years after its introduction. Consequently, these figures are best viewed as a means of analysing whether the CIS has shown growth potential over this period and whether it deserves to be viewed in policy documents as a profitable economic sphere.

The most significant point to note from figure 5.1.1 is that between 1984 and 1991 employment levels in Sheffield's cultural sector declined more significantly than national employment changes. This point is reinforced using all three definitions of the CIS. Using

Figure 5.1.1 Comparing Employment in Sheffield's CIS with National Employment Changes, 1984-1991



Pratt's analysis this represents a decline in Sheffield of -18.8% compared with a national employment decrease of -1.7%. Adopting O'Brien and Feist's definition this points to a Sheffield decline of -22.7% against a national decline of -2.9%, while utilising the Cultural Trends definition this results in a national increase of 7.5% set against Sheffield's more moderate decline of -10.6%. As identified earlier, it is the definitions adopted by O'Brien and Feist and Cultural Trends which primarily focus on forms of cultural production and consumption, that most accurately reflect Sheffield City Council's definition of the CIS. Both show significant employment declines in the cultural sector.

Although this information suggests that Sheffield may have been wrong to assume that economic growth could be promoted through a policy geared towards the CIS, it is important to set the changes in Sheffield's CIS against the overall rates of change within Sheffield as a whole. It must be remembered that during this period of recession the levels of employment in the cultural sector may compare favourably to the city's overall employment changes.

During the 1980's Sheffield suffered from a period of serious manufacturing decline, a decline that came later for Sheffield than for most industrial cities. The city's traditional steel and engineering base became increasingly undermined through the collective impact of acute recessions at the beginning and end of the decade, the privatisation of British Steel, the over -

capacity of the steel industry throughout the European community and fierce global competition.

In calculating regional employment changes Frost and Spence (1991) have ranked cities according to whether their performance in absolute terms was above or below what national rates of change would have predicted for them given their population size. Sheffield, with a net loss of 17,817 jobs against national predictions, represented the third highest total in the resulting analysis, lying behind only London and Liverpool. These changes, the authors concluded, reflected wider regional employment changes, with overall employment in Yorkshire and Humberside declining more acutely between 1981 and 1987 than the national average (-3.2% as against -0.2%).

Lawless (1995), meanwhile, has estimated Sheffield's employment changes during the 1980's using data obtained from the CoE. This information is summarised in table 5.1.1 During this

Table 5.1.1 Sheffield's Changing Economy, 1981-1991

	SIC Divisions	No. Employed Sheffield 1981	No. Employed Sheffield 1991	%Change Sheffield 1981-1991	%Change UK 1981-1991
0.	Agriculture	339	288	-15	-22
1.	Energy/Water	6069	3005	-15	-39
2.	Steel/Chemicals	27072	7314	-73	-29
3.	Engineering	42503	28792	-32	-28
4.	Other Manufacturing	16246	13143	-19	-18
5.	Construction	11233	9376	-13	-11
6.	Distribution/ Catering	44540	44509	-0.1	13
7.	Transport/ Communications	13600	12930	-5	-5
8.	Financial/ Business Services	15885	22103	39	51
9.	Other Services	64248	69944	9	15
Total		241,735	211,764	-12	1

decade Sheffield suffered an employment decline of more than 10% and the loss of more than 35,000 jobs in the manufacturing divisions (divisions 2, 3, and 4). The widening job opportunities in the financial and business services were unable to balance out the loss of manufacturing jobs in absolute terms. As a result of this, unemployment in Sheffield stood by November 1993 at 11.5% (a figure which Sheffield City Council using Labour Force Survey statistics estimated to in fact reach 18.2%).

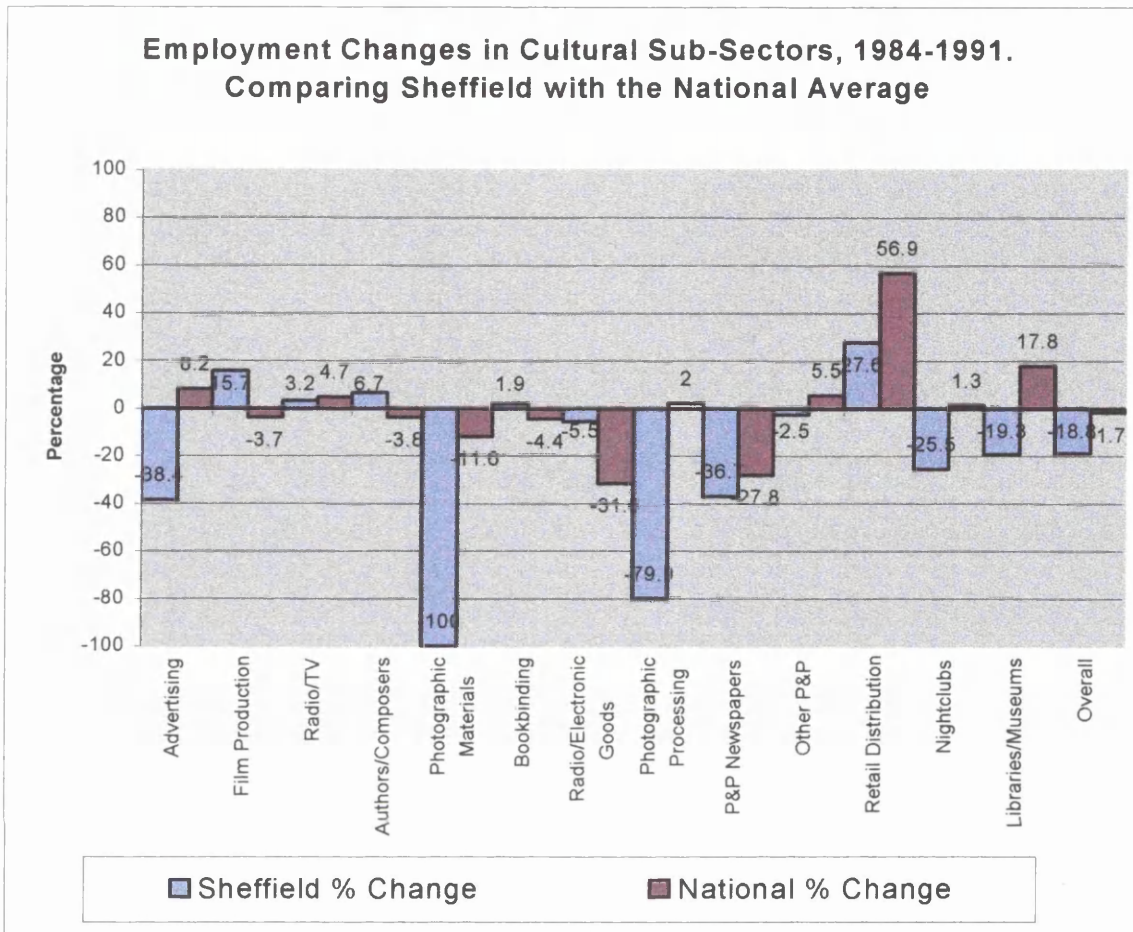
The overall rate of employment decline between 1981 and 1991 is calculated at -12%. With the exception of the Cultural Trends definition, estimating a decline marginally below the overall city average, it appears that employment in the CIS between 1984 and 1991 declined at a greater rate than in the city as a whole. In fact the employment decreases cited by both O'Brien and Feist and by Pratt (-18.8% and -22.7% respectively) are broadly consistent with the levels of decline in Sheffield's manufacturing sector (-19%). Clearly, therefore, Sheffield's CIS appears to have performed unfavourably.

II A SUB-SECTOR ANALYSIS OF SHEFFIELD'S CULTURAL INDUSTRY SECTOR

If taken alone, however, this information remains inconclusive in offering an exact numerical assessment of employment levels in Sheffield's CIS or in determining whether employment in this sector is concentrated within specific spatial aggregations. Where these figures are perhaps more illuminating is in assessing how particular sub-sectors of the CIS have fared over time. According to the results gained through NOMIS, two sub-sectors of Sheffield's CIS performed better than the national average between 1984 and 1991. Importantly, however, the businesses contained within these two SIC's (film production and distribution, and authors and composers), represent sub-sectors promoted by Sheffield's cultural industry policy. It is also important to note that Sheffield experienced absolute increases in employment in several other sectors promoted by its cultural policy, including a 3.2% employment increase in the radio and television sectors.

These figures are portrayed in figure 5.1.2 Although the absolute increases in the numbers employed in the cultural sub-sectors described above are relatively small, these are nevertheless significant trends given Sheffield's overall economic climate. It is not possible to estimate, for example, whether some of the traditional cultural sectors would have withstood the recession without the introduction of a cultural policy, nor whether any of the less traditional cultural sectors would have risen to prominence at all.

Figure 5.1.2 Comparing Employment in Sheffield's Cultural Sub-Sectors with National Employment Changes, 1984-1991.



To consider Sheffield's CIS in more detail it is useful to look at the 1992 SIC Revision. As mentioned in Chapter 3, to account for the weaknesses that emerge with industrial classifications over time the SIC is subject to periodic revision. Although the 1992 revision does not allow for temporal comparisons to be made, it can be used to offer a more accurate snap shot of employment patterns within Sheffield's CIS than the 1980 revision allows for.

Table 5.1.2, based on the 1996 COE, outlines employment figures in Sheffield's various cultural sub-sectors. The choice of the sub-sectors forming Sheffield's CIS was outlined in the research methodology.

Table 5.1.2: Employment in Sheffield's CIS, 1996

SIC	Description	Employment Levels in Sheffield 1996
9211	Motion picture and video production	26
9212	Motion picture and video distribution	57
9213	Motion picture projection	143
9220	Radio and television activities	136
9231	Artistic and literary creation	233
9232	Operation of arts facilities	161
9233	Fair and amusement park activities	0
9234	Other entertainment activities	11
9251	Library and archive activities	345
9252	Museum activities	101
2211	Publishing of books	73
2212	Publishing of newspapers	610
2213	Publishing of journals and periodicals	47
2214	Publishing of sound recording	2
2215	Other publishing	51
2221	Printing of newspapers	0
2222	Other printing	565
2231	Reproduction of sound recording	4
2232	Reproduction of video recording	12
2233	Reproduction of computer media	0
TOTAL		2557 (772)

The total number of people employed within this overall sector totals 2557, thereby suggesting that some form of aggregation has indeed formed within Sheffield based around the CIS. However, if a stricter definition of the CIS is adopted, including only those classifications that form the basis of Sheffield's cultural sector, these employment levels are significantly reduced. For example, the classifications relating to 'publishing of newspapers' and to 'other printing' which appear especially significant in this sample are not expressly referred to in Sheffield's cultural industry policy. The figures highlighted in bold offer a truer representation of the sub-sectors promoted by Sheffield's cultural policy, and yield an overall employment figure of only 772. Although the 1992 revision of the SIC still omits many of the sub-sectors of the CIS, it has to be concluded that even by 1996 we are still talking about a very small cultural sector.

If these cultural forms of employment are evenly spread out throughout the city it would appear that Sheffield's aggregation of cultural industries will not benefit from the advantages of collaborative competition that develop in close spatial clusters. The next aim therefore is to determine whether the majority of these cultural forms of employment are located within close spatial proximity to one another.

III A WARD LEVEL ANALYSIS OF SHEFFIELD'S CULTURAL INDUSTRY SECTOR

I turn, therefore, to consider how the 1996 CoE survey may be used to analyse the spatial concentrations of employment within Sheffield's CIS. The lowest spatial disaggregation of CoE data that can be obtained using the NOMIS statistical package is a ward level analysis. Rather than considering each of the 29 wards within Sheffield I have restricted my analysis to the wards of Netherthorpe and Sharrow. It is the boundaries of these two wards that straddle the perimeter of the CIQ. I focus on the CIQ because this is the area upon which Sheffield's cultural industry policy has been based and because of the qualitative assertion expressed by a number of questionnaire and interview respondents that up to 80-90% of the people engaged in Sheffield's CIS are located within this area. The reports of the Cultural Industries Development Unit similarly confirmed that 90% of its clients were located within the CIQ.

Table 5.1.3 and figure 5.1.3 calculate, as a percentage of all employment in Sheffield's cultural industries, the proportion of these jobs that are located within the two wards dissecting the CIQ. The overall findings suggest that 1068 of the 2577 jobs in Sheffield's CIS (52.5%) are located within these two wards, 41.4% of them in Netherthorpe alone. Clearly some form of spatial concentration has developed where like-minded industries locate in close proximity to one another. Particularly influential sectors in these wards include film production and projection, artistic creation and the operation of arts facilities. The latter is particularly significant given that Sheffield's cultural industry strategy suggests that the development of forms of artistic consumption create an environment that further attracts cultural producers.

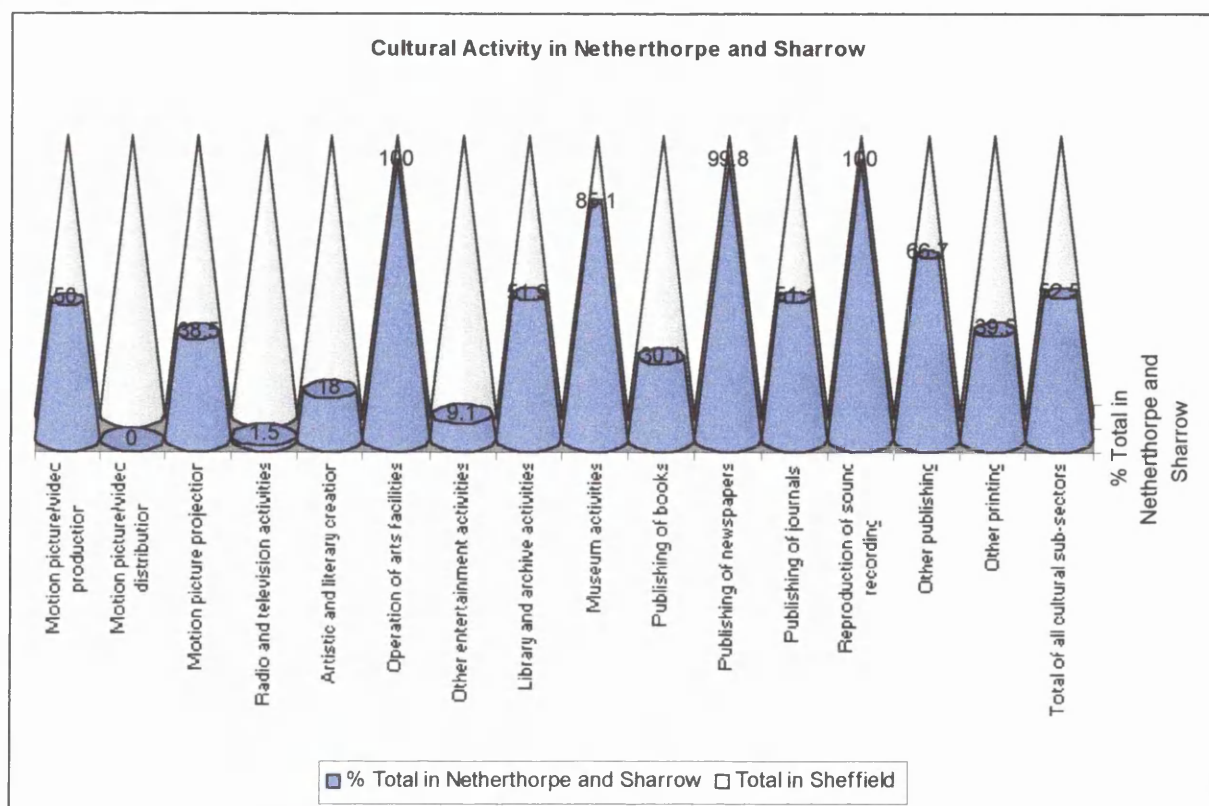
Taken collectively I argue that although these figures fail to confirm the qualitative reports indicating that 80% of Sheffield's cultural industries are located in the CIQ, the figures are sufficient to suggest that Sheffield's cultural industry policy has been successful in developing some kind of aggregation within this area. As a consequence of the identified weaknesses of CoE data, I therefore turn to augment this information with data from a number of local business surveys determining more precisely the level of cultural employment located within the CIQ. For example, it is surprising given my analysis of the CIQ that CoE data has

suggested that radio and television activities are relatively insignificant within this area. I suggest that despite being the most suitable national statistical indicator through which to compare local variations in a standardised manner, the CoE is unable to delineate industrial classifications as precisely as would often be useful.

Table 5.1.3: A Ward Level Analysis of Sheffield's CIS, 1996.

SIC	Description of SIC	Number employed in Sheffield	Number Employed in Netherthorpe	Number employed In Sharrow	% total in Netherthorpe and Sharrow
9211	Motion picture and Video production	26	13	0	50.0
9212	Motion picture and video distribution	57	0	0	0.0
9213	Motion picture projection	143	55	0	38.5
9220	Radio and television activities	136	2	0	1.5
9231	Artistic and literary creation	233	15	27	18.0
9232	Operation of arts facilities	161	158	3	100.0
9233	Fair and amusement park activities	0	0	0	0.0
9234	Other entertainment activities	11	1	0	9.1
9251	Library and archive activities	345	141	38	51.9
9252	Museum activities	101	86	0	85.1
2211	Publishing of books	73	5	17	30.1
2212	Publishing of newspapers	610	603	3	99.8
2213	Publishing of journals / periodicals	47	14	10	51.1
2214	Publishing of sound recording	2	0	0	0.0
2215	Other publishing	51	34	0	66.7
2221	Printing of newspapers	0	0	0	0.0
2222	Other printing	565	37	186	39.5
2231	Reproduction of sound recording	4	4	0	0.0
2232	Reproduction of video recording	12	0	0	0.0
2233	Reproduction of computer media	0	0	0	0.0
Total		2577	1068	284	52.5

Figure 5.1.3: A Ward Level Analysis of Sheffield's CIS, 1996.



IV SHEFFIELD'S CULTURAL INDUSTRY QUARTER: AN ASSESSMENT OF EMPLOYMENT LEVELS

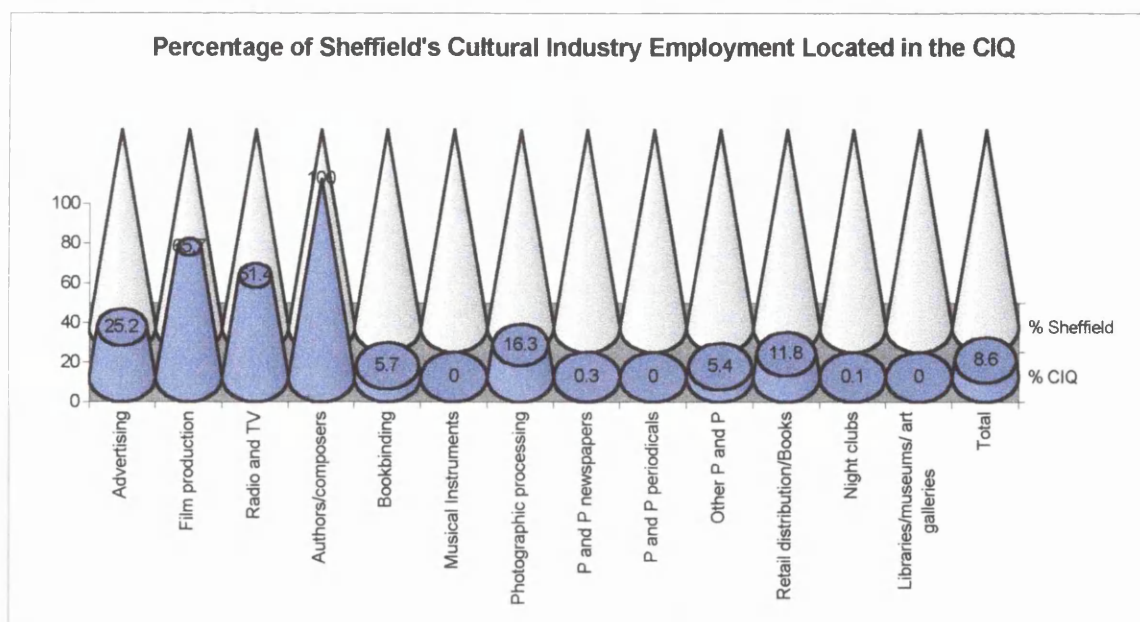
A survey of business activity in the area known as the 'CIQ' indicates that around 400 companies operate and trade in the area. This survey was based on information provided from a City Council questionnaire carried out in 1994; an audit of cultural and media related industries conducted in the same year and information provided by Sheffield's TEC. Two of the criteria by which each of the firms in the Cultural Business Audit were assessed were firm size (in terms of number of employees) and the SIC to which each firm belonged (based on the 1980 SIC revision). It may be possible, therefore, to combine this information with figures gained from NOMIS to gain a more accurate indication of the number of people employed in Sheffield's CIS that are located within the CIQ. This will involve a comparison of figures for Sheffield's overall cultural employment gained from the 1991 CoE with information for the CIQ based upon this 1994 survey. The time difference between these two surveys is significant, however, and extreme caution should be exercised when analysing these results. Nonetheless, these calculations do provide one of the few sources of information by which to determine how much of the city's cultural employment is located within the CIQ.

This business survey was used to assess the number of people employed within the CIQ engaged in each 4-digit SIC (Appendix 1). Although all firms present within the CIQ were designated a SIC only 68.5% of these firms were classified according to the number of people that they employed. Where the number of employees in a business was not indicated it was assumed that they employed the same number of people as the average firm within that particular SIC. Table 5.1.4 and figure 5.1.4 present the findings for those sub-sectors considered part of the CIS, offering a comparison between the CIQ and the city wide figures gained from NOMIS.

Table 5.1.4: Calculating the Proportion of Sheffield's Cultural Employment Located in the CIQ

SIC	Description	No. Employed in Sheffield 1991	No. Employed in CIQ 1994	% in CIQ
8380	Advertising	143	36	25.2
9711	Film production	140	92	65.7
9741	Radio and TV	292	150	51.4
9760	Authors/composers	16	17	100.0
2552	Printing ink	0	0	
2591	Photographic materials	0	0	
3276	Bookbinding	53	3	5.7
3443	Radio and electronic goods	17	N/A	
3453	Active components	N/A	0	
3454	Electronic Consumer goods	N/A	N/A	
3733	Photographic equipment	0	0	
4920	Musical instruments	2	0	0.0
4930	Photographic processing	43	7	16.3
3452	Gramophone records	0	2	
4751	Printing and publishing newspapers	584	2	0.3
4752	P and P periodicals	69	0	0.0
4753	P and P books	0	0	
4754	Other P and P	706	38	5.4
6530	Retail distribution/Books	550	65	11.8
6630	Night clubs	1591	2	0.1
9770	Libraries/museums/ art galleries	578	0	0.0
TOTAL		4784	414	8.6

Figure 5.1.4 Percentage of Sheffield's Cultural Industry Employment Located in the CIQ



Notwithstanding the inability of SIC's to account for all forms of cultural employment, nor the fact that only 8.6% of the city's overall employment in the designated cultural sub-sectors is identified within the CIQ, the results for certain cultural sub-sectors are again significant. In particular, it again appears that it is those sub-sectors upon which Sheffield's CIS has focused, including film production, radio and TV, advertising, and authors and composers that have indeed become predominant within the CIQ. Given that there were very few cultural industries within the area before the introduction of the city's cultural policy in 1988, I therefore propose that Sheffield's area-based cultural industry policy has been successful in creating a small aggregation of firms based around certain core cultural sub-sectors.

Sheffield City Council in 1994/1995 undertook a further cultural business audit of all the cultural jobs existing within the area known as the CIQ. This audit, using very different classifications to the SIC's, showed that a number of cultural jobs existed within the area. In total, of the 109 cultural businesses identified within the CIQ, only 83 (76%) took part in the survey. Once again by assuming that the average number of employees per firm remains consistent for those companies not surveyed, an overall employment figure for the CIQ can be gauged. In 1994, therefore, it can be calculated that there were 1,011 forms of cultural employment within the CIQ (469 full-time, 542 part-time) (see table 5.1.5).

This survey, not constrained to traditional industrial classifications therefore identifies a considerable aggregation of cultural industries within the CIQ, which compares favourably to the data gained from the CoE. The reason for this is that this survey includes a number of

forms of employment that are undeniably connected to cultural activities and crucial to the operation of the CIQ, but which would not be regarded as such in traditional SIC's. To take a few examples, the business audit referred to earlier designates 'AIVAF Design' as a firm whose SIC reads, 'Builders, carpentry and joinery' (SIC 4630). The Cultural Business Audit, meanwhile, labels the same firm as a cultural industry, because it develops and manufactures exhibition stands for museums. 'Loudmouth' manufacture creative postcards, but are contained in the overall business audit under the category of stationery (SIC 4723) rather than that of art and design. Total Sound Solutions install state of the art sound and vision equipment, but come under the heading of 'Installation of fixtures and fittings' (SIC 5030). Finally, DJ Associates are consultants in the application of network technology and the multi-media, but are included under the heading of 'Business services not elsewhere specified' (SIC 8395).

Table 5.1.5 Cultural Business Audit: Listing the Important Sub-Sectors in the CIQ

Sector	No of Businesses	Full-Time	Part-Time	Total No. of Jobs	%
Film and video	13	66	156	222	28.8
Music	13	42	72	114	14.8
Architects	3	58	8	66	8.6
Designers	9	39	22	61	7.9
Printing / publishing	5	29	26	55	7.1
Building / facilities Management	5	21	30	51	6.6
Training	5	39	12	51	6.6
Business services	8	31	9	40	5.2
Radio / theatre	5	7	26	33	4.3
Photography	3	9	22	31	4.0
Crafts	11	10	15	25	3.2
Restaurants	3	6	15	21	2.7
Total	83	357	413	770	100.0

Overall, I suggest that although exact figures are very difficult to certify, Sheffield has developed some form of aggregation in those sub-sectors of the CIS which it has most vigorously promoted, and that employment in these sub-sectors is primarily concentrated in the area defined as the Cultural Industries Quarter.

Summary

- Employment levels in Sheffield's CIS have decreased between 1984 and 1991 and compare unfavourably with national figures of employment in the CIS and against overall employment changes within Sheffield between 1981 and 1991.
- These statements can, however, be offset by certain caveats. Certain sub-sectors within Sheffield's CIS have at least sustained their employment levels between 1984 and 1991 and these tend to be those most forcefully encouraged by Sheffield's cultural industry policy.
- Moreover, CoE data and local business surveys indicate that the majority of Sheffield's cultural employment in these sub-sectors can be identified within the wards in which the CIQ is located and that some form of aggregation of cultural industries has developed in this location.

CHAPTER FIVE: RESEARCH ANALYSIS

B NETWORKING PATTERNS WITHIN THE CIQ

The preceding section, responding to the first research question, suggests that an aggregation of cultural industries has indeed developed in the area of Sheffield defined as the 'cultural industries quarter', and that this aggregation has been substantially based around the sub-sectors of film, music, design and software development. Having considered the locational dynamics of Sheffield's cultural industries, this section aims in response to the second research question, to analyse the organisational dynamics of businesses within the CIQ. It will determine whether a dense clustering of cultural products businesses are related through complex organisational networks and whether these networks offer the basis for the enhanced competitiveness of Sheffield's CIS. I suggest that Sheffield's cultural industries do not just represent an inert locational congregation of cultural producers, but that they are also characterised by a series of collective patterns within which the fortunes of all individual firms are intrinsically linked.

As I suggested in the literature review, these networking relationships take many forms and numerous taxonomies have attempted to define the multitude of theoretically prescribed inter-firm relationships. The schema adopted here distinguishes between formal, informal and institutional networks. If these networks exist simultaneously it can be suggested that an industrial clustering is characterised by a dense collective order which can potentially provide the essential foundations for enhancing local economic competitiveness.

As stated in the research methodology, this analysis is based upon the results obtained from a questionnaire survey of businesses within the CIQ and from a series of more in-depth and less structured interviews. In total, questionnaire responses were received from 28 businesses. (see Appendices 2, 3 and 4 for information on the design, sampling and analysis of the questionnaires). This information is supplemented by more in-depth interviews with seven of these firms. It should also be noted that two businesses did not respond to the questionnaire on the basis that they did not have connections with any other firms within the CIQ, a significant finding in itself. The chapter is divided into three major discussions:

1. An appraisal of the principal characteristics of those firms responding to the questionnaire. This reveals that the questionnaire respondents represent those businesses theoretically identified as having the potential to engage in inter-firm

networking and which have been encouraged by Sheffield's endogenous growth strategy.

2. An analysis of the broad range of inter-firm networks that these businesses are engaged in and the purposes for which these networks occur. The potential that these networking arrangements have for enhancing local economic competitiveness and innovation will also be considered.
3. An analysis of how these networks are reinforced by an enabling institutional environment. I consider both how firms utilise the broad range of collective support mechanisms that are available and how these various support organisations network with one another.

I. ANALYSING THE CHARACTERISTICS OF THE QUESTIONNAIRE SAMPLE: DEVELOPING THE POTENTIAL FOR NETWORKING RELATIONSHIPS.

This introductory analysis describes the characteristics of the questionnaire sample. It proves that, taken collectively, the companies questioned are representative both of the firms encouraged into the CIQ by Sheffield's cultural industry policy and of those companies theoretically assumed to engage in innovative inter-firm networks.

Six key points will be made about the questionnaire respondents;

- (i) They can typically be labelled as SME's. As identified in the literature review these firms are considered adaptable to new technological innovations, responsive to changing consumer demands and able to encourage endogenous economic growth.
- (ii) They are generally engaged in a range of cultural sub-sectors labelled the 'post-electronic' cultural industries, including the film, audio-visual, graphic design and computer based industries. These sub-sectors correspond to those actively promoted by Sheffield's cultural industry policy.
- (iii) They have generally only been located in the CIQ since the inception of Sheffield's cultural industry policy.
- (iv) Many of these businesses have located in the CIQ to benefit from the advantages stemming from a close geographical proximity to other cultural activities.
- (v) A number of these firms are locally based, but operate on an international scale and export globally. Therefore, their location in close proximity to similar firms is allied to an involvement in national and global communications patterns.
- (vi) In response to one particular survey question, it emerges that the majority of these businesses can be described as innovative.

(i) Firm Size

The average number of full-time employees among the 28 respondent businesses is just 7.1. It is clear, therefore, that this analysis investigates the organisational dynamics of a group of micro to small-sized enterprises. This figure appears reasonably consistent with other surveys of the CIS. The Cultural Business Audit (1994/95), for example, which additionally takes into account part-time labour, reports an average firm size in the CIQ of 9.5. To cite another example, Scott's (1997) analysis of California's multimedia industry, adopting a median average to negate the influence of several multinational conglomerates, reports an average firm size of 9.0.

The exact nature of this workforce fluctuates with demand. A number of questionnaire respondents indicated that their core workforce is supplemented by a significant number of part-time and freelance workers. The CIQ Business Audit, confirms this finding, indicating that there are 1.15 part-time employees for every 1 full-time person employed. Matthew Conduit, a member of the Cultural Business Network concurred, stating that *'a lot of the companies in the Workstation have only a small handful of employees, but most of them rely on the services of a much larger number of freelances and consultants'*. Scott's analysis similarly suggests that *'...a common employment strategy is to maintain a small cadre of full-time workers and periodically supplement this with changing complements of part-time and freelance workers as the need for labour rises and falls'* (1996, p150).

(ii) Cultural sub-sectors

In order to categorise the business activities of questionnaire respondents, firms were classified according to the schema illustrated in table 5.2.1. Despite the diversity of the activities listed each of these categories can be included within the wider definition of Sheffield's inter-connected post-electronic CIS. The most numerically significant of these cultural sub-sectors will be analysed more specifically later in this analysis in order to determine whether networking links are more prevalent among specific cultural sub-sectors than between them.

Using this same classification, column b of figure 5.2.1 offers an analysis of all the 70 companies initially selected for interview. It suggests that the questionnaire respondents and the potential questionnaire sample represent broadly comparable groups.

Table 5.2.1: The cultural sub-sectors of questionnaire respondents.

Product type	Column A	Column B	Column C
	Number of respondents in this sub-sector	% of respondents in this sub-sector	% of overall sample in this sub-sector
Computer industry	2	7.1	11.0
Arts and performance	0	0.0	5.6
Marketing and consultancy	3	10.7	12.6
Business support and training	2	7.1	8.4
Graphics and Print media	5	17.9	15.6
Software/systems design And new media	5	17.9	10.0
Audio/music production	4	14.3	15.6
Motion picture/television/video production	5	17.9	15.6
Miscellaneous+	2	7.1	5.6
TOTAL	28	100.0	100.0

(iii) Period of time located in the CIQ

The average period that each respondent firm has been located within the CIQ is just 5.5 years. In fact none of the businesses surveyed were located in the CIQ before the designation of the area as a cultural zone in 1988. This again confirms that the businesses surveyed are typical of the firms that have been promoted by Sheffield's cultural industry policy.

Furthermore, the average age of each of these businesses is just 10.2 years. From this conclusion I tentatively suggest that we are considering a relatively immature business sector, within which only a few of the pioneering companies in their field have become truly established.

(iv) Reasons for locating in the CIQ

Companies were asked to indicate the importance, on a scale of 1-5, of each of 12 factors that may have influenced their decision to locate in the CIQ. Their responses are indicted in table 5.2.2.

Table 5.2.2 Factors Affecting Firms Choice of Location in the CIQ

Potential reason for locating in CIQ	Average figure of importance	% of respondents stating this factor was very important	% of respondents stating this factor was very unimportant
Provision of Workspace	4.0	73.1	11.5
Proximity to City Centre	3.4	42.3	7.7
Good Communication Routes and Access to the Area	3.2	57.7	19.2
Perceived Image of Area	3.2	50.0	23.1
Proximity to Similar Businesses	2.7	38.5	31.5
Support of Local Agencies	2.5	27.0	42.3
Financial Incentives	2.4	30.8	53.8
Education/Training Facilities	2.1	19.2	50
Proximity of a Local Market	1.9	15.4	61.5
Availability of Skilled labour	1.7	11.5	61.5
Price of land	1.7	15.4	73.1
Other	1.5	11.5	88.5

A number of these locational factors relate to the presence of associated industries. The most obvious factor here is that explicitly referring to the **closeness of similar businesses**. It is interesting to note that this was cited as only the fourth most important factor of those listed, with only 38.5% of firms stating that this factor was quite or very important in their location decision. However, it should not go unnoticed that a further 38.5% of respondents considered this factor to be very important in their choice of location. As one respondent declared, the CIQ can be defined as *'a kind of network of like-minded people who can assist and help each other in media related work'*.

Furthermore, the **image of the area** as a site of cultural consumption and production is also a potentially significant location factor. Firms see the benefits that stem from locating in an area specifically designed as a Cultural Industries Quarter. Without the presence of many similar cultural activities, such an image could not have been created. In addition to these factors, the **provision of suitable workspace** within the CIQ is another factor affecting location decisions, heavily tied to the presence of many similar cultural businesses. The City Council has developed a range of workspaces that offer common services to groups of cultural businesses. In turn the closeness of contact created by such working conditions provides, as another

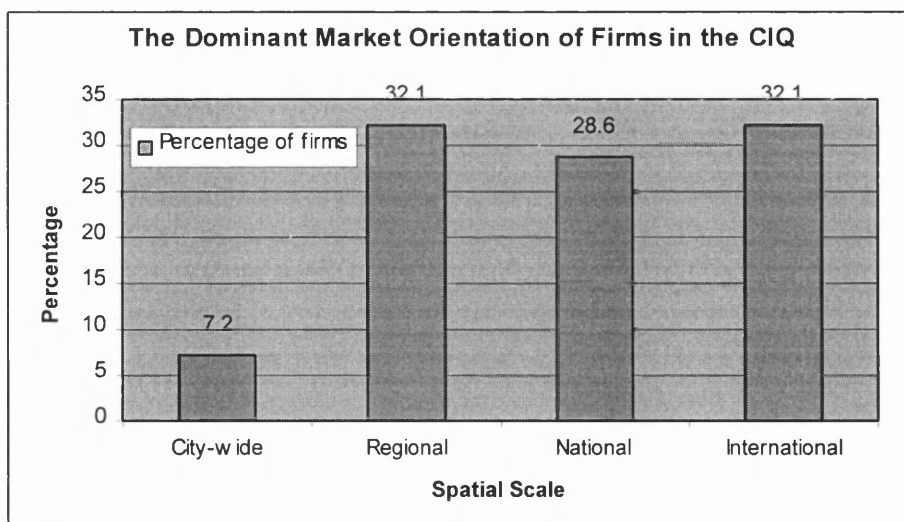
respondent put it, '*...the opportunity for inter-trading, and feeder businesses, which collectively give strength*'. The planning implications of this location factor should not go unnoticed.

Between them, as the table 5.2.2 illustrates, these factors represent three of the five most important reasons that businesses cited for locating in the CIQ.

(v) The Geographical Orientation of Business Activities of Firms within the CIQ

Despite their assumed desire to locate within close geographical proximity to associated businesses, all but two of the firms surveyed described their business operations as occurring on a geographical scale wider than that of the city level. This is interesting given that most of these firms have been locally conceived, employ local staff, and with two exceptions are local, independent enterprises. Figure 5.2.1 shows that despite their local base, 57.7% of firms indicate that their geographical focus is orientated to at least a national level. Meanwhile 30.8% of firms operate at an international scale and thereby potentially export nationally. One firm, for example, cited the most important reason for locating in the CIQ as the '*proximity to national through routes and therefore our accessibility to national and international visiting clients*'. It therefore appears that the desire expressed in the CIQ Strategic Vision to establish 50 export-orientated companies before 2007 is achievable.

Figure 5.2.1: The Dominant Market Orientation of Firms in the CIQ



The overall conclusion to be made here is that if the networking hypothesis is proved correct, Sheffield's cultural industries are deeply embedded in a mesh of both global and local relationships.

(vi) Innovative Businesses

Within the questionnaire a specific question asked firms whether they believed that they had produced an innovative product within the past two years. It is among the more innovative firms, I have proposed, that networking provides a means of enhancing the overall competitiveness of the CIQ. Overall, 74.1 % of respondents indicated that they had produced an innovative product in the past two years. It also appears that the majority of employees in the respondent businesses are engaged in creative and technical skills (38.4 percent and 25.4 percent of all employees within each business respectively). The remaining 36.2 percent of employees are classified as possessing business skills.

It will be interesting to note, as I shall consider later, whether there is a noticeable difference between the networking patterns of innovative and non-innovative firms.

Summary

The general trend emerging from these points suggests that the questionnaire sample consists of relatively small and newly formed firms, within innovative sub-groups of the CIS and which have a geographical focus that extends beyond the immediate locality. I thereby suggest that the questionnaire respondents are representative of those industries that have been promoted by Sheffield's cultural industry policy and which are assumed to provide the basis for the formation of a networked economy and to enhance local economic competitiveness.

Having identified these general characteristics, I turn to consider whether these businesses are, in reality, characterised by such networking relationships.

II EVIDENCE OF INTER-FIRM NETWORKING

The aim of this section is to determine the proportion of the questionnaire respondents that engage in networks with other businesses in the CIQ, the frequency with which this contact occurs, and the reasons why these networks have been promoted.

Overall, there appears to be a considerable amount of contact with other firms in the CIQ. 68% of firms stated that they enjoy formal links with other companies in the area. Moreover, the majority of those companies not directly associated with other firms are nevertheless bound to these firms by more intangible forms of alliance. In total, 88.0% of companies indicated an engagement in informal networks while only one of the questionnaire respondents indicated

that their firm had absolutely no contact with other firms in the CIQ. The average frequency of these contacts was monthly. More importantly, one third of all respondents suggested that their level of frequency was either weekly or daily.

(i) FORMAL NETWORKS

Having informed interviewees of my perception of formal networks (businesses engaging in contractual relationships with other firms), 68.0% of all questionnaire respondents claimed that they partake in formal inter-firm relations with other companies within the CIQ. I analyse these formal networks according to Cooke and Morgan's (1993) belief that the most significant forms of formal inter-firm networking are the development of subcontracting alliances and joint-ventures.

I divide this section into two parts:

1. An analysis of the types of formal contacts that can be witnessed **within the CIQ** and the primary reasons for which these contacts are made.
2. An assessment of the extent to which formal contacts within the CIQ are supplemented by inter-firm networks occurring **outside of the CIQ**. It may transpire that networking within the CIQ is no more important than networking with more geographically distant companies

1. Identifying Formal Networks within the CIQ

(a) Subcontracting

The ability to order smaller batches and repeat lines at very short notice, and the speed and reliability afforded in terms of delivery are advantages that can be accrued through long-run and co-operative subcontracting relationships with geographically proximate firms. There is in fact a great deal of evidence of subcontracting among the questionnaire respondents, with 89.5% of the questionnaire respondents citing examples of where they have subcontracted work to other companies within the area. The majority of retailers were generally open to small, local and independent firms who could provide them with specialist services. A full range of subcontracting arrangements have been identified including design work, the commissioning of new art work, photos, CD-Roms, exhibitions and training programmes. The Community Media Association, for example, state that they work closely with AMARC, have in the past worked with Lodestone Productions, and that they are currently utilising the services of EgG designs to produce 'positive transnational partnerships'. The Dream Factory

similarly state that they have undertaken commissions with EgG and Technimode and receive computer advice from DJ Associates.

These contracts, as illustrated in table 5.2.3, are formed with a variety of cultural sectors. The table illustrates that over half of the respondents have subcontracted out work to artists and illustrators within the CIQ. Many others employ local companies to perform software, marketing, audio-visual and cinematic services.

Table 5.2.3 Subcontracting Agreements in the CIQ

Work Subcontracted	Percentage of <u>all</u> companies subcontracting work
Artwork and illustration	66.7
Programming and software services	33.3
Sales and Marketing	19.0
Musical composition and performance	19.0
Cinematography/video	9.5
Other	19.0

To cite some examples, Blank Tape Studios talk about the production of their BOOGAchaLOOGA compact disc. Advice on its production was received from within the CIQ, its recording and sleeve design was similarly undertaken in the CIQ, its mastering took place elsewhere in Sheffield and its duplication occurred outside of the city. Forced Entertainment cite a similar example from the audio-visual sector, where a local agent was commissioned to write the music, Site Gallery was used for editing, and another local firm was deployed to produce the sleeve design. The final result was the production of a multimedia CD-Rom serving an International market. Perhaps the next stage in the development of the quarter would be to consider the potential for providing those activities that are currently undertaken outside of the area within the CIQ itself.

Three other features of these subcontracting patterns deserve mention. **Firstly**, these contracts tend to occur on a project by project basis and, as discussed later, are often formed through the informal alliances that are established when firms exist in close proximity to related businesses. **Secondly**, these subcontracting relationships reveal that there are interconnections both within and between the various cultural sub-sectors. Figure 5.2.2 reveals the interconnections between the various cultural sub-sectors, with the thickness of the lines

illustrating the relative strength of the contact. Companies were classified according to five categories. It transpired that five companies were each engaged in artwork and illustration, software design and services, audio-visual enterprises and the film and video sector. Four companies were engaged in sales and marketing. The four other companies, engaged in miscellaneous classifications, were ignored from the analysis. It emerged that there were significant two-way contacts between each of these sub-sectors. The thickness of the lines around each of the classificatory sectors reveals the strength of internal networking within them. For what appear the most significant of these sub-sectors (the film and audio-visual sectors), figure 5.2.3 identifies the nature of their internal subcontracting relationships.

Thirdly, it emerges that the predominant reason for interacting with other firms in the locality occurs at the supply level of firms. As one respondent claimed, their association with other firms in the CIQ represents *'a combination of supplier/customer contact relationships'*.

(b) Joint Ventures

Cooke and Morgan (1993) refer to joint ventures as a method for developing specialised products and services. Joint ventures represent perhaps the highest form of inter-firm collaboration because they require the deepest form of organisational interdependence. In total, only four questionnaire respondents indicated engaging in joint ventures with other firms in the CIQ, although one company claimed that joint ventures have been established with three other companies while another stated that *'outputs have been achieved through networking with related small businesses resulting in several joint ventures'*.

The limited evidence of joint venture associations would point towards the absence of truly innovation-orientated contractual relationships within the CIQ. However, this statement can be offset by two caveats. Firstly, one reason why so few joint ventures were identified may relate to the simple fact that companies were reluctant to divulge information on the nature of their more specialised inter-firm contacts. Secondly, Scott's (1996, 1998) analysis of California's multimedia industry similarly reveals the infrequency of joint ventures, stating that fifty percent of all companies had not participated in joint venture activities with other firms in the area, while over eighty percent of firms had only established one joint venture or less. Given that in Scott's (ibid) analysis that the majority of joint ventures comprised of links either to or from large media firms it is unsurprising that joint ventures were limited within the CIQ with its predominance of micro scale firms.

Figure 5.2.2 Subcontracting Relationships Between Cultural Sub-Sectors

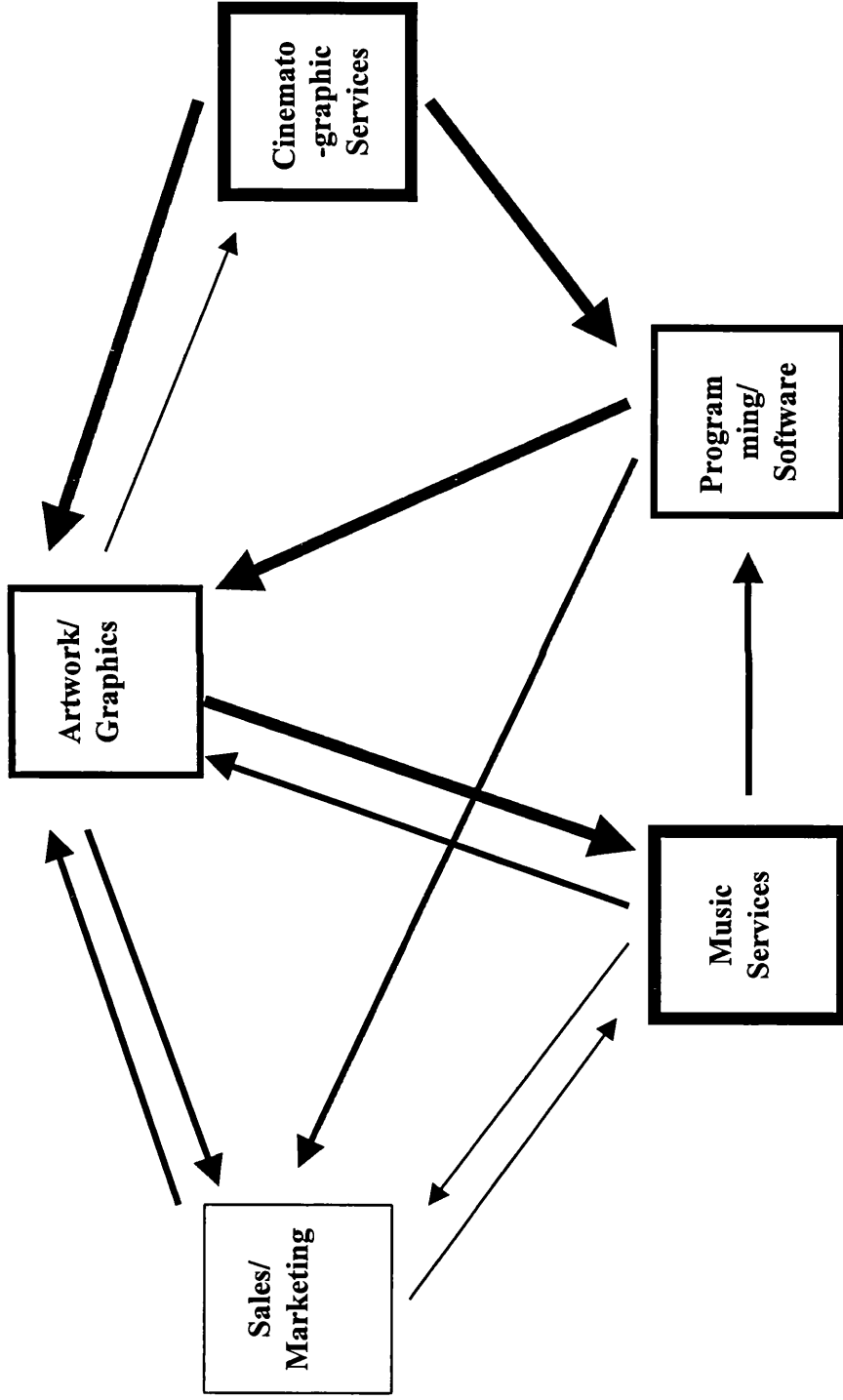
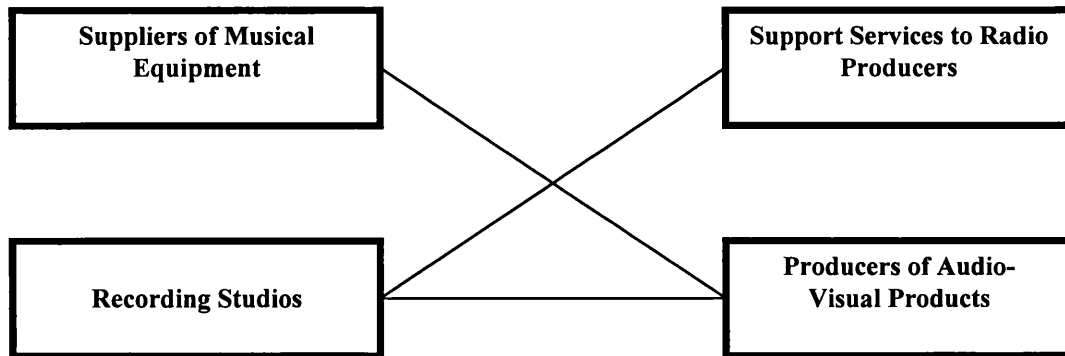
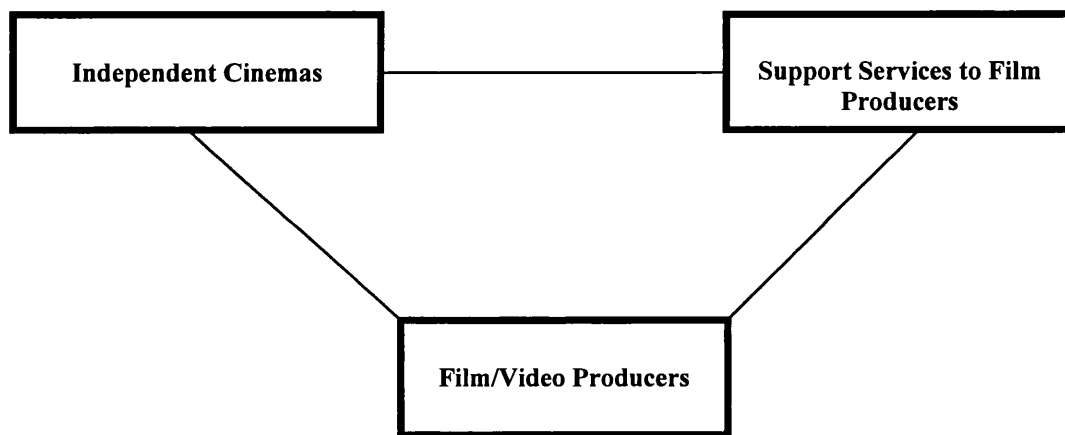


Figure 5.2.3 Subcontracting Relationships Within Cultural Sub-Sectors

The Audio-Visual Sector



The Film Industry



Evidence of networking to enhance product innovation.

Besides these subcontracting and joint venture relationships it is anticipated that in a networked system companies may operate formally with geographically proximate firms for a variety of other reasons. In order to determine the full range of reasons for which inter-firm contacts were made, the questionnaire asked businesses to state the primary reasons for contact with firms within the CIQ. This was achieved by adopting a taxonomy used by Huggins (1997) which suggests that networks can serve business, commercial and innovation purposes. Networks developed for business purposes seek to gain general business knowledge, including advice on training, financial assistance and research, those developed for

commercial purposes are concerned with purchasing, marketing, sales and distribution and those developed for innovation purposes seek assistance with product development and the transfer of technologies.

Table 5.2.4, in accordance with the analysis outlined thus far, suggests that the primary reason for contact with other firms related to traditional buyer and seller relationships. However, a number of other reasons for contact were expressed, including formal exchanges to encourage product development and to aid the transfer of technological skills, both of which are potentially very important in the production of new innovations.

Table 5.2.4 Reasons Expressed for Inter-Firm Contacts in the CIQ

Reason for Contact		% of all companies expressing contact with other firms in the CIQ for this reason
COMMERCIAL	Suppliers	25.0
	Customers	33.3
INNOVATION	Product Development	12.5
	Technology Transfer	16.7
BUSINESS	Financial Assistance	4.2
	Business Advice	12.5
	Training	4.2
	Research	12.5

While many of the firms in Sheffield's CIQ may be described as innovative, the majority of these firms, however, are currently not heavily characterised by networking arrangements that lead to product innovation. As innovation is considered the most important factor towards raising competitive advantage, this is a significant finding, and suggests that product innovations often occur on a more chaotic basis than proponents of the networking paradigm has allowed for.

In total, 73.1% of firms indicated that they had produced an innovative product within the past two years. Significantly, however, when asked for which purposes they networked, only 45.0% of all respondents believed that they had engaged in networks for the purposes of innovation (table 5.2.5). Therefore, firms either do not consider networking to be a significant factor in the innovation of their products or else they tend to network outside of the CIQ. In accounting for this, the interviews conducted for this research suggested that the majority of the formal inter-firm exchanges described above can be categorised as involving the subcontracting from innovative 'designers' to more functional 'jobbers' (Manshanden, 1998), rather than between these 'designers' themselves. Given their more specialised and innovative nature, inter-designer contacts are the most likely forms of networks to enhance product innovation, whereas contacts between designers and jobbers and between jobbers themselves are more likely to be undertaken for more routine commercial purposes. I shall return to the issue of how networks foster the developments of innovation in my conclusions.

Table 5.2.5 The Reasons Why Firms Seek to Develop Inter-Firm Networks

Purpose of Network	% of all firms networking for this purpose
Business	55.0
Commercial	80.0
Innovation	45.0

2. Formal Networks Outside of the CIQ

In determining whether formal contacts between firms within the CIQ are supplemented by networks with other firms from outside the area, companies were asked to state the frequency of their contact and the reasons for this contact with firms in a variety of spatial settings. In determining the frequency of contact, answers were coded according to the following classification:

0	No Contact	3	Monthly Contact
1	Once-Only Contact	4	Weekly Contact
2	Annual Contact	5	Daily Contact

Figure 5.2.4 and table 5.2.6 suggest that cultural firms associate with other firms not only in the CIQ, but also with business in the nearby Science Park, and with firms from outside of the area.

The level of contact with the adjacent Science Park is particularly interesting. Although the frequency of this contact was only between once a year and once a month, only 25.0% of all businesses indicated that they had no contact with businesses in the Science Park. Tentatively, therefore, I suggest that we could refer not just to a cultural industry quarter, but to a science and cultural industry quarter (SCIQ). These cultural-scientific contacts, as I have previously stated, are particularly significant given an increase in technological convergence and the emergence of a multimedia sector that straddles the divide between the cultural product industries and the high-technology sector.

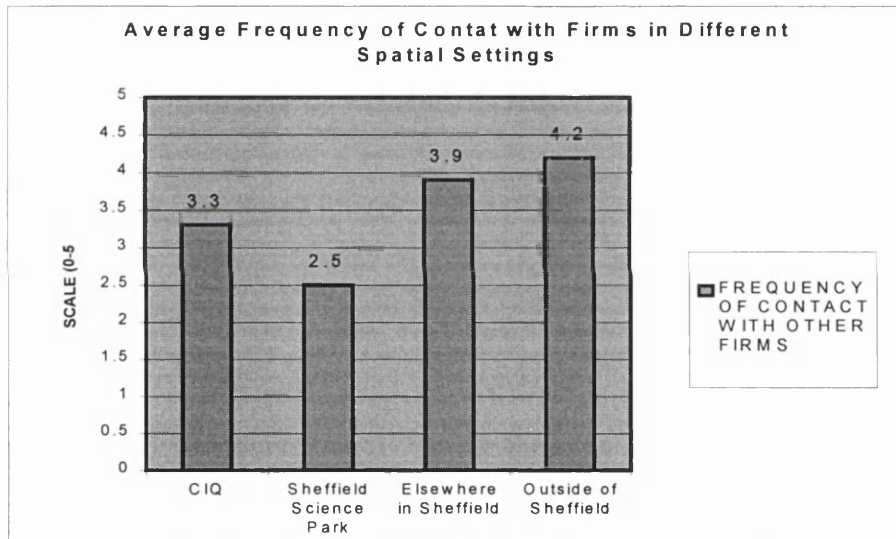


Figure 5.2.4; Average Frequency of Contact with Firms in Different Spatial Settings

Table 5.2.6 Firms Expressing of Contact with Other Firms in Different Spatial Settings

LOCATION OF OTHER BUSINESSES	% OF COMPANIES EXPRESSING CONTACT
CIQ	92.9
Sheffield Science Park	75.0
Sheffield (excluding CIQ and Science Park)	100.0
Outside of Sheffield	100.0

However, the frequency of contact with other firms escalates as one moves geographically away from the CIQ. This finding is confirmed by a survey of cultural, scientific and manufacturing firms within the area conducted by a local businessman, David Jennings. This survey, as shown in table 5.2.7 below, found that over half the organisations communicate at least weekly outside the UK and over 80% communicate weekly with national organisations.

Table 5.2.7 Percentage of firms indicating the presence of communication partners in different spatial settings

Spatial setting	Percentage of firms indicating communication partners within this spatial setting
CIQ	31.2
Science Park	18.7
Technology park	12.5
Sheffield (excluding areas above)	83.3
Yorkshire and Humberside	66.6
UK	81.2
Outside UK	47.9

Source: Jennings (1995)

Particularly revealing in my analysis, I propose, is that the reasons cited for engaging in business networks with less geographically proximate firms are not just related to buyer and supplier relationships. Table 5.2.8 demonstrates that not only do the firms in the CIQ have more customers and suppliers outside of Sheffield than within it, but that networks assisting product development and technology transfer are also more prevalent outside of Sheffield than within the city. Innovations in product and technology, it appears, arise through less geographically proximate business associations than proponents of the networking thesis have allowed for.

Table 5.2.8 The Percentage of Firms Indicating Different Reasons of Contact With Other Businesses

Reasons for Contact	CIQ	Sheffield Science Park	Sheffield	Outside of Sheffield
Suppliers	25.0	30.0	53.8	50.0
Customers	33.3	35.0	30.8	46.2
Product Development	12.5	0.0	11.5	15.4
Research	12.5	5.0	3.8	7.7
Technology Transfer	16.7	15.0	11.5	19.2
Financial Assistance	4.2	0.0	3.8	7.7
Business Advice	12.5	5.0	7.7	3.8
Training	4.2	0.0	11.5	11.5
Other	0.0	0.0	3.8	7.7

It can be concluded, therefore, that there are very definite signs of inter-firm relationships not only between businesses in the cultural sector itself, but also between the cultural and the technological sectors. However, within this broad trend there are significant variations according to the types of networking undertaken and the reasons for which this networking occurs.

COLLECTIVE ASSOCIATION

Another formal inter-firm networking structure, this time involving the participation of a large proportion of the businesses within a locality, can be referred to as a collective association. I wish to briefly draw reference to two of the most successful forms of collective association identified within the CIQ.

The first association arose when the arts-based management consultants, DJ Associates, established a collective form of networking assistance via an on-line data base package. The NEO Electronic Networking Project established a Forum that helped the CIQ, the NCPM and many other projects and businesses onto the Internet. The Wired Workplace scheme expanded the scope of NEO, creating a new not-for-profit company funded by the ERDF to manage and

develop on-line services to creative businesses across the CIQ and the Science and Technology Parks in the city.

Essentially the project aims to help businesses take advantage of new communications technology and to build better links with their clients and collaborators. This network enables any member organisation to exchange files and learn about each other's services. Of 110 recognised businesses within the CIQ, 80 have signed up as Wired Workplace customers (72.7%). This is a significant finding in itself, suggesting that businesses in the area are predisposed towards the advantages that networking may provide. It is proposed that these services will attract more innovative enterprises to Sheffield in growth sectors, will enhance opportunities to publicise the identity and services of businesses in these areas of the city, and will create opportunities to develop start-up or small businesses in the city.

This is based on the premise that science, technology, media and culture industries are strongly inter-connected. Although current reports indicate lower demand for communications between the cultural, scientific and technological quarters than within them, there may be a significant value, given the increasing convergence of these sectors, in developing a longer-term infrastructure that encourages better integration between them. As the outline report for the Wired Workplace Project states, *'Once drawn into a common networking infrastructure, the effectiveness of information sharing between organisations and sectors could soar... Thus co-ordinated electronic networking could prove to be a powerful agent for long term integration and growth in these sectors of Sheffield's economy'* (Jennings, 1995, p.14).

Moreover, with time, it may also be possible to encourage the common support partners serving all these industries to become accessible over the same electronic network. As a consequence, individual enterprises would become more aware of the potential support available to them, and the regularity of exchange between firms and these support mechanisms would be heightened.

A second formal network of cultural enterprises that may be labelled as a collective association is the Cultural Business Network (now reformed as part of the CIQDA). The CBN represented an association of the key cultural developers and organisers in the CIQ (including the Workstation, the Site Gallery, NCPM, Yorkshire Artspace and the Showroom). Although not providing direct support to individual businesses, the CBN met regularly to represent the interests of all enterprises within the CIQ and to champion the overall cause of the area. The

important thing about this network is that it provided a formal structure of firms, which could have been mobilised in times of crisis. When allied with the more contractual forms of interaction referred to earlier, these forms of collective association suggest that the CIQ is a formally networked district.

(ii) INFORMAL NETWORKS

'The immediacy and inherent indelicacy of all human existence means that the fine, fleeting yet essentially social moments of everyday life anchor and articulate the modern macro-economic order'

(Boden and Molotch, 1993, cited in Crewe, 1996, p265).

Informal networks are difficult to quantify and their scope and diversity is wide, but I believe that there is evidence that businesses within the CIQ are reinforced by a variety of informal, intangible associations. In fact personal contacts with like-minded individuals appear especially important in this sample, given that most of the respondents represent micro industries reliant upon ties with other firms to enhance their own growth potential. Personal contacts allow for a greater exchange of information and encourage the process of learning by using. Thrift (1994) refers to this as a '*compulsion to proximity*', while as one respondent summarised, these '*word of mouth networks form a thriving local grape-vine through which most firms know each other*'.

The general perception is that over the years informal associations between businesses within the CIQ have grown apace. Having defined informal networks within the questionnaire as the sharing of information and the alliance of businesses to meet collective goals, 88.0% of respondents stated that they engaged in such informal networks. These collective goals include the development of a co-operative atmosphere which enhances a sense of shared identity and which in turn is fundamental in helping to create the more formal and contractual relationships described above. One respondent indicated that '*Informal networking is more productive in a creative industry. Formality constrains progress*'. Furthermore, every one of the questionnaire respondents indicated that their relationship with other businesses within the CIQ was co-operative. Although co-operative arrangements cannot be equated to the development of informal networks, they do suggest that businesses generally feel some form of close affiliation with one another.

The close proximity to other businesses, especially through the provision of managed workspaces such as the Workstation, significantly enhances the possibility of forming informal alliances. Knowing individuals in associated businesses encourages experimentation without the risk of tendering having to be sought and over time fosters a sense of trust between local cultural producers. The general perception obtained from the questionnaire survey was that *'everyone knows everyone else in the CIQ'*. During my research for this thesis, I spent a working day in The Workstation utilising many of their common support facilities (photocopying services, shared reception, Workstation café etc). The impression that I gained was that even through using these facilities contacts between cultural producers are continually reinforced, reminding firms that there are many other specialist individuals within the area that can assist them in their own work.

The café culture is seen as a particularly important element in facilitating informal networking. A number of respondents stated that an appropriate number of cafes exist within the CIQ, with each tending to serve a different set of individuals. Therefore, as one respondent indicated, to network with particular people one may find oneself going to a particular café. What appears significant about this café culture is that it underlines how many of these informal links are based on friendships.

These cafés also host a number of informal evening events where local producers and designers can promote their products or services. A recent event witnessed local record and graphic producers combining their skills to stage an evening exhibition. Similar events, occurring in the Showroom café every other week are well attended, are open to the public and are seen as a good means of networking. Indeed one respondent, answering the question of how he would increase his networking with other companies, replied that this would be achieved *'when I have more time to hang around in the bars like I used to'*. Several other sites within the area also provide opportunities for local producers to exhibit their work and to attend the screening of other work.

Overall, these informal ties and associations have helped to create a strong collective sense of identity and ensure that businesses within the area do not feel threatened by competition from other locations. As one respondent remarked, *'There's a lot going on in Sheffield. Although you can't compare what's going on here with places like Soho, a real cultural community has slowly developed'*. One of the more significant consequences of this is that job vacancies are increasingly filled by word of mouth recommendations.

There is also evidence that these networks have often progressed through informal proposals into more formal inter-firm arrangements. The general perception expressed by firms within the CIQ is that *'Close proximity leads to co-operation and recommendations, and work arises from that'*. The typical form of informal association is revealed in the following quotation: *'We became friendly with [Company A] when they moved in across our unit. This has led to them producing numerous CD's for us.'* With time, and as trust is developed, these learning by using effects can lead to more formal inter-firm arrangements such as subcontracting and joint ventures. In fact, over 60.1% of questionnaire respondents stated that their informal associations with other firms had led to more formal or contractual associations.

However, in contrast to the evidence of inter-firm networking expressed above, one quarter of all businesses indicated that they were still largely unaware of how contacts with their neighbouring businesses could benefit their own firm. One respondent called for an increased *'awareness of more potential customers'*, another stated that *'links would be increased if I knew more about local firms and their skills'* and a further respondent declared that *'we need to hear more about individual company activities, successes and needs'*. Many companies, therefore, especially given the time constraints faced by micro companies, are often dependent upon external forces to enhance their networking opportunities with other firms and to extend these informal networks beyond infrequent chance encounters. This is the issue to which I turn in the next section of this analysis.

Summary of Inter-Firm Networks

- There is a clear perception that by being located within Sheffield's CIS the opportunities for forming alliances with other cultural firms are enhanced.
- Formal inter-firm contracts have been made with a number of other firms within the CIQ and Science Park.
- The majority of these contacts have been made with either suppliers or customers, rather than to promote product innovations.
- These contacts appear equally as prevalent with firms outside of Sheffield's CIS as with those firms within it.
- The presence of common support services and sites of consumption act as a valuable means of forming informal alliances with one another.

III INSTITUTIONAL NETWORKING

Underpinning these formal and informal networks is an enabling institutional environment that has encouraged the formation of various institutional support services. In this section I will consider whether firms have engaged in institutional networks, the frequency of contact that firms have had with these various organisations and the purposes that such contacts have served.

Frequency of contact with support institutions

Included in the questionnaire was a series of questions asking firms about the frequency of their contact and their reason for contact with various business support institutions and educational establishments. These institutions included the City Council, the local CoC, the TEC, Sheffield Business Link, Sheffield University and Sheffield Hallam University and a number of institutions expressly set up support the cultural industries. These organisations were each selected on the basis that they provide some form of assistance that is specific to the CIS and I do not therefore consider basic support services such as local bankers and accountants.

Given that a number of questionnaire respondents indicated that approximately two years ago there were very few business services available to the cultural industries, the variety of the institutional support mechanisms to have been established represents a remarkable achievement in itself. Table 5.2.9 shows the frequency of contact with various support organisations. The table shows that there is a great degree of divergence as to how frequently the various support mechanisms have been contacted. On average, firms utilise the listed institutional support structures on an annual level at best. However, if the services offered are effective, the average frequency of this contact is possibly less important than the overall number of firms that have utilised these support mechanisms. Indeed, more than 50% of companies have utilised each of the listed support organisations. In particular, the services offered by the city's Universities and by the TEC are the most frequently utilised, while the CIDU appears to have been used surprisingly infrequently.

Table 5.2.9; Level of Contact with Institutional Support Agencies

	% of companies expressing contact	Frequency of contact (1-5)
Universities	92.3	2.9
TEC	88.5	2.0
Sector based agencies	73.1	2.4
Chambers of Commerce	65.4	1.3
City Council	65.4	1.8
Business Link	61.5	1.6
CIDU	50.0	1.2
Other	19.2	0.7

Reasons for using support organisations

The reasons cited for these contacts are extremely diverse. Table 5.2.10, based on the number of contacts made to all of the listed institutions, indicates the main reasons. The most frequent reason for contact is for general business advice and assistance. Despite the institutional nature of these agencies, the next most frequent reason for contact is based on contractual supplier and customer arrangements. Somewhat surprisingly, given the innovative nature of these industries, few of these contacts are made for product development or for acquiring technological support and services. Figure 5.2.5 illustrates the reasons for which each of the various support organisations were contacted. While business advice represented one of the most important reasons of contact across the board, each institution tends to offer a number of more specialised services. For example, whereas the City Council is contacted for a broad range of miscellaneous reasons, the TEC is the main provider of financial assistance, the Universities specialise in research services and sector-based agencies are frequently contacted as customers.

Table 5.2.10: Reasons Expressed for Contacting Support Agencies

Reason for contacting support organisation	Percentage of all contacts made with support agency
General Business Advice	23.3
Customers of Products	14.0
Training Provision	13.4
Financial Support	10.4
Suppliers of Products	8.5
Research Assistance	8.5
Marketing and Sales Advice	4.3
Product Development	3.0
Technological Support and Services	2.4
Other	12.2
Total	100.0

(i) Sheffield Hallam University

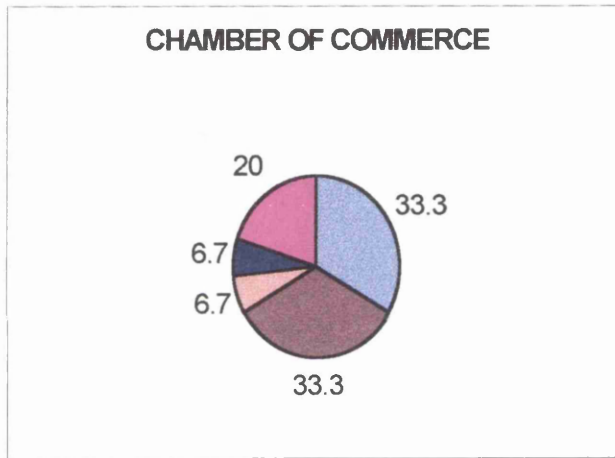
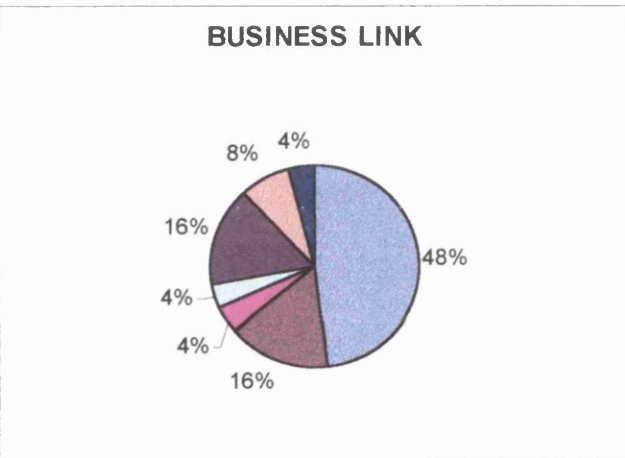
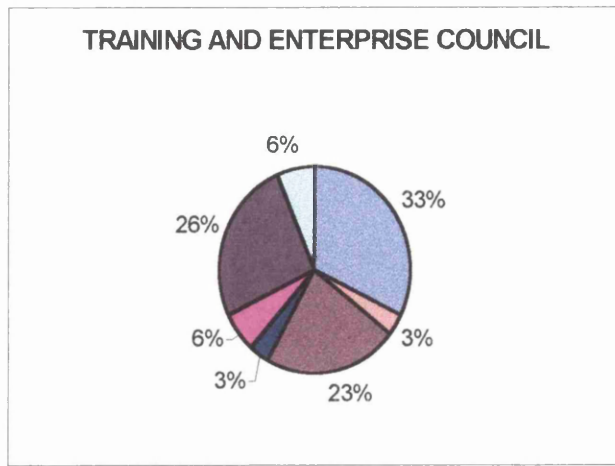
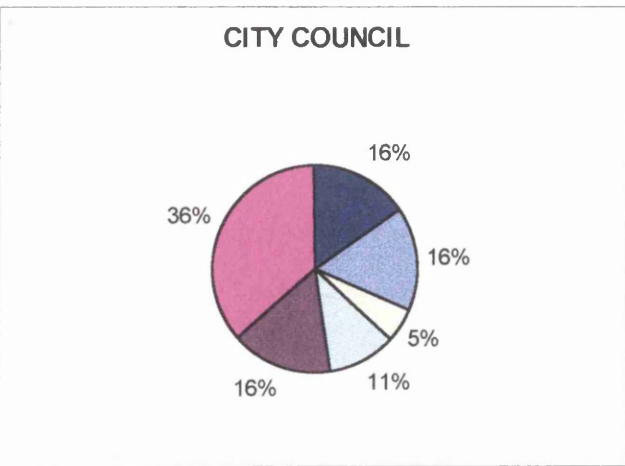
One of the most significant findings in table 5.2.10 is that firms have more contact, and on a more regular basis, with educational establishments than with other support organisations. The frequency of this contact tends, on average, to occur at approximately monthly intervals. Given their close geographical proximity most of these ties are between Sheffield's CIQ and Sheffield Hallam University.

Although a significant reason this for contact is based around formal and contractual customer-supplier relations there are a number of other reasons that reveal how businesses utilise the services offered by the Universities to enhance their own knowledge base. The regular training of new and existing employees, for example, is a significant reason of contact with Sheffield Hallam University offering short refresher or learning courses to local businesses. A further reason for liaising with these educational establishments is that businesses themselves form an integral part of the teaching process and take a lead part in the running of lecture courses.

(ii) Sheffield Training and Enterprise Council

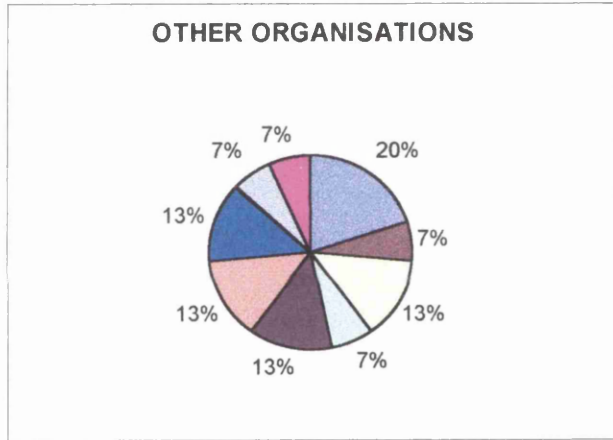
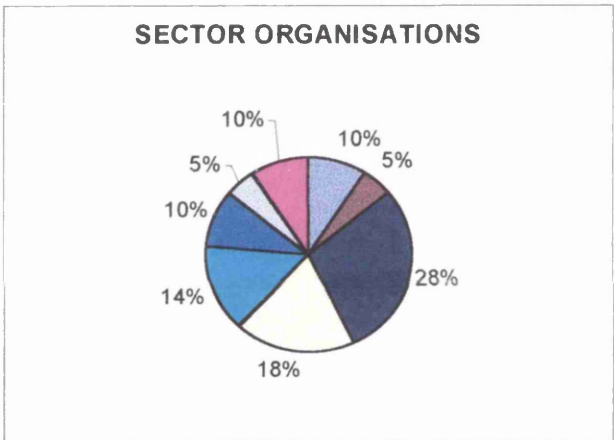
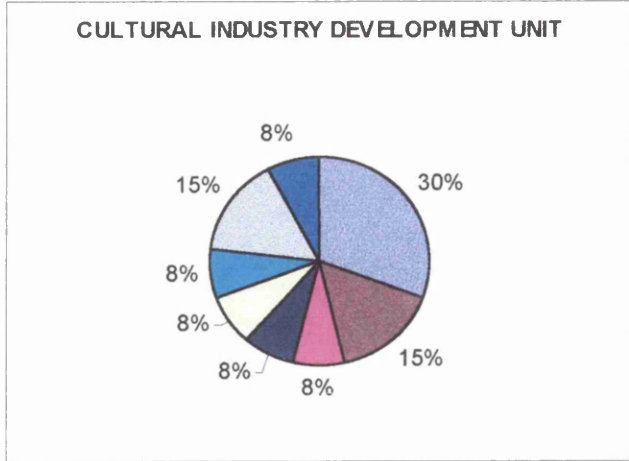
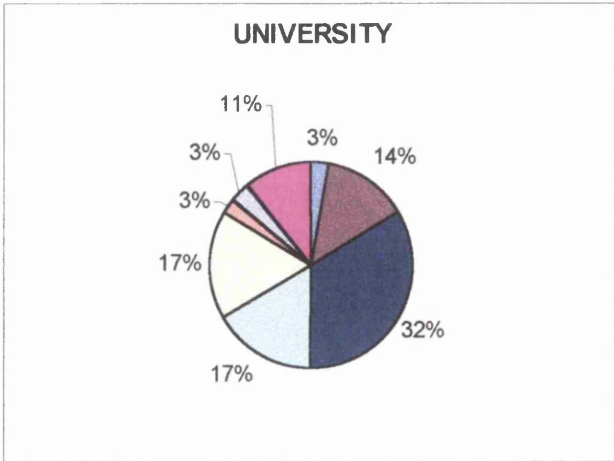
Training and Enterprise Council's were established by the Government in 1988 as area-based agencies to plan and deliver training and to promote and support the development of small businesses and self-employment. The Governmental document *TEC's: Towards 2000* (HM

Figure 5.2.5 Reasons for Contacting Individual Support Agencies



- General Business Advice
- Training Provision
- Suppliers of Products
- Research Assistance
- Financial Support
- Marketing and Sales Advice
- Product -Development
- Technological Support and Services
- Customers of Products
- Others

Figure 5.2.5 Reasons for Contacting Individual Support Agencies



Government 1994, p.10) describes the new role of TEC's to '*develop and implement local strategies for enhancing the competitiveness of people and businesses as central components of the overall vision for economic growth*'. Several respondents indicated that they believed that the TEC had tried the hardest to understand the cultural businesses and to provide support. This is reflected in the fact that over 85% of firms in the CIQ have at some stage used the services of the TEC. The TEC's, as figure 5.2.7 reveals, have been used mainly for the more traditional forms of business support, including general business advice, funding assistance and training provision.

(iii) Sheffield Business Link

Business Links were initiated between 1994 and 1996 to offer a co-ordinated 'one-stop-shop' of business support networks, including the services of the TEC, the local authority, the Chamber of Commerce and enterprise agencies. Over half of the companies in the CIQ have utilised their services, and this figure is probably only lower than that for the TEC because of its shorter history. Like the TEC, Business Links have been primarily contacted for business support, financial assistance and training provision.

(iv) Sheffield City Council

The annual budget for the development of the CIQ in 1998/99 is £124,000, covering three staffing posts, office overheads, training and conferences, revenue for strategy policy, new funding applications, new projects and programmes, monitoring and evaluation and feasibility studies. Analysing the questionnaire responses I suggest that Sheffield City Council may have placed too much emphasis on developing the overall concept of a cultural quarter, at the expense of providing links and support structures for those industries within it. Having formulated an overall strategic vision these tasks are generally left to other organisations to implement. As one respondent remarked, the Council's services are '*...so thin on the ground that (he!) is spread too thin.*'

Of the 65% of respondents indicating contact with the City Council the majority of these refer to one-off exchanges for a number of miscellaneous reasons.

(v) Sheffield Chamber of Commerce

The Chamber of Commerce represents a membership based and non-sector orientated association to promote local commercial interests. Although 65.4% of all respondents indicate

some form of contact with the Chamber of Commerce these contacts tend to occur in nearly all cases on an annual basis at most. These contacts, moreover, are rarely seen to provide traditional support services. As Hassink (cited in O'Dell, 1995) observes; *'The importance of the Chamber of Commerce in the technology transfer network has been decreasing. These organisations, which are not concentrated on a specific industry or field, find it increasingly difficult to help firms. This is because of the growing specialisation of the economy and the more complicated technical questions of the companies'*.

(vi) Sector based agencies

These support mechanisms can be divided between those agencies that represent the overall cultural sector and those that serve more specific sub-sectors within this.

(a) Organisations based around specific sub-sectors of the CIS

Numerous forms of specific sector based services are provided to firms within the CIQ. In the media sector support is offered by various organisations including Forge FM and Community Radio Association (radio), Sheffield Independent Film and Television (video production), Red Tape Studios (music production), Site Gallery (photography and electronic media and arts) and Sheffield Hallam's Northern Media School (film, video and journalism).

It appears that the majority of the firms (73.1%) network with at least one of these various organisations. However, because of the variety of each of these sub-sector support agencies and their differing goals, it is difficult to draw any more generalised conclusions from the data available.

(b) Organisations based around the entire cultural industries sector.

Certain support agencies have also tried to provide assistance to the entire cultural sector. It is interesting to note how these sector-based organisations have often been formed. There is evidence that a number of the support organisations discussed thus far, besides offering their own specialised services, sometimes network with other organisations to offer further kinds of sectoral assistance (Huggins, 1997).

These networks do much to explain the emergence of the Cultural Industries Development Unit (CIDU). Periodic meetings took place between Sheffield Business Link, Sheffield TEC, the Careers Service and other relevant organisations to consider which cultural businesses

were being helped through traditional support mechanisms and to determine which needs hadn't been met. It was concluded that specifically related support services were needed to sustain the CIS. The CIDU was subsequently established in October 1996 as a one year pilot project that included the TEC, Business Link, the City Council and the Cultural Business Network. The funding for the CIDU was made up of contributions from the ERDF (40%), the TEC (40%) and the cultural SME's themselves (20%). The Unit, utilising the services of individuals already in the CIQ, aimed to promote training and ran various courses in finance and marketing. When the pilot period expired, funding was not continued, although there have been efforts since this time to resurrect the CIDU and to build a new agency.

The CIDU aimed to represent the full and bewildering array of cultural producers within Sheffield's CIS. These cultural organisations include companies limited by shares and by guarantee, trusts (with or without charitable status), publicly accountable bodies, community or voluntary sector groups, formal partnerships and informal coalitions and partnerships. Support is to be accessible for each of type of cultural organisation at each stage of the lifecycle of a cultural project. The first stage is the pre-project, talent pool stage where creative and entrepreneurial players come together around a perceived market opportunity or technical development. The subsequent stages of the cultural industry lifecycle, at which specific support is offered, are project development, project delivery, repeating the project through the establishment of new businesses, assisting established small businesses, identifying growth businesses and assisting established medium and large companies. There was no set formula to the services offered, which varied according to the specific interests of each particular business. Each participant organisation was, however, provided with 20 hours of set training.

Moreover, as Yvonne O'Donovan (charged with translating the ideals of the CIDU into the new ACT programme) stressed, these services are not restricted solely to businesses within the CIQ. *'Our view is that the Unit's explicit mission should be to service companies beyond the CIQ, and that it has an important role to play in countering the perception that Sheffield's cultural economy consists solely of the Workstation or the Cultural Industries Quarter'* (O'Donovan and Evans, 1997, p.10). Thus although Sheffield's CIS is currently largely located within the CIQ, this is not to assume that this spatial boundary is fixed. The outer limit for the Unit's activities is stressed as the City of Sheffield. This boundary is not extended to a regional scale, because of stiff urban competition for cultural and business development resources within the sub-region.

The Policy Studies Institute conducted a report on the pilot year of the CIDU. The report stresses the project's successes as:

- The number of clients assisted (over 300)
- The generally high level of satisfaction, particularly with smaller clients
- The diversity and breadth of the client groups
- The seminars, workshops and training days that made individuals and organisations feel part of a greater whole, leading to informal networks, deals and joint projects.
- The personal development of individuals benefiting from being treated as serious businesses
- The facilitating of access to funding and publicity

It concludes that, *'During this project, CIDU has undoubtedly evolved to become an asset in the local economy. It has succeeded in developing a customised business support service in the areas of marketing and finance for organisations operating in cultural industries in Sheffield' (D.Devings, pvi).*

Conversely, the main shortcomings of the project were identified as:

- The failure to deliver to large clients who expressed clear training needs, which were not delivered
- The lack of planning and strategic development, with no long-term structure or systems put in place to ensure continuity of service to the unit's clients
- The failure to bid successfully for future funding, particularly SRB for 1998
- The lack of clear focus on what was being delivered to who and feedback mechanisms for creating a learning unit.

Many of these weaknesses were ascribed to the limited temporal remit of the Unit. *'The speed with which the pilot year was expected to produce quantifiable performance indicators led to a focus on immediate operational issues and a lack of long-term strategic planning and development for the unit's future' (O'Donovan and Evans) 1998, p3).* As a consequence, many of those people expecting to receive support have been left with their expectations unmet as they were given no indication of the short-term nature of this programme. Instead of producing quantifiable results, more diffuse, non-quantifiable actions to create a competitive capacity have been more significant in the long run.

My own analysis confirms that only 50% of businesses had utilised the services offered by the CIDU and the frequency of this contact could be described as sporadic at best. Two separate

reasons may account for this. The first relates to the limited amount of time that the Unit was in existence. The second relates to the specific services offered by the Unit, which many companies believed could have been better targeted. This opinion reflects more generally the perception that businesses had towards the support services in the CIQ and explains why these networks have not been developed as much as would be desired in a truly networked agglomeration.

Summary of Institutional Networking

Positive Findings

- There are a variety of different support organisations offering many forms of assistance to cultural industries in the CIQ.
- The majority of firms in the CIQ have used the services of at least a few of these organisations.
- When combined with the inter-firm networks described before, the impression gained is that the CIQ represents a truly networked agglomeration. Figure 5.2.6 based on a diagram produced by Bennett and Krebs (1994) shows the links that exist between businesses in the CIQ with each of the major organisations identified. The thickness of the lines corresponds to the perceived strength of these various contacts, while the further each organisation is placed on the diagram away from the central hub represents its geographical distance from the CIQ. The indications are that firms in the CIQ have strong links with other firms in all spatial settings and that many of the other strongest links occur with organisations located in close proximity to the CIQ and which therefore offer more specific services to the cultural sector.
- The CIQ is characterised by a complex set of inter-institutional networks. Consequently the CIQ represents a more integrated system than that outlined in figure 5.2.6. Figure 5.2.7 outlines how business-institution relationships are in fact supplemented by complex networking relationships among these institutions themselves. This diagram does not claim, however, to have identified all of these organisations, nor to have identified all of the interconnections. Given my focus towards the CIS, many of the strongest identified links occur between various sector and sub-sector based agencies and the other support organisations. The thickness of lines again indicates the strength of the identified links, with dotted lines indicating where a contact was identified but whose strength could not be calculated.

Figure 5.2.6 The Networking Patterns of Firms within the Cultural Industry Quarter with Other Organisations

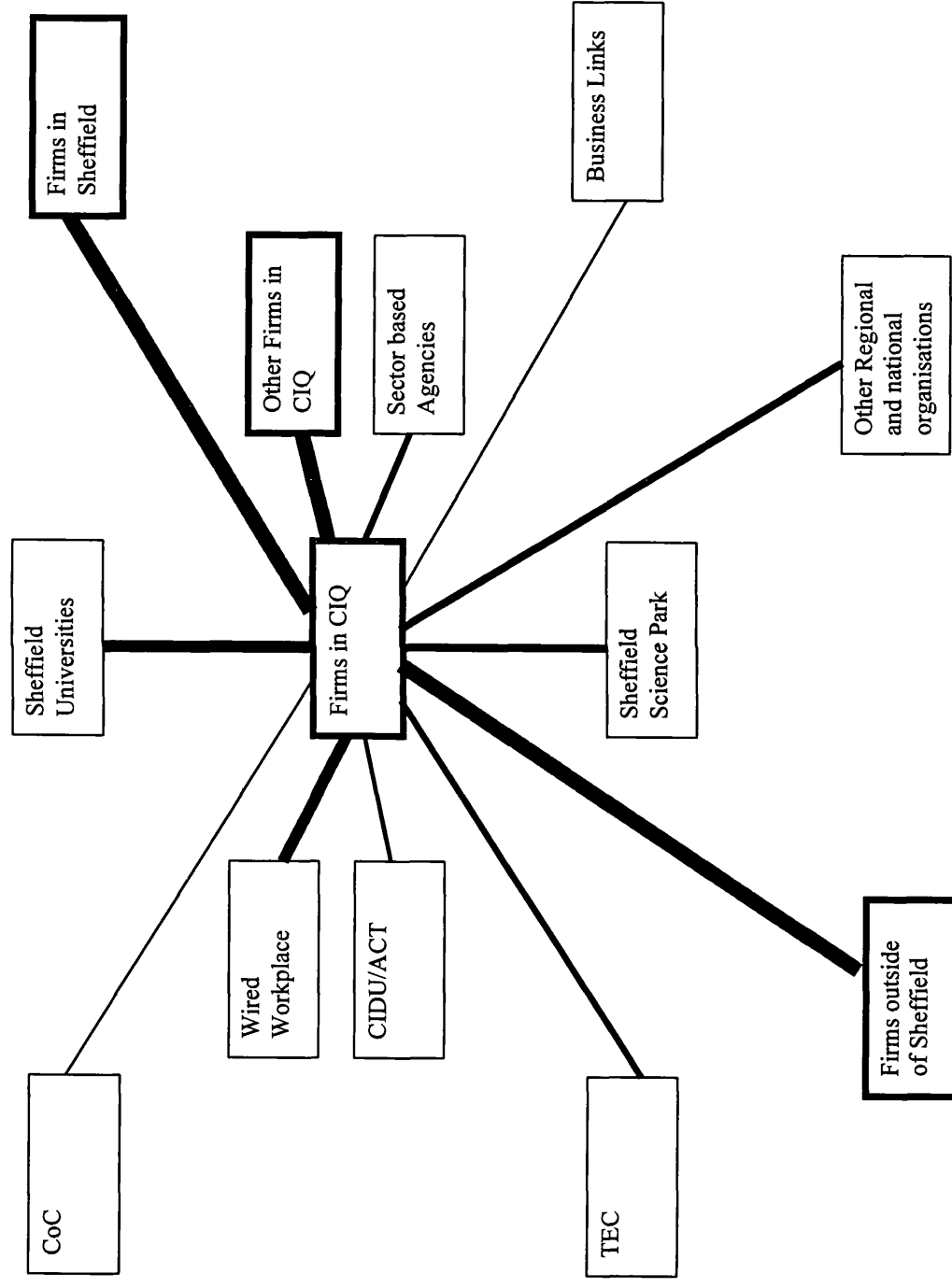
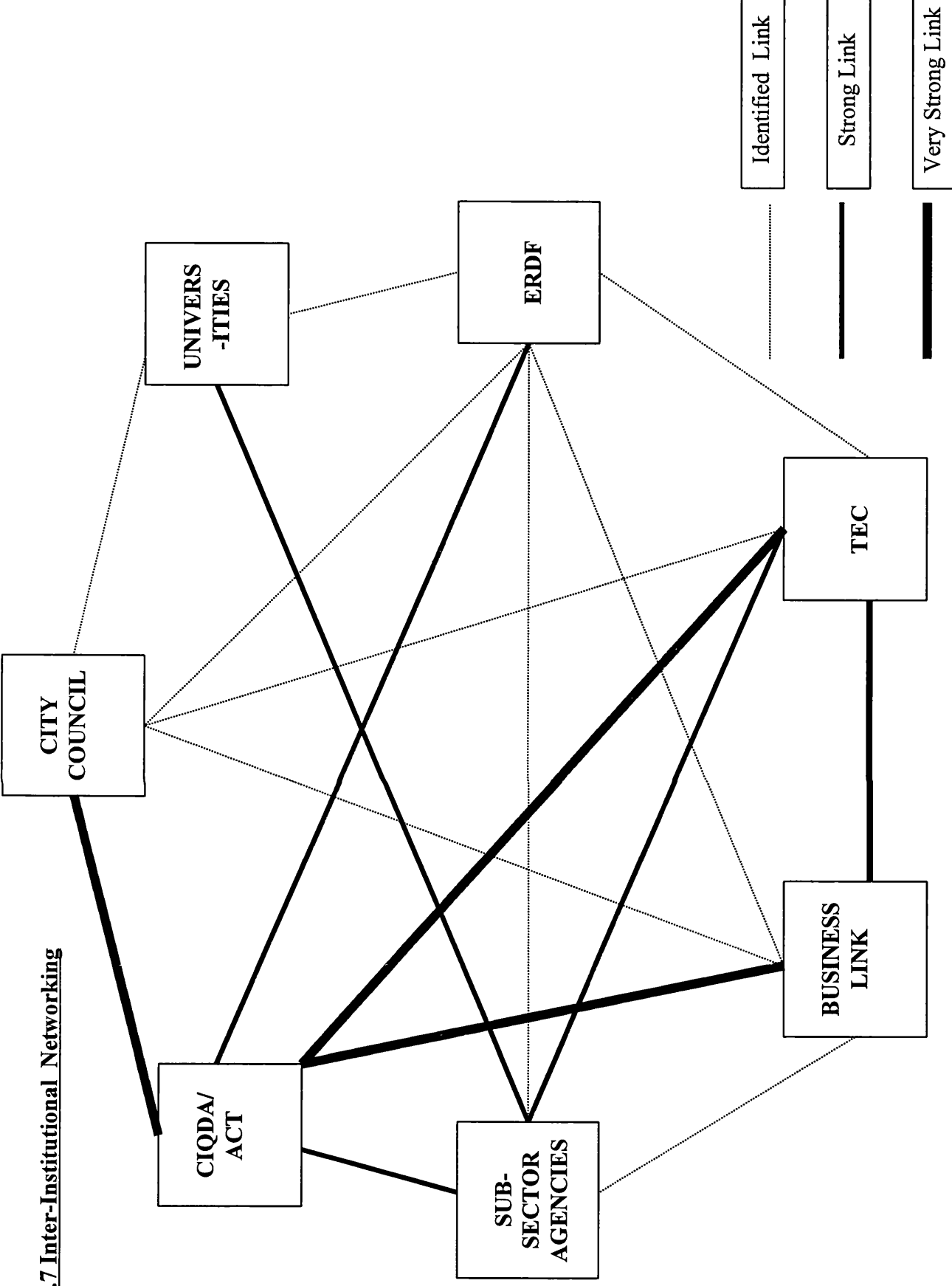


Figure 5.2.7 Inter-Institutional Networking



When combined, these advantages have helped to create a favourable business climate. Sheffield, for example, largely as a consequence of the heightened awareness generated through business support organisations, obtains the greatest concentration of grants for small businesses in the CIS of any area outside of London. Moreover survival rates within the CIQ are generally believed to be in the region of 90% (Betterton and Blanchard, 1992).

Negative Findings

- Although most firms are in contact with a number of support organisations, their association with these agencies can perhaps best be described as sporadic.
- When asked to give a score out of five for their level of satisfaction with the quality of the support services on offer in the area, the average figure gained from the questionnaire respondents was 2.6. This figure lies somewhere between the categories of average and poor. The overall perception was that people in the CIQ feel that the advice they receive is still not of an adequate quality and that the support institutions '*still don't understand us*'. One respondent suggested that a recent meeting of businesses within the CIQ indicated that it was unclear whether the business training and advice that was available to them was of any use.
- The institutional support mechanisms are not targeted strongly enough towards individual needs. They therefore provide only basic support services rather than assisting the production of more specialised and innovative products and processes. As the quotes below illustrate, it is suggested that a limited amount of targeted support would be more profitable than a mass of generalised assistance.

'If there was more emphasis on the quality rather than the quantity of support this would be a start. We need more focused specialist support'.

'Despite the plethora of organisations pervading the CIQ, there remains an absence of adequate understanding of the nature of R&D of film and television projects on a practical and financial level. People with real know-how need to be engaged to assess the more necessary expenditures. There is a reluctance to back companies and people except in very conservative, obvious ways. Perhaps the institutional mentality is at fault. It must be remembered that this is an entrepreneurial sector'.

Another firm stated that institutional support would be more valuable if it '*actively promoted our business on our terms, not using us to promote their own interest. I'm not*

interested greatly in institutional support for its own sake and ninety percent of it here seems to fall into this category'.

Chapter Summary

The overall conclusions resulting from Chapter 5 suggest that,

1. The firms present in the CIQ are characteristic of the firms with the potential to engage in innovation-orientated inter-firm networks.
2. The wide-ranging variety of inter-firm networks has demonstrated that the individual firm is not an appropriate unit of analysis.
3. The presence of many institutional networks suggests that the cultural industry sector is heavily influenced by its social context.

CHAPTER SIX CONCLUSIONS AND RECOMMENDATIONS

'The SCIQ has over the last few years established a solid basis of activity with growing levels of interaction, co-operation, networking, exchange, and technological and other types of business transfer. The close proximity of these activities to each other has contributed to the survival and growth of these activities'.

Draft Action Plan (1997, p.37)

I SUMMARY OF FINDINGS

This investigation started from the proposition that territorially defined networks of SME's can provide the basis for enhanced local economic competitiveness. Having outlined the interconnected nature and economic importance of the CIS in **Chapter 1**, **Chapter 2** introduced the theoretical debates underpinning this proposition and **Chapter 3** outlined the explanatory hypotheses and research questions emanating from this literature review. The first hypothesis proposed that the clustering of firms in a given industrial sector does not represent a static grouping, because such clustering heightens the scale and efficiency of transactions and information exchange between cultural producers. The second hypothesis proposed that there is less networking at the higher, more specialised level of the system, because innovation is a peak activity and is too secretive or specialised to be the subject of networking arrangements. By contrast, it suggested that there is more networking at the lower level of the system, because general support networks create an essential capacity or potential for innovation.

To answer these hypotheses two broad research questions were proposed. These asked, firstly, whether an aggregation of cultural industries had developed in Sheffield and secondly, whether this aggregation was characterised by network relations. In this conclusion I wish to summarise the results gained in respect to these questions and to analyse how they address the overall research hypotheses.

Research Question One

In determining whether an aggregation of cultural industries had developed within Sheffield, **Chapter 4** analysed the evolution of policy-orientated strategies and their efforts to develop networks of firms in the CIS. It suggested that the policy climate in Sheffield was conducive to the formation of such an aggregation and that it was characterised by an enabling institutional environment committed to the redevelopment of the CIQ as a centre for culture-

related industries. This policy had helped to create 250,000 square foot of floorspace providing homes for 140 companies, creating 1,300 fte jobs and attracting visitor levels of over half a million.

The first half of **chapter five** estimated how the existence of such a favourable policy environment was reflected in employment figures and business growth rates. Overall, Sheffield's CIS declined at a more significant rate than the national figures for these industries between 1984 and 1991. Using different definitions of the CIS this represented a decline in Sheffield of -18.8% compared with a national employment decrease of -1.7% (Pratt, 1997), a decline of -22.7 against a national decline of -2.9 (O'Brien and Feist, 1996) and a decline of -10.6% set against a national increase of 7.5% (Cultural Trends, 1993). Furthermore, this decline was also more severe than Sheffield's overall employment decline between 1981 and 1991 (-12%), with changes in the CIS being broadly consistent with Sheffield's manufacturing decline between these years (-19%).

A sub-sector analysis suggested that despite these unfavourable findings there were in fact positive employment gains in the sectors of film, TV, radio and artistic creation, suggesting that that it is those sub-sectors upon which Sheffield's CIS has focused that have shown the most encouraging results. A spatial analysis, meanwhile, indicated that the majority of Sheffield's cultural employment (52.5%) could be identified in the wards to which Sheffield's cultural policy has been focused. Furthermore, using local business surveys to consider the CIQ more specifically the Cultural Business Audit calculated that in 1994 the CIQ provided employment for 1,011 people.

Although overall employment figures appear disappointing it was concluded that Sheffield has developed some form of aggregation in those sub-sectors of the CIS which it has most vigorously promoted, and that employment in these sub-sectors is primarily concentrated in the area defined as the CIQ. This appears particularly significant given the marked spatial distributions of activity within the CIS. According to Pratt (1997b), London and the South-East accounted for 24% and 21% respectively of Britain's cultural employment in 1991. This conclusion is confirmed by Feist and O'Brien (1996), who argue that the greatest proportion of those working in the CIS are located in London. The implications of this finding for peripheral localities are self-evident. Clearly the development of an aggregation of cultural industries within a peripheral location such as Sheffield represents a significant achievement.

Research Question Two

Hypothesis Number 1

In response to the second research question I conclude that the CIQ represents an aggregation of predominantly small cultural enterprises integrated into a networking community through a variety of formal and informal alliances and supported by an enabling institutional environment. This finding therefore contradicts much empirical work in the UK pointing to the absence of a supportive inter-firm culture (Huggins, 1997).

The characteristic features of the firms responding to my questionnaire rendered them representative of the industries encouraged by Sheffield's cultural industry policy and which were held to offer opportunities for enhancing endogenous economic growth. Firms tended to be relatively small and newly formed, operating within innovative and inter-connected sub-groups of the CIS and with a geographical focus often extending beyond the immediate locality. Expressed quantitatively the average firm size was 7.1 employees, 74.1% of companies indicated that they were innovative and 30.8% operated at the international scale.

In total, 69.6% of firms expressed an engagement in **formal** inter-firm networks. The main reason for such contacts were traditional supplier and customer associations, but other significant motives for contact included business advice, technological transfer and product development. These contacts could be identified both within and between the various cultural sub-sectors present within the CIQ. Moreover, it appeared that the growth of Sheffield's knowledge network is also progressing, with most cultural firms expressing contact with firms from the nearby Science Park. I concluded that it may therefore be accurate to refer to a Science and Cultural Industry Quarter.

However, formal networking appears to be equally significant outside of the SCIQ, occurring at an average frequency of weekly rather than monthly. Again the primary reason for these contacts were supplier-customer relationships, but it is interesting to note that product development and technology transfer practices were equally as prevalent outside of the SCIQ and Sheffield as within them.

87.0% of firms indicated an involvement in **informal** inter-firm networks. These networks were often encouraged by the close geographical proximity to similar businesses, leading to co-operation and to the formation of alliances through recommendations. In total, 60.1% of companies stated that such informal exchanges had led to more formal business arrangements.

However, many companies stressed that such contacts had not been made because of the time constraints facing micro businesses.

Complementing these inter-firm networks were a series of **institutional** networks, with over 50% of firms stating that they had had contact with all of the institutional organisations identified. In particular, 92.3% of firms expressed contact with local Universities, 88.5% with Sheffield TEC and over 65% with the CoC, the City Council and various sector based organisations. Consequently I conclude that this industrial cluster constitutes a network within which relationships are envisaged not just with other firms, but also with research and higher education establishments, chambers of commerce, business associations, vocational training organisations, and relevant government departments.

The reasons stated for this contact most frequently related to the provision of general business support, with the use of these agencies to promote product development or to offer technological services being relatively small. Despite the overall levels of contact, the general perception is that the frequency of these contacts is sporadic and that the support offered is not targeted enough to meet individual needs.

Notwithstanding these caveats, I conclude that the networking relationships in the CIQ are broadly representative of the dynamics identified by Crewe in Nottingham's Lace Market. Crewe states, that *'The range and variability of the networking structure underpinning the fashion system in the Lace Market is considerable, encompassing formal buyer-producer-supplier chains through to informal, co-operative agreements based upon mutual trust. Such operational alliances are further reinforced by a sense of shared identity which is articulated through a variety of grassroots industry associations and by the conversation-enhancing properties of proximity'* (1996, p.261).

In summary, given the embryonic nature of Sheffield's cultural cluster (only 10 years have passed since the area was initially developed), the extent of these inter-firm and institutional networking arrangements is considerable and serve to confirm my first explanatory hypothesis.

Hypothesis Number 2

In response to the second research hypothesis I conclude that despite the innovative nature of many firms within Sheffield's CIS, at present, these firms are not heavily characterised by networking arrangements that lead to product innovation. As innovation is considered the most important factor towards raising competitive advantage, this is a significant finding, and

suggests that product innovations often occur on a more chaotic basis than proponents of the networking paradigm have allowed for.

This is not to deny, however, that the CIQ is an innovation-orientated locale. In total, 73.1% of firms indicated that they had produced an innovative product within the past two years. These figures compare favourably with a report produced by Keeble (1997) which similarly asked in a national survey of over 1,000 businesses whether firms had produced an innovative product during the previous three years. In total 52.7% of businesses in the South East and 48.3% of all firms in peripheral localities such as Sheffield replied in the affirmative. The results gained from my questionnaire, therefore, clearly reveal the CIQ as a highly innovative location.

To gauge a preliminary understanding of whether these innovative products have been produced as a consequence of local inter-firm networking I adopted a taxonomy used by Huggins' (1997), which suggested that networks can serve business, commercial and innovation purposes. As indicated earlier only 45.0% of all respondents believed that they had engaged in networks for the purposes of innovation, whereas eighty percent of firms had networked for more commercial and contractual supplier and customer relations. **This suggests that although 73.1% of companies stated that they had produced an innovative product within the past two years, only 45.0% of firms stated that had engaged in networks within the CIQ for the purposes of enhancing product innovations.**

These findings confirm the views expressed by both Huggins (1997) and Scott (1996). They propose that networks designed to provide general business support and knowledge functions tend to be the easiest type of network to form and that networks encouraging innovation are perhaps the most difficult to develop. It is held that in the most successful industrial districts, a progression may be witnessed from the provision of networks providing knowledge functions, to those enhancing product innovation and encouraging the transfer of technological expertise. *'Within this model it is argued that networking becomes increasingly sophisticated and therefore powerful, with information networks as the most simplistic and innovation networks being both the most interactive and difficult to implement'* (Huggins, 1998, p.815).

As I have argued, Sheffield's CIS currently appears to be located midway along this continuum. Inter-firm associations have increasingly risen in prominence as a consequence of economic development strategies encouraging the development of committed interest and trust through regular interactions or for more commercial purposes. To date, however, these interactions have not consistently been sought to assist in product development. From this

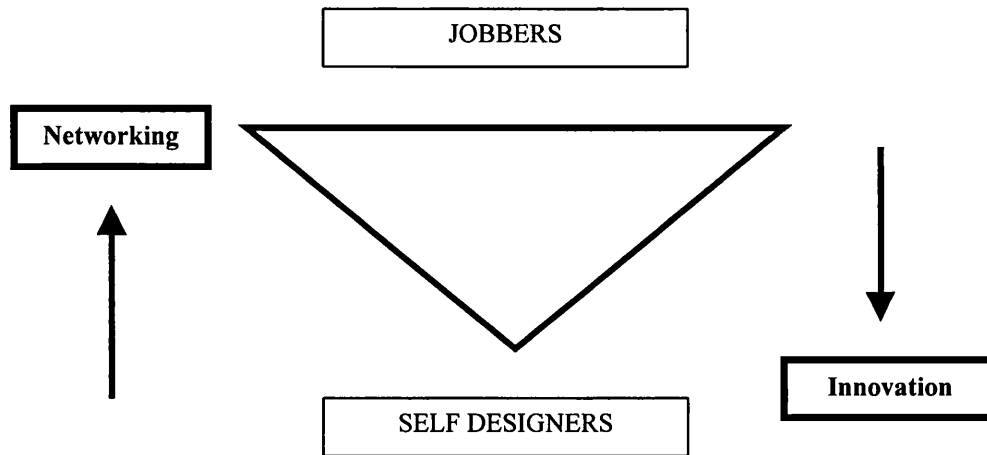
analysis I conclude that innovation is a peak activity, often too sensitive or specialised to be the subject of production networks. Although my interviews reveal little in the way of a 'fortress mentality' philosophy, whereby firms are secretive about their innovations, the activity of firms within the area does appear too specialised to be the subject of production networks. For example, there are few firms within the CIQ engaged in the same business operations and as my analysis revealed, many firms stated that their levels of networking may be enhanced if more related firms were located in close proximity.

Underneath this peak activity, however, it appears that networks are successfully utilised for a number of other purposes. There is a misconception in the literature, for example, that networking has to be directly associated with innovation in order to enhance the economic competitiveness of a locality. Networks appear equally crucial in offering business interactions based around supplier and customer relationships and by offering general support networks helping to create a diffuse capacity or the potential for innovation.

Manshanden (1998) suggests that these different forms of networking reflect a difference between two categories of producers, labelled as 'self-designers' and 'jobbers'. Whereas innovative self-designers tend to be too specialised to engage in networking relations, less innovative jobbers are more aware of the need to engage in general information and commercial networks to assist them in their day to day business operations. It would be useful, therefore, to have been able to make a distinction between innovative and non-innovative firms within the CIQ. However, given that most companies claimed to have produced innovative products, the sample of non-innovative companies was too small to draw even any general conclusions. My suspicion, however, is that despite their claims to be innovative companies, many of the firms within the CIQ can in fact be classified as 'jobbers', engaging with more innovative 'self-designers' for largely business and commercial purposes.

These ideas are illustrated in Figure 6.1 and appear to reflect the situation in Sheffield's CIQ. The diagram shows that although 'jobbers' operate at the lower level of the system and are less innovative than 'self-designers', they nevertheless tend to engage in more networking relationships.

Figure 6.1: The relationship between jobbers and self-designers in networking patterns.



Summary

- There is some evidence within the CIQ of networking relations being sought to assist in product innovation.
- However, businesses more frequently engage in networking arrangements for commercial purposes more than for the assisting in product innovation.
- The CIS represents a localised innovation system, characterised by a large number of small, indigenous firms, and within which problem solving is more important than technological expertise.
- Consequently, despite their claims of being truly innovative, many of the firms in the CIQ can in fact be referred to as 'jobbers', whose networking relationships serve business and commercial purposes.
- However, this is not to deny the very real importance of these networks to the competitiveness of individual firms. There tends to be a misperception in the literature that these networks have to lead to constant product innovation by themselves. Instead, inter-firm and institutional networks are important not just for producing innovations but for creating a diffuse innovative capacity or the potential for firms to be innovative.

II POLICY RECOMMENDATIONS

'It is clearly unrealistic to think that local authorities can by, and of, themselves create from nothing thriving cultural industries operating within world markets. But this is an issue which confronts local action in relation to many industrial sectors. Local intervention is, however, possible when policies support emerging activity, put a realistic ceiling on expectation and set realistic objectives'.

Greenhalgh et al (1992, p.134)

Public strategies in the cultural industry sector, I propose, cannot directly create the levels of inter-firm networking that lead to product innovation. Policy can, however, assist in creating more generalised and knowledge based networks both between firms and between firms and various support organisations. These networks, I have argued, are nonetheless crucial and can potentially enhance the competitiveness of individual firms and heighten their diffuse innovative capacity.

In order to enhance the strength of the networks that have already been identified, I conclude by suggesting a number of policy options open to the local authority that may serve to heighten networking patterns within Sheffield's CIS. The overall aim of these recommendations is to encourage the formation of more tightly knit interactive arrangements between different segments of the cultural products industries in order to enhance the innovative potential of the region. I propose that the critical mass of cultural industries should be expanded, that the levels of trust between businesses should be heightened and that more specific cultural support services are provided.

1. Developing the common links between businesses within the CIQ

Despite the dominance in the literature of the Third Italy model of development, in which all firms are integrated across the entire production pipeline from design and supply through to the final sale of products, in reality there are many different forms of industrial district. Most frequently firms tend to either cluster alongside other firms doing exactly the same thing, or to locate alongside inter-related businesses, but whose products are too specialised to be conducive to the formation of networks.

With regard to the CIQ, it is possible to confirm the view expressed by Huggins (1997) that one significant reason for network failure is a lack, or a perceived lack of commonality between businesses. Eight of the questionnaire respondents, for example, indicated in response

to an open-ended question that their networking patterns would increase if there were more associated businesses within the area. Respondents stated that they may be influenced by *the 'arrival or awareness of more potential customers', 'if there were more companies in the CIQ relevant to film', 'if there were more companies providing the services we needed', or 'were there common customers working on similar projects'.*

From a policy perspective, therefore, there is clearly a need to develop further the critical mass of cultural industries within the CIQ in order to encourage the presence of more associated companies. Two distinct strategies are available to policy-makers. The first involves a shift from a consideration of the cultural industries *per se*. While the all-encompassing notion of an inter-related set of media industries is useful from a political standpoint, it is important to acknowledge that firms may only productively interact if there are other industries in similar sub-sectors to which they belong themselves. Essentially this calls for the development of many sub-cultural quarters within Sheffield's overall cultural quarter. Having established the ties between cultural sub-sectors, the second strand of policy is to build on the successes of projects such as the Wired Workplace scheme and to identify the common links that do exist between the various cultural sectors. As I have previously identified, given the time constraints facing micro-companies, policy intervention may be crucial in identifying these linkages and organising the meetings and events that may bring cultural producers together.

2. Creating a range of firms of different sizes.

The questionnaire responses indicated that by far the most significant factor in attracting businesses to the CIQ was the provision, availability and cost of managed workspaces. The local authority's commitment to providing these workspaces remains strong, but I propose that there is a need to offer opportunities within the CIQ not just for micro-scale firms but also for larger cultural businesses.

At present, it appears that the volume of networking in Sheffield's CIS is restricted because of the uniformity of the firms in the area with respect to their overall size. The fear expressed by a number of individuals was that because of a lack of infrastructure, the CIQ may act as an entrepreneurial breeding ground to micro-scale cultural industries, but will not be conducive to larger cultural firms either relocating to the CIQ or expanding within it. It is through subcontracting activities from larger companies, after all, that many of the opportunities for SME's are provided. There is also a fear that as micro firms successfully expand they will be forced to relocate out of the area, and perhaps even out of Sheffield itself.

An interesting example is the firm Creative Byte, which originated in the CIQ but now operates from the Don Valley area of Sheffield. This company, with whom many firms in the CIQ had expressed contact with, believed that they had grown too much in size to remain in the CIQ. This was largely because with a greater number of staff on the books, they could no longer afford city centre rents. In this example the company did relocate within Sheffield, but the danger is that these locational moves may take companies away from Sheffield altogether.

The policy recommendation stemming from this observation is that a full range of premises needs to be established within the CIQ. One firm indicated that they would move from the area *'if I needed more space and the CIQ couldn't provide it'*. New premises would provide both luxury workspaces and bottom of the range studios for a whole spectrum of companies, including micro, small and medium sized enterprises. And once attracted to the area, mechanisms need to be sought to persuade these same companies to remain in the CIQ. This introduces a range of issues based around the themes of urban revitalisation, including an improvement of the area's transportation network, the enhanced landscaping of the CIQ and the provision of more residential properties.

3. A lack of specialist institutional support

As previously mentioned, my analysis discovered that the support organisations serving the CIS were not considered to offer adequately specialised support. As a consequence, they tended to provide rather traditional business services rather than to offer more specific assistance that acknowledges the specific requirements of different cultural sub-sectors. It is the more specialised forms of support that are most likely to enhance the innovation potential of individual firms.

Each of these more specialised support services, I propose, need to focus on promoting the development and diffusion of basic technologies, to systematically shape labour skills in response to local needs and to form appropriate support programmes for small experimental producers. Where most successful to date, support services have been very much related to the specific needs of the CIS. The CIDU was considered effective by locating an advisor within the CIQ to bring client needs to the advisory committee and to offer behind-the-scenes support. It is suggested, therefore, that more than most sectors the CI's need people who are able to empathise with them. Given these facts, I conclude, in line with an assessment report of the CIDU, that although there is an identified need for continuing support in the cultural sector, the existing structure is inappropriate to serve the needs of the cultural industries. *'We recommend that the ``most effective mechanism is the setting up of an independent organisation as a company limited by guarantee, separate from its funders, which is needs*

driven and similar in size and scale to the organisations it is constituted to serve' (O'Donovan and Evans, 1997, p.3).

III OPPORTUNITIES FOR FURTHER RESEARCH

Although employment levels in Sheffield's cultural sector remain relatively modest and tend to impact on only a small quarter of the city, it has to be remembered that the city's cultural policy was initiated just ten years ago. Some form of inter-connected aggregation of cultural industries has clearly been formed and it appears that the networking patterns among its members have served to heighten the competitiveness of the immediate area. If the natural growth of the CIQ continues apace, the sense of trust between firms (held to be a central feature of all successful districts) will gradually improve and the opportunities for networking may be enhanced. Meanwhile, the long-term policy measures outlined above, many of which have already been acknowledged by the local authority, may serve to further enhance the diffuse innovative capacity of Sheffield's cultural sector.

I propose, therefore, that this case study is a good illustrative example of a policy-prescribed cultural industry strategy. As such I believe that it serves as a useful yardstick against which to measure more recent cultural industry policies. Sheffield's economically peripheral location also serves to make this particular strategy a valuable case study from which to gauge the overall success of a cultural approach to economic development. Consequently, I propose that further research on the locational and organisational dynamics of this particular cultural strategy remains a worthwhile academic and practical exercise.

To complement my own investigations a range of more culturally specific data needs to be collected, including a comprehensive and sophisticated business survey providing a clearer picture of business presence, performance and aspirations in the CIS. My own research would have been further enhanced if a greater range and number of firms could have been contacted and had the sample been broad enough to distinguish between innovative and non-innovative firms. Moreover, it would have been beneficial in analysing the wider impacts of Sheffield's cultural industry policies, if the surveys that were available had adopted a city wide or sub-regional perspective rather than offering a consideration of the CIQ alone. The positive consequences of these policies, for example, may have impacted only marginally on areas of Sheffield outside of the wards of Netherthorpe and Sharrow, while the jobs created may have been offset by large plant closures and the numbers of low paid service jobs. Given that the cultural industry sector is still so very under-investigated, the opportunities for further research remain vast.

BIBLIOGRAPHY

Amin, A. and Robins, K. (1991) 'These are not Marshallian Times', in Camagni, R. (ed) Innovation Networks: Spatial Perspectives, London: Belhaven.

Amin and Thrift (1992) 'Neo-Marshallian Nodes in Global Networks'. International Journal of Urban and Regional Research, Vol. 16, pp. 57-187.

Amin, A. and Thrift, N. (1995) 'Globalisation, Institutional 'Thickness' and the Local Economy' in Healey, P. et al (eds) Managing Cities: The New Urban Context. Chichester: Wiley.

Appadurai, A. (1994) 'Disjuncture and Difference in the Global Cultural Economy' in Williams, P. and Chrisman, L. (eds) Colonial Discourse and Post-Colonial Theory. New York: Harvester Wheatsheaf.

Arts Council of Great Britain (undated) 'An Urban Renaissance: sixteen case studies showing the role of arts in urban regeneration'. London: ACGB.

Asheim, B.T. (1996) 'Industrial Districts as 'Learning Regions': a Condition for Prosperity. European Planning Studies, Vol. 4, No. 4, pp. 379-400.

Ashworth, G.J. and Voogd, H.(1995) Selling the City: Market Approaches in Public Sector Urban Planning. London and New York: Belhaven.

Askoy, A. and Robins, K. (1992), 'Hollywood for the 21st Century: global competition for critical mass in image markets', Cambridge Journal of Economics, Vol 16, pp. 1-22.

Aydalot, P. and Keeble, D. (1988) High Technology Industry: the European Experience. London: Routledge.

Bassett, K (1993) 'Urban cultural strategies and urban regeneration: a case study and critique'. Environment and Planning A, Vol. 25, No. 12, pp. 1773-1788.

Bell, J. (1987) Doing Your Research Project: A Guide for First-Time Researchers in Education and Social Science. Buckingham: Open University Press.

Bennett, R.J. and McCoshan, A. (1993), Enterprise and Human Resource Development: Local Capacity Building. London: Paul Chapman.

Bennett, R.J and Krebs, G. (1994), 'Local Economic Development Partnerships'. Regional Studies, Vol 28, pp. 119-141.

Best, M.H. (1990) The New Competition: Institutions of Industrial Restructuring. Cambridge: Basil Blackwell.

Betterton, R. and Blanchard, S. (1992) Made in Sheffield: Towards a Cultural Plan for Sheffield in the 1990's. Sheffield: Sheffield Hallam University.

Bianchini, F. (1989) 'Cultural Policy and Urban Social Movements: The Response of the 'New Left' in Rome (1976-85) and London (1981-86)' in Brahman, P. et al (eds) Leisure and Urban Processes: Critical Study of Leisure Policy in Western European Cities. London: Routledge.

Bianchini, F. and Parkinson, M. (1993) Cultural Policy and Urban Regeneration: The West European Experience. Manchester: Manchester University Press.

Bianchini, F. (1996) 'Culture, Economic Development and the Locality', in Hardy, S., Malbon, B. and Taverner, C. (eds), The Role of Art and Sport in Local and Regional Economic Development. London: Regional Studies Association.

Boyle, M. and Hughes, G. (1991) 'The politics of representation of the 'real': discourses from the Left on Glasgow's role as the European City of Culture', Area, Volume 2, No. 3.

Boyle, M. (1997) "Civic boosterism in the politics of local economic development - institutional positions and strategic orientations in the consumption of hallmark events". Environment and Planning A, Vol. 29, pp. 1975-1997.

Braczyk, H.J., Cooke, P. and Heidenreich, M. (1998) Regional Innovation Systems, London: University College London Press.

British American Arts Association (1989) Arts and the Changing City: An Agenda for Urban Regeneration: BAAA, London.

Camagni, R. (1991) Innovation Networks. London: Belhaven Press.

Castells, M. (1989) The Informational City. Oxford: Basil Blackwell.

Castells, M. and Hall, P. (1994) Technopoles of the World. London: Routledge.

Cherry, G. (1995) 'Book Review: Bianchini, F. and Parkinson, M. (1993) Cultural Policy and Urban Regeneration: The West European Experience', Cities, Volume 12, Number 4, pp. 285-286.

Christopherson, S. and Storper, M. (1987) 'Flexible specialisation and regional industrial agglomerations: the case of the US motion picture industry', Annals of the Association of American Geographers, Vol. 77, No. 1.

Cooke, P. (1998) 'Introduction: Origins of the Concept', in Braczyk, H.J., Cooke, P. and Heidenreich, M. (1998) Regional Innovation Systems, London: University College London Press.

Cooke, P. and Morgan, K. (1993) 'The network paradigm: new departures in corporate and regional development'. Environment and Planning D: Society and Space, Vol 11, pp. 543-564.

Cornford, J. and Robins, K. (1992), 'Development Strategies in the Audio-Visual Industries: The Case of North-East England. Regional Studies, Vol 26, No. 5, pp. 421-435.

Council of Europe (1997) Culture and Neighbourhoods, Volume Two: A Comparative Report. Strasbourg: Council of Europe Publishing.

Crewe, L. and Forster, Z. (1993) 'A Canute Policy Fighting Economics? Local economic policy in an industrial district: the case of Nottingham's Lace Market'. Policy and Politics, Vol 21, No. 4, pp 275-287.

Crewe, L. (1995) 'Material Culture: Embedded Firms, Organisational Networks and the Local Economic Development of a Fashion Quarter'. Regional Studies, Vol 30, No. 3, pp. 257-272.

Cultural Trends (1993) Volume 20: Employment in the Cultural Sector. Policy Studies Institute: London.

Curran, J. and Blackburn, R. (1994) Small Firms and Local Economic Networks: The Death of the Local Economy? London: Paul Chapman.

Day, S. (1997) 'The Cultural Industries, Property Development and Urban Regeneration', Unpublished thesis, MSc European Property Development and Planning, University College London.

Devings, D. (1997) 'The Cultural Industries Development Unit', Policy Studies Institute, University of Leeds.

Dicken, P. (1992) Global Shift. London: Paul Chapman.

Dorricott, H. F. (1997) 'An evaluation of the development of the twenty-four hour city in Sheffield's Cultural Industries Quarter', Unpublished thesis, Sheffield Hallam University.

Fisher, M. and Owen, U. (eds) (1991) Whose Cities? Harmondsworth: Penguin.

Fisher, M and Worpole, K (eds) (1991) City Centres, City Cultures, 2nd edition. Manchester: Centre for Local Economic Strategies.

Foley, P. and Lawless, P. (1992) The Sheffield Central Area Study 2010: A Vision of Quality. Sheffield: University of Sheffield.

Freeman, C. (1994) 'The economics of technical change'. Cambridge Journal of Economics, Vol. 18, pp. 463-514.

Froebel, F, Heinrichs, J and Kreye, O. (1980) The New International Division of Labour. Cambridge: Cambridge University Press.

Frost, M. and Spence, N. (1991) 'British Employment in the Eighties: The Spatial, Structural and Compositional Change of the Workforce', Progress in Planning, Volume 35, No 2, pp. 77-168.

Geddes, M. (1992) 'The sectoral approach to local economic policy', in Geddes, M. and Bennington, J. (eds), Restructuring the Local Economy. Harlow: Longman.

Ghilardi, L. (1996) 'Innovation and cultural creativity: the role of the multimedia industry in the future regeneration of cities', in Hardy, S., Malbon, B. and Taverner, C. (eds), The Role of Art and Sport in Local and Regional Economic Development. London: Regional Studies Association.

Gold, J.R. and Ward, S.V. (eds) (1994) Place Promotion: The Use of Publicity and Marketing to Sell Towns and Regions. Chichester: Wiley.

Goodenough, J. (1995) 'Place Marketing as a Planning Tool', Unpublished thesis, MPhil Town Planning, University College London.

Granville, D. (1994) 'From Cutlery to Culture'. Planning Week, Vol. 2, No. 44, pp. 16-17.

Granovetter, M. (1985) 'Economic action and social structure: the problem of embeddedness', American Journal of Sociology, Volume 91, pp. 481-510.

Greater London Council (1985) The London Industrial Strategy. London: Greater London Council.

Greenhalgh, L., Kelly, O., and Worpole, K. (1992), 'Municipal culture, arts policies and the cultural industries', in Geddes, M. and Bennington, J. (eds) Restructuring the Local Economy, Harlow: Longman.

Griffiths, R. (1993) 'The Politics of cultural policy in urban regeneration strategies' Policy and Politics, Vol. 13, No. 1, pp. 39-46.

Griffiths, R. (1995) "Cultural strategies and new modes of urban intervention" Cities, Vol. 12, No. 4, pp. 253-265.

Grogan, D. and Mercer, C. (1995) The Cultural Planning Handbook: An Essential Australian Guide. New South Wales: Allen and Unwin Pty Ltd.

Hall, P. (1996a) 'Creative Cities', in Hardy, S., Malbon, B. and Taverner, C. (eds) (1996) The Role of Art and Sport in Local and Regional Economic Development. Regional Studies Association, London.

Hall, P. (1996b) Cities of Tomorrow. Oxford: Basil Blackwell.

Hall, P. (1998) Cities in Civilisation: Culture, Innovation and Urban Order. London: Weidenfeld and Nicolson.

Hardy, S., Malbon, B. and Taverner, C. (eds) (1996) The Role of Art and Sport in Local and Regional Economic Development. Proceedings of the Regional Studies Association, Annual Conference, November 1996. London: Jessica Kingsley Publishers.

Harrison, B. (1991) 'Industrial Districts: Old Wine in New Bottles?', Regional Studies, Volume 26, No. 5, pp. 469-483.

Hart, D., Breheny, M., Doak, K., Strike, J. and Montgomery, J. (1994) Bright Green: Developing a Knowledge-Based and Environmentally-Aware Strategy for Hertfordshire into the 21st Century, Hertford: Hertfordshire County Council.

Hart, D. and Simmie, J. (1997), 'Innovation, Competition and the Structure of Local production Networks: Initial Findings from the Hertfordshire Project', Local Economy, November 1997, pp. 235-245.

Harvey, D. (1989a) The Condition of Postmodernity: an Enquiry into the Origins of Cultural Change. Oxford: Basil Blackwell.

Harvey, D. (1989b) The Urban Experience. Oxford: Basil Blackwell.

Haughton, G. and Thomas, K. (1992) 'The role of local sector studies: the development of sector studies in the UK', Local Economy, Vol. 7, pp. 100-113.

Healey, P. et al (199?) Managing Cities: The New Urban Context. Chichester: Wiley.

HM Government (1994) TEC's: Towards 2000. London: HMSO

HM Government (1995) Competitiveness: Forging Ahead. London: HMSO.

Hirst, P. and Zeitlin, J. (1992) 'Flexible specialisation versus post-Fordism: Theory, evidence and policy implications', in Storper, M. and Scott, A.J. (eds), Pathways to Industrialisation and Regional Development. London: Routledge.

Huggins, R. (1997) 'Competitiveness and the global region: The role of networking', in Simmie, J.M. (ed) Innovation, Networks and Learning Regions? London: Jessica Kingsley.

Huggins, R. (1998) 'Local business co-operation and Training and Enterprise Councils: The development of inter-firm networks'. Regional Studies, Vol. 32, No. 9, pp. 813-826.

Jarvis, B. (1994) "Transitory Topographies: Places, Events, Promotions and Propaganda" in Gold, J.R. and Ward, S.V. (eds) Place Promotion: The Use of Publicity and Marketing to Sell Towns and Regions. Chichester: Wiley.

Jennings, D. (1995) 'Science and Media Electronic Networking: Opportunities and Demands for Growth: Market Research for the Feasibility of the NEO Project'. Sheffield: DJ Associates.

Kearns, G. and Philo, C. (eds) (1993) Selling the City: The City as Cultural Capital, Past and Present. Oxford: Pergamon Press.

Keeble, D. (1997) 'Small Firms, Innovation, and Regional Development in Britain in the 1990's', Regional Studies, Volume 31, No. 3, pp. 281-293).

Keens, W et al (1989) Arts and the Changing City: An Agenda for Urban Regeneration. London: British American Arts Association.

Landry, C. and Bianchini, F. (1995) The Creative City. London: Demos.

Landry, C., Greene, L., Matarasso, F., and Bianchini, F. (1996) The Art of Regeneration: Urban Renewal Through Cultural Activity. Stroud: Comedia.

Lash, S. and Urry, J. (1994) Economies of Signs and Spaces. London: Sage.

Lawless, P. (1995) Urban Studies, Volume 32, No. 7, pp. 1097-1125.

Lawless, P. (1996) 'The Inner Cities: Towards a New Agenda'. Town Planning Review, Vol. 67, No. 1 pp. 221-40.

Llewelyn-Davies (1996) Four World Cities: A Comparative Study of London, Paris, New York and Tokyo. London: Llewelyn Davies.

Loftman, P. and Nevin, B. (1995) 'Prestige Projects and Urban Regeneration in the 1980's and 1990's: A Review of Benefits and Limitations'. Planning Practice and Research, Vol. 10, No's 3/4 pp. 299-315.

Lundvall, B. (1992) 'National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning'. London: Pinter.

Manshanden, W. (1998) 'Business Services and Regional Economic Development: The Economics of Proximity', PhD thesis, University of Amsterdam.

Marshall, M. (1987) Long Waves of Regional Development. London: MacMillan.

Montgomery, J. (1990) "Cities and the Art of Cultural Planning". Planning Practice and Research, Vol. 5, No. 3, pp. 17-23.

Montgomery, J. (1995) 'The story of Temple Bar: Creating Dublin's Cultural Quarter'. Planning Practice and Research, Vol. 10, No. 2, pp. 135-172.

Montgomery, J. (1996) 'Developing the Media Industries'. Local Economy, August 1996, pp. 158-168.

Myerscough, J. (1988) The Economic Importance of the Arts in Britain. London: Policy Studies Institute.

O'Brien, J. and Feist, A. (1995) 'Employment in the arts and cultural industries: an analysis of the 1991 Census', Arts Council of England Research Report No. 2, London: Arts Council of Europe.

O'Connor, J. (1996) 'Northern Quarter Network', in Hardy, S., Malbon, B. and Taverner, C. (eds), The Role of Art and Sport in Local and Regional Economic Development. London: Regional Studies Association, pp. 64-68.

O'Connor, J. and Wynne, D. (eds) (1996) From the Margins to the Centre: Culutral Production and Consumption in the Post-Industrial City, Arena: Aldershot.

O'Dell (1995) 'The Potential for a British Technopole: A Study of Hertfordshire'. Unpublished thesis, MPhil Town Planning, University College London.

O'Donovan and Evans, S. (1998) 'The Future of the Cultural Industries Development Unit'. Sheffield: Cultural Industries Steering Group.

Oatley, N. (1996) 'Sheffield's Cultural Industries Quarter', Local Economy, August 1996, pp. 172-179.

Paddison, R. (1993) "City Marketing, Image Reconstruction and Urban Regeneration". Urban Studies, Vol. 30 No 2, pp.339-350.

Pepper, K. (1997) 'On-line networking for small businesses in Sheffield: Feedback Report from Survey', Institute of Work Psychology, University of Sheffield.

Piore, M. and Sabel, C. (1984) The Second Industrial Divide: Possibilities for Prosperity. New York: Basic Books.

Porter, M. (1990) The Competitive Advantage of Nations. New York: The Free Press.

Pratt, A.C. (1991), 'Industrial Districts and the Flexible Local Economy', Planning Practice and Research, Vol. 6, No. 4, pp. 4-8.

Pratt, A.C. (1996) 'Cultural industries in the digital age: the challenges of technological convergence, globalisation and innovation', in Hardy, S., Malbon, B. and Taverner, C. (eds), The Role of Art and Sport in Local and Regional Economic Development, London: Regional Studies Association, pp. 16-24.

Pratt, A.C. (1997a) 'The cultural industries production system: a case study of employment change in Britain, 1984-1991'. Environment and Planning A, Vol. 29, pp. 1953-1974.

Pratt, A.C. (1997b) 'The Cultural Industries Sector: its definition and character from secondary sources on employment and trade, Britain 1984-91', London School of Economics Working Paper, No. 41.

Preston and Hall, P. (1989) The Carrier Wave: New Information Technology and the Geography of Innovation, 1846-2003. London: Unwin Hyman

Pyke, F. and Sengenberger, W. (eds) (1992) Industrial Districts and Local Economic Regeneration, Geneva: International Institute for Labour Studies.

Robson, B. et al (1994) Assessing the Impact of Urban Policy. London: HMSO.

Rosenfeld, S. (1996) 'Does co-operation enhance competitiveness? Assessing the impacts of inter-firm collaboration', Research Policy, Number 25, Vol. 2, pp. 247-263.

Sadler, D. (1997) 'The global music business as an information industry: reinterpreting economies of culture', Environment and Planning A, Vol. 29, pp. 1919-1936.

Sassen, S. (1991) The Global City. New Jersey: Princeton University Press.

Sassen, S. (1994) Cities in a World Economy. London: Sage.

Savage, M. and Warde, A. (1993) Urban Sociology, Capitalism and Modernity. Basingstoke: Macmillan Press.

Scott, A.J. (1988) 'Flexible production systems and regional development: the rise of new industrial spaces in North America and Western Europe', International Journal of Urban and Regional Studies, Volume 112, pp. 215-232.

Scott, A.J. (1996) 'The craft, fashion and cultural-products industries of Los Angeles: competitive dynamics and policy dilemmas in a multi-sectoral image production complex'. Annals of the Association of American Geographers, Vol. 86, pp. 306-323.

Scott, A.J. (1998) 'From Silicon Valley to Hollywood: Growth and development of the multimedia industry in California', in Braczyk, H.J. et al, Regional Innovation Systems, London: University College London Press pp. 136-162.

Shapiro, D., Abercrombie, N., Lash, S. and Lury, C. (1992) 'Flexible specialisation in the culture industries', in Eynste, H. and Meire, V. (eds) Regional Development and Contemporary Industrial Response, London: Belhaven.

Sharp, J.A. and Howard, K. (1996) The Management of a Student Research Project. Aldershot: Gower.

Sheffield City Council (1989/1990) 'Local Economic Development Information Service: Cultural Industries Quarter', Sheffield City Council.

Sheffield City Council (1990) South Yorkshire 2000 - Towards a Brighter Future - The European Dimension, Sheffield: Sheffield City Council.

Sheffield City Council (1995a) Cultural Industries Quarter: A Cultural Business Audit for 1994/95, Department of Employment and Economic Development, Sheffield City Council.

Sheffield City Council (1995b) 'Report to the Sub-Committee of the Directorate of Planning and Economic Development', Sheffield City Council.

Sheffield City Council (1997a), Unitary Development Plan. Sheffield: Sheffield City Council.

Sheffield City Council (1997b) The Science and Cultural Industry Quarter Draft Action Plan. Department of Employment and Economic Development. Sheffield: Sheffield City Council.

Sheffield City Council (1998a) Sheffield Cultural Industries Quarter: Strategic Vision and Development Study. EDAW.

Sheffield City Council (1998b) 'Cultural Industry Quarter Strategic Vision and Development Study': Report to the Development, Environment and Leisure Policy Committee, Sheffield City Council.

Sheffield Telegraph (27 February 1998) '2,500 jobs hope for cultural quarter'.

Simmie, J.M. (1994) 'Technopole Planning in Britain, France, Japan and the USA'. Planning Practice and Research, Vol. 9, No. 1, pp7-20.

Simmie, J.M. (1997) 'The origins and characteristics of innovation in highly innovative areas: The case of Hertfordshire', in Simmie, J.M. (ed) Innovation, Networks and Learning Regions, London: Jessica Kingsley.

Simmie, J.M. (1998a) 'Innovate or stagnate: economic planning choices for local production nodes in the global economy', Planning Practice and Research, Vol. 13, No. 1, pp35-51.

Simmie, J.M. (1998b) 'Reasons for the development of 'Islands of innovation'. Evidence from Hertfordshire', Urban Studies, Vol. 35, No. 8, pp. 1261-1289.

Skelton, P. (1996) 'Sheffield's Cultural Industries Quarter', in Hardy, S., Malbon, B. and Taverner, C. (eds) The Role of Art and Sport in Local and Regional Economic Development. London: Regional Studies Association, pp. 88-90.

Smith, C. (1998) Creative Britain. London: Faber and Faber.

Smith, N. (1996) The New Urban Frontier: Gentrification and the Revanchist City. London: Routledge.

Smyth, H. (1994) Marketing the City: The Role of Flagship Developments in Urban Regeneration. London: Spon.

Storper, M. (1993) 'Regional Worlds of Production: Learning and Innovation in the Technology Districts of France, Italy and the USA', Regional Studies, Vol. 27, No. 5, pp. 433-455.

Storey, C. (1997) 'The Cultural Industries Quarter from conception to present day', Unpublished thesis, Sheffield Hallam University.

Thrift, N. (1994) 'On the social and cultural determinants of International financial centres: the case of the City of London', in Corbridge, S., Martin, R. and Thrift, N. (eds) Money, Power and Space. Blackwell: Oxford.

Tweeddale, G. (1995) Steel City: Entrepreneurship, Strategy and Technology in Sheffield 1743-1993. Oxford: Clarendon Press.

Urban Cultures Limited (1994) Prospects and Planning Requirements of the Creative Industries in London. London: London Planning Advisory Committee.

Urban Cultures Limited (1998) Sheffield's Cultural Industries Quarter, unpublished.

Wheeler, K. (1997) 'Cultural Industries Quarter, Sheffield', Local Economic Development Initiatives, The Planning Exchange, March 1997.

Williams, C. (1996) 'An evaluation of approaches towards cultural industries in local economic development: a comparison of Sheffield, Glasgow and Leeds', in Hardy, S., Malbon, B. and Taverner, C. (eds) The Role of Art and Sport in Local and Regional Economic Development. London: Regional Studies Association, pp. 56-59.

Wynne, D. (ed) (1992) The Culture Industry. Aldershot: Avebury.

Yeung, H.W. (1994) 'Critical reviews of geographical perspectives on business organisations', Progress in Human Geography, Vol. 18, No. 4, pp. 460-491.

Zukin, S. (1982) Loft Living. Baltimore: John Hopkins University Press.

Zukin, S. (1995) The Cultures of Cities. Oxford: Basil Blackwell

APPENDIX 1

Cultural Industry Quarter Business Audit

This information is based on information from a City Council questionnaire (1996), an audit of cultural and media related businesses (1995) and information from the Training and Enterprise Council. It categorises each business in the CIQ into Standard Industrial Classifications (1980 Revision) and calculates the overall number of people employed in each of these.

SIC	Description	Number o businesses in CIQ	% of all businesses in CIQ	No. of firms listed with employee details	Average number of employees	Total employees
2210	MANUFACTURING Iron and steel	1	0.3	1	12	12
2245	Aluminium	1	0.3	1	1	1
2489	Ceramic goods	2	0.6	0		
3112	Non-ferrous metal foundries	2	0.6	1	1	1
3120	Forging, pressing and stamping	1	0.3	0		
3138	Surface treatment of metals	3	0.9	3	3	9
3142	Metal doors	1	0.3	0		
3161	Hand tools	3	0.9	0		
3162	Cutlery	13	3.9	10	4.1	41
3169	Other finished metal products	5	1.5	5	33	165
3204	Mechanical engineering of constructional steelwork	3	0.9	3	7.3	22
3221	MECHANICAL ENGINEERIN Machine tools	3	0.9	1	37	37
3222	Small tools	5	1.5	3	5	15
3246	Process engineering contractors	1	0.3	1	10	10
3255	Mechanical lifting equipment	1	0.3	1	6	6
3276	Printing machinery	1	0.3	1	3	3
3281	Internal combustion engineering	1	0.3	1	10	10
3285	Weighing machinery	1	0.3	1	19	19
3289	Other precision engineering	3	0.9	1	1	1
3302	Manufacture of electronic data processing equipment	5	1.5	3	2.7	8

3433	ELECTRONIC ENGINEERING Alarms and signalling equipment	1	0.3	0		
3435	For industrial use not otherwise specified	2	0.6	2	5.5	11
3441	Telephone apparatus	1	0.3	0		
3452	Gramophone records and pre- recorded tapes	1	0.3	1	2	2
3454	Electronic consumer goods not otherwise specified	1	0.3	0		
3710	Checking of precision instruments	1	0.3	0		
4196	OTHER MANUFACTURING Bread and flour confectionery	1	0.3	0		
4555	Soft furnishings	1	0.3	1	2	2
4630	Builders carpentry and joinery	2	0.6	2	5	10
4650	Other wooden articles	1	0.3	1	10	10
4671	Wooden and upholstered furniture	5	1.5	5	33	165
4672	Shop and office fitting	1	0.3	0		
4723	Stationery	1	0.3	1	2	2
4751	Printing and publishing of newspapers	1	0.3	1	2	2
4754	Other printing and publishing	10	3.0	6	3.8	23
4834	Processing plastics building products	3	0.9	3	6.3	19
4836	Processing other plastic products	2	0.6	2	6	12
4910	Manufacturing of jewellery and coins	10	3.0	9	3.8	34
4930	Photographic laboratories	1	0.3	1	7	7
5000	General construction	1	0.3	0		
5010	Construction and repair of buildings	1	0.3	0		
5020	Civil engineering	2	0.6	0		

5030	Installation of fixtures and fittings	6	1.8	6	12.8	77
5040	Building and completion works	4	1.2	1	2	2
6120	WHOLESALE DISTRIBUTION Industrial materials	4	1.2	3	8.3	25
6130	Building materials	5	1.5	4	14.75	59
6149	Machinery and industrial equipment	4	1.2	4	6.25	25
6150	Household goods	1	0.3	0		
6170	Food, drink and tobacco	1	0.3	0		
6180	Pharmaceutical goods	1	0.3	1	2	2
6190	Other wholesale distribution	1	0.3	1	60	60
6420	RETAIL DISTRIBUTION Confectioners and off-licences	2	0.6	2	3	6
6450	Clothing	4	1.2	3	6	18
6470	Furnishing fabrics	4	1.2	2	15.5	31
6480	Household goods and hardware	5	1.5	4	9.25	37
6510	Motor vehicles and parts	7	2.1	7	23.1	162
6530	Books, stationery, office Supplies	4	1.2	4	16.25	65
6540	Other specialised retail Distribution	3	0.9	3	15	45
6560	Mixed retail business	1	0.3	0		
6610	HOTELS AND CATERING Snack bars and cafes	2	0.6	1	36	36
6612	Take away food shops	5	1.5	3	4.3	13
6620	Public houses and bars	6	1.8	6	6.6	40
6630	Night clubs	1	0.3	1	2	2
6640	Canteens	1	0.3	0		
6710	REPAIR OF CONSUMER GOODS Motor Vehicles	8	2.4	8	8	64
6730	Other consumer goods	3	0.9	0		
7210	TRANSPORT AND COMMUNICATION					

	Scheduled road passenger transport and urban railways	1	0.3	0		
7220	Other road passenger transport	1	0.3	0		
7230	Road haulage	2	0.6	1	5	5
7610	Supporting services to inland transport	2	0.6	2	26	52
7700	Misc transport services	1	0.3	1	2	2
8200	BUSINESS SERVICES					
	Insurance	2	0.6	2	43.5	87
8320	Activities auxiliary to insurance	1	0.3	0		
8340	House and estate agents	2	0.6	1	1	1
8350	Legal services	1	0.3	1	45	45
8370	Professional and technical services not specified elsewhere	20	6.0	14	9.6	135
8380	Advertising	4	1.2	2	9	18
8394	Computer services	10	3.0	7	3.6	25
8395	Business services not specified elsewhere	10	3.0	5	5.4	27
8396	Central offices not located elsewhere	2	0.6	1	30	30
8480	Hiring out transport equipment	1	0.3	1	5	5
8500	Owning and dealing in real Estate	3	0.9	2	5.5	11
9111	OTHER SERVICES					
	National government services	3	0.9	1	3	3
9211	Refuse disposal and street cleaning	2	0.6	1	25	25
9320	School education	1	0.3	1	4	4
9330	Vocational training	12	3.6	8	11.75	94
9360	Driving schools	1	0.3	0		
9400	Research and development	4	1.2	3	10	30
9520	Other medical care institutions	1	0.3	0		
9611	Social welfare, charitable and community services	6	1.8	5	32.2	161
9631	Business and professional associations	1	0.3	1	8	8
9660	Religious organisations	2	0.6	1	3	3

9690	Tourist office and other community services	4	1.2	3	3.3	10
9711	Film production, distribution and production	13	3.9	8	7.1	57
9741	Radio and television services	11	3.3	8	13.6	109
9760	Authors, music composers and own account artists	7	2.1	4	2.5	10
9791	Sport and other recreational services	2	0.6	2	3.5	7
9812	Dry cleaning	2	0.6	2	3.5	7
9820	Hairdressing	1	0.3	0		
9890	Personal services not specified elsewhere	2	0.6	1	8	8
TOTAL		327	100.0	224	10.8	2,415

APPENDIX 2

Cultural Industries Quarter Business Directory

The tables overpage list those companies selected to be questioned after the sampling procedure. This list of companies was compiled using information contained within the CIQ webpage (www.syspace.co.uk/ciq). This provided the most up-to-date and comprehensive list of companies available. This information was supplemented by data from a further website (www.workstation.org.uk), from the Cultural Business Audit and from a list of tenants within the CIQ's managed workspaces.

The columns of this table contain the following information:

- Column A: Name of Firm
- Column B: Details of Main Business Activity of the Firm
- Column C: Classification of Main Business Activity of the Firm
- Column D: Address of Firm
- Column E: Nature of Response to Questionnaire
- Column F: Contact Name
- Column G: Phone Number
- Column H: E-mail Address

The classification used in Column C divides each firm into the following categories:

- | | |
|--|------------------------------|
| A: Arts and Performance | M: Marketing and Consultancy |
| B: Business Support and Training | G: Graphics and Print Media |
| S: Software/Systems Design and New Media | AV: Audio/Music Production |
| F: Film/TV/Video Production | Misc: Miscellaneous |
| C: Computer Industry | |

No.	COLUMN A Company Name	COLUMN B Business Activity	COLUMN C Business Classification	COLUMN D Business Address	COLUMN E Questionnaire Response	COLUMN F Contact name	COLUMN G Contact Number	COLUMN H E-Mail/Fax
1.	ACT	Distance learning and computer based training for the commercial business sector	IT NM T&C	Units 29-30 Cooper Building	No Response	Nigel Harrison/ Tim Ray	278 0798	Act@sci-tech.org.uk
2.	Adrian Bibby Creative Design	Use electronic technology to aid creative Design	D&P	The Workstation Paternoster Row, S1 2BX	No Response		249 2227	249 2228
3.	AIVAF	Design and build electronic circuits	IT	Unit 4 Sheffield Science Park	RESPONSE RECEIVED	Duncan Miller/ Bruce Davies	276 3348	Aivaf@sci-tech.org.uk
4.	Amarc	NGO supporting community radio	BS		RESPONSE RECEIVED	Paula Hardwick	221 0597 279 5219	Amarc@gn.apc.org
5.	Amber Initiatives	Consultancy for the development of the CI's	T&C		Questionnaire not relevant to company - informal conversation held instead	Yvonne O'Donovan	279 6511	Amber@workstation.org.uk
6.	Aswan	Songwriters, production company	M		No Response	Trevor Grossett	279 6511	279 6522
7.	Atomising	Specialist services for		Sheffield Science Park	RESPONSE			

	Systems	technology industries				RECEIVED			
8.	Axis/Manna	Recording studios	M	50 Shoreham St/ 3 Brown Street		No Response		275 0283	
9.	Big Wide World	Independent Production company				No Response			
10.	Blank Tape	Recording studios	M	16 Sidney Street		RESPONSE RECEIVED		275 7757	
11.	Cage	Recording Studios	M	1 Sidney Street		No Response		273 7409	
12.	CBC Computer Systems	Computer reseller		68 Brown Street		RESPONSE RECEIVED		275 4141	
13.	Community Media Association	National membership organisation for community media	BS	24 Rockingham Lane		RESPONSE RECEIVED	Keely Scott	279 5219	Cma@community.org.uk
14.	Comtronic	Software Design for virtual reality products	IT	137 Arundel Street		No Response		275 9451	
15.	Connect Venues	A consortium of venues offering facilities to conference organisers	T&C	Workstation		RESPONSE RECEIVED	Terry Billingham	249 3090	249 3091
16.	Creative Byte	Reprographic services	D&P	Workstation		Moved Address		281 3177	
17.	The Designers Republic	Graphic design company specialising in the media industry	D&P	Workstation		No Response	Ian Anderson/ Liz Close	275 4982	Dr@syspace.co.uk
18.	DED Associates	Graphic/digital design company specialising in the	NM	Workstation		RESPONSE RECEIVED	Jon and Nik Daughtry	249 3939	Info@dedas.com

		media industries										
19.	Diagram Marketing Limited	Marketing services, especially to the outdoor pursuits market	D&P NM		Workstation		No Response	Simon Homfray	275 4868	<u>Homfrv@legend.co.uk</u>		
20.	Dialogue Communications	Design applications to integrate office and mobile workers	IT				No Response	Hugh Spear	281 5275	<u>Info@dialogue.co.uk</u>		
21.	Distinctive Developments	Video game specialists	IT		Sheffield Science Park		RESPONSE RECEIVED	Nigel Little/ Keith Birckett	281 2208	<u>Distinctive@sci-tech.org.uk</u>		
22.	Diva pr	Marketing and pr, design for print and electronic communications	T&C				RESPONSE RECEIVED	Amanda Pearce/Shirley Harris	279 6511	<u>Divapr@globalnet.co.uk</u>		
23.	DJ Associates	Applications of new technology in multimedia and networking for cultural industries	T&C				RESPONSE RECEIVED	David Jennings	249 3435	<u>Di@djassociates.com</u>		
24.	Dream Factory	Independent film and TV production company	F,V,TV		Workstation		RESPONSE RECEIVED	Antoinette O'Grady	272 5946	249 2209		
25.	Dynamic	Management and technology consultants	T&C		Sheffield Science Park		No Response		276 6388			
26.	Eg.G	Graphic designers for the media industry	D&P NM		Workstation		No Response	Dom Raban	276 8266	<u>Dom@egg.demon.co.uk</u>		
27.	Eventus	Management of creative events					RESPONSE RECEIVED	Mike McCarthy	221 0386	<u>101545.707@compuserve.c</u>		

28.	Forced Entertainment	An experimental theatre company Also working on a multimedia CD-ROM	A&P NM	Workstation	RESPONSE RECEIVED	Deborah Chadbourne/Verity Leigh	279 8977	<u>om</u> <u>Fe@fdgroup.co.uk</u>
29.	Forge FM	Training providers in the radio sector	BS T&C	5 Brown Street	No Response		281 2043	
30.	Gogglebox Productions	Independent film production company	F, V, TV	Workstation	No Response		249 2202	249 2203
31.	HL Studios	Recording studios	M		No Response			
32.	Hurdall Ross Media	Media consultants	T&C		No Response	Alison Hurdall/Martin Ross	221 0380/1/2	<u>Hrmedia@lineone.net</u>
33.	Id8 photography	Professional photography	P	Workstation	No Response	Mark Harvey/Bill Stephenson	249 5036	249 5045
34.	IKON Solutions plc	Suppliers and servicers of photocopying products	D&P		No Response		249 3550	<u>Seajarair@ad.com</u>
35.	Illuminares	Training services for the commercial business sector	T&C	Sheffield Science Park	RESPONSE RECEIVED	Dr Tony Bennett	270 0800	<u>Illuminares@sci-tech.org.uk</u>
36.	Independent Television Commission	Licensor and regulator of commercial television services	F, V, TV	Workstation	RESPONSE RECEIVED	Michael Fay	276 9091	<u>Publicaffairs@itc.org.uk</u>
37.	Infinite designs	Electronic system design			No Response	Jonathan	281 4409	Infinite-

		services and consultancy					Morris		designs@sci-tech.org.uk
38.	Integrated Training Systems	Offer training services to the commercial business sector	IT T&C	20 Furnival Street	No Response			249 0300	
39.	Ju Ju Club	Promoters and agents for world music			No Response		Alan Deadman	279 6511	279 6522
40.	Leadmill	Arts Centre - events and nightclub entertainment		6-7 Leadmill Rd	No Response			275 4500	
41.	Lifeseize Pictures	Producers of documentary and fiction work	F, V, TV	Workstation	No Response		Caroline Cooper/ Jocelyn Cammack	249 2211	Lifeseize@syspace.co.uk
42.	Liquid Records Ltd	Developing young 'indie' bands	M		No Response		Mark Wilkinson	281 2128	279 6522
43.	Lodestone Productions Ltd	Production of audio and multimedia material on vinyl, tape and CD	M	Workstation	No Response		Steve Athey/Clare Refern	249 4015	Lodestone@workstation.org.uk
44.	Loft, The	Promote arts in the community and business	A&P	106 Mary Street	No Response			281 2050	
45.	Loudmouth Postcards	Producers of card printing for the media and arts industries	D&P	Workstation	No Response		Chet Cunago	275 3175	Loud@eg-g.demon.co.uk
46.	Lovebytes	Develop the creative			RESPONSE		Janet	221 0393	Info@lovebyt

		potential of digital and interactive media				RECEIVED	Jennings/Jon Harrison		es.org.uk
47.	Microsystems Centre, The	Provide training in software	IT NM T&C	Sheffield Science Park	No Response		273 8184		
48.	Million	Web design services	NM		No Response				
49.	Mr Modos' Limited	Independent recordcompany	R		No Response	Adam Morris	249 4014	Mimodo@workstation.org.uk	
50.	National Centre for Popular Music	Visitor attraction focusing on the development of popular music	NM	Paternoster Row	No Response	Stuart Rogers	279 8941	Stuart@ncpm.syspace.co.uk	
51.	Otto Personal Management	Actors co-operative agency	A&P	Workstation	No Response		275 2592	Otto@workstation.org.uk	
52.	Picture Palace North	Regional office of London-based film production company	F,V,TV	Workstation	No Response	Alex Osborne	249 3160	279 6522	
53.	Red Tape Studios	Council initiated recording studios, also providing training in music production	M BS T&C	50 Shoreham Street	No Response		276 1151		
54.	SCEPTRE	Provides support in the area of manufacturing technology	BS		RESPONSE RECEIVED		225 3450	Sceptre@shu.ac.uk	
55.	Sheffield	Film and video equipment	BS	Brown Street	No Response	Colin Pons	249 2204/	279 6522	

	Independent Film Limited	rental and production support Workspace facilities for film production companies	F, V, TV W					272 0304	
56.	Sheffield International Documentary Festival Ltd	Annual festival to celebrate the art of the documentary	F, V, TV	Workstation	No Response	Kathy Loizou	276 5141		Shefdoc@fdgroupp.co.uk
57.	Showroom	Four screen independent cinema complex	F, V, TV	7 Paternoster Row	RESPONSE RECEIVED	Ian Wild	276 3534		Showroom@workstation.org.uk
58.	Site Gallery	Gallery shows contemporary photography and new technology installation Provide training in photographic and electronic media	P A&P BS T&C	Brown Street	RESPONSE RECEIVED		272 5947		
59.	Soundhouse	A production based communications agency		Workstation	RESPONSE RECEIVED	Sarah Barlow	221 0200		Soundhouse@workstation.org.uk
60.	Source Creative Marketing Ltd	Marketing agency specialising in creative concepts	T&C	Workstation	No Response	Susan Morgan	249 3662		Source@fdgroupp.co.uk

61.	South Yorkshire Funding Advice Bureau	Free funding advice and information for NPO's in South Yorkshire	T&C	Workstation	No Response	Sue Cook	249 4343	Syfab@workstation.org.uk
62.	Steel Bank Films	Film Production	F,V,TV	AVEC, Brown Street	Declined to answer quaire over phone		272 1235	
63.	Steel City Media	Web design services	NM	Allen Street	No Response		275 4150	
64.	Sweet Patootee	Film Production	F,V,TV	5 Brown Street	No Response		281 2701	
65.	Technimode Ltd	Hardware and software sales	D&P NM	Workstation	RESPONSE RECEIVED	Martin Spence	249 5035	Info@technimode.com
66.	TechnoPhobia Ltd	Multimedia design company specialising in electronic media.	NM		No Response	Amelia Thorne	221 2123	Us@technophobia.co.uk
67.	Traveling Light	Produce animated films, multimedia and screen graphics	F,V,TV	5 Brown Street	No Response		275 9330	Jharrison@tli.ghdemon.co.uk
68.	Total Sound Solutions	Produce programmed background music	M	Workstation	RESPONSE RECEIVED		272 1198	
69.	VirtuaMusic	Developing highly innovative on-line MIDI applications	M		RESPONSE RECEIVED			
70.	Yorkshire Media Production Agency	Film and video production	F,V,TV		RESPONSE RECEIVED	Colin Pons	249 2205	279 6522

APPENDIX 3

QUESTIONNAIRE

SECTION ONE: COMPANY DETAILS

- 1. **Name and address of business:**

- 2. **Please state the main business activity at this address**

- 3. **Has your business designed or produced an innovative product within the past two years?**

[] Yes [] No
- 4. **How many people are employed within this business?** _____
- 5. **What percentage of your labour force is employed in each of the following skills categories? (NB total should equal 100%)**

[] Creative
[] Technical
[] Business
- 6. **How long have you been located at this address?** _____
- 7. **In what year was the business founded?** _____
- 8. **Please state how important each of the following factors were in your decision to locate in the Cultural Industries Quarter. Please assess this on a scale of 1-5 (1 being very unimportant and 5 very important)**

[] Good Communication Links [] Financial Incentives
[] Proximity to Similar Businesses [] Proximity to City Centre
[] Education and Training Facilities [] Proximity of a local market
[] Availability of Skilled Labour [] Support of Local Agencies
[] Availability and price of land [] Perceived Image of the Area
[] Provision of workspace and premises [] Other (please specify)

SECTION TWO: NETWORKING WITH OTHER ORGANISATIONS

9a. How regular is your contact with each of the organisations listed in the table below? Please indicate in Column 9a, using the following coding.

- | | | | |
|---|-------------------|---|-----------------|
| 0 | No Contact | 3 | Monthly Contact |
| 1 | Once-Only Contact | 4 | Weekly Contact |
| 2 | Annual Contact | 5 | Daily Contact |

9b. What is the primary reason for your relationship with those organisations who you have indicated contact with? Please state this in Column 9b, using the following coding.

- | | | | |
|----|------------------------------------|---|------------------------|
| T | Training Provision | P | Product Development |
| B | General Business Advice | R | Research Assistance |
| F | Financial Support | S | Suppliers of Products |
| M | Marketing and sales advice | C | Customers of Products |
| Te | Technological Support and services | O | Other (please specify) |

Name of Organisation	Column 9a. Regularity of Contact	Column 9b. Reason for Contact
Sheffield City Council		
Sheffield TEC		
Sheffield Business Link		
Sheffield Chamber of Commerce		
Sheffield University or Sheffield Hallam University		
Cultural Industries Development Unit		
Sector-based organisations (e.g. SHIFT, Red Tape, Site Gallery, Northern Media School (please specify)		
Any other organisations (please specify, but not including other businesses.)		

9c. How highly do you value the level of institutional support offered to your business? Please assess this on a scale of 1-5 (1 being very poor, 5 being very good)

9d. What other forms of institutional support do you feel would be of value to your business?

SECTION 3: NETWORKING WITH OTHER COMPANIES

10. Using the same coding as in questions 9a and 9, please state how frequent your contact is with the following businesses and the nature of this contact.

	Regularity of Contact	Reason for Contact
Other businesses within the CIQ		
Business within Sheffield Science Park		
Businesses outside of the CIQ, but within Sheffield		
Businesses outside of Sheffield		

11 If you have not indicated any contact with businesses in the CIQ, why do you believe that this is the case? (if answering this question, please continue from question 18)

12 If you have indicated contact with other businesses in the CIQ please state which of the following networks that your business engages in.

- Formal networks
- Informal networks
- Both formal and informal networks

13 For what reasons does your business network with other companies in the CIQ? Please tick as appropriate

- Business networks (general business knowledge)
- Commercial networks (purchasing, marketing, sales and distribution)
- Innovation networks (product development, technology transfer)

14 Please indicate which of the following categories of work that you have subcontracted out to other businesses within the CIQ over the past two years.

- Artwork and illustration
- Programming and software services
- Cinematography/video
- Musical composition and performance
- Sales and Marketing
- Other (please specify

15 Please list any examples of such inter-firm networks?

16 Please state any final outputs that have emerged from these inter-firm networks?

17 Do you believe that informal alliances have led to more formal inter-firm relationships? If possible, please give examples.

Yes No

18 Under what circumstances would you envisage increasing your links with other businesses in the CIQ?

19 Where would you describe as local in terms of your overall business operations?

- City-wide
- Regional
- National
- International

20 Which of the following best describes your relationship with other companies in the CIQ?

- Competitive
- Co-operative
- A combination of both of the above

21 Under what circumstances would your business consider moving out of the CIQ?

THANK YOU FOR YOUR CO-OPERATION AND HELP.
Please return by e-mail to AdeKeal@aol.com

It would be greatly appreciated if you could spare 5-10 minutes to discuss some of your responses to this questionnaire. This could be completed over the phone at a time that is convenient to yourselves. Please indicate below if this would be possible.

APPENDIX 4: LIST QUESTIONNAIRE DATA TABULATION

The table overpage tabulates the responses received from the 28 completed questionnaires. This table can be related to the specific questions contained within the business survey (replicated in Appendix 3). The following classifications are adopted;

All Questions

0 No
1 Yes
9 No answer given
n/a Not Applicable

Questions 9 and 10

T	Training Provision	P	Product Development
B	General Business Advice	R	Research Assistance
F	Financial Support	S	Suppliers of Products
M	Marketing/Sales Advice	C	Customers
Te	Technological Support	O	Other

Question 14

A Artwork and Illustration
P Programming and Software Services
C Cinematography/Video
M Musical Composition and Performance
S Sales and Marketing
O Other

Question 19

C City-wide
R Regional
N National
I International

<u>No.</u>	<u>Name of Business</u>	<u>Business Activity</u>	<u>Innovative</u>	<u>Employees</u>	<u>Skills - C</u>	<u>Skills - I</u>	<u>Skills - B</u>	<u>Yrs @ Cl</u>	<u>Founded</u>	<u>L-Comm</u>
		<u>Q2</u>	<u>Q3</u>	<u>Q4</u>	<u>Q5</u>	<u>Q5</u>	<u>W5</u>	<u>Q6</u>	<u>Q7</u>	<u>Q8</u>
1	Connect Venues	Mkting of facilities	1	6	0	0	100	4	1982	3
2	Virtua Music	Computer S/ware Devlpt	1	1	n/a	n/a		2.5	1993	5
3	Dream Factory	Film devlpt and prodc	1	1	50	0	50	4	1990	2
4	Diva PR	Communications agency	1	5	50	15	35	1.5	1997	3
5	Eventus	managmt of art events	1	2	80	0	20	2	1997	2
6	Forced E'ment	Innovative art on CDRom	1	10	70	0	30	5	1984	5
7	DJ Associates	Managmt consult for arts	1	4	n/a	n/a		3.5	1992	5
8	Distinctive Dvlpmnts	Video game devlpt	0	7	n/a	n/a		3	1994	5
9	Showroom, The	Independent cinemas	0	30	10	10	80	10	1989	0
10	Illuminaries	Dvt IT Bus Mngt Systems	1	4	20	60	20	2.5	1991	4
11	Atomising Systems	Engnering Process Plant	1	10	30	30	40	6	1992	4
12	Lovebytes	Digital Arts and Media	9	2	60	20	20	6	1993	3
13	Blank Tape Studios	Rcrding Sound Services	0	1	n/a	n/a		13	1985	1
14	Technimode	E-Commerce Websites	0	4	20	60	20	4	1993	4
15	Sceptre	Design p/types for sme's	1	7	35	35	30	10	1988	5
16	Comm Media Assoc	Support to media projects	1	8	50	12	38	8	1983	5
17	Total Sound Group	Supply musiceqpt-retail	1	5	10	40	50	5	1994	1
18	AIVAF	I'active exbts for museuems	1	9	25	50	25	10	1988	4
19	DED Associates	Graphic/Digital Design	1	4	80	20	0	2	1991	4
20	Indept TV Commission	Regulate commc TV	1	4	n/a	n/a		5	1954	4
21	AMARC - Europe	Support comm radio prdcrs	1	5	100	0	0	5	1994	1
22	Yorks Med Prodc Agcy	Film and video prodc	1	10	0	30	70	10	1976	5
23	Yorks Screen Comms	Support to film/vid prodc	0	6	n/a	n/a		4	1994	5
24	Soundhouse	AV Devlpt/Prodc	1	2	35	30	35	2	1992	3
25	CBC Cmptr Ssytems	Computer Reseller	0	30	0	50	50	3	1986	1
26	Site Gallery	Photography/media centre	1	7	43	41	16	11	1978	4
27	Bucknall Austin	MM training devlpt	0	9	n/a	n/a		2	1995	5
28	Designers Republic	Design	1	8	75	0	25	3	1986	2

<u>L-Finc</u>	<u>L-Bus</u>	<u>L-City</u>	<u>L-Edc</u>	<u>L-Mkt</u>	<u>L-Lab</u>	<u>L-L/Ac</u>	<u>L-Pric</u>	<u>L-Imagi</u>	<u>L-W/Sp</u>	<u>L-Other</u>	<u>CC(a)</u>	<u>CC(b)</u>	<u>TEC(a)</u>	<u>TEC(b)</u>	<u>BL(a)</u>	<u>BL(b)</u>	<u>CoC(a)</u>	<u>CoC(b)</u>
Q8	3	3	3	3	1	1	1	4	5 n/a	Q8	Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9
	1	5	1	1	1	1	1	1	5 n/a		2 Ot	1 R	1 R	1 Ot	3 T/B/R	1 T	1 T	1 T
	1	4	1	1	1	4	2	4	1 n/a		0 n/a	0 n/a	1 Ot	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a
	1	4	1	1	1	1	1	5	4 n/a		0 n/a	3 C	2 F	1 B	3 B/F	0 n/a	0 n/a	0 n/a
	1	3	2	2	1	5	1	3	5 n/a		4 S	4 S	3 C/B	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a
	1	1	2	1	1	3	1	3	4 n/a		3 F/B	3 F/B	0 n/a	0 n/a	0 n/a	1 Ot	0 n/a	1 Ot
	1	5	2	2	2	2	1	4	4 n/a		2 Ot	2 Ot	3 Ot	4 Ot	2 Ot	2 Ot	2 Ot	2 Ot
	1	3	1	1	3	1	1	3	4 n/a		0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a
	0	0	0	0	0	0	0	0	0	5	4 Ot	4 Ot	2 B	2 B	2 B	2 B	2 B	2 B
	4	5	2	1	1	3	1	4	5 n/a		0 n/a	0 n/a	2 F	4 F	4 F	2 M	2 M	2 M
	1	3	3	1	2	1	1	2	5 n/a		2 Ot	2 Ot	2 T	2 T	2 T	0 n/a	0 n/a	0 n/a
	5	3	1	3	2	5	1	1	5 n/a		9 n/a	9 n/a	1 B	1 B	1 B	0 N/A	0 N/A	0 N/A
	3	2	1	1	1	1	1	1	5 n/a		2 Ot	2 Ot	1 B	1 B	0 n/a	1 B	1 B	1 B
	3	2	2	2	2	3	2	4	3 n/a		2 C	2 C	3 B/F	3 B/F	3 B/F/C	2 B	2 B	2 B
	1	4	3	5	1	2	1	4	5	5	3 Ot	3 Ot	4 F/T/B	4 F/T/B	4 F/T/B	4	4	4
	5	3	5	2	3	5	3	1	3 n/a		0 n/a	0 n/a	4 F	4 F	0 n/a	3 T	3 T	3 T
	5	1	1	1	1	1	1	5	5 n/a		0 n/a	0 n/a	1 T	1 T	1 T	2 T/Ot	2 T/Ot	2 T/Ot
	5	2	4	3	4	4	4	2	2 n/a		0 n/a	0 n/a	4 B/M	4 B/M	4 B/M	2	2	2
	2	3	1	5	1	3	1	3	4 n/a		0 n/a	0 n/a	1 B	1 B	0 n/a	1 B	1 B	1 B
	1	1	3	4	1	4	1	4	4 n/a		0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a
	1	1	1	1	1	1	1	1	1	5	1	1	1	9	0 n/a	1	1	1
	1	5	1	1	1	1	1	5	5 n/a		3 R	3 R	2 R	1 B	1 B	3	3	3
	5	5	5	5	5	5	5	5	5 n/a		4 B/R/F	4 B/R/F	2 T	3 B	3 B	0 n/a	0 n/a	0 n/a
	1	4	3	1	1	2	1	4	3 n/a		3 B	3 B	3 B/F	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a
	5	1	5	5	1	5	4	5	5 n/a		5 C	5 C	3 T	3 M	3 M	3 T	3 T	3 T
	5	4	3	3	2	2	4	4	5 n/a		3 F	3 F	3 F	3 B	3 B	3 C	3 C	3 C
	1	5	1	1	1	1	1	5	5 n/a		0 n/a	0 n/a	3 T	1 B	1 B	2 T	2 T	2 T
	3	2	1	2	1	1	3	3	2	5	1 Ot	1 Ot	1 n/a	0 n/a	0 n/a	2 B	2 B	2 B

<u>Uni (a)</u>	<u>Uni (b)</u>	<u>CIDU (i)</u>	<u>CIDU (b)</u>	<u>Sector (a)</u>	<u>Sector (b)</u>	<u>Other (a)</u>	<u>Other (b)</u>	<u>OVERALL B - CIQ (a)</u>	<u>B - CIQ (b)</u>	<u>B - Sci (a)</u>	<u>B - Sci (b)</u>	<u>B - Sheff (a)</u>	<u>B - Sheff (b)</u>
Q9	Q9	Q9	Q9	Q9	Q9	Q9	Q9c	Q10	Q10	Q10	Q10	Q10	Q10
4 S/C	0 n/a	0 N/A	0 n/a	0 n/a	0 n/a	0 n/a	3	3 S	3 S	2 S	2 S	3 S	3 S
1 T	0 n/a	2 B	0 n/a	0 n/a	0 n/a	0 n/a	0	0 n/a	0 n/a	3 S/Te	3 S/Te	3 S	3 S
4 S/C	0 n/a	4 S	0 n/a	4 F/R/P	2 to 3	4 F/R/P	2 to 3	2 Te	2 Te	0 n/a	0 n/a	2 Te	2 Te
3 C	0 n/a	3 S	0 n/a	0 n/a	0 n/a	0 n/a	3	3 S	3 S	0 n/a	0 n/a	5 C/S	5 C/S
2 S/C	2 P	2 P	0	n/a	0	n/a	2	3 P	3 P	0 n/a	0 n/a	4 P/S	4 P/S
2 C/S/R/M	4 T/B	5 S/C/B	0 n/a	0 n/a	0 n/a	0 n/a	9	S/R	S/R	1 S	1 S	5 S	5 S
5 Ot	3 Ot	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	1	5 R/Te/C	5 R/Te/C	5 Ot	5 Ot	4 Ot	4 Ot
0 n/a	0 n/a	0 N/A	0 n/a	0 n/a	0 n/a	0 n/a	1	2 S	2 S	0 n/a	0 n/a	2 S	2 S
5 C	2 B	5 C	5 C	5 B/F/M/P/S	5	5 B/F/M/P/S	5	5 B/C	5 B/C	3 C	3 C	4 C/S	4 C/S
1 S/C	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	5	C	C	5 C/S	5 C/S	5 C/S	5 C/S
3 R/Te	0 n/a	0 n/a	0 n/a	3 Ot	3 Ot	3 Ot	1	2 S	2 S	2 S	2 S	5 S	5 S
2 B/R	1 B	3 T/C	3 T/C	0 n/a	0 n/a	0 n/a	3	5 T/F/Te	5 T/F/Te	2 C	2 C	3 Te/P/R/S/A	3 Te/P/R/S/A
2 C	0 n/a	3 Te	3 Te	0 n/a	0 n/a	0 n/a	2	4 C	4 C	3 C	3 C	4 C	4 C
3 C	2 R	5 C	5 C	0 n/a	0 n/a	0 n/a	2	5 C	5 C	4 C	4 C	5 C	5 C
5 Ot	4	2	2	0	0	0	4	5 C	5 C	5 C	5 C	5 C	5 C
3 Ot	0 n/a	3 Ot	3 Ot	0 n/a	0 n/a	0 n/a	5	3 P	3 P	3 Te	3 Te	3 T	3 T
4 T	1 T	0 n/a	0 n/a	0 n/a	0 n/a	0 n/a	1	1	1	0 n/a	0 n/a	5 S	5 S
5 S/Ot	0 n/a	2 Ot	2 Ot	0 n/a	0 n/a	0 n/a	2	0 n/a	0 n/a	5 S	5 S	5 S	5 S
1 T	2 S	4 S	4 S	0 n/a	0 n/a	0 n/a	3	5	5	4	4	4	4
3 T/R	0 n/a	1	1	0 n/a	0 n/a	0 n/a	2	1 n/a	1 n/a	0 n/a	0 n/a	4 n	4 n
1	0 n/a	3	3	0 n/a	0 n/a	0 n/a	1	3 Te/S	3 Te/S	3 Te	3 Te	T/Te/S	T/Te/S
4 R	1	5 R	5 R	0 n/a	0 n/a	0 n/a	9	5 B/C	5 B/C	5 B	5 B	2 B	2 B
3 R	3 Te	4 R	4 R	4 B/T/M/S	4	4 B/T/M/S	4	5 R/B	5 R/B	0 n/a	0 n/a	3 T/B/F/M	3 T/B/F/M
0 n/a	0 n/a	0 N/A	0 N/A	0 n/a	0 n/a	0 n/a	2	5	5	4	4	5	5
5 C	2 C	3 C	3 C	0 n/a	0 n/a	0 n/a	3	3 C	3 C	4 C	4 C	4 C	4 C
4 C	4 B/Te	4 P	4 P	0 n/a	0 n/a	0 n/a	5	4 P	4 P	2 R	2 R	4 S/P	4 S/P
3 T	0 n/a	2 R	2 R	0 n/a	0 n/a	0 n/a	3	3 S	3 S	3 S/C	3 S/C	3 S	3 S
1 C	0 n/a	3 C	3 C	4 Te	4 Te	4 Te	2	4 S/Ot/Te	4 S/Ot/Te	2 Te	2 Te	5 S/Ot/Te	5 S/Ot/Te

<u>B-Out (a)</u>	<u>B-Out (b)</u>	<u>Network F Network I</u>	<u>Business</u>	<u>Commerci</u>	<u>Innovation</u>	<u>Subcontract I to F?</u>	<u>Spatial</u>	<u>Competiti</u>	<u>Cooperative</u>				
Q10	Q10	Q12	Q12	Q13	Q13	Q13	Q13	Q14	Q17	Q19	Q20	Q20	Q20
3 S	1	1	1	1	1	1	1	0	A	1 N/I	0	0	1
5 S/Te/P/C	9	9	9	9	9	9	9	9	9	0 I	0	0	1
5 Te/P/P/C	1	0	0	0	0	0	0	0 A/P	9	0 I	0	0	1
5 C/S	0	1	0	1	1	1	1	0 Ot		0 N	1	1	1
1 S	0	1	0	0	0	0	0	1 Ot		0 R	0	0	1
5 S	0	1	1	1	1	1	1	1 A	n/a	1	0	0	1
4 C, Ot	1	1	1	1	1	1	1	9	9	1 R	0	0	1
5 C	1	1	0	9	9	9	9	9	9	0 N	0	0	1
4 C	1	1	1	1	1	1	1	0 A/P/C		1 C	0	0	1
C/S	1	1	1	1	1	1	1	1 A/S		1 R	0	0	1
5 S	9	9	0	1	1	1	1	0 A		0 I	9	9	9
3 Te/P/R/S/C	1	1	1	1	1	1	1	1 A/P/C/M		1 N	0	0	1
2 C/S	0	1	0	0	0	0	0	0 A		1 R	1	1	1
5 C	1	1	0	0	0	0	0	1 A/S		0 N	1	1	1
5 C	1	1	0	0	0	0	0	1	9	1 R	0	0	1
5 P/T/Te	1	1	1	1	1	1	1	0 A/M		1 R	0	0	1
5 S	1	1	0	0	0	0	0	0	9	9 N	0	0	1
5 S	9	9	1	1	1	1	1	0	9	9 I	9	9	9
5	1	1	1	1	1	1	1	0 Ot		9 N	1	1	1
4 n	0	1	1	9	9	9	9	9	9	0 R	9	9	9
3 T/F/Te/S	0	0	1	1	1	1	1	9 A/P/O		1 I	0	0	1
5 B	1	1	1	1	1	1	1	1 A/P/M/S		1 R	0	0	1
3 R/F/M	1	1	1	1	1	1	1	9 n/a		1 I	1	1	1
5	1	1	1	1	1	1	1	1 A/P/M/S		0 N	1	1	1
5 C	0	0	0	0	0	0	0	0		0 R	1	1	1
4 S	1	1	1	1	1	1	1	1 A/C/S		1 C	1	1	1
5 C	0	1	1	9	9	9	9	9	9	9 N	1	1	1
5 S/Ot	1	1	0	0	0	0	0	0 P/Ot		1 I	1	1	0