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**Article (Accepted version)
(Refereed)**

Original citation:

Pratt, Andy C. (2000) New media, the new economy and new spaces. [Geoforum](#), 31 (4). pp. 425-436.

DOI: [10.1016/S0016-7185\(00\)00011-7](https://doi.org/10.1016/S0016-7185(00)00011-7)

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Available in LSE Research Online: September 2008

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New media, the new economy and new spaces

Version to appear in GeoForum, Sept. 2000

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Abstract

This paper counters proponents of the 'weightless economy' who have suggested the 'death of distance' in relation to economic and social activities that use the world wide web. An analysis of new media developers in New York's 'Silicon Alley' demonstrates that place and distance still are in important. The most important aspect of this co-location is the possibility of social interaction. This paper points to the value of analysis of the material practice of the social (and the economic and cultural). The notion of 'untraded dependencies' is developed through looking at its manifestation and constitution in the specificity of space, time and economic activity.

Introduction

There is a growing consensus amongst academics, business commentators, politicians and the news media that the infrastructure, technologies and practices which constitute the new media are revolutionising economic activity, most specifically through the activities known as electronic-commerce (e-commerce) and business-to-business (B2B). Many (non-geographical, mainly economic) commentators are also quick to add that the role of geography in shaping the location of these new economic activities is at best limited, at worst it is non-existent. A growing number of accounts do document, albeit in a partial or anecdotal manner, a revolution of business practices and economic organisation. However, none, as yet, seem to be able to sustain the popular argument that geography, or specifically place and distance, no longer matters. This point is also borne out by the empirical evidence of local clusters of new media activity in New York, San Francisco and London and many other global cities (see Hillner and Weiners 1998).

It may be hypothesised that geography matters even more in this current phase of development of new media. The aim of this paper is to explore why and how geography matters, and to offer an account of the multiple dimensions of the clustering of new media activity. We accept the case for un-traded dependencies playing a role, however, the paper suggests that it may be necessary to adopt a rather more sophisticated view of un-traded dependencies than is currently found in the literature.

The paper is divided into three substantive sections. The first section situates the research in the context of the development of the internet and the world wide web. The second section outlines a number of conceptual debates that have a bearing on accounting for new media practices and the locational clustering of new media activities. The final substantive section is a case study of new media in Silicon Alley, New York.

Definitions

The term new media has been used carefully in the research reported below in order to represent those involved in developing tools and practices that exploit the potential of the world wide web. As we will note below, definitions are contentious, so this is a situated definition, not one that is universally held. New media incorporates what has commonly been known as multimedia: literally, the convergence of text, sounds and images in the same medium. Multimedia, as a term, is closely associated with the CD-ROM delivery system. New media is used in this paper as a term to refer to all multimedia systems whether on-line, on disc, or related to the development of older broadcast or recording technologies associated with text, sound and images.

The focus of interest in this paper is on the practitioners of new media, those who construct and maintain web pages and those who create companies that seek to exploit the possibilities of e-commerce or B2B activities. We have consciously focused on companies primarily involved in these activities, and not looked at those companies that have 'bolted-on' a new media capability to their existing business. To include such companies would introduce a range of confounding factors into an already complex situation; however, this might be a useful focus for future work.

There is a common perception amongst commercial analysts of new media that the sector will continue to grow (see Baldwin et al. 1996, Kelly 1998). This prediction is based upon the well-founded assumption that because new media is a convergence form, its impacts will migrate to activities that form the basis of convergence. Thus, the first two areas of frontline impact should be: first, media, communications, and the electronically based cultural industries; and second, businesses going 'on-line' (the domain of e-commerce and B2B). Many commentators have claimed that economic and business practices are somewhat peculiar in the new media sector. This 'strangeness' of the new media sector, added to its capacities to impact more widely on the economy as a result of convergence, has led some commentators to claim that new media will create a 'new economy' with new rules of business practice and

economic rationale (Kelly 1998). This paper does not make any claims as to the broader nature of the current or the future 'new economy'. Instead, it confines its comments to developments and practices within the actually existing new media sector.

Novelty and rates of change

A key problem in an analysis of any aspect of new media is time. There are many anecdotal accounts of the almost instantaneous economic success, as well as verified empirical evidence of the actual performance of 'e-stocks'. The 'e-economy' is the child of the world wide web (WWW). The WWW has come to prominence, and crucially to wide user-ship, only in the late-1990s. The rate of growth is dramatic.

The internet, that is a network of switches to split, direct and recombine digital packages of information, was initially developed in 1964. The public investment in the ARPANET in the US expanded the internet across military and university installations (see Hafner and Lyon 1996). Various national information infrastructures initiatives were proposed in the early 1990s, notably US Vice-president Al Gore's much heralded 'information superhighway', with an aim to expand both the internet to build national foundations for companies providing hardware and software. A key objective here was not so much that of 'rolling out infrastructure' as that of creating demand to build up the user base, so that the (national) private sector would be stimulated to develop internet software tools and applications. The notion was that once a base in protected national markets had been established, international trade could develop from a position of strength (see Lanvin 1993). The 1964-89 version of the internet, a switching system of digital information, had a limited application. However, the development of the WWW, the multimedia branch of the internet that utilised graphical elements, in 1990 was the beginning of that which is recognisable web of today. Another key element was the development of software, most notably search engines, and particularly web browsers. The first browser, NCSA's Mosaic, was developed in 1993. In 1995 Netscape's Navigator became available

and quickly established itself as a universal standard. Microsoft later sought to re-colonise the web via its own browser, Internet Explorer¹. Around the same time companies such as Macromedia developed web-authoring tools - such as Director - to facilitate the construction of web pages. The final element was been the growth of Internet Service Providers (ISPs) providing access to the internet for private users. The growth of ISPs has been even more recent; however, the growth has been significant. America Online (AOL) had achieved such a powerful position by the start of 2000 that it was able to draw the global media conglomerate Time-Warner into a merger². The resulting entity was, at formation, the third largest company in the world, with a turnover close to that of Mexico.

Research lags, Time lags

Historians of technology comment upon the rapid adoption rate of the web compared to technologies such as the telephone or the fax. One of the stable characteristics of the new economy has been the rate of change and instability of both technologies and of business and wider social practices. A period 5 years, or less, of 'permanent revolution' is hardly the best vantagepoint from which to make any sort of judgement about the structure of an industry, or its location patterns. However, this situation must be faced when carrying out research in this area.

The object of our enquiry is thus novel, and constantly changing. A large number of journalistic accounts of the growth of the web, and commercial adventures of its use, are now appearing (see for example Stoll 1995, Negroponte 1995, Coupland 1995, Hafner and Lyon 1996, Ullman 1997, Dyson 1997, Woolf 1998, Kelly, 1998, and, Bronson 1999). These offer a partial insight into the various lifeworlds of the protagonists, and are a necessary part of the background to a study such as this. What is of particular

¹ Both Navigator and Explorer were distributed free in an attempt to develop demand for the use of the web. Clearly, there was a future possibility for any provider of such software, if it had enough users, to exploit its monopoly position by extraction of a micro-rent for each use. In part, this is what propelled Microsoft into the market.

value in these accounts is not only their immediacy, but also the ways in which some recount an awareness of the un-formed, only partially imagined, potential of the web. Companies and individuals are not only considering filling a market niche with a refined product as is commonly found, in the case of new media they are having to simultaneously imagine a market, a niche, and a product. This extraordinary practice is an important characteristic of the new media sector. Moreover, in parallel, there is a strong conviction that huge amounts of money will be made from these (yet undefined) activities.

Three simple models can be identified. Internet Service Providers offer a standard manner of making money, they are gatekeepers charging a tariff for use. Advertisers offer another traditional mechanism; clients can be charged for display advertisements. Finally, web pages can act as a display that can be a 'shop window' or a point of sale. However, these three models offer a rather backward looking conception of the future of the web, and its convergence with commerce, entertainment and information. The additional possibilities lie at the boundaries of imagination and technical problem solving that can link together both concepts of exchange and the practicalities of facilitating that exchange with interactive communications technologies. Much of the initial development of web companies has focused on the simple provision of services (web page design), or the creation of a new type of intermediary between suppliers and consumers. Some radical organisational forms that are first confined to web companies have quickly generated a re-alignment of organisational forms in non-web companies as they too attempt to exploit the potential of web-based commerce.

Conceptualising new media activities

Academic accounts of new media are rather less common than the journalistic variety, in part due to the lag-time between research idea, funding application, research activity and publication that can commonly exceed 3 or 4 years. A variety of strands of academic work can be identified, they can be broadly

² See Herman and McChesney (1997) for details of the political economy of the global media industries before convergence with the WWW.

categorised into those that are concerned with the 'on-line' world, and those with the off-line world. The former can be divided into two camps. First, those sociological or cultural accounts that explore the formation of online identity and community (for example Rheingold 1993, Burrows and Featherstone 1995, and Doheny-Farina 1996). Second, those by economists interested in electronic commerce. A particular influential representative of this group have theorised about the 'weightless economy'. The off-line group are characterised by those concerned with a range of physical, location, economic, social and cultural settings of new media activity. Next, we review the literatures on the weightless economies and multimedia clusters as a way of positioning the Silicon Alley case study.

Weightless economies

A body of work on the 'weightless economy' has been developed in the field of economics and has become influential in business and policy arenas (see Quah 1996a, 1996b, 1997a, 1997b; Coyle 1998, and Carincross 1998)³. This work has yet to make an impact within geography; this is ironic given what it has to say about geography. Put very simply, accounts of the 'weightless economy' point to the radical possibilities of the cost-free reproduction and distribution of e-goods such as software. Infinite numbers of copies (all 'originals') can be made and be instantaneously available ready for use on any number of customer's computers. Consequentially, the role of physical location associated with transport of raw materials to the producer and the goods to market are no longer relevant. Producers will be free to locate where they wish. An extension of this argument us that cities will decline as centres of economic activity and be replaced by dispersed teleworkers. It is on this foundation that the notion of the 'death', or the end, of geography as a location factor in relation to new media has been built.

³ This body of work is also referred to as dematerialised economics. Leading business commentators, as well as national and international public policy advisors also draw upon this literature. These ideas are common currency amongst what Nicholas Negroponte (1995) terms the 'digerati' (for example, those associated with Wired magazine and with MIT Media Lab) as well as more widely such as with writers and commentators on The Economist and Financial Times, and the Bank of England Quarterly.

It is not my intention to dispute the core idea of the 'weightless economy'; simply to add three significant caveats that concern the embedded nature of the weightless economy in the world of atoms and people. First, even within 'new media' few goods actually fall into the weightless category. The prime example is a software programme. To be weightless it must be conceived, traded and distributed on-line, moreover, it must have no paper documentation and no packaging. Few items reach such purity, often for good reason. It is possible to sell computer games in this way. However, people still have an attachment (maybe nostalgic) to consuming material objects: the box and the brochure associated with a product. As one of my informants noted: "you can't put a web-page under a Christmas tree". So, whilst weightless products are possible, they are not yet, and possibly may never constitute, the majority of goods traded (even as a proportion of those that are nominally weightless).

Second, weightless products still have to be conceived and created. As yet, software is not autonomously produced by other software. In fact, as the case studies of the development of contemporary software indicate (see Cusumano 1991, and Cusumano and Selby 1996), production is an intensively human process. Production involves a huge amount of investment to sustain the employment of huge teams of designers and managers to create and continually update the software. On top of this there is a huge sales force, advertising, and a growing cohort of 'help staff' to be maintained if a product is to be trusted and viable.

Third, related to the second point, that the armies of software designers, managers, sales and support need to be co-ordinated. It is theoretically possible to carry out such tasks remotely. Software exists to facilitate sophisticated monitoring, delegation and evaluation of dispersed tasks carried out by individuals connected to a system. Thus, conceivably, all of these tasks could be carried out remotely and there exist a 'virtual software factory'. Moreover, the 'virtual city' could also exist whereby work related social interaction could take place. However, the 'power of place' seems to continue to exert an influence. A good example is the recent growth in 'call centres' in

many parts of the world. It is true that some staff work from home, however, by far the majority work in individual cubicles in huge open plan 'sheds'. Workers are intensively and many would argue intrusively monitored (data is collected and summarised by managers of every key stroke, and of the time to make a sale on a call; time of visits to the toilet are also measured in detail). However, workers are still collected together in one location.

Work has yet to be carried out on this issue, however, one can hypothesise that there must be some local, geographical factor, related to surveillance, to work discipline or work practices, that commercial operators believe benefits co-location of workers. Such a location factor must apply to both routinised work such as call centres, as well as to specialised activities such as software, see, for example, the corporate campuses of Microsoft et al. The same point can be made regarding clusters of companies that either group around the corporate campus; or, to the grouping of new media companies found in New York, San Francisco, London, and other emerging centres. Thus, despite the apparent logic and potential of the 'death of distance' with regard to the weightless economy, when the matter is looked at in more detail there are a number of material impediments that 'bring it back to earth'.

Before moving on, we must note a further issue, namely that the weightless economy only accounts for activities in part of the economy. Where there is e-trade involving regular, weighty, goods then production of these goods must still take place and the role of labour processes and transport costs be taken into account. Perhaps it is better to think of e-commerce companies as a new technical division of labour. Whilst it may be argued that one fraction of the labour process is freed from location constraints; it is still inextricably linked to the rest of the production process which is subject to more traditional location factors. Even if we take the extreme case by abstracting e-commerce from its production processes we could argue that such activities will still be subject to ties of particular places. As we will note below, these ties may not be of the traditional transport variety, but instead related to organisation and knowledge transfer issues. Nevertheless, the result is a spatial clustering.

Embedding the weightless economy

If the prescription of the death of geography is premature how are we to account for, and explain this geography? One useful source of insight might be the body of economic geography that has sought to account for clustering of economic activities. Work on transaction costs has been used to account for similar phenomena in more traditional manufacturing industries. However, this argument rests upon the minimisation of transaction costs through organisation and location. Transaction costs theorists argue that, organisationally, costs may be reduced through outsourcing production to sub-contractors (see for example Williamson 1975; 1985). Empirical analyses indicate that strong control over contractors may require frequent contact and inspection of part-finished goods, as well as transport of goods from supplier to production in a very short time period (such as Just-In-Time systems). Both points suggest a spatial dimension to the minimisation of transaction costs, namely physical proximity and the co-location with similar or parallel industries (see Scott 1988).

Analyses of clusters, or co-located firms, have highlighted what are termed 'untraded dependencies'. Untraded dependencies may reinforce the economic factors of transaction costs. Storper (1997:19) identifies 'labour markets, public institutions, and locally or nationally derived rules of action, custom, understanding and values'. Other writers have used the far more diffuse term of the embeddedness of economic action to allude to the same processes (see Granovetter 1985, Grabher 1993).

The question is, what form transaction costs, untraded dependencies, or embeddedness generally, take in the new media sector? Moreover, will these factors be manifest as a co-location of firms engaged in the same and parallel activities? If the weightless economy hypothesis is followed to its conclusion, along with the technological determinism commonly found in such accounts, we should not expect clustering. Transaction costs, are the very stuff of B2B and e-commerce, what clustering there was would occur near distribution

hubs. It could also be assumed that untraded dependencies could be managed 'at a distance' with telephone, email and web cameras.

Research by Scott (1999: 811) draws upon fieldwork in a range of cultural industries, he argues that the spatial clustering of producers facilitates 'unstable, finely grained, frequent and mediated face to face contact', moreover, that mediation, iteration and heuristic development involves 'not only concrete practices and technologies, but also the emotive content of products' (emphasis added). Following this, it could be hypothesised that in the field of new media a clustering of producers will occur where new communications technologies are insufficient to capture the full range of human expression. Although it is not the focus of this paper, we might also expect to find a clustering of distribution points at transportation hubs, something not so different to current patterns.

Clustering of producers will, it may be hypothesised, occur in particular places, namely those that afford a large degree of chance and random encounter with both similar and different producers, and users. These places would facilitate mediation, iteration and heuristic action that is integral to production in the wider cultural industries, and particularly the case in new media.

The debates outlined above suggest that whilst manufacturing industries may exploit economies of scope via subcontracting the additional communications needs that involve person time and transport are more likely to be resolved through co-location. Arguments about the weightless economy suggest a minimisation, or erasure, of distance effects due to the improved facility of communication and 'free' transport of finished goods (if they are wholly software). Although not mentioned in the literature, there is empirical evidence to suggest that e-trade that involves 'weighty goods' will give rise to warehouse clusters near existing communications hubs that give access to large markets, commonly at motorway intersections⁴. Amazon.com's

⁴ This process of the re-organisation or warehousing and distribution, together with the use of automated picking systems, has already developed apace (see McKinnon and Pratt 1985).

distribution centre in Slough, west London is a good example (see Dodge 1999).

The case of new media would seem to offer a better potential fit with the weightless economy argument as it represents a new technical division of labour that can be organisationally and physically separate from production and distribution. Clearly, B2B interactions (purchasing) could potentially erase the standard transaction costs arguments for co-location; however, the issue of untraded dependencies may be less clear cut. The most important point is whether electronic communications can fully replicate the physical world of face to face meeting and social interaction. The aim of the remainder of this paper is to explore the nature of untraded dependencies in the new media sector in Silicon Alley, New York. As will be clear as the argument is developed, it is first necessary to explore the local nature of business and labour organisation.

New media, New York (Silicon Alley)

New York has emerged as a contender to be the world node in the production of 'new media' (see Hillner and Weiners 1998). Such a claim has been made by protagonists via assertion, reference to commissioned research, and journalistic survey (see Coopers and Lybrand 1996, 1997; Indergaard and McInerney 1998; Citizens Budget Commission 1998). The objective here is not to evaluate such claims; rather, simply to acknowledge that the protagonists believe it to be so and to explore how they are seeking to substantiate such claims. One of the themes developed below is how New York, or rather Silicon Alley in particular, is actively being 'made' into a New Media centre.

The findings reported below draw upon a series of in-depth interviews and participant observation carried out in mid-1998 in New York. The objective is to bring as few preconceptions to the research as possible. Thus, the agenda was to find out what people were doing, how they constituted themselves and their companies, and how they carried out their business. This naïve approach employs a loosely defined ethnographic frame of reference. The overall

objective is to report activities as the protagonists see and understand them, and in so doing render their life-world for comparison or contrast with more general expectations or assumptions.

Research on the topic of new media is very difficult, due to the fast moving nature of the business and its relative youth, consequently, very few documentary records exist. In addition, there is considerable debate amongst and between protagonists and general commentators as to what new media actually is. A wide range of new media protagonists were interviewed (networkers, employees, free-lancers, entrepreneurs, property developers, and city officials). Each interview took place in the new media milieu, in Downtown and Mid-Town New York, in the office, studio, coffee shop, or restaurant. Interviews probed the history and current position of protagonists in the creation of new media enterprises. Interviewees commonly ranged over (what academics would classify as the economic, social, cultural and political) aspects of their work and life in a seamless thread. Rather than excluding the 'non-economic', or the 'non geographical', discourse from the analysis I sought to embrace the complex webs of relations that characterised protagonists lives. As well as the interview material, secondary sources such as web sites, newsletters, e-letters, and newspapers were monitored. I also 'hung out' in Silicon Alley talking and observing activities inside and outside new media companies, and in the social milieu that the new media workers frequented.

Interviewees were very sensitive about labelling; they generally sought to distance themselves from the term 'multimedia' and orientate themselves toward the label 'new media'. Accounts of this preference cited the commonly held, lay, association of multimedia with CD-ROMs; which were generally regarded as either at best a limited, or at worst a failed product. The term new media sought to link their activities with established 'media' activity; at the same time associating with the 'new' achieved a distancing effect of themselves from the 'old'. Finally, many interviewees were reflexive about the term, considering 'new media' as a 'place holder' rather than a defined place. Whilst this point may be considered as minor, I think that it is emblematic of the unstable and hybrid nature of what we might understand as 'new media'.

The analysis that follows summarises the findings from this research through seven themes that offers a number of perspectives on the form and nature of new media activities in New York.

Burn rate: the vaporous company

Most economic and cultural geographers display unquestioning confidence that their respondents know what they are doing. The new media community is demonstrably and overtly unsure about its own activities; however, this is presented with some bravado. This can be accounted for either in terms of naivety, or in terms of insight. I think that what respondents were trying to communicate was the inappropriateness of conventional business models. Indeed, they often orientated against 'business models'. Their ad hoc alternative was to go with the flow and 'make it up as you go along'. Another way of looking at this would be an, yet un-named, flexible management and product strategy. Conceptually, this resonates with the notion of strategic agency discussed above. Here the point is not so much about alliances, but about actually constituting the resources (human, physical, financial and contractual) to create a firm that has some stability of business goal and product. Some sense of the economic and organisational maelstrom within which new media operates can be garnered from the following thumbnail sketch of a new media 'start up' that can be patched together from interviewees experiences.

A typical company is set up by a one or two high-school students who work part-time, all night, in their bedrooms in upstate New York. What investment is required is financed on unsecured loans commonly using a credit card. The big break is getting a contract to design a one-off web page for a small company; then they may move to New York to be part of the perceived New Media community in 'Silicon Alley'. This pattern may continue until they want to pitch for larger contracts, or they devise a web related application that they think might be saleable (a software application is the most conventional, however, some only have a distinctive site name and a concept). Product

development, or company development, requires finance for new hardware and staff; this requires money in the form of 'up front' investment.

Next most new companies seek venture capital. They do this by pitching ideas to venture capitalists who meet new media developers at 'cybersuds' parties. Cybersuds parties, are informal meetings of new media people ('cyber-') with drinks, beer ('suds'); people meet, network and talk (have 'face time', or meet IRL: In Real Life). These parties are also where the new company may recruit, via word of mouth, new employees. The venture capitalists are effectively 'shell' financial instrument for small investors. Venture capitalists create a strategic position such that they are the key passage-point of investors and companies. The Venture Capitalists will, if they are interested in the investment, put together a plan with a clearly defined 'exit strategy' timed for 18-24 months hence. Thus, money is channelled into the company, which may well at this stage have not produced a product or sold anything. The exit strategy is the Independent Public Share Offering (IPO); where stock in the company will pay off the initial investors, channel some money to the initial entrepreneurs, and raise further development capital. In a recent commentary on this process Michael Wolff (1998; see also Cringely, 1996, on a similar process in Silicon Valley, California) refers to the total capital advanced divided by days before the IPO as the 'burn rate' of new media companies. At this stage the original new media entrepreneurs may have, via stock options or straight payment, been made rich; the venture capitalists and their clients have made their profit, and shareholders will be holding shares (which may well be appreciating in value). The company may well still not have produced anything; or, it will, as in the case of all internet companies at the time of writing, be making an operating loss.

It is not surprising that conventional Business School models flounder in such a vaporous world of expectation and virtuality. Of course, what all protagonists hope and believe (not unrealistically) is first that there will be a product, and second it will have a market, and third, that eventually profits will be made, and the stock will be worth even more than it is now. Aside from those who have made an early profit through an IPO, entrepreneurs worry about how to

make money from the internet. What can they sell; what is their product or service? This is the other aspect of the lack of a business model, the lack of a product.

Virtual products and services: the viral company

We can perhaps now see why those outside the new media community feel more secure with the idea of the CD-ROM/multimedia. As one interviewee noted, retailers, investors and consumers understand and accept multimedia, especially if it translates into a familiar box or material objects (classically, the CD-ROM in a 'jewel box'). All concerned have many more difficulties with 'new media' especially if it has no material product associated with it. So, shiny disks can retail with a price point; the consumer is used to buying records and CDs. CD-ROMs are more of the same. Except, they are not; they are a version of new media. Other versions are still 'under development'.

If 'new media' is not quite a boxed product, maybe it is simply a service? It is clear that a web designer can sell her services on a one-off, or continuing basis; just as any other service might be sold. Likewise, new media companies can package information for delivery (databases, images, text). Finally, they can use new media to sell other products: namely advertising. These three stereotypes have analogous positions in the old media world; and as such their business models are not so different.

This is true to an extent. However, few companies seek to replicate old media in this way (this is the generally acknowledged failed strategy of old media operating with new media). Even the 'straight' strategies noted above tend to hybridity. In short, the potential of technology and human imagination generates something new. Advertising is not 'sold' in the conventional way. An illustration of the Madison Avenue based company DoubleClick (<http://www.doubleclick.net>) will help here. DoubleClick operate software that collects and analyses information on the user and the web site looked at 'on the fly', such that by the time the user clicks on the second site information systems and databases have been analysed and a customised advert is

placed on the user's screen. DoubleClick collects a rent from advertisers for the number of 'clicks' as well as the accumulated data returned to companies advertising with DoubleClick. Such a simple idea (though very complex in practice) is an apparently 'sure-fire winner'; yet DoubleClick, one of New York's most successful new media companies, still has yet to file a profit.

DoubleClick, which effectively trades data, is one of the more conventional companies. Many others have a far less clearly defined product or activity. In fact, this is complicated by the fact that so many companies that I interviewed were in an advanced and rapid state of evolution/revolution. In summary, a continuum can be identified from Web page design, through, advertising, marketing, e-commerce, logistics, management consultancy and artist. Some of the companies had migrated, from one activity to another as they became trusted by contractors. It is perhaps better to identify these companies as 'viral' in nature. Just like a biological virus, they mutate and develop when in contact with host companies. In some cases one or other partner may 'kill' or absorb the other.

For many readers the appendage of 'artist' to the activities of new media companies may seem anomalous. However, it is an important part of many companies' identity, and that of their workers, that they are also producing 'cutting edge' digital art. Some companies host 'digital galleries' of their own, their friends, or simply their favourite, work (see Razorfish: <http://www.razorfish.com>). While for some companies this is part showcase for their design skills, for many it seems to be a statement of principles associated with the workers identities.

The firm as zoo

Given what has already been discussed above about the nature of new media production it will be no surprise to discover that the labour process too is far from that which we may normally expect to find. In many respects, 'normal', is not a word that adequately describes much of what goes on in the cultural industries more generally, let alone new media (see Lash and Urry 1994).

Thus, it is not surprising that we find casualisation, self-employment, chronic job insecurity, and 'self-exploitation' common to analyses of the media and cultural industries more generally (Ross 1997, Zukin et al 1999). Some particular aspects of the new media workers are worth highlighting. The first, and this is shared with many other media industry workers, is the spill over between work and play. Long hours and socialising with media co-workers and other creative workers generates a strong and peculiar affective community.

What is particularly interesting is how difficult it seems to be to create 'firms'. We have already noted that the 'market' location of a firm and its product are problematic. However, even when this problem is resolved the internal issues of constituting a firm still have to be attended to. A strong aspiration of many new media workers is to freelance, or to be self-employed. Indeed, it is possible to operate on this basis. Consequently, many new media companies find it difficult to recruit staff. Aside from the usual labour market recruitment issues the most significant in the new media world are those of convincing workers to eschew independence and work for a company. Companies talk of the need to 'add value' via décor, perks, and a relaxed setting. In addition to financial benefits, which usually are not about pension schemes and health plans, there are stock options in the company. Recruitment is seldom by conventional advertising but by word of mouth and e-lists.

Perhaps most interesting is the labour process in new media. New media companies seldom have a defined structure and hierarchy. The best analogy is that with a common radio and television format that emerged in the 1980s called 'zoo radio' (see Garner 1990; Gill 2000). In contrast to the usual format of DJ presenter and his /her silent support staff, the 'zoo' format involves the presenter and 'the team' all contributing in a rather haphazard and informal manner to the programme. The concept of the firm as a 'zoo' captures the extreme informality and the mixing of different skills and expertise required to get the product completed. The common sense meaning of 'multi-media' is suggestive of the necessity to meld many different media skills. The new media community, and educators associated with it, in California have

identified this as a potential problem. The model of the 'studio' has been suggested as worthy of emulation by new media companies, whereby the key individual is the Director who has to plan, marshal and mediate between many different individuals and skill sets, as well as weaving a successful narrative, and completing the project (Regan and Associates 1997: 13). Companies report that they develop 'corporate structures' in an isomorphic response to contracting relations; in many cases, this is more the 'corporate face' of an organisationally anarchic firm.

The new media tribe and the 'bulimic career'

Many workers talked about the salience of their identity as part of 'new media', a point that is buoyed by their interaction with a 'community' of like-minded workers, and the construction of the community in writing by the press and by civic promotion agencies. Moreover, it is also linked to a particular elective affinity group associated with lifestyle, music, aesthetics, décor and clothing. There are strong parallels here with the notion of the 'tribe' that Maffesoli (1996: 139) discusses.

"...[T]he constitution of micro-groups, of the tribes which intersperse spatiality, arises as a result of a feeling of belonging, as a function of a specific ethic and within the framework of a communications network" (emphasis in original).

Obviously, more detailed work would be needed to establish this notion more fully, however, it is a useful proposition that might be explored in future work. In the New York research I found that new media workers tended to self-identify with two stereotypes: (software) coders and (digital) artists. Both groups tended to work in 'boom and bust' patterns; which I term 'bulimic careers'. People work long days and nights, then break until the next project. They keep this pattern up for a few years and then fear 'burn out' and take what many referred to as a 'sabbatical' (see Ullman 1997, for an autobiographical 'factionalised' account of new media workers in San Francisco that closely follows accounts that I heard in New York). The sabbatical described typically divides along the group that they identify with most. Coders aspire to a trip far away (South America, India, SE Asia, etc.) to

'discover themselves', or to discover the 'meaning of life'⁵. Artists take time off to develop their art. Interestingly, the some of the artists feedback their 'pure art' into their commercial practice either directly, or as a 'sidebar'.

Network building

Networks exist within, without, and across firms, financiers and clients. This statement is equally true in other areas of economic activity. However, in the new media community developers and financiers have sought to 'grow' the community. I am not simply referring to networks as connection here, rather the notion of network as a constitutive and constructive process and entity. In New York, for example, Wall Street exiles searching for potential new investment targeted nascent new media companies. Obviously, such investment is risky; in the mid-90s it was more so. It can be hypothesised that the synergistic relationship between venture capitalists and new media developers developed to reduce the investment risks.

The New York New Media Association began as a series of soirees and dinner parties of those involved in the arts and technology; as a cultural link between MIT(Boston) and New York⁶. At such occasions, business and pleasure mixed with the exchange of knowledge. Investors developed the knowledge and insight that made investment possible. In time these parties grew from what became 'cybersuds' meetings, to huge 1,000 plus attendee events⁷. The role such events play is still as a point of the exchange and updating of knowledge, as well as acting as a crude market place of ideas and business options; additionally, they have developed into a community support and labour recruitment fair. This is the process by which the NYNMA was created. Subsequently, it become the 'public face' of the New Media community, able to act as a 'third party' to pressurise the City for concessions for its members; it has also acted as a publicity machine (see below). Another

⁵ Most of the workers that I interviewed were in their 20s.

⁶ The point here is the attempt to replicate the overlap of technology, money and media that proved so propitious in Silicon Valley.

⁷ For example Silicon Alley 99 (www.siliconalley99.com), and the Rising Tide (July 1998) <http://www.siliconalleyreporter.com/rts/party.html> events organised by the Silicon Alley Reporter.

spin-off of this community are the online newsletters: for example, @NY (<http://www.atnewyork.com>), and the Silicon Valley Daily (<http://www.siliconalleyreporter.com>), as well as the glossy paper magazine, Silicon Alley Reporter, which acts as a cross between social diary, gossip column and business barometer. Of course, the irony for many is that 'face time', plays such an important role in such a wired community. More generally, this question also resonates with questions about space and place in the wired world.

Locating the wired world; aligning bits and atoms: the portal as strategic agency

It has been suggested, inappropriately, that place is not important in the field of activities that can be transacted entirely via electronic means. However, the fieldwork does suggest ways in which space is very important. The first, is the achievement of strategic agency; that is, the optimal solution, or the advised solution to the problems of others. Second, the mediation of the real and the virtual worlds that is manifest in physical location.

The first sense has two dimensions to it. First, the organisational and aspirational interlocking of interests via strategic alliances. In the wired world this is best illustrated by the notion of a 'portal'. Simply put this is a web site which acts as a window to a selection of other sites. The 'portal' operator (such as Yahoo!, or , on a subscription basis, Compuserve) charges a rental to those other sites to which it signposts. The rental charged may be linked to the numbers of users passing through the portal. These companies literally position themselves at a junction, through which they hope many will wish to pass. Their success will be increased by convincing more users that their aspirations and desires will be satisfied if they use the portal.

The second sense, is the product: or, as the e-community would have it, the killer application. The term 'killer application' has commonly been applied to

software applications such as 'Visicalc' the first computer software spreadsheet that not only defined a business tool, but also made it worthwhile buying computers for average business users (see Cringely 1996). A similar application for the internet is the 'holy grail' of new media developers. Hopes were high for CD-ROMs as carriers of information, games however they were very slow to build a PC dedicated consumer base. Latterly, films via Digital Video Disk (DVD), and shopping, have also sought to re-invigorate this delivery channel. The details are not relevant here, what is important is that each of these 'products' seeks to define a 'territory' in virtuality through which all other users will want to, or have to, pass. As users pass that way, a micro-rent can be applied and, as the traffic flow increases, so will incomes.

Despite much popular media comment that asserts otherwise, it can be argued that the development of a completely 'virtual' portal is impossible. A successful portal has not only to align the bits, but also the atoms. The early CD-Rom was evidence of this; they were developed and sold (or, more commonly given away free in a 'software bundle') on the back of a physical 'pre-installed' base (integral CD ROM players in PCs). Whilst bits and atoms were aligned in one strategy, strategic agency was not achieved. Retailing of games and information has generally been about transferring existing activities from one platform to another. E-commerce is no different; market pioneers are following the CD-ROM strategy by either discounting computers, or, in the case of a US company, giving them away free in order to build an on-line consumer base. Attempts to encourage the migration of users also lie behind the strategies of cable TV companies providing internet access via and through the TV. The strategic point here concerns which company can control the feed into a household and thus collect the rental on the information flow.

The other substantive spatial point is that all of these activities require people to work for them, they all need a place to work. Likewise, workers are needed to maintain infrastructure, to service hardware and reception equipment (TV, computer, modem, fax, and telephone). In addition to operating and servicing machines, people are also required to produce the hardware, as well as the

more obvious production of content. In total, this amounts to a substantial dependent employment, and a particular geography to its location.

Real estate and the constitution of Silicon Alley

Finally, we can focus on the creation of the more traditional physical presence of New Media in New York: the real estate. The first salient point is the development on promotion of 'Silicon Alley'. If nothing else, this seems to suggest a 'placeness' about new media. When it is explored a little further it appears that Silicon Alley was initially a construct of NYNMA, but one eagerly taken up by the community, the City and Real Estate developers. It is true that many new media companies do cluster between midtown and downtown around the locale of the intersections of 5th and 6th avenues, and 18th and 21st streets. The connection here is with the availability of relatively cheap loft space for developers to live and work; also with in close proximity to street and restaurant life (SoHo); and not so far from Madison Avenue (advertising) and Midtown (old media), and of course, the Downtown (Finance and City government).

Interestingly, much of the promotion and construction of Silicon Alley has been carried out through an alliance of the City and NYNMA, and its actual focus has been on the Downtown area. Two influential reports carried out by accountants and management consultant Coopers and Lybrand (1997, 1998) sang the praises of the economic contribution that the nascent new media was making to the New York economy. These reports were circulated free of charge, were made available on-line, and became the subject of news reports the world over. It was a successful example of an advertising and booster strategy for the city as well as announcing that Silicon Alley was the 'place to be'. In effect, it was seeking to mobilise a virtual community and to attract it to, and weave it into, the community and fabric of New York.

From the City Hall's point of view, and the Downtown Alliance Business Improvement District (<http://www.downtownny.com>), it was jobs and taxes that were the target of the promotion of new media in the city. Economic decline, a

property overhaul, and the financial downturn of the late 80s and early 90s had caused many problems for New York (Sassen 1991; Fitch 1993). However, there was yet another player, one that managed to achieve a strategic position: the Rudin family. The Rudins owned real estate in the Downtown area, property that was in the early 1990's lying empty (Conway 1997). Not surprisingly, the Rudins paid attention to the potential market of new media (and, at the time, its technological infrastructure needs). They developed a flagship building, called a 'plug and go' building that offered the potential to simply 'plug in' to tailored infrastructure. The irony is that the building, the New York Information Technology Centre, at 55 Broad St in the heart of the Downtown, close to Wall Street, was originally the very site of Drexell Burman's 'junk bond factory'; in part, the cause of the 90s slump. The Rudins, through careful and insightful property development, created their own real estate 'portal' site. Not only did they create the new media address to be seen at, but they created a web site that became the unofficial site of Silicon Alley (<http://www.55broadst.com/>)⁸. So, as many commentators have pointed out, the 'public face of Silicon Alley' is not even in Silicon Alley.

Conclusions

The focus of this paper has been on clustering of new media practitioners. There are a number of conclusions and points for further investigation that can be drawn out of the analysis. We can deal with these issues in two parts, first, location questions, and second, conceptualisations of the 'social'.

Location

A review of the literature and debates of the locational determinants of new media and e-commerce activities suggested a decline in cluster formation where communications infrastructures and technologies were widely available. Empirical examples demonstrated a clustering of new media activities in a select group of locations.

⁸ Currently Rudin is globalising Silicon Alley, a linked building is, for example, being developed in London . See the WWW page, <http://www.55broadst.com/> for further examples.

As we noted above there are two lines of argument that can be developed. First, that the 'weightless economy' perspective is prone to technological determinism - if something is possible, it will happen (in a pre-defined manner). Second, that it is also prone to a form of economism - economic factors are the only consideration in location. The paper developed an alternative perspective that stressed the significance of non-traded dependencies. The paper explored the nature of these untraded dependencies in the new media sector.

One point that came through very clearly was that the form and practice of untraded transactions was important. Specifically, the need for face to face communication of a formal and informal, planned, chance and serendipitous nature. It was clear that many aspects of human interaction, those that are important in untraded transactions, cannot be achieved solely by new technology (email, webcasting, video links etc.). The need for physical interaction was identified in the practices of learning, innovating, contracting, employment, as well as in socialising, eating, relaxing, or just 'feeling the pulse' of the city. Moreover, these functions of interaction were commonly transacted simultaneously; this multi-tasking itself could be seen as characteristic of the pattern of human interactions that underpins new media production activities.

The argument in favour of clustering based upon minimisation of economic transactions costs is weak in the case of new media. However, the case for untraded dependency was high; based upon the character, and the multiple and interlocking function, of these interactions. Moreover, physical proximity facilitates these untraded dependencies and patterns of interaction. Structured and routinised social events and institutions (such as cyber suds parties, and particular restaurants, coffee bars, and night clubs) became the focus for such interactions. Characteristically, new media spaces overlapped with other cultural milieu, and other production milieu (advertising, music or old media). Finally, we can note that important agents are able to leverage these social spaces into physical spaces, and virtual spaces. The example of Silicon Alley, and of the NYITC demonstrated this.

The virtual and ethereal nature of new media and the world wide web should not seduce us into thinking that the materiality of new media production is insignificant. Quite the contrary, what this paper has shown is that the social milieu, a very particular social-spatial network, may be the most important factor in (literally) locating new media activity. However, we should not fall into the trap of excluding the role of the virtual. Many activities are carried out virtually; however, a common point raised was that such interaction was either preceded by, or was after, face to face meeting. The point here is that virtual communication, in this context, reinforces and generates a particular quality of human-physical interaction. Finally, we noted that social interaction spaces developed organically, and were shaped by particular institutions or property interests. Embeddedness is too weak a notion here; this is about leverage, and what Latour terms 'translation'.

An interesting process can be observed in relation to the 'representation' of Silicon Alley. The material practices that we have noted above suggested a particular spatiality to new media activity; and if one was to seek a 'user-defined' Silicon Alley it would perhaps have a focus in the Flatiron district and Mid-Town Manhattan. We should contrast this to the virtual presence of Silicon Alley, which resides in the Downtown, focused on 55 Broad Street. Further research would be required to explore the nature of the interplay between these two spaces; however, it simply serves to stress that place is a socially and economically mediated and situated affair.

The social

The consideration of the social factor in this paper points to the value in transgressing the boundaries of the firm and consideration of networks that cut across boundaries within and out-with firms. The paper took a firm focus on the materiality of social practices in the new media sector. We can begin with some comments about the nature of the firm and the product. The majority of social-economic analyses of business activity work with an implicit notion that there are stable entities such as firms and products; moreover that

there is a one-way causal relationship running from firms to products. The research findings reported here suggested that this model was not sustainable in the field of new media. This point adds a further dimension to comments that have been made of cultural production being 'reflexive' (see Lash and Urry 1994). The findings point to the fact that firms are neither self-evident nor stable; that are commonly continually under re-construction, there is an heuristic and iterative relationship between product, market and firm. There is an ongoing re-calibration of what the firm is, and who constitutes it, along with what the product is, and with what the market is, or could be.

Stability can be, and is, achieved through a process of lock-in. This lock-in is more subtle than 'institutional capture' implied in the literature on embeddedness (see Grabher 1993, Amin and Thrift 1994). The lock-in implied in this paper is a multi-directional and reflexive process. When a product can be aligned with a market and a consumer, then the firm can be shaped around its delivery. In effect, this is about drawing a boundary, or envelope around a set of relationships (human, physical and economic) that will constitute a viable economic unit. The unique form that many firms may take can be related to the means of valuing a viable economic unit. At the time of writing, nearly all new media companies are constituted through the predicted value of future sales; this is why at any point in time they may not appear to be 'sensible' or 'rational' economic propositions.

In conclusion, this paper highlights the need for vigilance against easy economic and technological reductionism. Both styles of account underplay, or write out, the social dimensions of action. This is a point well taken at an abstract level by many writers from Granovetter (1985) onwards. The implication from this paper is that the two forms of mediation pointed to by writers in this debate is not sustainable. For example, (in the case of new media, at least): either, a novel institution inserted (a network, or a public or private agency), or a generalised social practice (trust, or sociality). This paper suggests that we might view the 'social factor' as constitutive rather than simply additive. Moreover, the paper was written against a generalisation, abstraction, or idealisation of 'the social'. This paper points to the value of

analysis of the material practice of the social (and the economic and cultural). The paper demonstrated the value of taking the notion of 'untraded dependencies' and looking at its manifestation and constitution in the specificity of space, time and economic activity. Finally, despite protestations otherwise, it would seem that geography still matters in the 21st century; however, its is subtly different to that which we have experienced in the past.

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55 Broad Street, NYITC <http://www.55broadst.com/>

DoubleClick <http://www.doubleclick.net>

Downtown Alliance Business Improvement District
<http://www.downtownny.com>

Razorfish <http://www.razorfish.com>

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