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Digital media, nation-states and local cultures: the case of multimedia 'content' production

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1: Introduction

This article explores aspects of the changing relations between the local, national and global in the domain of digital multimedia 'content' products/services. It critically engages with a number of themes associated with 'globalization' and new information and communication technologies (ICTs) including the changing spatial 'relationship between place, community and identity', and the role of the culture industries and the nation-state in reshaping, sustaining or renewing forms of identity.

Over the past 10–15 years, we have witnessed the explosion of publications in the social sciences which proclaim that we are living in an era of increasing *globalization*. There has been a mini-publishing industry centred around analyses of the intensified globalization of production and trade in goods and services (especially finance, 'information' and communication services), and the rising dominance of a new global 'space of flows' (Castells, 1996). Enthusiasts of the globalization thesis comprise a very varied group of sociologists, political and cultural theorists and business economists, who 'agree about very little' else except that contemporary changes are weakening the nation-state and the salience of national identities (Mann, 1997: 473).

This article will critically interrogate the 'global march of technology' thesis with respect to one particular field of multimedia applications – the production of cultural content products and services aimed at final users in the home. It will address this field in relation to the complex 'web of relations' between international flows of capital and information, nation-states and particular cultures of development and consumption. It will critically engage with apocalyptic views that globalization threatens the

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nation-state and cultural specificities and will further question aspects of the utopian view that new information technologies will both enable and empower all citizens and consumers equally, and people will effortlessly become producers and consumers of content.[1]

The social shaping perspective adopted by this article argues that new multimedia artefacts are shaped by their particular contexts of production and consumption and via networks of relations between actors, producers and users. Within these contexts there are brakes and accelerators which account for differing rates of innovation and diffusion of new ICTs throughout the century (e.g. the telephone, the television) and the divergent uses of new ICTs by different social groups in different countries (Winston, 1990, 1996; Sørensen, 1996). The development of a new product is ultimately a process of negotiation between different constituencies and the development of content is a fundamentally social process (Williams, 1974; Bijker and Law, 1992).

Both technologies and their content must become embedded in specific contexts in order for them to function and have meaning. We might call this a process of *appropriation* involving the acquisition, placing, interpretation and integration of an artefact into existing or changed/changing social and cultural practices. This process may take place at individual but also at institutional and national level through regulated and non-regulated processes of learning. A fundamental part of this process and this perspective is the production of meaning around, and through, the artefact.

These issues are addressed in the context of a small nation-state where international capital has been actively courted by the political establishment and where new information related industries are one of the main engines of economic growth. In this context this article examines how national and cultural factors influence the multimedia content development process at two levels: at the national level where a mix of political, economic and cultural factors influences the location and direction of developments (Sections 3 and 4) and at a more detailed case study level where the cultural capital of both producers and consumers plays an active role in shaping new multimedia content (Section 5).

The findings draw upon a case study conducted during 1997/8 in a branch of a multinational corporation based in Ireland, which localized online digital content developed in the US for European markets. The issues raised here reflect the findings of the Social Learning in Multimedia (SLIM) multi-country project, funded under the EC's Targeted Socio-Economic Research programme (1996–8).[2]

2: The meaning of 'multimedia' and 'cultural content'

Within the SLIM project 'multimedia' was defined as new configurations of digital technologies and one core sub-set of the overall cluster of radical

new technologies known as ICTs. The authors, however, prefer to highlight that multimedia has an important pre-digital history and that multimedia involves the combination and development of different media forms on one or more channels.

The term 'multimedia' aptly illustrates the notion that technological artefacts are open to many interpretations but that over time, and due to the interaction of a number of different constituencies, their meaning may achieve relative 'closure'. An analysis of the development of 'multimedia' illustrates that the term has a long history in education and performance art and possesses multiple meanings, often depending on one's industrial background and the era under examination. By the late 1990s a public consensus had emerged which defined multimedia in terms strongly reminiscent of the promotional rhetoric adopted by major ICT and software manufacturers world-wide. Today multimedia products are generally defined in relation to their digital nature and their degree of 'interactivity'. By the late 1990s, multimedia has become synonymous with CD-ROMs and the Internet.

Meanwhile politicians, in Europe and elsewhere, argue that new multimedia products will generate increased wealth and opportunities for many 'high-level, grey-matter' jobs as well as providing a platform for the promotion of information society visions. Indeed the meaning of the term 'multimedia' must be viewed in relation to the wider contemporary discourses in which it is embedded, especially the role of 'information society' policy initiatives[3] and the associated discourses which have been favoured by the hegemonic industrial and policy elites in the 1990s.

These discourses are marked by a tendency to conflate distinct 'information' activities within a single meta-theory. This derives from a reliance on the undifferentiated application of the descriptor 'information', a parallel tendency to embrace a technology-centred vision of 'convergence' processes as well as the use of rather quantitative models of communication. For example, along the sectoral dimension the dominant discourses tend to conflate the production of (i) informational/communication technological tools and platforms (e.g. CD-ROMs, WWW or software programs), (ii) 'contentless' connectivity, (iii) types of information content (Preston, 1996a, 1996b).

However influential and hegemonic these discourses have become in the 1990s, such technology-centred analyses of multimedia are closely bound up with older debates concerning 'convergence'. From a communication studies perspective, these tendencies to 'blur the boundaries' between very distinct information/communication spheres are highly unsatisfactory. Research on the specific processes of socio-cultural-technical change relating to 'emergent' new multimedia content fields must be informed by alternative sets of concepts, especially those drawn from communication and cultural studies fields. This involves making distinctions between

'information' technologies, systems or tools on the one hand and content on the other. It also involves making distinctions between different kinds of 'content'. This points attention to the peculiar economic, socio-political as well as cultural roles of the emergent new (as well as 'mature') media, in contemporary societies.

In the broader context of the SLIM research network we sought to address the differences between various categories of multimedia content by focusing on the content, and the meaning that the end user gave to it, rather than the technology. The case studies conducted for this sub-set of the SLIM research project focused on the construction and negotiation of meaning in multimedia 'content' projects designed for particular national markets of final users (defined as both citizens and consumers).[4] The projects were initiated by both new actors, actors diversifying from other industrial sectors and established media firms. Drawing upon concepts familiar to media and communication scholars, these particular kinds of multimedia projects were defined as potential new forms of public communication or precursors of an emergent new cultural industry.

This set of case studies became known as the 'cultural content' stream of research within the overall SLIM research programme. The term 'cultural content' served to create distinctions from other forms of digital 'content' like specialized scientific/professional content services or educational applications. It also served to legitimate the exploration of national and local socio-spatial and cultural factors shaping the creation of such multimedia content products within the EU single market context. This consideration seemed important to us precisely because it is often overlooked by information society models which are highly techno-centric and tend to rely on quantitative models of the communication process. They also tend to stress the potential of new technologies to provide increased communication and information exchange without any attempt at delineating the types of information which might be exchanged, the quality of that exchange or its implications.

In the 1990s, the discourses of the industrial and policy elites have tended to place an increasing emphasis on the industrial development aspects of the new and old media content services and their perceived contributions to employment and economic growth in an emerging 'information society' (e.g. Australia, 1994; Canada, 1995; CEC, 1994a, 1994b, 1994c; ISSC, 1996). These make occasional genuflections towards the special characteristics and role of the media and cultural sphere, but overall the stress is essentially on 'the market-driven' approach. This is not an entirely new approach to the institutions of public communication or cultural expression. Rather, it represents the extension of a long-term set of processes of change in the production and consumption of cultural/symbolic, political and other forms of expression ('cultural industries')

which began in the early stages of capitalist industrialism and cultural modernity.

Throughout this long history there has also been a marked dissonance between the dominant values, orientations and criteria of worth which characterize the instrumental and mechanical imperatives driving the market-based production processes on the one hand, and those which have informed the relevant authors and the special forms of expertise within (much of) the field of cultural content, on the other (e.g. Williams, 1958, 1983; Habermas, 1989; McLuhan, 1962; Bourdieu, 1984). These non-market considerations and 'extra-economic' values point to the overall role of old and new media products within societies and indicate some dimensions of the priority values attached to diversity and pluralism in this particular sphere of productive activity. In approaching such digital multimedia developments as a process of conjoint socio-technical change, we explore the complex processes of change in global–local relations at play in the realm of multimedia cultural content applications.

We emphasize here not only the different meanings of multimedia and conceptually distinct types of 'information' sectors, but also the special socio-cultural role and characteristics of the cultural industries (Garnham, 1990, 1993). While stressing its specificity, we do not, however, seek to separate culture from society and the economy, as is the case in many influential information society works (e.g. Bell, 1973). Indeed, as the economic and employment roles of the media and cultural industries expand, it is becoming much less tenable to treat them as autonomous realms operating in isolation from wider economic and policy developments.[5] Instead, it seems to us that it is much more fruitful to explore the social and economic developments surrounding the development of cultural content for multimedia as one intertwined and mutually shaping web while at the same time taking appropriate account of the distinctive specificities of cultural applications.

3: Globalization, nation-states and local culture as multimedia 'content'

The term 'globalization' has been invoked in the social sciences and humanities fields to express the sense of a growing interconnectedness between different parts of the world and the increasing complexity of new forms of supra-national interaction and interdependency (Giddens, 1993; Thompson, 1995: 149). For many, globalization defines an increasingly distinctive feature of the contemporary world which refers to complex interconnections between different national, regional and local entities which are increasingly *systematic* to some degree, and which are marked

by deepening levels of *reciprocal* (but, we would stress, not always symmetrical) relations.

Proponents of the globalization thesis tend to emphasize changes in technology and information. Among the diverse contributions to the recent globalization literature, '*the core of most arguments rests on the technological-informational innovations of our times*', according to Mann's critical review (1997: 473). Many enthusiasts of the globalization thesis stress the emergence, pervasive adoption or diffusion of new ICTs as a major 'driver' of intensified globalization and/or the changing role of information flows and communication services associated with changes in the division of labour, occupational and industrial structures in the advanced capitalist world.

For many postmodernist theorists, the expanding range of information flows and the spatial reach of digital communication systems are leading to new kinds of social anomie, a 'dissolution' of social relationships and the collapse of political, cultural and place-based identities which characterized the era of capitalist industrialism. New multimedia artefacts are seen to create a 'cyberspace' and new global form of communication composed of 'seas of data transmuted into the universal digital language' which then speed 'around the world so quickly that time and distance are erased' (Jordan, 1999: 168). Ironically, these academic views often closely parallel the constructions of digital multimedia products, markets and consumers which are advanced by the hegemonic industrial and policy elites – usually promoting a very instrumental vision of socio-economic change (Gates, 1995; Negroponte, 1995). They both suggest and evoke images of the autonomous, free-floating, global consumer, of highly individualized 'digital beings' roaming the global digital info-sphere, each simultaneously constructing and consuming his/her distinctive menu of information content.

We do not have the space here for any extended review of the ever-expanding literature on globalization processes or their many perceived implications for social and cultural change. Nevertheless, our research inclines us to challenge those apocalyptic visions, which assert that new ICTs are leading to a rapid 'collapse' or dissolution of the forms of social space and spatial specificities which characterized capitalist modernity. Thus we wish to flag a number of important a priori positions concerning the role of the nation-state and the salience of national/local specificities which emerge from (our reading of) the most empirically nuanced and theoretically compelling accounts in contemporary political economy and geography literature (e.g. Amin, 1994; Castells,[6] 1996, 1997; Hirst and Thompson, 1996; Massey, 1994). The following may be taken as initial hypotheses which will be further elaborated in the subsequent, more empirically based sections of this article.

First, while new communication technologies and networks may today (as in the 19th century) further facilitate the 'annihilation of space by time'

by reducing the costs of mobility across physical space, the extent and forms of any extended globalization (or any other new 'social space') will be shaped by particular configurations of economic, political and socio-cultural processes (Lefebvre, 1991). Second, the globalization processes facilitated by new communication and transportation technologies do not necessarily imply any singular homogenization of socio-economic or cultural space. Indeed, our research indicates that 'geography still matters' in a very real sense as local and national geographical specificities continue to shape production and consumption processes in many sectors in different ways. Third, the nation-state still matters. For sure, the deepening internationalization of the economy appears to impose new constraints on certain kinds of national level economic or industrial strategies. But in the advanced industrial world, the restructuring of the nation-state is best characterized by a significant shift in its functions and internal structures rather than some absolute diminution or reduction in its role or responsibilities. Fourth, it may be noted that the 'myth of globalization' is closely bound up with prescription as much as description; for example, strong versions of economic globalization tend to suggest that national and local political mobilizations or policy initiatives are relatively pointless. While this version of the globalization thesis provokes a view of the international economy which 'subsumes and subordinates national-level processes', the observable tendencies can be accommodated within an alternative view which still allocates 'a major role to national-level policies and actors' (Hirst and Thompson, 1996: 4). Fifth, the dominant discourses are mistaken in assuming that all information-intensive activities are to be viewed as particularly prone to globalization pressures or 'opportunities'. In contrast, as argued above, we stress that it is necessary to reject any singular conceptualizations of an 'information' sector, especially those based on technology-centred 'convergence' theories.

In essence, we have adopted a conceptual framework for this research which insists that ICT or 'multimedia' technology (software and hardware) activities must be separated from information 'content' – and that the latter must be further disaggregated (e.g. specialized/producer information services must be distinguished from cultural or symbolically laden content services). This means that multimedia and other 'cultural content' sectors are characterized by quite different economic and policy logics and market 'spaces' compared to those which apply to the multimedia technologies and tools sectors (Preston, 1996a, 1996b, 1997). As the case study cited below indicates, the former continue to be marked by very specific 'market' boundaries on the demand and consumption fronts, based around distinct national, ethnic, etc. formations of taste, cultures, habitus, community and other identities, whatever the global reach of the new technologies of content production and distribution.

4: A 'Celtic' Tiger? The national context for the multimedia case studies

We explore these global/local interconnections in the context of a small nation-state where inward investment has been actively sponsored by state policies and where new ICT and information related industries are major engines of economic growth and employment. This section addresses some distinctive features of the national context which influenced the location and growth of major ICT and multimedia companies in Ireland since the 1980s (including the case examined in the following section), and which account for the country's elevation to the status of the fastest-growing economy in the EU by the late 1990s (Kerr, 1997a, 1997b, 1999a).

First, over the past 10–20 years a mixture of industrial, S&T and tax policies combined with particular national characteristics have attracted a relatively large share of total EU inward investment by US multinationals in the ICT hardware and software sectors to Ireland. These policies have contributed to the development of an open, high-tech economy which benefits from tax concessions and low wage bills while supported by a publicly financed programme of industrial research and application supports. According to some measures, Ireland is the second largest exporter of packaged software products after the USA and the provider of almost 45 percent of the software imported into Europe (McCall, 1996). The expansion of inward investment in a favourable global context has helped Ireland, as a 'late developing, post-colonial economy' to 'leapfrog' more established industrial economies and maintain a phase of rapid growth for most of the 1990s. By so doing, it earned the dubious title 'The Celtic Tiger'.

Second, Ireland's demographic and socio-cultural profile has played an important additional role in attracting these foreign investors to Ireland. Ireland is unique in relation to other advanced capitalist economies with regard to its rate of dependency with over 70 percent of the population aged below 44 in 1993. Further, with high rates of participation in second and third level education in comparison with other OECD countries and government investment in education and industrially orientated educational programmes Ireland provided a youthful, well-educated and English speaking workforce for potential investors. A related, but in no way insignificant national characteristic, is the legacy of high emigration from the mid-1800s to the early 1990s. This leaves Ireland as one of the only European countries whose population fell during this century and which can claim to have a large 'diaspora' of some 70 million dispersed around the world (NESC, 1991). Of late this has become both an extended and experienced employment pool and a ready-made market for Irish made products.

Third, like many other European states the Irish government has commissioned a national information society strategy (ISSC, 1996). In common

with that of many other countries, this strategy has highlighted the potential growth of the information 'content' sectors as sources of job and wealth creation based on the 'rich' national cultural heritage and related 'comparative advantages'. Yet in practice (and in keeping with the overall drift of EU-level policies), most R&D and industrial support policies have to date been directed at the further development of ICT infrastructures, systems and tools and internationally traded specialist information services. In practice, new multimedia projects which focus on the development of digital content products or cultural services or which primarily target the domestic market have received little direct public financial or other support.

It is significant that in the four Irish case studies examined in this research project, the organizations involved had to cross-subsidise the initial prototyping of their projects using internal resources and in three of the four cases the further development of the project depended upon securing additional EU or private funds (Kerr, 1998). Those cases which actively sought public funding in Ireland were continually frustrated in their attempts. Given the paucity of national support for cultural content innovations, this research project found that many companies had no alternative but to rely upon EU research programmes or multimedia specific programmes like 'Info2000'. Interviewees indicated, however, that the funding and development criteria set out by these programmes played an important role in shaping not just the production networks and deadlines, but also the actual content of the multimedia artefacts. These findings serve to highlight the gap between the hype surrounding 'information society' initiatives or the presumed trends of growth in multimedia markets and the reality of trying to finance and produce new content products for those markets. In all four cases studied, the costs and financial constraints available meant that initial content plans were radically scaled back during development.

Finally, it is significant that while Ireland is often referred to as a 'Celtic Tiger' the Celtic or other cultural attributes of this entity are rarely emphasized as an important aspect, or one which might distinguish Irish multimedia content productions from productions produced in other English speaking nations (Kerr, 1999b). Cultural content production in any media form is a risky business. But in the Irish context, public support for traditional works in media forms such as film, music and dance (often identified as areas for indigenous innovation and industrial advantage) has not been matched by support for innovative new work in new media forms. Institutional support for multimedia in Ireland is driven by an internationally focused economic and technological logic. This serves to prioritize digital hardware and software tools, and to only value highly specialized multimedia content services which are devoid of cultural specificities. This approach tends to neglect the development of products aimed at the domestic market and inhibits the development of multimedia as a potential

new cultural form. In the long run this approach does little to aid the development of a culturally diverse 'way to the information society' in Ireland.

5: Compuflex – globalization and the localization of multimedia cultural content

We will now turn to one of the SLIM cultural content case studies focused on the Irish branch of a multinational computer software company, Compuflex.[7] The financial and distribution power of this multinational was in sharp contrast to the other cases which mainly comprised comparatively small indigenous media production organizations. The research also established, however, that there were a number of other crucial differences between the content development strategies adopted by this multinational and the strategies adopted by indigenous cases. This section of the article will explore the tensions and controversies which arose when the globalizing techno-economic logic of the multinational encountered geographically and culturally specific national and local barriers. It also examines the issue of convergence and the difficulties encountered when a company with a background in the development of software tools tried to diversify into the development of on-line multimedia content.

Compuflex is the largest computer software developer in the world. It established a base in Ireland in the early 1980s in order to gain access to the European market and because of the availability of well-educated young people and generous government fiscal incentives. By 1996 the company employed 1000 people in Ireland working on the localization and repackaging of a variety of office and home software applications originally developed in the US. The company employs over 25,000 people worldwide and net revenue for 1997 was $11,360m, 60 percent of which was generated by overseas sales.

From its establishment in the mid-1970s, Compuflex has dominated each emerging new area of software: from operating systems to desktop applications, from networking software to Internet browsers. During the 1980s, Compuflex decided to diversify from desktop software into multimedia content products, initially focusing its efforts on CD-ROM based reference products. By the early 1990s, the company was probably the most successful CD-ROM producer in the world with considerable sales and market penetration, assisted by its strategy of bundling products together and leveraging its extensive distribution and sales networks. These products were developed in the US and subsequently localized in branch plants in Ireland and around the world.

Following its relatively unproblematic move from software tools development into CD-ROM reference titles, the company decided to expand its 'multimedia content' activities to include an on-line service. The company established the Compuflex Network (CFN) as a proprietary on-line service in 1995. The content on this service was aimed at technical and specialist users and largely bought in from specialist content developers. By the end of 1995 the service had 525,000 subscribers, while its main competitor America Online (AOL) had over 4 million. Reports in the press noted that the service was too memory heavy for modem users and too thin on content.

By 1996 it was apparent that the Internet was replacing proprietary services as the technology and service of choice for most end users. New start-up companies like Netscape were challenging the control of companies like Compuflex and AOL. The desire to compete with these newcomers, to generate alternative revenue streams and to capture market share in the new emerging home computer market prompted Compuflex to act. In the absence of a competitor willing to sell its service, the company decided to develop new technology in-house. The CFN service was re-launched in 1996 as an Internet based, full multimedia, entertainment service aimed at mass audiences/users in the home.

Most importantly for the research informing this article, Compuflex decided to produce the 'content' for this new service internally and to expand its in-house capabilities in the US to include content development personnel. Without a clear conception of the form and nature of the content for this new Internet based service, the development team in the US adopted stylistic conventions and language derived from US television. The main centre in the US began developing TV style shows (women's shows, science fiction, news), which would then be localized for different national markets. Each show would run for up to six weeks and then be replaced by the next show in the series. In addition to these shows the service offered thematic channels with information on everything from cars to holidays and supplemented these services with chat forums and bulletin boards. The design of the interface was clean and minimalist: a black background on which a strip banner contained the service logo and four headings with drop-down menus.

The marketing for this re-launched service highlighted the 'premier content', the 'stronger sense of community' and the 'member's services' offered. The service was available for 30 days on free trial, integrated into the company's new operating system and distributed via newspaper and music shops in the US and Europe. By 1997 it could claim to be the third largest on-line service in the world with 1.5 million subscribers in the US and another 1 million worldwide. At this stage the service was losing $200 million a year.

Global/local controversies

After the CFN service was re-launched in 1996, Compuflex's global business strategy involved the localization of aspects of the service for specific markets including France, Germany, Australia and Japan.[8] The Irish CFN localization team was established in September 1996. Initially the company followed established localization routines for software tools and CD-ROM reference titles and the work was conducted in the US. However, attempts in the US to localize the TV style shows for the French and German markets proved highly unsatisfactory. National producers rejected the localized files, which they felt were patronizing and too American. In one case the audio files for the French market employed actors who spoke French with US accents.

> . . . when Compuflex started localization – they were doing it over there [in the US] and they weren't selling a thing. . . . So they sent their marketing people over to France and Germany to see why it wasn't selling and they came back with this information – it's not French – the reason it is not selling to a French market is because it's got Americanisms – so they let people in France and Germany set up an affiliate group. (Andrew, Chief Technical Engineer)

During 1996 and 1997 the localization process for CFN evolved quite dramatically. In late 1996 a small CFN team of five people was established in Dublin and their task was to mediate between the US and the European affiliates and to co-ordinate the localization process. Appendix 1 illustrates the geographical spread and complex web of production and consumption relationships which had developed by 1997.

The geographical spread of companies, affiliates and sub-contractors meant that the company relied upon electronic communications technology to co-ordinate and conduct communication between personnel in the US, Ireland and Europe. The main tools of communication were topic specific web pages and email on the company intranet, supplemented with day-to-day desktop videoconferences and weekly boardroom video conferences. When the Dublin localization team was established, they admitted that they spent the first year trying to build trusting relationships and prove to their counterparts in the US that they could 'do the job', a task which was made more difficult by the lack of face-to-face meetings. While their US boss would visit quite often, only two of the Dublin team had met their counterparts in the US. Indeed, such was the pace of company re-organizations and changes in business strategy in the US that the Dublin team was frequently uncertain as to whom it should be communicating with. This problem was compounded by the tendency for certain positions in the US to remain vacant for a prolonged period.

The Dublin team was dominated by technical personnel who were charged with the task of programming and testing the localized service

files. They supplemented this core team with one multimedia editor who had experience in developing a range of multimedia titles and they tried to source native actors where possible to work on the localization of audio files. The Irish team, however, still encountered a number of problems: from simple geographical, time-zone co-ordination, to legal and copyright differences between countries, to more fundamental tensions between the technological and market driven interests of the parent-company and the more culturally sensitive values and criteria of worth of the subsidiaries:

> . . . we had a lot of problems with editing material because they [Compuflex] had never used editors before and the French and German producers were turning down the localized shows . . . saying that the language was unsuitable, etc. so [this entailed] setting up a slightly different production process to what we would do for a regular CD-ROM . . . my role is to evaluate the program and give my opinion of it and that's a useful role . . . because a lot of the time the Americans and French won't even talk to each other and the French . . . they don't return emails to the Americans – they don't take phonecalls, people go over to meet them and they don't turn up for the meeting. (Ann, Content Editor)

These tensions are illustrated by the controversy which arose between the in-house lingual department – which proposed using standard terminology across all the company's software products – and the producers 'in-country' who proposed using more colloquial and non-technical terminology in the on-line shows for CFN. This particular controversy reflected a more fundamental struggle between the organization's global push and desire to standardize global language/content and more local attempts to maintain and indeed promote culturally specific language and content. The producers in France and Germany argued strongly that the latter would be a more successful strategy in their respective markets. This particular controversy also seemed to highlight how producers who are embedded in one culture, i.e. the US, can fail to recognize the cultural specificities they inscribe into their products and equally underestimate the cultural and linguistic specificities of their end users.

It emerged over time that localizing the web shows for this on-line product involved more than just linguistic translation: the US-produced shows also had to be edited in order to attune the content to the cultural tastes of the target markets. The decision about what to localize was based on the 'suitability' of the texts: the extent to which the content was 'Americanized' and the potential cost of localizing it either partially or totally. The affiliate companies in Europe would take content developed in the US, assess it, and if satisfied would allocate a budget to the Dublin team for the localization work. The Dublin team was thus dependent on commissions from these affiliates for their work.

> . . . we'd take some of the stuff we like . . . some of the other content we won't. It's not relevant to the market and would cost too much to localize it. It would

> be much cheaper to pay someone in the UK to develop unique UK content. (John, Program Manager)

In some cases the affiliates rejected the shows after they had been localized in Dublin on the grounds that they were not localized or edited enough, that they were not meaningful for their audiences. Indeed, even some of the more generic aspects of the on-line service were rejected after they had been localized and this resulted in major cross-national (virtual and physical) negotiations as well as budget and time delays. Again, these tensions reflect quite simply the opposition of economic and cultural interests: headquarters staff who wished to localize at least cost and staff in affiliates who sought to maintain greater cultural diversity and difference. Over time the Dublin team developed its own procedures for localizing cultural content and mediating between the US headquarters and European affiliates.

> Intuitively, by just knowing what the markets are, and feeling that you understand . . . that French people in general don't really want American culture stuffed down their throat – talking to producers, knowing how they feel – what they want on their channels, what they think are priority items and what they think are trashy and just trying to communicate it to Americans . . . which is very difficult because most of the time they're all very technical people . . . you get a bit of a blank wall all the time, and they just say things like 'just dub it out, dub it out and give it to them'. (Ann, Content Editor)

To the surprise of the team in Dublin, significant differences in on-line consumption and appropriation patterns emerged between Germany and France over time. In Germany, where media audiences are generally more tolerant of dubbing for foreign language programming, on-line users were found to accept more 'Americanisms' in their on-line texts. The French, however, were found to prefer their foreign media content completely 'localized' and this was reflected in their on-line media usage as well. There are interesting crossovers here between traditional media consumption norms and emerging patterns of usage with new media.[9]

In this case direct feedback from national affiliates and indirect feedback via the market (e.g. subscription figures) served to 'shape' the content of the multimedia service – such feedback is an important part of the development process when the content is demanded by the end user rather than broadcast to them. The tensions between the different producers in different cultural contexts serve to illustrate that globalization of media production structures does not automatically eliminate national or other cultural differences resulting in a unified, homogenized global culture. At the same time, it is not leading to the democratization and decentralization of media production and flows. Rather, this case points to the complexity of globalization processes and the ongoing negotiation and struggle between economic and cultural priorities between different kinds of actors at the global and local levels.

An indicator of the continuing salience of linguistic and cultural differences between national contexts is the tendency for global companies to form alliances with content producers in those contexts or to form their own production centres in-country. In early 1998, Compuflex announced that it was radically revising its content development and globalization strategy for CFN for a third time. The company decided to become a portal site offering access to content generated by existing content producers in their target markets rather than producing the content in the US and localizing it for different markets. This shift in Compuflex's digital content strategy is closely related to our earlier argument concerning the need for distinctions to be made between different forms of content. It reflects a belated recognition by Compuflex that national and local cultural, spatial and social factors play an important role in shaping the creation of cultural content for both the new as well as the more mature media.

Convergence and its limits

The diversification from software tools to multimedia content creation was viewed by Compuflex as a natural or logical trajectory of development, given the trends towards technological convergence enabled by digitalization during the 1990s, and by the increasing standardization of the underlying infrastructures used by the IT, broadcasting and software industries. Such conceptions of convergence trends and their implications closely mirror the tendency at a political and theoretical level to conflate sectorally distinct activities and organizations under the generic term 'information'.

The Compuflex case, however, provides some interesting pointers to the limits of industrial and media convergence. While the company had a strong set of core competencies and experience in the production of 'content-less' information and communications tools, it clearly found it difficult to capture the skills and competencies necessary to move into the production of symbolically laden cultural content for different national markets. By late 1998 the company had decided to concentrate more on its core competencies in designing software and technologies to support on-line services, e.g. travel services and communications services which required little localization or editing. They had discovered that while the localization of packaged office software for different national markets can be largely automated, the localization of cultural content for different national services required a much more complex and spatially dispersed communications and actor-network.

> . . . it's the nature of the content, not that it's on-line. . . . Compuflex aren't used to producing or localizing entertainment stuff . . . reference material in services are slightly closer to drawing on banks of databases . . . there are not as

> many problems with the services side of CFN localization. (Ann, Content Editor)

A critical factor which appeared to limit the potential for industrial convergence in this case, and strongly shaped the content development strategy for CFN, was the overwhelming techno-economic logic which informed all aspects of the organization. Interviewees indicated that, regardless of the marketing hype, Compuflex was using content simply to leverage innovative and radically new hardware and software technologies. Content, meaning and the end user were of secondary importance in the development of the global business strategy for CFN. A clear illustration of this technology-first approach can be found in the launch of the first set-up CD for the CFN service. This CD contained a number of critical bugs which crashed the end user's machine and resulted in much adverse publicity. When asked why the product was released with bugs, interviewees indicated that they were under pressure to conform to the deadlines set by the marketing department and they needed to establish a position in the marketplace. In addition, the CFN service was criticized for the demands it made on bandwidth and the presumptions, inscribed in the text, that end users would be using the latest hardware and software technologies.

This case reveals that Compuflex was prepared, and able, to absorb substantial financial losses in the short term in order to attain a leading market position in the on-line multimedia services sector. Nevertheless, moving from the production of digital tools into the production of cultural content for different markets proved that there were limits to the financial costs which the company would absorb. Indeed, while the cost of copying and distributing content via new media technologies may have fallen, the cost of both producing and localizing diverse forms of content for different, and not very large, national markets, clearly has not. In the long term, the pervasive techno-economic logic in the company appeared to undermine the company's strategy to move into the media content production business.

> Compuflex was never very good at making content – it wasn't their core of business from the day the company started, they tried to get into it and they kind of left it back – I won't say it's not what they're good at – if they throw their hand to it they can do it . . . but it costs, it costs a lot and the benefits have to be very high or else the company won't survive. (Harry, Technical Lead)

The corporation's strategy informing the production of cultural content for the CFN service between 1996 and 1998 reveals a lack of appreciation for the specific characteristics of both old and new media and the cultural differences between markets. Compuflex approached the production and global distribution of cultural content for CFN in the same way as it had approached desktop applications software and reference CD-ROMs. In the

final analysis, this case seems to highlight the usefulness of a communications and cultural studies approach to the study of new media and their particular characteristics as cultural and symbolic forms of expression. It also illustrates that multimedia content developers should be conceived of in terms which recognize them as distinct from instrumental software developers and specialist information providers. Multimedia content developers can be seen as an emergent cultural industry which draws upon both traditional skills of representation and communication and new global technologies to develop new cultural forms for diverse groups of end users.

6: Conclusions

The case study referred to in this article suggests that the cultural capital of both producers and end users continues to play an active role in creatively shaping new multimedia content, while location and geographical distance continue to exert considerable influence on the production and diffusion of new media products. In the new global production and consumption systems, 'difference' and 'diversity' have become important labels contributing to the economic and cultural wealth of nation-states. This leads us to question the simplistic assumptions underlying the fashionable notions of convergence or multimedia and some variations of the globalization thesis.

The research on which this article is based indicates that, in the context of a rapidly modernizing social and economic context, the nation-state, government policy and other local socio-cultural characteristics played an important role in shaping software and multimedia developments in Ireland. First, a mix of industrial, education, S&T and partnership policies plays an important role in shaping which companies locate in Ireland, what stage of the development process takes place in Ireland and the availability of a skilled workforce for relatively low wages. Second, the focus on hardware and software tools in these policy documents and the lack of government support for more diverse and locally relevant forms of content means that much of the multimedia content sector in Ireland produces or localizes internationally traded specialist information services. Those firms which wish to produce products for the home market are dependent on EU programmes, alliances or other forms of patronage. Given the lack of support for cultural content projects aimed at minority markets, and the obvious market disincentives to investment in this area, one has to question whether or not the desired plurality of messages will emerge at global and local levels.

This article challenges prevailing notions of 'globalization' or an emergent singular global 'cyberspace' of information production and exchange. In so doing, it questions aspects of the dominant late 1990s

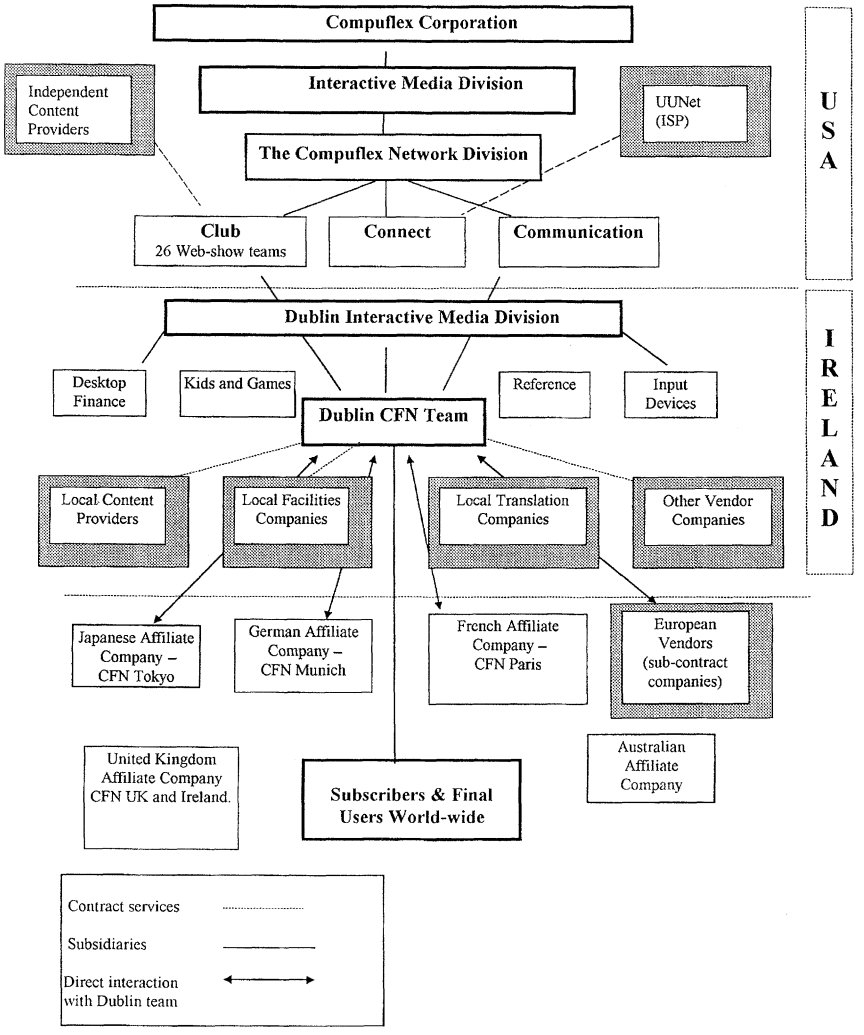
discourses which assert that universally beneficial flows will be derived from a 'market-driven global information infrastructure'. The approach and findings also emphasize the need to distinguish between absolute/physical 'space' and the construction or re-structuring of social or cultural spaces (Lefebvre, 1991). In more concrete terms, the authors acknowledge that new ICTs are serving to extend and deepen older forms of international interdependencies. But, while the production and consumption of new ICT and multimedia technologies and infrastructures (software and hardware 'tools') is increasingly global in scope, this is much less so in the case of content applications such as those studied here.

The arguments advanced in this article may be familiar to those who are conversant with the critical traditions in the fields of communication and cultural studies. However, they represent important challenges to the constructions of 'multimedia' which are held by researchers in neighbouring fields and the discourses which generally inform relevant industrial and policy actors in the EU and beyond. They also suggest a particular set of 'policy implications' which may assist in filling the gaps between the rhetorical promises associated with the 'information society' and current developments or practices.

We conclude with some of the more practical policy-orientated implications for information society initiatives and related innovation and communication policy at the national and EU level:

1. national states and local cultures continue to have an important role to play in shaping how new multimedia content services develop[10] industrial and innovation policies;
2. given the limited success of 1990s policies in generating much needed 'high-level, grey-matter' jobs in Europe, there is a growing need to re-orientate national and EU industrial policies to focus more on downstream innovation and applications, especially in the digital media content fields. This also implies a greater recognition of the symmetries between progressive cultural and industrial development policies;
3. increased public sector funding is needed to support the complex set of competencies required for the effective authoring, design, distribution and promotion of culturally specific content. This implies a greater stress on non-technical competencies, culturally specific resources and on the needs of indigenous producers and a recognition of the diversity of local users and cultures in the domain of digital content applications;
4. global technologies offer potential opportunities as well as threats. For the smaller social formations and national cultures, there remain many 'spaces' and creative opportunities to challenge trends towards the more hegemonic and monopolistic global media structures.

Appendix 1
Map of global production network for developing the CFN service (1997)



Notes

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earlier draft was presented at the Communication Technology Policy Section, of the 21st AIERI/IAMCR/AIECS Conference, Glasgow, Scotland, 26–30 July 1998.

1. The term 'content' is frequently used in the language and discourses associated with national, European and global information infrastructure and associated official policy documents related to multimedia and/or new ICTs. The term is used to distinguish the industries or services producing information 'content' products or services (e.g. entertainment, news, current affairs, specialized economic or technical information) from those involved in the supply of technologies/tools and communication services (contentless connectivity), and transaction services, etc.
2. The SLIM project involves research centres in eight different European countries: the United Kingdom, Ireland, Norway, Denmark, Germany, Switzerland, the Netherlands and Belgium. The project examined the emergence of multimedia in these countries and in the educational, public and cultural industries/content sectors. See http://www.ed.ac.uk/~rcss/SLIM/SLIMhome.html for more information.
3. National/global 'information infrastructure' and/or 'ICT' and/or 'multimedia' strategies.
4. For reasons of space this article will only draw upon one of the case studies. The cases excluded games producers due to limited resources and limited access to potential cases.
5. In this context, even sympathetic critics suggest that Bourdieu's insistence on the 'cultural arbitrary' may have to be modified in the light of more recent trends and developments (Garnham, 1993; Lash, 1993).
6. Ironically, in his discussion of multimedia systems, Castells advances his most extreme technology-centred and transformative positions which are somewhat at odds with the overall tone and more grounded analysis of contemporary developments provided by his recent works (1996, 1997).
7. Compuflex is a pseudonym used for reasons of confidentiality. Interviewees' names have also been changed.
8. There were six market versions of the CFN service in 1997 and four language versions: English, French, German and Japanese.
9. One interviewee remarked that the Spanish market would seem more accessible for CFN given their willingness to consume American films and television programmes.
10. In the case of Ireland the prevailing technological and industrial logic is encouraging the development of a foreign owned multimedia sector which localizes cultural content developed elsewhere for export and an indigenous sector which depends on 'scarce' public (mainly EU) funding in order to develop content for the Irish market. In the light of current European developments, much of this public sector funding is currently under threat.

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