The Information Revolution and Ireland: prospects and challenges

Lee Komito

ACKNOWLEDGEMENTS

This book has grown out of lectures given to Information Studies students at University College Dublin which focus on social and cultural issues arising from the technological transformation that we are all experiencing. I am grateful to Mary Burke, Michael Casey, Ian Cornelius, Maeve Conrick, Vera Regan, and Daniel Regan-Komito for comments or observations they made on various parts of this book or issues arising from the book. I would like to particularly thank James Wickham for comments he made on an earlier draft of this book. The deficiencies that remain are, of course, my responsibility. Thanks to Barbara Mennell at UCD Press who was supportive, and gracious about the inevitable delays due to pressures of work. The award of a President's Research Fellowship from University College Dublin provided the time to finish the book, and I am grateful for the support of that institution.

PREFACE

There has been an Information Revolution and we are either living in an Information Society or are about to enter an Information Society. At least, so proclaim newspaper and magazine articles, as well as television and radio programmes. Popular books describe the 'death of distance'(Cairncross 1997) as well as the 'third wave' which is coming after the agricultural and industrial 'waves' (Toffler 1980), and newspapers and magazines are zealous in their discussion of new gadgets and the transformation (sometimes good and sometimes bad) that these technological marvels herald. Academic writers are less certain, with some arguing that current technologies are leading to economic and social transformation (Castells 1996; Poster 1990) while others (Schiller 1985; Wood 1997) argue that the Information Revolution is just the Industrial Revolution with a few new frills.[i] Some have argued that new technologies will lead to freedom and empowerment (Bell 1973), while others have drawn attention to these technologies increasing the power of states or multinational corporations, at the expense of individuals (Lyon 2002; 1994; Lyon and Zureik 1996). This book is not intended to be an exhaustive or definitive discussion of the digital revolution or the Information Society,[ii] nor is it intended to proclaim or denounce the new Information Society. However, whether there is a new economic, political, and social order emerging, or not; whether the new order is beneficial or detrimental to citizens; all agree that significant changes are taking place. Often, however, it is as though we are all bystanders, watching change taking place, with very little public participation in the process. The central issue in this book is that technology, including the new information and communications technology linked with the Information Society, is not a force external to society and beyond the control of society; technology is an integral part of society and is acted upon and altered by social forces (Winner 1977; Williams 1974).

This book is not an attempt to predict the future; the future will result from interactions between technologies, individuals, social forces and political policies, and will differ from society to society. There has never been a single or inevitable result of technological change, and, in the context of recent technological changes, there is no 'one size fits all' outcome in which societies throughout the world will either become carbon copies of each other or mini-versions of the United States. The societies that will emerge in the twenty-first century depend on policy choices that individuals and governments make, whether by acts of commission or omission. The future is not inevitable; it is flexible and can be altered. The aim of this book is to encourage individuals to contribute to such policy choices, so that the society that emerges is one that citizens desire rather than one neither of their making or choosing. Its aim is to encourage discussion and thought rather than proclaim conclusions.

TABLE OF CONTENTS

CHAPTER 7: POLITICAL PARTICIPATION

7.1. Introduction

In earlier chapters, the role of the states in promoting and regulating economic activities has been discussed, as have government policies regarding the regulation of information. Who decides what states should be doing in these areas? Who decides what information should be protected under data protection legislation, or what the rules of electronic commerce should be? These issues of policy have to be decided before governments can administer those policies, and all citizens play a role in determining public policy. The potential political consequences of new technologies are significant, possibly changing the way in which citizens participate in policy formation.

For citizens in democracies, political participation in policy formation is restricted to voting at elections and so choosing amongst the competing policies of different political parties. The parties with the most votes then have the mandate to bring those policies into force. People may also vote at referendum, if the matter is something that elected politicians are not permitted to do themselves and which may require a change to the constitution of a country. There are a range of informal mechanisms by which people have input into policy, ranging from writing to their politicians to participating in interest groups that lobby governments and politicians on specific issues. All of these are means by which people can influence decisions about the allocation of the scarce resources (often tax revenue) controlled by the state.

The democratic process is changing as a result of new technologies, and there is potential for greater change in the future. Electronic voting, virtual public meetings, politicians participating in internet question and answer sessions are examples of current political changes. The structure of traditional political parties is changing, and new political parties and interest and community groups are emerging, to enable citizens to participate in policy formation is new ways. There is a tendency towards a displacement or marginalization of formal political parties; interest groups, social partners, and community groups tend to bypass the political parties and articulate policy concerns directly to administrators and political decision-makers. New technologies have been facilitating such trends by providing inexpensive means of communication and information transfer, so that small groups find it easier to both organise internally and communicate externally.

Many countries have suffered increased political apathy, with diminished interest in voting and political participation generally. Information technologies provide mechanisms by which such a decline in participation might be arrested and enhanced political participation encouraged. Many governments have issued policy documents proposing such improved participation, whether through traditional structures or newly developed structures (Melody 1996). These range from the ‘National Information Infrastructure’ pronouncements in the United States (Gore 1991; Information Infrastructure Task Force 1993) to the European Union’s High Level Expert Group on the Social and Societal Aspects of the Information Society (Commission of the European Community 1996) noting that “ICTs create new opportunities for greater public participation in and awareness of the political process”.[47] The recent report by Ireland's Information Society Steering Committee (Information Society Steering Committee 1996) suggests similar policy directions, projecting that “Government will become more accessible and responsive to its citizens’ needs”. These policy documents paint a picture of a future in which citizens are informed about current issues and

participate in policy decisions as interested and concerned parties. By and large, these documents are aspirational; what is the evidence for such changes?

7.2. Representative Democracy

To understand why people expect new technologies to revolutionise and transform political structures, one must understand how contemporary democracies developed. For many industrial democracies, the model of government is representative democracy, and people imagine no other way for a democracy to function. But, representative democracy developed as a compromise between the desire for citizens to contribute to policy, and the constraints imposed by the limitations of distance and size. Before the emergence of states, political decisions were based on a consensus, based on discussions in which everyone participated (Roberts 1979; Lewellen 1992).[48] Even after the emergence of states, it was still possible for all citizens to meet together. Policy issues could be discussed and decisions taken, on issues affecting the entire political community. This model of a forum for public discussion is taken from the *agora* of the early states of Greece where all citizens (but neither slaves nor women) could meet (2003), and can still be the case rural small towns or villages. This is direct democracy, and, for many, it is the ideal model for policy formation. However, it requires an informed citizenry who can meet, on a face-to-face basis, over a sufficient period of time to come to agreement (whether by consensus or a vote). As the size of a political community grows, direct input becomes impractical. It is impractical for all citizens to meet together for long enough to make policy decisions. Imagine the size of a town hall that would be necessary for all the citizens of even a small city to meet together, and imagine how long it would take for citizens to inform themselves of the issue involved, discuss it, and then come to a decision. It is simply too expensive to inform all citizens of the issues involved, too costly for them to travel far enough to meet together, and too difficult for them to gather together in one place where they can debate and discuss and vote on the issue.

Once a political system grows too large, representative democracy becomes a necessary substitute for direct democracy. Citizens elect someone to represent their views, and delegate, to these elected representatives, the power to make policy decisions on the behalf of citizens. While elected representatives sometimes consult with their constituents, it would be time-consuming to obtain their views on every issue, so politicians make their own decisions. Their policy positions were endorsed by voters at the previous election, so they can then make the decisions that they believe their constituents would desire, or would be in the best interests of their constituents. At subsequent elections, the electorate can change policy by electing someone with a different ideological or policy stance. While it is possible for all citizens of a nation to vote on the same set of politicians, it is more common that a country is divided into a number of regional constituencies, and people decide amongst the competing candidates within that constituency. The presumption is, then, that the politician will articulate the concerns of that locality or constituency.

Although representatives are elected in local constituencies, the representatives are also members of political parties which operate at a national level and which articulate broad policy orientations. The process of elections, as well as parliamentary discussions, are the public fora in which people and groups with differing views debate and, eventually, accommodate to each other to come to a consensus view on collective policy. In addition to elected representatives articulating the concerns of a locality, interest groups articulate the concerns of particular occupational or other groups, such

as doctors, environmental activists, and so on. Such groups actively contact politicians or civil servants to exert pressure on those making policy, and thus are often referred to as 'pressure groups' as well as 'interest groups'. Politicians or bureaucrats may voluntarily consult these groups while considering policy decisions, to ensure as broad a consensus as possible.

More recently, the policy process in many liberal democracies has also come to involve 'social partners'. This has been an attempt to create consensus politics among the various interest groups, including trade unions, employers, and some generalised vision of the 'public'.[49] Social partnership is founded, to some extent, on the pragmatic realisation that voluntary compliance by all members of society is necessary: compliance cannot be imposed or coerced, as there are too many informal or unofficial means by which resistance can be expressed. If all members of society, or their representatives, are involved in policy formulation, they can be held accountable for any non-compliance in the execution of policy.

All of these interests and groups form a 'public sphere', as Habermas (1989) and others have argued, which has been crucial for rational-critical debate in the formulation of public policy, as new mass media have permitted a larger number of people to become involved in policy debate. Newspapers and pamphlets were vital in encouraging discussion, changing people's views on various issues, and increasing public support for political positions. Pamphleting has often been a crucial means of spreading alternative political views throughout the world. More recently, newspapers, radio, and television have also provided important vehicles for communicating policy issues and encouraging debate. These are obviously important because of the reduced cost of producing the information, in terms of the number of people that can be communicated with, as well as reducing the time delay in reaching them. These technologies enabled more information to be communicated to citizens from established political groups, but such mass media outlets tend to exclude alternative political views, and such alternative policies have tended to be marginalized in terms of policy debate. Furthermore, while information could be distributed to the general population, only a small portion of that population were able to participate in the formulation of policy.

The structure has not necessarily been the best possible, but it has developed to accommodate the practical limitations of communication and participation in the context of ever larger political systems. It is impossible to underestimate the extent to which the information technology revolution has removed the previous restrictions on information flow as well as communication and transportation. The fundamental reason for representative democracy as a substitute for direct democracy has now been removed, leading people to rethink the fundamentals of how people participate in politics and policy.

7.3. New Political Structures

Representative democracy has been based on the unavoidable limitations of previously existing communications technologies, but new communications technologies reduce communications costs and increase speed of communication. Direct, rather than representative democracy, is once again possible, despite the large numbers of citizens and the large geographical expanse involved. It is now feasible for citizens to inform themselves on a wide range of issues, and participate in discussion and debate, make their opinions known in the decision making process, and even vote directly on issues. Even if the structure of representative democracy is maintained, new

mechanisms of collective participation are possible. Local groups and interest groups can meet and discuss issues and convey their opinions to policy-makers (politicians and civil servants) and monitor the application or administration of policy as it affects them. Just as new technologies have led to 'dis-intermediation' in many organisations (with intermediaries between levels of an organisation disappearing), so also could politicians, political parties, and interest groups decrease as links between citizen and state.

7.3.1. traditional political parties

Traditional political parties have been affected by new information and communications technologies, in the same ways as other organisations. New technologies are being used to reduce communication and co-ordination costs with external audiences and internal activists. New technology has been used to reduce organisation costs, obtain better information on public concerns, and target specific electoral interests. Political parties use websites and electronic newsletters to mobilise existing supporters and recruit new supporters. New technologies are used to conduct research on policy issues more effectively, and, by using detailed demographic information on voters, target specific kinds of voters with specially designed mailings or advertisements that appeal to class, regional, or other special characteristics. It may also involve giving speeches in areas that are tailored to the concerns of voters in that particular area. Many politicians use computer technology to keep track of constituents with whom they have contact; such records can be used, in elections, to seek political support.

Elections have been altered by new technologies. New technology has increased the efficiency and reduced the cost of opinion polls, so political parties can gather, input, and process survey data at great speed and little cost. During elections, political parties commission private surveys to gauge public opinion and alter policy in response to public opinion. This has made political parties more responsive to public input than they previously were. During elections, political parties also use new technology to co-ordinate activities, especially policy statements during elections. As issues arise, research can be done quickly, and then disseminated to all the candidates. This means that all the candidates can respond, in the same way to the same issue, even if that issue arose only in the last twenty-four hours.

New mass media technologies have been largely viewed as a new means by which the electorate can be targeted; it is an extension of other mass media communication, which is one-way communication from the party to the electorate. New technology can also be used by citizens to contact politicians, which facilitates debate and discussion. Political parties, as well as politicians, in many countries now have email addresses as well as response forms on web pages, so that voters can make suggestions or respond to statements from political parties and politicians. These communication channels are a supplement to the traditional ones of personal visits and phone calls; although there is some evidence in the United States of new communications technologies replacing traditional means of mobilizing supporters. Democratic presidential candidate Howard Dean, governor of Vermont, has been depending on new technology in his campaign for nomination in the 2004 Presidential election. He has used a web site to raise two-thirds of his initial funding of seven million dollars, and supporters have been using geographic based software to enable people to find other supporters in their local area, so they could meet face to face and organise themselves locally (Butcher 2003; O'Brien 2003). These tactics have brought

significant cash contributions[50] and mobilised a relatively large number of potential supporters. It is too early to tell whether or not the support is confined to a relatively small segment of the US vote, or whether it will encourage people to vote who might previously have not bothered.[51] If successful, the campaign will demonstrate the potential of new technologies to inexpensively mobilize voters.

7.3.2. special interest groups

There are some social and political issues that are of passionate concern to a small number of individuals, but are of only marginal interest to most people. These individuals may organise into single issue organisations (as opposed to traditional political parties, which have policies along a broad range of issues). Some examples of single-issue organisations would be ecology, nuclear disarmament, and refugee rights groups.[52] In the past, individuals interested in such issues could not undertake collective action because individuals were too dispersed geographically to co-ordinate their activities and to exert pressure on political parties or policy makers. The communication costs, both internally and externally, to support such activities would have been too expensive, given the small numbers and large distances involved. The best they could hope to do was to bring such issues to the attention of the main political parties and hope to alter the policies of such parties.

New technologies have enabled an increased number of interest groups and also enhanced their public impact (see Melucci 1996 for a discussion of social movements). Geographical dispersion is no longer a barrier to effective political communication and coordination. Where activists in traditional parties meet in local areas to co-ordinate activities and share information, activists in fringe groups can communicate electronically and act in concert. Individuals who previously would have been isolated and marginalized can have an impact out of proportion to their numbers. They can communicate with the general public, by creating a web site, making videos for distribution to television news, providing material for cable or satellite broadcast, or electronic publishing. They can stage ‘events’ which will then be covered by the mainstream media, thus reaching a large audience. The ecology movement and the nuclear disarmament movement are both prime examples of dispersed individuals engaging in collective action. Ecological protests, when reported by news programmes, raise public awareness and put issues on the political agenda that might otherwise have been ignored. This, in turn, leads to mainstream political parties responding to public concerns, as illustrated by the protests in Ireland in 1999 over genetically modified organisms (O'Sullivan 1999). These activities can, and have, set political agendas for politicians, political parties, and governments as a whole.[53]

7.3.3. community politics

Much of the discussion of political change as a result of new technologies has focused on the use of new technologies for local empowerment, involving both greater participation in local decisions by all as well as participation in national decisions by vocal local groups (e.g., Carter 1997). New technologies could enable electronic town halls, so that all citizens could participate in collective discussion and decision-making. Individuals could find out about current policy issues, and contribute their own views as to what the city or local government organisation should do. The Santa Monica information system (PEN), in 1989, is often cited as an example of community networking, but it has encouraged little public participation and has been used to improve administration rather than public policy deliberations (Docter and Dutton

1998). There has been a number of other developments in community networking (for examples, see Tsagarousianou, Tambini et al. 1998). The Free-Net movement (sometimes also known as Community Networking) has been active in the United States and Canada, and is a prime example of local activists using new technology to increase participation in local community policy making. These movements receive varying amounts of state support; very little in the United States, except for some tax relief, while the Canadian government supports a community access programme (http://cap.unb.ca/). In Ireland, while there is evidence of more and more communities using new technology, this is still mostly in order to encourage extra tourist revenue. The high infrastructure cost (phone charges, capital costs of computers and modems), as well as a general lack of awareness of new technologies, remain impediments to community networks, though there remain attempts to encourage community networks throughout the world (Huysman, Wenger et al. 2003). The main impact of new technologies in community politics is the ease with which individuals can organise when specific issues arouse great local interest. These tend to be short-term issues, and, due to the informatisation of government administration, such groups can communicate electronically with both politicians and administrators. Individuals can organise ad-hoc meetings and exert pressure on local politicians and officials, which enhances local community solidarity and common identity. Even if such groups do not last long enough to enable community networks to develop, they still enable greater political participation.

7.3.4. direct democracy

At the moment, citizens make direct policy decisions only on issues that are beyond the remit of elected politicians. For instance, changes to a national constitution require the direct approval of citizens through a referendum. New technology enables citizens to have a similar direct policy input on every issue; in such a participatory democracy, all citizens participate in decision-making. At the moment, governments are experimenting with the more modest aim of introducing electronic voting into traditional elections. The major motive is to encourage greater electoral participation by making voting easier, although added benefits would be to reduce administrative costs and improve voting accuracy (Dutton 1999:173-93).[54]

Electronic voting can take two forms. At its simplest level, this involves people going to physical voting booths, and satisfying the normal requirements about eligibility to vote. They then vote using an electronic machine rather than a physical vote. The benefits of such voting would be faster counting of votes, with less scope for human error. In the case of complicated voting systems, as exists in Ireland, this would mean election results in hours rather than days, and no need for recounts. The Irish electoral system is one of the few in the world to use multi-seat constituencies with proportional representation for elections. This system makes it possible for political parties with twenty percent of the vote (or even less, depending on ranking voting preferences) to elect candidates to parliament, but it also means that elections to the national legislature can be decided on as few as twenty or thirty votes; in the last election (May 17th, 2002), there was a constituency in which only one vote separated winner from loser (Kennedy 2002). Electronic voting will mean faster and more accurate tabulation of votes.

Electronic voting can enable voting to be extended to new areas. New technologies were used to great effect in South Africa in 1999 (Cross 1999). Polling stations were linked electronically (including satellite links) so that results could be

collected, despite the poor communications infrastructure (especially the roads) that would have otherwise have delayed counting of voting by up to a week. In the 1999 elections, 14,500 polling stations sent results to Pretoria in triplicate: phone, fax, and a high speed data network. The same results had to arrive by two media, independently, in order to be verified. By virtue of speeding up the vote count by a week, it improved the legitimacy of the poll, and, now that the network is in place, will enable greater electoral participation at less cost than before.

A more elaborate system of electronic voting would involve citizens voting electronically, as well as having their vote tabulated electronically. This would reduce the costs of holding referenda, since people would use the existing communications infrastructure to vote, thus making it affordable for governments to hold many more referenda. However, this would involve many complexities. This requires a system of validating identity electronically, providing inexpensive access to electronic voting systems, and ensuring that votes are both confidential and secure. Such electronic voting is still in the experimental stage, but the experiments appear to be successful. In the recent local elections in the UK, both Sheffield and Swindon used electronic systems that permitted people to vote from home, from public Internet sites, over the phone, and even via SMS or text messaging (Mathieson 2003). One of the aspirations of the local councils was that, if it were easier for people to vote, then more people would vote. The experiment was a modest success, as voter turnout remained the same even though turnout throughout the rest of the country declined by five percent. It remains to be seen in electronic voting would reverse the decline in electoral participation.

If these experiments are successful, it may means that electronic voting could not only be used in traditional elections, but as a means of obtaining policy input on a regular basis. Instead of politicians making the policy decisions which they think their constituents would wish, the constituents could actually vote on the policy issue. Not a few political scientists (as well as many politicians), would argue that such direct decision-making would be contrary to good governance. Busy citizens cannot be expected to be informed on every issue, and if citizens who lack sufficient time or expertise, were expected to make decisions about complex laws, then the result would be bad laws. This is why full-time politicians, with their own staff of specialists, are necessary, along with the whole panoply of consultative interest groups. Such a system might also polarize and factionalise the electorate; elections tend to be conflict based whereas the legislative process tends to focus on consensus building. In any event, there is little evidence that voters are interested in such direct democracy. There are only a limited number of issues on which voters seem to feel strongly enough to want a policy input. For the rest, they are content to let others (political parties, interest groups, and so on) make the policy decision (c.f., Birrer 1999).

However, new technologies are increasing public input into legislation in other ways. With new computer technology, surveys of public opinion are easier, cheaper, and faster, with a consequent increase in the number of surveys being carried out. In addition to house to house surveys, there are now mail surveys, telephone surveys, and web-based surveys. Sometimes these surveys are carried out by political parties, sometimes by politicians concerned to discover local opinion on an issue, and sometimes by mass media organisations, such as newspapers or television stations. The surveys permit politicians to gauge public opinion more frequently, and on a wider range of issues. As politicians feel increasingly vulnerable to public opinion, frequent surveys are leading to a more responsive political system, even without the need for

direct input by citizens on specific laws. One of the most intriguing developments have been phone-in surveys on radio and television programmes. In response to a topical issue, people phone a particular number to indicate a yes or no preference. These are particularly inexpensive to operate with new technology; they cost very little to initiate and the results are available in real-time. These phone-in surveys provide a low cost and non-binding alternative to referenda; in Ireland, phone-in surveys have had participation rates of over ten thousand phone calls.[55] These high participation polls provide a snapshot of public opinion which policy makers are likely to take seriously.

7.4. International Politics

7.4.1. international pressure groups

New technologies are also facilitating international pressure groups and interest groups. Because of the low 'start-up' costs and the low communication costs, technology has been used even more effectively at international than at national level. There is no need for expensive mailings or other propaganda - electronic word of mouth can enable ad-hoc groups with no permanent or rigid structure to mobilize large number of people to act in concert in dispersed locations. Demonstrations since the June 1999 'Reclaim the City' demonstrations and the World Trade Organisation protests have inspired anti-globalisation demonstrations. In June 1999, protests took place in seventeen cities around the world, with protesters recruited and organised via websites. Since then, such protests have become commonplace, on anti-globalisation themes, usually timed to coincide with meetings of either the World Trade Organisation or the G7 group of nations. It is virtually impossible to find, much less prosecute, the organisers of such demonstrations, and even less possible to stop co-ordination amongst interested parties of such protest activities. Such informal groupings seem hardly worthy of the term 'organisation': they lack a formal structure and are recreated, afresh, at each new event. They can appear and disappear as quickly as newsgroups and discussion lists in 'cyberspace' do, with temporary websites and discussion lists which lapse once the protest is finished and with new sites and lists circulating, at virtual speeds, when a new protest is being organised. Using text messaging, individuals can rapidly congregate in specific areas (and just as rapidly disperse). These groups, however ephemeral, have 'real space' manifestations in concrete political actions, which disrupt activities and claim headlines, and are mobilizing people across nations (see Surman and Reilly 2003).

These groups may start as informal associations, but some become formal and even legitimate. Ecology and nuclear disarmament movements, already mentioned in the context of national politics, are both examples of groups whose members are dispersed throughout the world and would have little face-to-face contact with each other. New ICTs have enabled internal co-ordination and communication within the group, which has been used to develop common policy statements, co-ordinate protest activities. ICTs also enable public relations (or propaganda) activities that attract new members to the group through an enhanced public profile. GreenNet, PeaceNet and ConflictNet all developed as means of articulating specific international policy objectives, but have become permanent and well-organised interest groups. They joined together to create the Association for Progressive Communications (APC) in 1990 (Frederick 1993); the groups associated with the APC include the former Soviet Union, the Pacific Rim, South America and Africa, and so provide an umbrella for an truly international pressure group.

The actual political impact of such groups is sometimes debated, but there are instances where their actions are claimed to have had significant impact. One example has been Amnesty International's use of the Internet to organise protest letters when human rights violations are uncovered. It is claimed that hundreds of political prisoners have been freed as a result of such co-ordinated pressure campaigns (Odasz 1995:119). Equally, NGOs have been very vocal in international environmental conferences, exerting great pressure on governments and the policy statements that governments agree to at such conferences. In recent international environmental and women's conferences, these voluntary organisations have often played a very prominent public role in deliberations. In the case of the Women's International Congress in China in 1996, it has been suggested that the denial of access and participation by some women's groups became an issue through electronic discussions and protests, then became an issue at the conference, and resulted in a UN working group being established to examine the issue. So, in some instances, the activities of these dispersed electronic groups have resulted in policy outputs.

7.4.2. international expressions of internal dissent

New technologies also enables international expressions of internal national dissent, as well as the international organisation of dissent. In some countries, dissident groups cannot legally express their views within the country and, even with new technology, the development of alternative political groupings is suppressed. Previously, their only propaganda outlet would have been underground press publications or offshore radio broadcasts. Now, individuals can convey their views to an international audience using new technologies, and can also use ‘offshore’ electronic sites to disseminate information within their own country. Electronic discussion groups on the Internet are often used as fora for opposition to national governments, such as the People's Republic of China, the government of Burma, and so on. Such groups are also a means by which emigrants can keep in contact with each other, for social support as well as political action. Inexpensive video cameras, and tape recorders have all become means of capturing information and, especially if the visual or audio information is digitised, making it available to a wider audience, including transnational news organisations such as CNN. World Wide Web sites become quasi-official sources of information to counter ‘propaganda’ claims of repressive regimes. With the proliferation of satellite broadcasting and internet video and audio streaming, it is also getting difficult to prevent such propaganda from being received within the target country.[56] Telephone connections can be used to communicate digitised text, graphics, video information; even verbal information, when rapidly disseminated, has an important impact.

The threat of such electronic dissident action is evidenced by the extremes to which countries go to suppress it. The publicity that resulted from the suppression of dissent in Tiananmen Square was effective precisely because it was disseminated on an international scale, and, on the ten year anniversary of Tiananmen Square, the Chinese government reduced, as much as possible, communication from citizens to outside journalists and also blocked reception of foreign news stations. In the 1991 abortive Russian counter-revolution, Yeltsin and his supporters were surrounded in government buildings by tanks and soldiers but were still able to get news of the threat to the outside world, and so organise world support against the counter-revolutionaries (c.f., Castells 1998:60-2).

This extra-national discussion now extends to warfare, where conflicting views and reports about conflict are expressed on discussion lists. In the early days, these discussion lists were on Usenet, but are now often mirrored on World Wide Web sites or even hosted on World Wide Web sites, where anyone can post messages, to be read anywhere in the world. Since the World Wide Web is available to people with little computer expertise, these discussion lists now reach a significantly wider audience. Ethnic conflict in Yugoslavia, for instance, was waged electronically (Taylor 1999), with conflicting claims (often supported by visual images) were commonly found on different web sites. However, as with the 'fringe' political action groups, the impact of such discussions on policy formation is hard to gauge and may only be as significant as graffiti or handing out propaganda sheets on street corners. The benefit is may be largely to facilitate the co-ordination of propaganda activities and the dissemination of information to activists. The difficulty of regulating international information flows is highlighted by the extent to which individuals can have access to satellite broadcasts regardless of attempts by government to restrict information (for an example from Romania, see Gross 1996).

It should also be noted that not all activities by emigrants are necessarily illegal. With the increase in transnational labour flows and the increase in access to technology, there are many 'long distance nationalists'. These are people who remain committed to political participation in their home country, whether their residence in another country is temporary or long-term. In countries that permit absentee voting (such as the United States), these individuals can be an important political voice. Even in countries where citizens who reside outside the country cannot vote (such as Ireland), committed citizens can make their opinions known via electronic mail or postal campaigns, and can organise themselves as a pressure group. It is notable that recent political history in Ireland has begun to emphasise citizenship and identity as a non-territorial characteristic. This process that first gained prominence when Mary Robinson was President of Ireland and specifically discussed the Irish Diaspora. In her address to the Houses of the Oireachtas on 2 February 1995, she highlighted the transformation which new technology is bringing about in the way those who leave Ireland continue to maintain their Irish identity and their contact with people and events in Ireland (Address by Uachtarán na hÉireann Mary Robinson to Joint Sitting of the Houses of the Oireachtas, http://www.gov.ie/oireachtas/Addresses/02Feb1995.htm):

> "We are at the centre of an adventure in human information and communication greater than any other since the invention of the printing press. We will see our lives changed by that. We still have time to influence the process and I am glad to see that we in Ireland are doing this. In some cases this may merely involve drawing attention to what already exists. The entire Radio 1 service of RTE is now transmitted live over most of Europe on the Astra satellite. In North America we have a presence through the Galaxy satellite. There are several Internet providers in Ireland and bulletin boards with community databases throughout the island. The magic of E-mail surmounts time and distance and cost. And the splendid and relatively recent technology of the World Wide Web means that local energies and powerful opportunities of access are being made available on the information highway.
>
> The shadow of departure will never be lifted. The grief of seeing a child or other family member leave Ireland will always remain sharp and the absence will never be easy to bear. But we can make their lives easier if we

> use this new technology to bring the news from home. As a people, we are proud of our story-telling, our literature, our theatre, our ability to improvise with words. And there is a temptation to think that we put that at risk if we espouse these new forms of communication. In fact we can profoundly enrich the method of contact by the means of expression, and we can and should - as a people who have a painful historic experience of silence and absence - welcome and use the noise, the excitement, the speed of contact and the sheer exuberance of these new forms."

The recent change in the Irish constitution redefined national identity on a less territorial basis, in order to accommodate the Good Friday agreement in Northern Ireland. This is part of a continuing process by which those who are no longer resident in the state continue to identify with that state and wish to have a political input in the policy decisions of that state. New technologies are enabling individuals to participate in national or global politics, regardless of where they reside.

7.4.3. illegal politics

Some political groups engage in activities that are deemed to be illegal or subversive in particular countries, but are accepted elsewhere (e.g., protest movements in China or Burma). But there are also groups whose policy aims are illegal almost everywhere. These would include white supremacist, racist, anti-Semitic groups as well as terrorists groups. The World Wide Web, discussion lists, and electronic mail are used by a large number of such groups (Whine 1997; Castells 1997). The use of the Internet for such illegal activities is virtually impossible to monitor, much less regulate, or stop. As already noted, it is possible to set up a web site, in one jurisdiction, that promotes activities that are illegal in another jurisdiction, and it is very difficult to prevent access to those web sites.

In addition, there may be countries that actually disagree about what is illegal. There is a great legal diversity in the world, and United Nations conventions that promote harmony tend to be vague about specifics. Finally, there are some jurisdictions where such laws may actually be impossible to implement. In the United States, the First Amendment protection for free speech makes it very difficult to prohibit sites discussing activities that many other countries would deem illegal. There have been cases of illegal activities in the European Union could not be halted because the site was located in the United States. Even if the Internet Service Provider in the United States hosting the web site wished to prevent its site from being used, organisations promoting the activity could claim protection under the US constitution.

If it is difficult to monitor or control the sites that are the centre of illegal activities, it is equally difficult to find those who access such sites. Tracking people who access such sites is a relatively complicated and expensive process. Do such illegal electronic activities have sufficient impact to warrant such concern? As with all organisations, communication within illegal organisations has two functions: internal co-ordination and external propaganda. In terms of external propaganda, it is 'public' distribution of propaganda that is illegal; private distribution, through personal conversations, is usually not illegal and arouses little comment. Racist web sites are illegal in the same way as handing out pamphlets at a street corner is illegal, because of their public character. Such web sites are worrisome because they are so hard to control, but there is little evidence (as of yet), that such sites have significant influence or power. Users of the Internet still have to seek such sites out, just as they would previously have had to write away for such information. There are differences, of

course -- the 'address' is easier to find, and the distribution of the information is less costly -- so the cost of such propaganda is less. However, there is still no strong evidence that using the Internet makes these groups more effective than when they were dependent on more traditional propaganda.

The internal coordination function of such groups is a different issue, however. Especially when encryption technology is used, illegal groups now have new resources to communicate and co-ordinate activities amongst members. Individuals can exchange addresses and can use web sites with password access, they can use bulletin boards that are accessed via telephone rather than Internet, and they can use anonymous sites that enable users to upload or download files. These actions are difficult to detect, although it is possible to monitor the actions of known participants through surveillance technology. Yet, this is nothing new. Previously, individuals coordinated activities through phone calls; the state could monitor such phone calls only when they first knew which individuals to monitor. Similarly, the state can monitor the email or web activities once the individuals have first been identified. The problem remains initial detection: what are the various email addresses being used, what mobile phone numbers are being used (especially in these days of pay-as-you-go mobile phones in which the user in anonymous). This is part of a long history of clandestine communication among illegal groups, and a problem for police and criminal investigation.

The one new element is the question of encryption. Individuals have often, in the past, wished to communicate in ways that enable secure communication. There is a long history of using codes to disguise the meaning of letters or other communications, so that the communication, if intercepted, cannot be deciphered. In more recent times, phone scramblers have been used to ensure secure communication, even if phones were tapped. However, such codes are often difficult to keep secure and cumbersome to use. The real threat of new communication technologies is the development of secure encryption systems that make it possible for anyone, with only a small degree of knowledge, to communicate in a secure manner. Indeed, governments, even if they can intercept the communication, may still be unable to decipher the content. At the moment, though, it is more a worry than a reality. There was concern, for instance, after the events of September 11th 2002, that terrorists were using secure encryption to organise their activities (Campbell 2001). In fact, since so few communications are currently encrypted, that an encrypted communication would be very easy to discover. It is more revealing to encrypt a message than to simply use plain electronic mail, because it identifies people whose activities should then be monitored.

7.5. Irish Political Participation

In this general review of new technologies and political participation, the case of Ireland is illustrative of the potential of new technology for political change. Though Ireland is not a unique political system, new technologies will have a particular impact on the Irish political landscape. Although Ireland is a parliamentary democracy with a professional civil service, it is also a post-colonial society (for a summary, see Coakley and Gallagher 1999; Chubb 1992; Peillon 1982; Clancy, Drudy et al. 1986). There has been an expectation that government benefits were not allocated on the basis of objective criteria, but as a result of the personal assistance of politicians. This type of politics has been described as clientelist: politicians intercede on behalf of voters and, in return, voters become clients, providing votes at election time in reward for benefits (Komito 1984). Such a political system is not uncommon in post-colonial nations,

where the administration of the state becomes politicised and personalised (Clapham 1982). In fact, the system actually operated relatively fairly, but in a closed and non-transparent manner. The 'influence' of politicians derived from their knowledge of how the system operated, the unwillingness of Irish civil servants to respond directly to citizens, and long delays in providing benefits (especially prevalent during the expansion of state activities in the 1970s and 80s). Citizens who experienced long delays in getting state benefits, and could get no adequate feedback from civil servants, were dependent on any assistance politicians could provide. This tacit exchange of political support for special personal preference has been a cornerstone of Irish politics since independence in the 1920s (Komito and Gallagher 1999).

This political relationship between citizen, politician, and the state has changed as a result of information technology in the government over the past twenty years. With the increase in state intervention in Ireland in the 1960s came an increase in the amount of work in government departments. Office information systems were eventually introduced in the Irish civil service, although it wasn't until the 1980s that a dramatic increase in IT-related expenditure, in both equipment and staff, took place (Pye 1992). The justification for IT investment was to improve the efficiency of service provision, and indeed the speed of processing cases increased, as did the ability of civil servants to deal with more complex eligibility criteria, using ever more information about applicants. As a consequence, however, the basis for politicians' special influence was undermined. Previously, people needed to monitor the progress of applications (Komito 1989), and politicians 'sold' their ability to provide this information. With the introduction of office information systems, the processing of cases speeded up, and the need for intervention to discover the status of a case lessened. Furthermore, the direct monitoring of cases by applicants became possible. Under the previous system, it was difficult, on a practical level, to find out exactly what was happening with a particular case. The answer might only be found on a particular piece of paper on a particular desk, and it might not be clear on whose desk the case was, and, if the person was away or busy, a report might be slow in coming. Direct queries by citizens produced either no answer or an answer only very slowly, but civil servants had little choice but to put other work aside to find the answer if a politician inquired. With new technology, a departmental information officer (or even a receptionist) can now easily trace the progress of cases[57]. Citizens no longer need politicians, they need only post a letter or make a phone call (often free of charge) to the relevant department to monitor an application's progress (Komito 1997). Local government authorities have been investing in new technologies which improve internal administration and the delivery of services, but which also enable direct input by individuals and groups. Increasingly, if an individual or group wants to comment about a proposal or find out current state of services, they can contact the local county council directly.

No longer are citizens dependent on the mediation and intervention of politicians for information. Politics in Ireland had previously been conditioned by restricted access to information, but this has now changed, as an unintentional consequence of efficiency-driven ICT investments. This has altered the nature of the relation between citizen and state in Ireland. Individual issues are less central to the political process, since politicians do not need to be involved in the provision of individual benefits. This leaves scope for the development of collective policy inputs, and perhaps it is no coincidence that the 1990s has seen a substantial growth in policy based political parties (Democratic Left, Progressive Democrats, Green party), as well as 'fringe' groups acting to advance local community interests. These political changes

have also lessened the dependence of individuals on others to mediate their access to power, whether that mediator was a politician or other influential figure. This lessened sense of dependency is enabling a more active voice by citizens in the determination of public policy in Ireland. Of course one should not over estimate this impact; by and large, citizens still acquiesce in decisions being made by influential figures in Irish political life. However it is hard to ignore the changes that have taken place of late. Technology has reduced the barriers for participation; it is easier for local groups to develop and their activities can be more efficient and effective.[58]

Not only has there been a growth in policy-driven political parties, but there has been an increase in transparency and accountability. This is evidenced by numerous tribunals that have been investigating corruption that had been wide spread in the 1980s and 1990s, and can be seen as a consequence of direct access to information under Freedom of Information legislation. The continuation of clientelist politics in Ireland depended on restricted information, when private decisions regarding public policies were never subjected to scrutiny. Direct access to information reduces dependency on politicians for assistance, enabling individuals to have all the relevant information themselves. Freedom of Information legislation ensures access, not only to personal information, but all government information. Such public access to the decision process exposes decisions made privately, and potentially for private benefit. The result is more explicit decisions, easier to justify, and clearly removed from the aura of backrooms and private benefit for the well connected (c.f., Komito 1999).

BIBLIOGRAPHY

Agar, Jon, Sarah Green, et al. (2002). Cotton to Computers: From Industrial to Information Revolutions. Virtual Society? Technology, Cyberbole, Reality. S. Woolgar. Oxford, Oxford University Press**:** 264-85.

Anderson, Benedict (1991). Imagined Communities: Reflections on the Origin and Spread of Nationalism. London, Verso.

------- (1998). The Spectre of Comparisons: Nationalism, Southeast Asia and the World. London, Verso.

Ang, Ien (1985). Watching Dallas : Soap Opera and the Melodramatic Imagination. London, Methuen.

------- (1996). Living Room Wars: Rethinking Media Audiences for a Postmodern World. London, Routledge.

Appadurai, Arjun (1996). Modernity at Large: Cultural Dimensions of Globalization. Minneapolis, Minn., University of Minnesota Press.

Archer, Margaret Scotford (1988). Culture and Agency, the Place of Culture in Social Theory. Cambridge, Cambridge University Press.

Aronowitz, Stanley and William DiFazio (1994). The Jobless Future: Sci-Tech and the Dogma of Work. Minneapolis, University of Minnesota Press.

Banisar, David (2002). Freedom of Information and Access to Government Records around the World, Privacy International.

Bannon, Liam (1997). "Conceptualising the Information Society." Economic and Social Review **28**(3): 301-5.

Bannon, Liam, Ursula Barry, et al., Eds. (1982). Information Technology: Impact on the Way of Life. Dublin, Tycooly International Publishing Ltd.

Barker, Martin, Jane Arthurs, et al. (2001). The Crash Controversy : Censorship Campaigns and Film Reception. London, Wallflower.

Barnes, John A. (1969). Networks and Political Process. Social Networks in Urban Situations. J. C. Mitchell. Manchester, Manchester University Press**:** 51-76.

Baym, Nancy K. (1995). The Emergence of Community in Computer-Mediated Communication. Cybersociety: Computer-Mediated Communication and Community. S. G. Jones. London, Sage**:** 138-63.

Beck, Ulrich and Mark Ritter (1992). Risk Society : Towards a New Modernity, Sage Pubns.

Behaviour & Attitudes Marketing Research (2001). Ennis Residents Survey. Dublin, Ireland, Behaviour & Attitudes Marketing Research.

Bell, Daniel (1973). The Coming of Post Industrial Society, Penguin.

------- (1979). The Social Framework of the Information Society. The Computer Age: Twenty-Year View. M. L. Dertouzos and J. Moses. Cambridge, Mass, MIT Press**:** 163-211.

Beniger, James R. (1986). The Control Revolution: Technological and Economic Origins of the Information Society. Cambridge, Massachusets, Harvard University Press.

Benjamin, Walter (1973). The Work of Art in an Age of Mechanical Reproduction. Illuminations. W. Benjamin. London, Fontana.

Bernstein, Basil (1964). Aspects of Language and Learning in the Genesis of the Socila Process. Language in Culture and Society: A Reader in Linguistics and Anthropology. D. Hymes. New York, Harper & Row**:** 251-63.

Bessat, John (1987). Information Technology and the North-South Divide. Information Technology: Social Issues. R. Finnegan, G. Salaman and K. Thompson, The Open University.

Bijker, Wiebe E., Thomas P. Hughes, et al., Eds. (1987). The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology. Cambridge, Massachusetts, The MIT Press.

Birdsall, William F. (2000). "The Digital Divide in the Liberal State: A Canadian Perspective." First Monday **5**(12) http://firstmonday.org/issues/issue5_12/birdsall/index.html.

Birrer, Frans A. J. (1999). Cyber Society and Democratic Quality. Exploring Cyber Society, Volume I. J. Armitage and J. Roberts. Newcastle, UK, University of Northumbria at Newcastle.

Boyd-Barrett, Oliver, Peter Braham, et al. (1987). Media, Knowledge and Power : A Reader. London, Croom Helm in association with the Open University.

Braverman, Harry (1974). Labour and Monolopy Capital. New York, Monthly Review Press.

Brown, John Seely and Paul Duguid (2000). The Social Life of Information. Boston, Harvard Business School Press.

Buckland, Michael Keeble (1991). Information and Information Systems. New York, Greenwood Press.

Burton, Paul F. (1995). "Regulation and Control of the Internet: Is It Feasible? Is It Necessary?" Journal of Information Science **21**(6): 413-28.

Butcher, Mike (2003). 'Bloggers' Aim to Make an Impact in the Real World. Irish Times, Dublin. 8 August, Business This Week**:** 4.

Cairncross, Francis (1997). The Death of Distance. London, Orion Publishing Group.

Campbell, Duncan (2001). How the Plotters Slipped Us Net. Guardian, 27 September, OnLine Supplement**:** 1-3.

Carter, Dave (1997). 'Digital Democracy' or 'Information Aristocracy'? Economic Regeneration and the Information Economy. The Governance of Cyberspace: Politics, Technology and Global Restructuring. B. D. Loader. London, Routledge.

Castells, Manuel (1996). The Rise of the Network Society. Oxford, Blackwell.

------- (1997). The Power of Identity. Oxford, Blackwell.

------- (1998). End of Millenium. Oxford, Blackwell.

------- (2000). "Materials for an Exploratory Theory of the Network Society." British Journal of Sociology **51**(1): 5-24.

Castells, Manuel and Peter Geoffrey Hall (1994). Technopoles of the World: The Making of Twenty-First-Century Industrial Complexes. London New York, Routledge.

Castells, Manuel and Pekka Himanen (2002). The Information Society and the Welfare State: The Finnish Model. Oxford, Oxford University Press.

Central Statistics Office (2003a). Information Society Statistics - Ireland 2003. Dublin, Government Publications Office.

------- (2003b). Quarterly National Household Survey Information and Communications Technology (Ict) June 2003. Dublin, Central Statistics Office.

------- (2003c). Quarterly National Household Survey: Module on Teleworking Third Quarter 2002. Dublin, Central Statistics Office.

Chandrasekaran, Rajiv (1998a). 'Operating System' Definition Debated at Trial. Washington Post, Washington, D.C. 9 December**:** C13.

------- (1998b). U.S. Uses Software Firm's Dictionary of Computer Terms against It. Washington Post, Washington, D.C. 10 December**:** B8.
Chubb, Basil (1992). The Government and Politics of Ireland. London, Longman.
Clancy, Patrick, Sheelagh Drudy, et al., Eds. (1986). Ireland: A Sociological Profile. Dublin, Institute of Public Administration.
Clapham, Christopher (1982). Clientelism and the State. Private Patronage and Public Power. C. Clapham. London, Frances Pinter.
Clark, Colin (1940). The Condition of Economic Progress, Macmillan.
Clarke, Donald (2002). The Family That Views Together. Irish Times, 21 December, Magazine**:** 11-2.
Coakley, John and Michael Gallagher, Eds. (1999). Politics in the Republic of Ireland, 3rd edition. London, Routledge.
Colgan, Jim (2003). Rivals out to Imitate Dean's Blogging Campaign. Irish Times, Dublin. Business This Week**:** 8.
Colley, Linda (1992). Britons : Forging the Nation, 1707-1837, Yale University Press.
Collins, Richard (1996). The Cultural Dimension of Communication Technology and Policy: The Experience of Satellite Television in Europe. Information and Communication Technologies -- Visions and Realities. W. H. Dutton. Oxford, Oxford University Press**:** 233-48.
Commission of the European Communities (2003). Electronic Communications: The Road to the Knowledge Economy. Brussels, Commission of the European Communities,.
Commission of the European Community (1994). Europe and the Global Information Society: Recommendations to the European Council. Brussels, Commission of the European Community.
------- (1996). Building the European Information Society for Us All: First Reflections of the High Level Group of the High Level Group of Experts. Brussels, Belgium, Commission of the European Community, DG V.
------- (2000). Eeurope: An Information Society for All, Progress Report. Brussels, Commission of the European Communities. **130**.
Corcoran, Mary P. (1993). Irish Illegals Transients between Two Societies. Westport, Conn., Greenwood Press.
Couvares Francis, G. (1996). Movie Censorship and American Culture. Washington ; London, Smithsonian Institution Press.
Cowan, Ruth Schwartz (1983). More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave. New York, Basic Books.
Crook, John Hurrell (1972). The Socio-Ecology of Primates. Perspectives on Human Evolution 2. S. L. Washburn and P. Dolhinow. New York, Holt, Rinehart and Winston.
Cross, Michael (1999). E-Voting in Africa. Guardian, 10 June, OnLine Supplement**:** 13.
Crump, Barbara and Andrea McIlroy (2003). "Why the "Don'T-Want-Tos" Won't Compute: Lessons from a New Zealand Ict Project." First Monday **8**(12) http://firstmonday.org/issues/issue8_12/crump/index.html.
Crystal, David (1987). The Cambridge Encyclopedia of Language. Cambridge, Cambridge University Press.
Curran, James (1977). Capitalism and Control of the Press, 1800-1975. Mass Communication and Society. J. Curran, M. Gurevitch and J. Wollacott. London, Edward Arnold; Open University**:** 195-230.

Curran, James, Michael Gurevitch, et al. (1977). Mass Communication and Society. London, Edward Arnold; Open University.

Curran, James and Jean Seaton (1991). Power without Responsibility: The Press and Broadcasting in Britain, 4. London, Routledge.

Dandeker, Christopher (1990). Surveillance, Power and Modernity: Bureaucracy and Discipline from 1700 to the Present Day. Cambridge, Polity.

Daniels, Peter T. (2003). Writing Systems. The Handbook of Linguistics. M. Aronoff and J. Rees-Miller. Oxford, Blackwell**:** 42-80.

De Grazia, Edward and K. Newman Roger (1982). Banned Films : Movies, Censors and the First Amendment. New York ; London, Bowker.

Diffie, Whitfield and Martin Hellman (1976). "New Directions in Cryptography." IEEE Transactions on Information Theory **22**(6): 644-54.

Docter, Sharon and William H. Dutton (1998). The First Amendment Online: Santa Monica's Public Electronic Network. Cyberdemocracy: Technology, Cities and Civic Networks. R. Tsagarousianou, D. Tambini and C. Bryan. London, Routledge**:** 125-51.

Doogan, Kevin (2001). "Insecurity and Long-Term Employment." Work, Employment & Society **15**(3): 419-41.

Douglas, Mary (1973). Natural Symbols: Explorations in Cosmology. New York, Random House.

Downey, Gary (1986). "Risk in Culture: The American Conflict over Nuclear Power." Cultural Anthropology **1**(4): 388-412.

Duff, Alistair (2000). Information Society Studies. London, Routledge.

Dutton, William H, Jay G Blumler, et al., Eds. (1987). Wired Cities: Shaping the Future of Communications. Washington, D.C. Boston, Mass., Washington Program, Annenberg School of Communications G.K. Hall.

Dutton, William H., Ed. (1996). Information and Communication Technologies -- Visions and Realities. Oxford, Oxford University Press.

------- (1999). Society on the Line: Information Politics in the Digital Age. Oxford, Oxford University Press.

Dutton, William H., Jay G. Blumer, et al. (1996). The Politics of Information and Communication Policy: The Information Superhighway. Information and Communication Technologies -- Visions and Realities. W. H. Dutton. Oxford, Oxford University Press**:** 387-405.

Eckert, Penelope and Sally McConnell-Ginet (1992). Locating Power: Proceedings of the Second Berkeley Women and Language Conference. K. Hall, M. Bucholtz and B. Moonwomon. Berkeley, Calif., Berkeley Women and Language Group, University of California, Berkeley**:** 89-99.

Eisenstein, Elizabeth L. (1983). The Printing Revolution in Early Modern Europe. New York; Cambridge, Cambridge University Press.

Electronic Privacy Information Center and Privacy International (2002). Privacy and Human Rights 2002: An International Survey of Privacy Laws and Developments. Washington, D.C., Electronic Privacy Information Center and Privacy International.

Ellul, Jacques (1964). The Technological Society. New York, Random House.

Encyclopaedia Britannica (2003). Encyclopaedia Britannica, [New ed.]. Chicago, Ill. ; London, Encyclopaedia Britannica.

European Commission (1996). Universal Service for Telecommunications in the Perspective of a Fully Liberalised Environment - an Essential Element of the Information Society. Brussels, European Commission,.

European Commission Legal Advisory Board (1996). Working Party on Illegal and Harmful Content on the Internet Report. Brussels, European Commission.

Feather, John (1998). The Information Society: A Study of Continuity and Change, 2. London, Library Association Publishing.

Featherstone, Mike, Ed. (1990). Global Culture, Nationalism, Globalization and Modernity. London, Sage.

------- (1995). Undoing Culture: Globalization, Postmodernism and Identity. London, SAGE Publications.

Featherstone, Mike, Scott Lash, et al., Eds. (1995). Global Modernities. London, SAGE Publications.

FitzGerald, John (2000). The Story of Ireland's Failure - and Belated Success. Bust to Boom? : The Irish Experience of Growth and Inequality. B. Nolan, P. J. O'Connell, C. T. Whelan and Institute of Public Administration. Dublin, Institute Public Administration**:** 27-57.

Forester, Tom (1987). High-Tech Society: The Story of the Information Technology Revolution. Cambridge, Mass., MIT Press.

Forfas (1999). E-Commerce Report. Dublin, Department of Trade and Enterprise.

------- (2002). Ebusiness: Where Are We and Where Do We Go from Here. Dublin, Department of Trade and Enterprise.

Fox, Richard Gabriel, Ed. (1990). Nationalist Ideologies and the Production of National Cultures. Washington, DC, American Anthropological Association.

Frankenberg, Ronald (1969). Communities in Britain: Social Life in Town and Country. Harmondsworth, England, Penguin.

Frederick, Howard (1993). Networks and the Emergence of Global Civil Society. Global Networks: Computers and International Communication. L. M. Harasim. Cambridge, Massachusetts, The MIT Press.

Friedman, Jonathan (1994). Cultural Identity and Global Process. London, SAGE Publications.

Friis, Christian S. (1997). "A Critical Evaluation of the Danish National Ict Strategy." Economic and Social Review **28**(3): 261-76.

Fuller, Steve (1997). Science. Buckingham, Open University Press.

Galvin, Michael (1994). Vectory in the Gulf: Technology, Communications and War. Framing Technology: Society, Choice and Change. L. Green and R. Guinery. St. Leonards, NSW, Australia, Allen & Unwin**:** 176-90.

Garreau, Joel (1993). Thanksgiving in Cyberspace: A Far-Flung, Close-Knit Family's Computer Network. Washington Post, 25 November**:** B1.

Gellner, Ernest (1983). Nations and Nationalism. Oxford, Blackwell.

Gibbons, Michael, Camille Limoges, et al. (1994). The New Production of Knowlege: The Dynamics of Science and Research in Contemporary Societies. London, Sage Publications.

Giddens, Anthony (1985). The Nation-State and Violence. London, Polity.

------- (1991). The Consequences of Modernity. Cambridge, Polity, 1991.

Gillespie, Marie (1989). "Technology and Tradition: Audiovisual Culture among South Asian Families in West London." Cultural Studies **3**(2): 226-39.

Gittings, John (2001). In the Chinese Doghouse. Guardian, 27 September, OnLine Supplement**:** 7.

Gluckman, Max (1971). Politics, Law and Ritual in Tribal Society. Oxford, Basil Blackwell.
Goody, Jack (1977). The Domestication of the Savage Mind. Cambridge [Eng.] New York, Cambridge University Press.
Gore, Al (1991). Infrastructure for the Global Village. Scientific American. **265:** 108-11.
Government of Ireland (1997). Freedom of Information Act, 1997. Dublin, Government Publications Office.
------- (1998). Illegal and Harmful Use of the Internet. Dublin, Stationery Office, Department of Justice, Equality and Law Reform.
------- (2002a). Annual Report of the Information Commissioner 2001. Dublin, Government Publications.
------- (2002b). National Spatial Strategy for Ireland 2002 - 2020: People, Places and Potential. Dublin, Government Stationery Office.
Graham, Stephen and Simon Marvin (1996). Telecommunications and the City: Electronic Spaces, Urban Places. London, Routledge.
Granovetter, Mark (1973). "The Strength of Weak Ties." American Journal of Sociology **78**: 1360-80.
------- (1982). The Strength of Weak Ties: A Network Theory Revisited. Social Structure and Network Analysis. P. Marsden and N. Lin. Beverly Hills, CA, Sage.
Greenfield, Patricia Marks (1984). Mind and Media: The Effects of Television, Computers and Video Games. London, Fontana.
Grimes, Seamus (2000). "Rural Areas in the Information Society: Diminishing Distance or Increasing Learning Capacity?" Journal of Rural Studies **16**(1): 13-21.
Gross, Peter (1996). Mass Media in Revolution and National Development : The Romanian. Ames, Iowa, Iowa State University Press.
Grossman, Wendy (2002). A New Blow to Our Privacy. The Guardian, 6 June.
Gurstein, Michael (2003). "A Community Informatics Strategy Beyond the Digital Divide." First Monday **8**(12) http://firstmonday.org/issues/issue8_12/gurstein/index.html.
Haase, Trutz and Jonathan Pratschke (2003). Digital Divide: Analysis of the Uptake of Information Technology in the Dublin Region. Dublin, Dublin Employment Pact.
Habermas, Jurgen (1989). The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society. Cambridge, MIT Press.
Hafner, Katie and Matthew Lyon (1996). Where Wizards Stay up Late: The Origins of the Internet. New York, Simon & Schuster.
Hammersley, Ben (2003). Net Booms in Kabul. Guardian, Manchester. Online.
Hampton, Keith and Barry Wellman (2000). Examining Community in the Digital Neighborhood: Early Results from Canada's Wired Suburb. Digital Cities: Technologies, Experiences and Future Prospects. T. Ishida and K. K. Isbister. Berlin, Springer Verlag.
Hannerz, Ulf (1992). Cultural Complexity: Studies in the Social Organization of Meaning. New York, Columbia University Press.
------- (1996). Transnational Connections: Culture, People, Places. London and New York, Routledge.
Harrison, Bernice (2001). Tesco to Sell Clubcard Data. Irish Times, 8 February**:** 19.

Harvey, David (1989). The Condition of Postmodernity. Oxford, Basil Blackwell.
Haythornthwaite, Caroline and Barry Wellman (2001). "The Internet in Everyday Life." American Behavioral Scientist **45**(3).
Herz, Jessie Cameron (1997). Joystick Nation: How Videogames Gobbled Our Money, Won Our Hearts and Rewired Our Minds. London, Abacus.
Hess, David J. (1995). Science and Technology in a Multicultural World. New York, Columbia University Press.
Hinde, Robert A. (1974). Biological Bases of Human Social Behaviour. New York, McGraw-Hill.
------- (1982). Ethology: Its Nature and Relations with Other Sciences, Fontana Paperbacks.
Hobsbawm, Eric and Terence Ranger, Eds. (1983). The Invention of Tradition, Cambridge University Press.
Hockett, Charles F. (1960). The Origin of Speech. Scientific American**:** 3-10.
Hudson, Grover (2000). Essential Introductory Linguistics. Oxford, Blackwell.
Huysman, Marleen, Etienne Wenger, et al., Eds. (2003). Communities and Technologies. Dordrecht ; Boston, Kluwer Academic Publishers.
Information Infrastructure Task Force (1993). National Information Infrastructure: Agenda for Action. Washington, DC, National Telecommunications and Information Administration.
Information Society Commission (2002). New Connections. Dublin, Information Society Commission.
------- (2003). Egovernment: More Than an Automation of Services. Dublin, Information Society Commission.
Information Society Ireland (1999). Implementing the Information Society in Ireland: An Action Plan. Dublin, Information Society Ireland.
Information Society Steering Committee (1996). Information Society Ireland, Strategy for Action, Report of Ireland's Information Society Steering Committee. Dublin, Forfas.
Ingold, Tim (1987). Evolution and Social Life, Cambridge.
------- (1988). "Tools, Minds and Machines: An Excursion into the Philosophy of Technology." Techniques et Cultures **12**: 151-76.
------- (1993). Tool-Use, Sociality and Intelligence. Tools, Language and Cognition in Human Evolution. E. K. Gibson and T. Ingold. Cambridge, Cambridge University Press**:** 429-46.
Ingold, Tim, David Riches, et al., Eds. (1988). Hunters and Gatherers 1: History, Evolution and Social Change. Oxford, Berg.
International Telecommunication Union and M. Minges (2003). Itu Digital Access Index. Geneva, International Telecommunication Union.
Jolly, Alison (1972). The Evolution of Primate Behavior. New York, Macmillan.
Kalathil, Shanthi and Taylor C. Boas (2001). "The Internet and State Control in Authoritarian Regimes: China, Cuba, and the Counterrevolution." First Monday **6**(8) http://firstmonday.org/issues/issue6_8/kalathil/index.html.
Katz, Raul Luciano (1988). The Information Society, an International Perspective. New York; London, Praeger.
Kavanaugh, Andrea L. and Scott J. Patterson (2002). The Impact of Community Computer Networks on Social Capital and Community Involvement in Blacksburg. The Internet in Everyday Life. Oxford, UK ; Malden, MA, Blackwell Pub.**:** 325-44.

Keena, Colm (2003). Self-Employed Use Internet to Pay €200m Tax in 24 Hours. Irish Times, Dublin. 22 November**:** 1.

Kelleher, Denis (2001). How Much Sense Is There in Censorship? Irish Times, 17 September**:** 14.

Kennedy, Geraldine, Ed. (2002). The Irish Times Nealon's Guide to the 29th Dail and Seanad. Dublin, Gill & Macmillan.

Kiberd, Damien, Ed. (1997). Media in Ireland: The Search for Diversity. Dublin, Ireland, Open Air.

Kiesler, Sara, Jane Siegel, et al. (1984). "Social Psychological Aspects of Computer-Mediated Information." American Psychologist **39**(10): 1123-34.

Kling, Rob (1980). "Social Analyses of Computing: Theoretical Orientations in Recent Empirical Research." Computing Surveys **12**(1): 61-110.

------- (1994). "Reading All About Computerization: How Genre Conventions Shape Nonfiction Social Analysis." The Information Society **10**: 147-72.

Koch, Howard (1970). The Panic Broadcast: Portrait of an Event. Boston, Little, Brown.

Kollock, Peter (1999). The Economies of Online Cooperation: Gifts and Public Goods in Cyberspace. Communities in Cyberspace. M. A. Smith and P. Kollock. London, Routledge**:** 220-39.

Komito, Lee (1984). "Irish Clientelism: A Reappraisal." Economic and Social Review **15**(3): 173-94.

------- (1989). Dublin Politics: Symbolic Dimensions of Clientelism. Ireland from Below: Social Change and Local Communities. C. Curtin and T. Wilson. Galway, Galway University Press**:** 240-59.

------- (1992). Information Technology and Regional Developments: Promises and Prospects. Environment and Development in Ireland. J. Feehan. Dublin, The Environmental Institute, UCD**:** 166-71.

------- (1997). "Politics and Administrative Practice in the Irish Information Society." The Economic and Social Review **28**(3): 295-300.

------- (1998a). "The Net as a Foraging Society: Flexible Communities." The Information Society **14**(2): 97-106.

------- (1998b). "Paper 'Work' and Electronic Files: Defending Professional Practice." Journal of Information Technology **13**: 235-46.

------- (1999). Political Transformations: Clientelism and Technological Change. Exploring Cyber Society. J. Armitage and J. Roberts. Newcastle, UK, University of Northumbria at Newcastle.

------- (2001). "Electronic Community in the Information Society: Paradise, Mirage or Malaise?" Journal of Documentation **57**(1): 115-29.

Komito, Lee and Michael Gallagher (1999). Dail Deputies and Their Work. Politics in the Republic of Ireland, 3rd edition. J. Coakley and M. Gallagher. London, Routledge**:** 206-31.

Kopytoff, Igor (1986). The Cultural Biography of Things: Commoditization as Process. The Social Life of Things. A. Appadurai. Cambridge, Cambridge University Press**:** 64-91.

Lancaster, Jane Beckham (1975). Primate Behavior and the Emergence of Human Culture. New York, Holt, Rinehart and Winston.

Latour, Bruno (1987). Science in Action: How to Follow Scientists and Engineers through Society. Cambridge, Massachusetts, Harvard University Press.

Lave, Jean and Etienne Wenger (1991). Situated Learning: Legitimate Peripheral Participation. Cambridge, Cambridge University Press.
Lea, Martin, Ed. (1992). Contexts of Computer-Mediated Communication. Hemel Hempstead, Herts, England, Harvester Wheatsheaf.
Lee, Richard B. and Irven DeVore, Eds. (1968). Man the Hunter. Chicago, Aldine.
Lenhart, Amanda, John Horrigan, et al. (2003). The Ever–Shifting Internet Population: A New Look at Internet Access and the Digital Divide, The Pew Internet & American Life Project.
Levinson, Paul (1997). The Soft Edge. London, Routledge.
Lewellen, Ted C. (1992). Political Anthropology: An Introduction, 2. Westport, Connecticut, Bergin and Garvey.
Liebes, Tamar and Elihu Katz (1990). The Export of Meaning : Cross-Cultural Readings of Dallas. New York ; Oxford, Oxford University Press.
Liebowitz, S. J. (2002). Re-Thinking the Network Economy : The True Forces That Drive the Digital Marketplace. Amacom, New York.
Lillington, Karlin (2000). Bandwidth Boost Means the Republic Could Be Key Internet Player. Irish Times, Dublin. 25 February, Business This Week.
------- (2001a). Eu Battle Lines Drawn as Security Challenge to Data Privacy Grow. Irish Times, Dublin. 1 June, Business This Week**:** 11.
------- (2001b). Retention of Mobile Call Records Queried. Irish Times, Dublin. 7 November**:** 15.
------- (2003). Our Past Is Not So Far Behind Us. Irish Times, Dublin. 23 May.
Loader, Brian D., Ed. (1998). Cyberspace Divide: Equality, Agency and Policy in the Information Society. London, Routledge.
Lynch, Michael F. (1974). Computer-Based Information Services in Science and Technology - Principles and Techniques. Stevenage, England, Peter Peregrinus Ltd.
Lyon, David (1994). The Electronic Eye : The Rise of Surveillance Society. Minneapolis, University of Minnesota Press.
------- (2002). Surveillance Society : Monitoring Everyday Life. Buckingham England ; Philadelphia, Open University Press.
Lyon, David and Elia Zureik (1996). Computers, Surveillance, and Privacy. Minneapolis, University of Minnesota Press.
Machlup, Fritz (1962). The Production and Distribution of Knowledge in the United States. Princeton, N.J.,, Princeton University Press.
------- (1980). Knowledge and Knowledge Production. Princeton, N.J., Princeton University Press.
Machlup, Fritz and Kenneth Leeson (1978). Information through the Printed Word : The Dissemination of Scholarly, Scientific, and Intellectual Knowledge. New York, Praeger Publishers.
MacKenzie, Donald and Judy Wajcman, Eds. (1985). The Social Shaping of Technology: How the Refrigerator Got Its Hum. Milton Keynes, Open University Press.
Malik, Yasmin (2003). Mobile Calling: Mobile Phones Occupy a Special Place in the Lives of Pakistanis. Guardian, Online Supplement**:** 7.
Mantovani, Giuseppe (1996). New Communication Environments: From Everyday to Virtual. London, Taylor & Francis.

Marvin, Carolyn (1988). When Old Technologies Were New: Thinking About Electric Communication in the Late Nineteenth Century. Oxford, Oxford University Press.

Masuda, Y (1981). The Information Society as Post-Industrial Society. Bethesda MD, World Futures Society.

Mathieson, S. A. (2002). Big Brother Gets Stronger. The Guardian, September 12, OnLine.

------- (2003). X Marks the Spot. The Guardian, Manchester. 1 May, Online**:** 15.

May, Christopher (2002). The Information Society: A Sceptical View. Cambridge, Polity Press.

McCaffrey, Conor (2003). The Digital Divide in the Eu: National Policies and Access to Icts in the Member States. Dublin, Oscail - National Distance Education Centre, DCU.

McCaffrey, Una (2003). Educated, English-Speaking and in the Eu - Why Ireland's Still Hard to Beat. Irish Times, Dublin. 4 July, America 2003.

McDonagh, Maeve (1998). Freedom of Information Law in Ireland. Dublin, Round Hall Sweet & Maxwell.

McQuillan, Helen (2000). Eircom Ennis Information Age Town: A Connected Community. http://www.ennis.ie, Eircom Ennis Information Age Town Ltd.

Mead, George Herbert (1934). Mind, Self, and Society: From the Standpoint of a Social Behaviorist. Chicago, University of Chicago Press.

Melody, William H. (1996). "Towards a Framework for Designing Information Society Policies." Telecommunications Policy **20**(4): 243-59.

Melucci, Alberto (1996). Challenging Codes : Collective Action in the Information Age. Cambridge, Cambridge University Press.

Merritt, Raymond H. (1995). Technology. Microsoft Encarta 96 Encyclopedia. Richmond, Washington, Microsoft; Funk & Wagnalls Corporation.

Merton, Robert K. (1973). The Sociology of Science: Theoretical and Empirical Investigations. London, University of Chicago Press.

Miles, Ian, John Bessant, et al. (1987). It Futures in Households and Communities. Information Technology: Social Issues. R. Finnegan, G. Salaman and K. Thompson. Sevenoaks, Kent, Hodder and Stoughton; The Open University**:** 225-42.

Mjøset, Lars (1992). Irish Economy in Comparative Institutional Perspective. Dublin, National Economic and Social Council.

Moore, James R. (1989). Communications. Science, Technology and Everyday Life: 1870-1950. C. Chant. London, Open University; Routledge**:** 200-49.

Morgan, Lewis Henry (1877). Ancient Society or Researches in the Lines of Human Progress from Savagery through Barbarism to Civilization. New York, Holt, Rinehard and Winston.

Morley, David (1980). Nationwide Audience : Structure and Decoding, British Film Institute.

------- (1992). Television, Audiences and Cultural Studies, Routledge.

Morris, Desmond (1977). The Naked Ape. London, Triad Grafton.

------- (1987). Bodywatching: A Field Guide to the Human Species. London, Grafton.

Moseley, Fred (1999). "The Us Economy at the Turn of the Century: Entering a New Era of Prosperity?" Capital and Class **67**: 25-45.

Mumford, Lewis (1934). Technics and Civilization. New York, Harcourt, Brace and World.

------- (1962). Technics and Human Development: The Myth of the Machine. New York, Harcourt Brace Jovanovich.

National Telecommunications and Information Administration (2002). A Nation Online: How Americans Are Expanding Their Use of the Internet. Washington, D.C., United States Department of Commerce.

Navasky, Victor (1996). Tomorrow Never Knows. New York Times Magazine, 29 September**:** 216.

Nettleton, Sarah, Nicholas Pleace, et al. (2002). The Reality of Virtual Social Support. Virtual Society? Technology, Cyberbole, Reality. S. Woolgar. Oxford, Oxford University Press**:** 176-88.

Nie, Norman H. (2001). "Sociability, Interpersonal Relations and the Internet: Reconciling Conflicting Findings." American Behavioral Scientist **45**(3): 420-35.

Nora, Simon and Alain Minc (1980). The Computerisation of Society. Cambridge, Mass., MIT Press.

Ó Riain, Seán (1997a). "The Birth of a Celtic Tiger." Communications of the ACM **40**(3): 1-16.

------- (1997b). "International Perspectives - the Birth of a Celtic Tiger." Communications of the ACM **40**(3): 7.

------- (1998). A Tale of Two Globalizations: The Irish Software Industry and the Global Economy. ESRI working paper 101. Dublin, Economic and Social Research Institute.

------- (2000). "The Flexible Developmental State: Globalization, Information Technology, and the "Celtic Tiger "." Peace Research Abstracts **37**(5).

Ó Riain, Seán and Philip J. O'Connell (2000). The Role of the State in Growth and Welfare. Bust to Boom? : The Irish Experience of Growth and Inequality. B. Nolan, P. J. O'Connell, C. T. Whelan and Institute of Public Administration. Dublin, Institute Public Administration**:** 310-39.

Oakley, Kenneth Page (1957). Man the Tool-Maker. Chicago, University of Chicago Press.

O'Brien, Danny (2003). Democratic Contender Surfs Wave of Support. Irish Times, Dublin. 12 September, Business This Week**:** 7.

Odasz, Frank (1995). Issues in the Development of Community Cooperative Networks. Public Access to the Internet. B. Kahin and J. Keller. Cambridge, Massachusetts, MIT Press.

O'Dea, Clare (2001). Shoppers Give Too Much Away with Loyalty Card. Irish Times, 1 June, Business This Week**:** 3.

O'Donnell, Susan, Helen McQuillan, et al. (2003). Einclusion: Expanding the Information Society in Ireland. Dublin, Information Society Commission.

Office of the Data Protection Commissioner (2000). Eleventh Annual Report of the Data Protection Commissioner 1999.

Ong, Walter J. (1982). Orality and Literacy: The Technologizing of the Word. London, Routledge.

Organisation for Economic Co-operation and Development (2002). Measuring the Information Economy. Paris, Organisation for Economic Co-operation and Development.

------- (2003a). The E-Government Imperative. Paris, Organisation for Economic Co-operation and Development.

------- (2003b). The Learning Government: Introduction and Draft Results of the Survey of Knowledge Management Practices in Ministries/Departments/Agencies of Central Government. Paris, Organisation for Economic Co-operation and Development.
------- (2003c). Oecd Communications Outlook. Paris, Organisation for Economic Co-operation and Development.
Orr, Julian (1996). Talking About Machines: An Ethnography of a Modern Job. Ithaca, New York, IRL Press.
O'Sullivan, Kevin (1999). Anti-Gm Foods Campaigners Undaunted. Irish Times, Dublin. 5 April.
Oxford English Dictionary (1998). The New Oxford Dictionary of English. Oxford, Oxford University Press.
Peillon, Michel (1982). Contemporary Irish Society: An Introduction. Dublin, Gill and Macmillan.
Peltu, Malcolm, Donald MacKenzie, et al. (1996). Computer Power and Human Limits. Information and Communication Technologies -- Visions and Realities. W. H. Dutton. Oxford, Oxford University Press**:** 177-95.
PEW Internet and American Life Project (2000). Tracking Online Life:How Women Use the Internet to Cultivate Relationships with Family and Friends.
------- (2001a). Online Communities: Networks That Nuture Long-Distance Relationships and Local Ties.
------- (2001b). Teenage Life Online: The Rise of the Instant-Message Generation and the Internet's Impact on Friendships and Family Relationships.
------- (2002). Use of the Internet at Major Life Momments.
Pfaffenberger, Bryan (1992). "Social Anthropology of Technology." Annual Review of Anthropology **21**: 491-516.
Phelps, Guy (1975). Film Censorship. London, Gollancz.
Pool, Ithiel de Sola (1983). Technologies of Freedom. Cambridge, Mass., Harvard University Press.
Porat, Marc Uri, Michael Rogers Rubin, et al. (1977). The Information Economy. Washington, U.S. Governmnet Printing Office.
Poster, Mark (1990). The Mode of Information: Poststructuralism and Social Context. Cambridge, Polity Press.
Power, Carol (2001). Web Gives More Bite to Word of Mouth. Irish Times, 22 March, Business This Week**:** 9.
Prell, Christina (2003). "Community Networking and Social Capital: Early Investigations." Journal of Computer Medicated Communication **8**(3).
Preston, Paschal (2001). Reshaping Communications: Technology, Information and Social Change. London, Sage.
Price, Derek J. de Solla (1963). Little Science, Big Science. New York, Columbia University Press.
Provenzo, Eugene F. (1991). Video Kids: Making Sense of Nintendo. Cambridge, MA, Harvard University Press.
Putnam, Robert D. (2000). Bowling Alone: America's Declining Social Capital. New York, Simon & Schuster.
Pye, Robert (1992). An Overview of Civil Service Computerisation, 1960-1990. Dublin, Economic and Social Research Institute.

Rheingold, Howard (1993). A Slice of Life in My Virtual Community. Global Networks: Computers and International Communication. L. M. Harasim. Cambridge, Massachusetts, The MIT Press**:** 57-80.

------- (1994). The Virtual Community: Finding Connection in a Computerized World. London, Secker & Warburg.

Roberts, Simon (1979). Order and Dispute: An Introduction to Legal Anthropology. Middlesex, England, Penguin.

Robertson, Roland (1992). Globalization: Social Theory and Global Culture. London, Sage.

Robins, Kevin and Frank Webster (1987). Dangers of Information Technology and Responsibilities of Education. Information Technology: Social Issues. R. Finnegan, G. Salaman and K. Thompson, The Open University.

------- (1999). Times of the Technoculture: From the Information Society to the Virtual Life. London, Routledge.

Rosenberg, Richard S. (1993). "Free Speech, Pornography, Sexual Harassment, and Electronic Networks." Information Society **9**(4).

Roszak, Theodore (1994). The Cult of Information: A Neo-Luddite Treatise on High Tech, Artificial Intelligence, and the True. Berkeley, California, University of California Press.

Scheflen, Albert (1974). How Behaviour Means. Garden City, NY, Anchor Press.

Schein, Louisa (2002). Mapping Hmong Media in Diasporic Space. Media Worlds: Anthropology on New Terrain. F. D. Ginsburg, L. Abu-Lughod and B. Larkin. Berkeley, University of California Press**:** 229-44.

Schiller, H. I. (1985). Electronic Information Flows: New Basis for Global Domination? Television in Transition. D. Paterson, BFI.

Schiller, Herbert I. (1973). The Mind Managers. Boston, Beacon Press.

------- (1981). Who Knows: Information in the Age of the Fortune 500. Norwood, NJ, Ablex.

Sciadas, George (2002). Monitoring the Digital Divide, UNESCO, Orbicom-CIDA Project Report.

Shannon, Claude and Warren Weaver (1949). The Mathematical Theory of Communication. Urbana, Illinois, University of Illinois Press.

Shapiro, Andrew L. (1999). The Control Revolution: How the Internet Is Putting Individuals in Charge and Changing the World We Know. New York, Public Affairs.

Sheff, David (1994). Video Games: A Guide for Savvy Parents. New York, Random House.

Silverstone, Roger (1994). Television and Everyday Life. London, Routledge.

Silverstone, Roger and Eric Hirsch, Eds. (1992). Consuming Technologies, Media and Information in Domestic Spaces. London, Routledge.

Silverstone, Roger, Eric Hirsch, et al. (1991). "Listening to a Long Conversation: An Ethnographic Approach to the Study of Information and Communication Technologies in the Home." Cultural Studies **5**(2): 205-27.

Slouka, Mark (1995). War of the Worlds: Cyberspace and the Hightech Assault on Reality. New York, Basic Books.

Smith, William John (1977). The Behavior of Communicating: An Ethological Approach. Cambridge, Mass, Harvard University Press.

Smyth, Jamie (2001). State Faces Decision on Implementing Cybercrime. Irish Times, 9 November, Business This Week**:** 12.

------- (2004). Dublin City Council to Give Its Staff the 'Big Brother' Treatment. Irish Times, Dublin. Business This Week**:** 7.

Standage, Tom (1998). The Victorian Internet: The Remarkable Story of the Telegraph and the Nineteenth Century's on-Line Pioneers. New York, Walker and Co.

Stehr, Nico (1994). Knowledge Societies. London, Sage Publications.

Stonier, Tom (1983). The Wealth of Information: A Profile of the Post-Industrial Economy, Thames Methuen.

Suchman, Lucy (1996). Supporting Articulation Work. Computerization and Controversy: Value Conflicts and Social Choices. R. Kling. London, Academic Press**:** 407-23.

Surman, Mark and Kathernine Reilly (2003). Appropriating the Internet for Social Change: Towards the Strategic Use of Networked Technologies by Transnational Civil Society Organizations. New York, Social Science Research Council.

Tapscott, D. and A. Caston (1993). Paradigm Shift: The New Promise of Information Technology, McGraw-Hill.

Taubman, Geoffry L. (2002). "Keeping out the Internet? Non-Democratic Legitimacy and Access to the Web." First Monday **7**(9) http://www.firstmonday.org/issues/issue7_9/index.html.

Taylor, Cliff (2003). America 2003: Partners Making Progress - Us Business in Ireland Remains Strong Despite Current Uncertainties. Irish Times, Dublin. 4 July, America 2003.

Taylor, Ros (1999). Partisans Wage Virtual War. Guardian, 22 April, OnLine Supplement**:** 8.

Tinbergen, T. (1969). The Study of Instinct. Oxford, Oxford University Press.

Toffler, Alvin (1980). The Third Wave. New York, William Morrow.

Tomlinson, Bruce (1991). Cultural Imperialism. Baltimore, Johns Hopkins Press.

Toumey, Christopher P. (1996). Conjuring Science: Scientific Symbols and Cultural Meanings in American Life. New Brunswick, New Jersey, Rutgers University Press.

Touraine, Alain (1974). The Post-Industrial Society: Tomorrow's Social History: Classes, Conflicts and Culture in the Programmed Society. London, Wildwood House.

Tsagarousianou, Roza, Damian Tambini, et al., Eds. (1998). Cyberdemocracy: Technology, Cities and Civic Networks. London, Routledge.

Tsaliki, Liza (2003). "Electronic Citizenship and Global Social Movements." First Monday **8**(8) http://www.firstmonday.org/issues/issue8_2/.

Turkle, Sherry (1995). Life on the Screen: Identity in the Age of the Internet. New York.

Turkle, Sherry. (1984). The Second Self Computers and the Human Spirit. London, Granada.

Ugboajah, Frank Okwu and World Association for Christian Communication (1985). Mass Communication, Culture and Society in West Africa. Oxford, Hans Zell.

United Nations Conference on Trade and Development (2002). E-Commerce and Development Report 2002. New York; Geneva, United Nations.

Van Koert, Robin (2002). "The Impact of Democratic Deficits on Electronic Media in Rural Development." First Monday **7**(4) http://www.firstmonday.org/issues/issue7_4/index.html.

van Loon, Joost, Ulrich Beck, et al., Eds. (2000). The Risk Society and Beyond : Critical Issues for Social Theory. London, SAGE.

Waldman, Amy (2004). Indian Soybean Farmers Join the Global Village. New York Times, New York. 1 January 2004**:** 1.

Walsham, Geoffrey (2001). Making a World of Difference : It in a Global Context. Chichester ; New York, J. Wiley.

Ward, Katie (2000). "The Emergence of the Hybrid Community: Rethinking the Physical Virtual Dichotomy." Space and Culture **4**(5): 71–86.

Watt, Susan E., Martin Lea, et al. (2002). How Social Is Internet Communication? A Reappraisal of Bandwidth and Anonymity Effects. Virtual Society? Technology, Cyberbole, Reality. S. Woolgar. Oxford, Oxford University Press**:** 61-77.

Weale, Sally (2002). The Cost of Reunion. Guardian, 7 November, G2**:** 8-9.

Weber, Eugen (1977). Peasants into Frenchmen : The Modernization of Rural France, 1870-1914. London, Chatto and Windus.

Weber, Max (1958). The Protestant Ethic and the Spirit of Capitalism. New York, Scribners.

------- (1978). Economy and Society: An Outline of Interpretive Sociology. Berkeley, University of California Press.

Webster, Andrew (1991). Science, Technology and Society. London, Macmillan.

Webster, Frank (1994). "What Information Society?" The Information Society **10**: 1-23.

------- (1995). Theories of the Information Society. London, Routledge.

------- (2002). Theories of the Information Society, 2nd edition. New York, Routledge.

Webster, Frank, Raimo Blom, et al., Eds. (2003). The Information Society Reader. London, Routledge.

Webster, Juliet (1996a). Revolution in the Office? Implications for Women's Paid Work. Information and Communication Technologies -- Visions and Realities. W. H. Dutton. Oxford, Oxford University Press**:** 143-57.

------- (1996b). Shaping Women's Work Gender, Employment, and Information Technology. New York, Longman Group.

Weitz, Shirley, Ed. (1979). Non-Verbal Communication. Oxford, Oxford University Press.

Wellman, Barry (1988). The Community Question Re-Evaluated. Power, Community and the City. M. P. Smith. New Brunswick, NJ, Transaction Books**:** 81-107.

Wellman, Barry and Caroline A. Haythornthwaite, Eds. (2002). The Internet in Everyday Life. Oxford, UK ; Malden, MA, Blackwell Pub.

Wellman, Barry, Anabel Quan-Haase, et al. (2003). "The Social Affordances of the Internet for Networked Individualism." Journal of Computer Medicated Communication **8**(3) http://www.ascusc.org/jcmc/vol8/issue3/.

Wellman, Barry, Janet Salaff, et al. (1996). "Computer Networks as Social Networks: Collaborative Work, Telework, and Virtual Community." Annual Review of Sociology **22**: 213-38.

Wenger, Etienne (1998). Communities of Practice: Learning, Meaning and Identity. Cambridge, Cambridge University Press.

Whine, Michael (1997). The Far Right on the Internet. The Governance of Cyberspace: Politics, Technology and Global Restructuring. B. D. Loader. London, Routledge.

Wickham, James (1987). Industrialisation, Work and Unemployment. Ireland: A Sociological Profile. P. Clancy, S. Drudy, K. Lynch and L. O'Dowd. Dublin, Instititute of Public Administration.

------- (1997). "Where Is Ireland in the Global Information Society?" The Economic and Social Review **28**(3): 277-94.

------- (1998a). "The Golden Geese Fly the Internet: Some Research Issues in the Migration of Irish Professionals." Economic and Social Review **29**(1): 33-54.

------- (1998b). An Intelligent Island? Encounters with Modern Ireland a Sociological Chronicle, 1995-1996. M. Peillon and E. Slater. Dublin, Institute of Public Administration**:** 81-8.

Wilk, Richard R. (2002). Television and the Imaginary in Belize. Media Worlds: Anthropology on New Terrain. F. D. Ginsburg, L. Abu-Lughod and B. Larkin. Berkeley, University of California Press**:** 171-86.

Williams Bernard Arthur, Owen and Great Britain Committee on Obscenity (1979). Report of the Committee on Obscenity and Film Censorship. London, H.M.S.O.

Williams, Raymond (1974). Television, Technology and Cultural Form. London, Fontana.

Winner, Langdon (1977). Autonomous Technology : Technics-out-of-Control as a Theme in Political Thought. Cambridge, Mass., MIT Press.

Winston, Brian (1998). Media Technology and Society. A History: From the Telegraph to the Internet. London, Routledge.

Witchalls, Clint (2002). World Wide Wealth. Guardian, 12 December, Online Supplement**:** 1-3.

Wood, Ellen Meiksins (1997). "Modernity, Postmodernity or Capitalism." Review of International Political Economy **4**(3): 539-60.

Woodburn, James (1982). "Egalitarian Societies." Man **17**: 431-51.

Woolgar, Steve (1988). Science, the Very Idea. Chichester, Sussex; London; New York, Ellis Horwood; Tavistock Publications.

World Intellectual Property Organization (2002). Intellectual Property on the Internet: A Survey of Issues, World Intellectual Property Organization.

Wyatt, Sally, Graham Thomas, et al. (2002). They Came, They Surfed, They Back to the Beach: Conceptualizing Use and Non-Use of the Internet. Virtual Society? Technology, Cyberbole, Reality. S. Woolgar. Oxford, Oxford University Press**:** 23-40.

Yearley, Steven (1988). Science, Technology, and Social Change. London, Unwin Hyman.

Young, J. Z. (1971). An Introduction to the Study of Man. Oxford, Oxford University Press.

[i] See Webster (2002) for discussion of these opposing views.

[ii] There are many such texts, some of them comprehensive and articulate (for instance, Castells 1998; 1997; 1996; Robins and Webster 1999; Webster 2002; May 2002; Stehr 1994; Beniger 1986; Dutton 1996; 1999; Roszak 1994 are all interesting and sometimes contradictory expositions). For a collection of central readings, see Webster, Blom et al. (2003).

[3] This view was first popularized by Daniel Bell (1973).

[4] Quoted in Navasky (1996:216).

[5] Debate about VHS vesus BetaMax has been going on for years and it is now one of many 'urban legends' (see http://www.urbanlegends.com/products/beta_vs_vhs.html). Liebowitz (2002) was

the first academic to argue that VHS was not worse technically than BetaMax; the victory of VHS was largely due to marketing and user consumption issues.

[6] See Corcoran (1993) for a study of Irish illegals in the United States.

[7] This is clear from any texts on human evolution, see Young (1971), or any standard texts on physical anthropolgy and human evolution.

[8] Written text is also interpreted by reader, and the last decade has seen broad acceptance that written texts are also social constructions. Despite this, written text is still less subject to alteration than oral speech.

[9] See Bernstein (1964) on restricted versus elaborated codes, as well as Douglas (1973) on cultural aspects of this distinction.

[10] Not all writing suffers from such constraints; for instance, letters between friends are written in an informal style. The reader is already known to the writer and the two share a context by which ambiguous phrases can be deciphered. Equally, it is possible to write texts using a specialised vocabulary such that only other members of the same group could understand the written text. Such exclusionary practices are a way of recreating, in written form, the special relationship between speaker and audience of oral speech. Most written text, however, is intended for a wider, public audience.

[11] The relation between science, analysis, and written text is a complex one. Having stated that science is only possible once facts are extracted from their social context, social studies of science and technology have, over the past few decades, demonstrated that such a detachment is more of an ideal than a reality. The claim that scientific 'facts' exist outside of society is just that -- a claim. 'Facts' exist within a social context and the process of detaching 'fact' from 'person' only disguises this dependence on context.

[12] Oral language can also be used in this way, in which restricted knowledge or vocabulary being used to create secret societies or clubs that exclude others from powerful knowledge. However, with written language and differential levels of literacy, such distinctions become much easier to institutionalize, including a larger social group.

[13] It also helped painting by enabling the mass reproduction of original arts works, again see Benjamin (1973).

[14] This applies, of course, only to industrial societies where a telephone infrastructure is in place, as opposed to industrializing societies in which access to a telephone remains a preserve of the elite.

[15] The only partial exception are the pirate or illegal radio stations that can sometimes flourish if there is sufficient demand, but these depend on low power transmission to a restricted audience. It such cases, it was affordable to simply set up more low power broadcast equipment, if equipment was confiscated or, alternatively, set up high power transmitters outside the jurisdiction. In both cases, it was virtually impossible to regulate content.

[16] The only exception to this was the telegraph, which was rapid but also recorded. However, the amount of information was severely restricted, and the storage of information was temporary.

[17] Although it is only a matter of time before the both production and consumption of visual and auditory signals for television and radio is also digital. Digital televisions are already becoming more common.

[18] For further readings on the history of information processing technologies, see Winston (1998), Marvin (1988), Beniger (1986).

[19] This is a transformation from base ten notation, in which each column increases by ten (one, ten, hundred, thousand, and so on), to base two notation, in which each column increases by two (one, two, four, eight, sixteen, and so on). The actual amount or number is the same, although the representation looks different. Thus, twenty one is represented, in base ten notation, by two in the 'ten' column which is added to a one in the 'one' column ("21"). The same amount is presented in base two by one in the 'sixteen' column, added to one in the 'four' column, and one in the 'one' column ("10101"). For more on this encoding issue, see Lynch, (1974).

[20] As late as the early 1980s, some universities in the United States refused to install word processing programs on mainframe computers; word processing was seen as an expensive luxury for an an expensive computer.

[21] This is precisely the solution in some countries, where wireless computing enables countries to avoid the cost of installing telephone lines. This has enabled a mobile phone market to develop in Pakistan (Malik 2003), as well as Internet access in Afghanistan (Hammersley 2003). Users still have to be able to afford mobile phones or computers, as well as the cost of accessing the network, but at least the network costs are minimized by use of the new technology.

[22] It is debatable whether the microcomputer revolution actually achieved this. Individuals now have access to significant computing power, and have access to information via the internet, but organisations can still afford larger and faster computers, better software, and so on. The information that is available to anyone tends to be out of date and unreliable, as compared with the information that organisations can afford to pay for. Further, often, information does not necessarily convey power, sometimes it only reveals how powerless a person might be.

[23] There has been considerable research showing that the economic consequence of new information and communication technologies are far more complex than can be elaborated here (see, for example, Stehr 1994; Dutton 1996; Castells 1996; Preston 2001).

[24] For a discussion of changing wage levels in the United States, especially since the introduction of new technologies, see Moseley (1999).

[25] See chapter seven in Preston (2001) for a discussion of the impact of economic transformation on individual workers.

[26] New technology can also be used to improve amount of profit that such workers make, by enabling them to bypass middlemen and sell directly to consumers in more developed countries (see United Nations Conference on Trade and Development 2002).

[27] In this example, calculating 'similar value' must take into a number of factors. These factors include whether the seller provides continual support, whether it requires new in-house expertise to use, whether it can be easily integrated with previously purchased software products, whether it is compatible with the products that other organisations use, and so on.

[28] http://www.sims.berkeley.edu/research/projects/how-much-info-2003/

[29] This, needless to say, applies only to societies where the content of mass media is not subject to state control. In countries where the state determines information content, consumers learn very quickly to be dubious about the authenticity and accuracy of public information. Even the significance of the information can be in doubt, since there is likely to be a disparity between what the state and the public considers to be significant. There may even develop a 'black market' in alternative information.

[30] There is a long established literature looking at the sociology of mass media and news reporting (e.g., Curran, Gurevitch et al. 1977; Pool 1983; Curran and Seaton 1991).

[31] For further discussion of social studies of science and the sociology of information, see Merton (1973), Latour (1987), Yearley (1988), Webster (1991), and Gibbons, Limoges et al. (1994).

[32] For discussion on the link between technology and the growth of the state, see Ellul (1964), Beniger (1986), Mumford (1934; 1962), Dandeker (1990), and Giddens (1985) to name a few.

[33] With the exception of sacred knowledge which was restricted.

[34] See Pye (1992) regarding the history of technology investment in Irish government departments.

[35] In practice, since deciphering messages using public key encryption is computer-intensive and time-consuming, this system is usually used only to create and share a symmetric key which will be valid only for that session. Since the symmetric key is shared using a secure system and will only be used for a limited period of time, it is effectively private. In the case of World Wide Web browsers, for instance, the software uses public key encryption to create a symmetric key that is valid only for the duration of the secure web connection.

[36] In fact, while there is evidence of the use of public and anonymous email services for coordinating illegal activities, the content of these email communications is not encrypted (Campbell 2001). Instead, the emails depend on messages that would be ambiguous to anyone that did not have a shared knowledge of the backgrounds of the individuals -- a time honoured and effective way of talking in 'public' so that only one's own friends understand the vague references and descriptions. In any event, since the use of encrypted communication is so rare, such use is more likely to reveal identities of such individuals, as such communications are more easily identified through electronic surveillance than unencrypted but unclear communications.

[37]Current laws and proposals in various jurisdictions are tracked by the Electronic Privacy Information Centre (http://www.epic.org).

[38] This issue arose in the earlier discussion of court cases involved Microsoft and other software companies.

[39] This is a constantly changing area, and the best source for current debates is the Electronic Frontier Foundation (http://www.eff.org) and Electronic Privacy Information Center (http://www.epic.org).

[40] There were, of course, exceptions. Many consumers in Ireland could receive BBC and ITV without need for relay stations, if they lived close enough to line of sight broadcasters and had directional aerials.

[41] For a general discussion of these issues, see (European Commission Legal Advisory Board 1996) as well as the EU Green Paper on "The Protection of Minors and Human Dignity in Audiovisual and Information Services" (http://europa.eu.int/ISPO/infosoc/legreg/docs/protect.html).

[42] As reported by BBC, http://news.bbc.co.uk/hi/english/world/europe/newsid_524000/524951.stm

[43] Such countries are less likely to have high speed international connections, which reduces access to the public, and they may also have poor quality software and hardware support services.

[44] For instance, the user can jump to a different site outside France and then access the site from that remote location; the user can phone an ISP outside France; find a mirror of the site outside the United States, or a host of other strategies to short circuit such a ban.

[45] The Republic of China, for instance (as of 2001), controls ISPs and this enables the government to block access to sites if they so desire. Sites blocked often include the BBC site, perhaps because there are links from that site to both text and audio versions of its Chinese-language service (Gittings 2001).

[46] In the wake of September 11th, new laws in the United States require librarians to keep track of which books are borrowed, using the same logic. Civil liberties groups, as well as librarians, are opposed to what is perceived to be an infringement of personal freedom (see http://www.ala.org for the American Library Association's response to the Patriot Act). The same monitoring is proposed for access to electronic information.

[47] Although the Group also warned that "the increase in the flow of information does not necessarily engender an amelioration of the democratic system. It could just as easily lead to a distancing of citizens with regard to real democratic stakes".

[48] Everyone, that is, that had a political voice. In many non-state societies, this excluded women and children and might exclude individuals without kinship links.

[49] This process may also invole consulting ethnic or religious groups as well.

[50] Howard Dean has raised enough money to enable him to withdraw from the public campaign finance system, in which candidates can receive financial assitance from the government but which imposed rigid controls on spending. By opting out, he is able to decide his own spending strategy (Colgan 2003).

[51] This was written in November 2003

[52] This excludes amorphous protests or movements which are not linked to formal, even if dispersed, organisations. These movements are increasingly significant, but will be discussed in a later section.

[53] For a discussion on the use of websites for such social movements, see Tsaliki (2003).

[54] The latter being an even more high profile benefit after the controversies in Florida state regarding the recounts in the Bush-Gore Presidential election of 2000.

[55] The participants may be unrepresentative due to self-selection and are still only be a small percentage of the total population of over three and a half million people, but a sample size of ten thousand is still likely to have predictive value. For instance, in April 2002, 72 per cent of the 8,430 participants were dissatisfied with the bishops' statement on clerical child sex abuse (Iish Times, April 10, 2002). In October 2003, three out of four of 16,000 particpants agreed that residents should pay to have rubbish collected, which was during a high visibility protest over such charges (Sunday Independent, October 19, 2003).

[56] It should be noted that difficult does not mean impossible. The recent conflict in Iraq demonstrated that many repressive regimes are still to both control internal information and prevent the dissemination of external information.

[57] For an example of this, see Komito (1998b).

[58] With new technologies, individuals can respond rapidly and organisation collective action. These are often adhoc groups which disappear as soon as they appear, but such mobilisation in the face of a local issue is effective and their eventual disbandment does not diminish their short term effectiveness.

[59] http://news.bbc.co.uk/1/hi/technology/3222664.stm

[60] As reported by news releases from the Revenue Commissioners (Keena 2003)

[61] Examples would include http://www.oasis.gov.ie/, http://www.gov.uk, http://www.firstgov.gov/, and so on.

[62] As recently as January 2004, Phillips announced the move of its accountacy services from Ireland to Poland, citing reduced labour charges in Poland (Irish Times, 15 January, 2004). This assumes that other factors (such as technology infrastructure and labour expertise) are either equal in Poland or at least close enough to make the reduced labour overheads cost-effective.

[63] Shared information system, electronic documents, electronic mail, video conferencing and other such technologies make decentralised administration and decision making possible, as has been demonstrated in multinational corporations. But evidence from multinational corporations also suggests limits in terms of decision-making and sharing tacit knowledge; sometimes the result of decentralised administration is the centralisation of crucial decision-making to locations where face-to-face communication is still possible.

[64] This definition is taken from Council of Europe Resolution 94/C48/01, but would be a commonly accepted definition.

[65] This is of increasing concern in places like Dublin, where rising housing costs are driving house purchasers further and further outside of Dublin. As two hour commutes each way to work become commonplace, the prospect of avoiding such time consuming journeys by teleworking (even if only one or two days a week) becomes more attractive.

[66] This trend towards linking pay for output is not restricted to telework. Monitoring output is now also possible with new ICTs in the workplace -- that is, how many phone calls are made, how many customers are served, as so on (Smyth 2004 provides a example for Dublin City Council staff). In the workplace, monitoring of output is also cost effective, with new technology, and is being used, in addition to physical presence, as a monitoring mechanism. This makes possible a move from a regime of the same pay scales for all people in the same job description, to determining individual pay by individual output, usually in the name of productivity.

[67] In a study by TUC in the United Kingdom, forty-four percent were part-time and female (http://www.tuc.org.uk/work_life/tuc-35040f0.cfm).

[68] Evidence suggests that recent knowledge is not enough - software engineers fresh out of University are not actually of much benefit, until they acquire about two years of experience. But, after that two to five years, they are highly employable. (see also Wickham 1998a)

[69] In addition, as jobs are automated or altered through technology, there is need for training conversion from old skills to new skills.

[70] In some cases, the motivation for such a change can come from the purchasing company. In a recent example, an Indian soybean company has sponsored the introduction of internet access to villages so that they can obtain the product directly. This reduces the cost and improves the efficiency of their operation. It also benefits the villages, which not only get a better price for their soybeans, but can also access information (such as proper fertilizers and future weather conditions) that improves their own productivity (Waldman 2004).

[71] This issue will be explored in greater detail in Chapter Ten.

[72] Of course the inconveniently long queue may result from job reductions imposed by the bank, and the switch to automatic teller machines and home banking may be precisely the result which banks hoped would result from longer queues.

[73] In some parts of London, it was so difficult to find a parking place near home that it was easier to get shopping delivered than to try to find parking after shopping, which meant ordering the shopping online.

[74] or shopping centre, or café, depending on the cultural mileau.

[75] It also means that when an individual is composing an email or text message or placing a phone call, they can no longer know where the recipient actually is. The person answering the phone call or email message can be in Dublin or Dubai. By the same token, when reading an email or answering a phone call, the recipient can not know whether the sender is in Delhi or Dallas. Some people find it disconcerting to talk to someone without knowing where the person actually is but this is becoming the common experience of communication.

[76] For instance, there has been a move from rigid contact lenses to soft lenses that can be worn longer and now a move to laser surgery that alters eyesight permanently.

[77] Statistics from Commission for Communications Regulation: Irish Communications Market, Quarterly Market Updates, (http://www.comreg.ie).

[78] Evidence already shows that the gender imbalance previously associated with computers and the Internet has disappeared. Class barriers remain significant but are slowly shrinking (National Telecommunications and Information Administration 2002; Central Statistics Office 2003a; Haase and Pratschke 2003).

[79] Much has been written on the decreasing public trust of science and the increasing public perception that they are surrounded by risk and danger (often caused by science). The central works on 'risk' have been Beck (1992) and Giddens (1991) but see also Loon, Joost and Beck (2000), Tourmey (1996), Downey (1986), Winner (1977), and Hess (1995).

[80] There are many possible definitions of community, and this topic will be further discussed later in the chapter. For the moment, it is useful to focus on community as people sharing a similar set of beliefs and understandings. Needless to say, the same logic can apply to culture as well, the crucial issue is the common understandings the develop out of interaction and there tends to be greater overlap of individual understandings at local rather than national level (Mead 1934; Archer 1988).

[81] See also Colley (1992) for additional descriptions of French history.

[82] The issues of national identity, nationalism, and culture are far too complex and highly debated to be discussed here other than in a very superficial manner. It is enough to suggest that mass media is commonly accepted as being an important element in national identity (see Anderson 1991 for a historical perspective).

[83] For a West African example of controlling mass media as well as controlling the circulation of other commodities, see Ugboajah (1985).

[84] However, as the next section will explore, access to foreign media products in the United States is increasing, as ethnic groups in the United States and elsewhere use new technologies to access foreign media products that are relevant to their cultural heritage.

[85] Part of the industrial development strategy of the Irish government has been to develop multimedia products that enable Irish content to be marketed abroad.

[86] Although some would say it has Irish derivations originally, as Irish music traditions were exported to the United States during the waves of emigration.

[87] There is ongoing debate whether electronic communication is replacing face-to-face communication, or whether both are increasing, at the expense of other activities. See Wellman and Haythornthwaite (2002)for the most recent debates on this issue.

[88] Most of the statistical information about the Ennis Information Age Town comes from reports commissioned by the project group and are available at http://www.ennis.ie (e.g., McQuillan 2000).

[89] The drop in Internet usage has also been documented by UK studies (Wyatt, Thomas et al. 2002).

[90] According to a spokesperson for Irish Internet shopping company Buy4Now, in the run up to Christmas online shopping in 2003, 52 percent of Irish registered Buy4Now users weree women (interview on Morning Ireland, Radio Telefis Eireann, 22 December 2003).

[91] As already noted, there has been a long discussion within the context of 'social studies of science and technology' about causal relations between technology, society, and individuals. In the context of the Information Society debate, it is worth focusing particularly on Castells (2000; 1996), Kling (1994; 1980), and Webster (2002; 1999; 1994), as well as Duff (2000).

[92] This "international breakfast" is usually a buffet, from which guests can choose fruit, orange juice, yogurts, boiled eggs, cold meat and cheese, pickled fish, croissant, bread or dry cereal. There is something for virtually every culinary tradition, but little sense of an integrated aesthetic experience!

[93] For instance, the lights on houses that were previously associated with Christmas in the United States are becoming a more common feature of Christmas in Ireland.