The West Johnstone Digital Inclusion Project: An Evaluation Study - Appendices

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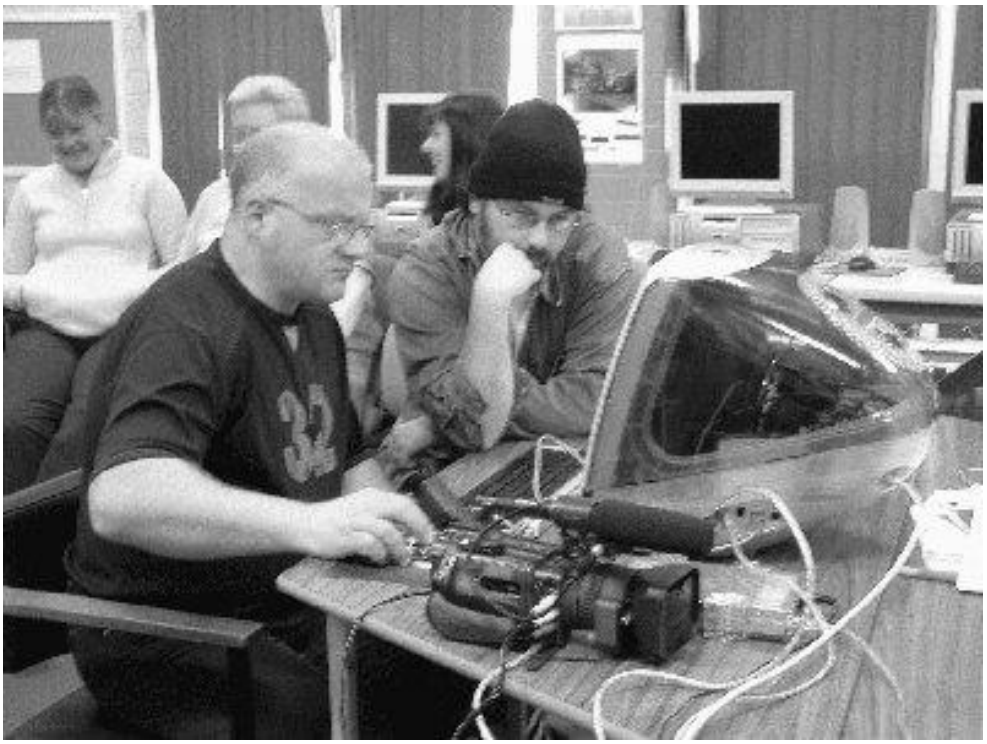

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The following appendices contain a series of supplementary and supporting documents for the Evaluation Study on the West Johnstone Digital Inclusion Project: a review of the academic literature relevant to the study; a set of documents on specific working studies carried out as part of the evaluation; the questionnaire used in the survey carried out for the evaluation; and some of the key results from the survey.

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PART I: Review of literature on the digital divide

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Public versus private computer and internet access

The initial emphasis of strategies to combat the digital divide focused on public access provision (Liff, Steward & Watts 2002: 79-80). The bulk of resources from government programmes such as IT for All (under the Conservatives) and its successor UK Online have gone to existing public-sector organisations such as local authorities, colleges, schools and libraries which "fits comfortably with a discourse of public provision for literacy and knowledge" (Liff, Steward & Watts 2002: 80). Whereas such institutions have benefited from continuous funding, community-based internet access sites have tended to be funded on a project basis on the apparent assumption that "there is only a transitional need for the provision of such types of access, which will disappear once the internet's value is proved" (Liff, Steward & Watts 2002: 81). Though still prominent in most countries' strategies, and still emphasised in the European e-Inclusion strategy (European Commission 2001a), evidence suggests limited penetration of digitally, socially and economically excluded groups. The public debate has not surprisingly moved farthest in the USA, with the Consumer Federation of America arguing that public access is not 'full' access, and that use of the internet at work or at the library should be regarded only as "transitional steps useful for creating skills in the population, or carrying out specific tasks associated with those locations, but … not a replacement for [the internet's] availability in the home." (Cooper 2002: 3). They argue that internet access, having crossed the 50% threshold, needs to be regarded by public policy as "worthy of the status of universal service support", i.e. a service which provides 'essential functions' in the public interest without which it is impossible to fully engage in commercial, civic and political activity (ibid.: 8). What is notable is how the argument hinges in part on the assumption that America is not a 'café' culture and that "most personal business is conducted from the home" (ibid.: 3): hence public access can at best be regarded as supplementary. This raises the intriguing question of whether a different policy rationale could be valid in societies which are regarded as café cultures (e.g. parts of central and Mediterranean Europe). It should also caution us to treat cross-national comparisons of home internet access with reserve, at least until we have established that 'digital divides' in relation to access are replicated in internet use patterns. For example, American experience seems to be that the diffusion of internet adoption proceeds from workplace to home, with projects to promote information technologies through public access having only a marginal effect. This implies that the opportunity structure for individuals is tightly conditioned by the local business structure and the extent of commuting, as well as by patterns of residential migration (Donnermeyer & Hollifield 2003: 115). Even in America this picture is challenged by other observers who note, for example, the important historical role played by public libraries in the creation of social and political citizenship - providing widespread access to connectivity, capability and content, to employ today's language (Schement 2003). If in other countries diffusion of information technologies in addition follows other channels (including public/community channels) the work-home axis may be less determining of individuals' opportunity structure.

Research in the UK seems to indicate that while public access points serve a useful purpose for their users, they mainly augment the facilities available to people who have experience with and access to ICT either at home or at work (Selwyn 2002). Indeed the number of people relying on non-home access to the internet is falling - from 13% to 8% of British adults between August 2001 and November 2002 (Oftel, 2001-2003*, Consumers' Use of the Internet*, cited in Hall Aitken 2003: 73). Europe-wide polls provide further context: non-commercial public internet access points are frequented by just 7.6% of the population aged 15 or over (internet cafes by 6.1%), whereas 76.2% use the internet at home, 37.4% at work, 15.1% at a friend's, 13% at school and 9.6% at university (Eurobarometre 55.2 2001: 7). Moreover, PIAPs are used by more people in countries where home computer ownership, home internet access, use of computers at work and for teleworking, and

internet experience and training are most commonplace, such as Sweden, Denmark, Finland and the Netherlands (Eurobarometre 55.2 2001, Eurobarometre 58.0 2002). In all countries the users of PIAPs are disproportionately younger and better educated, and are likely to be multiple-location internet users rather than groups which rely on public facilities; correspondingly PIAPs are more attractive to those who already use the internet - about 40% of non-users but just 13% of internet users said that nothing could encourage them to use PIAPs, a finding all the more significant in Britain, where people are generally more reluctant than the average EU citizen to use PIAPs (Eurobarometre 55.2 2001: 22-4). UK evidence indicates these drawbacks apply to all types of public facilities, i.e. community centres as well as educational establishments, libraries or museums, and estimates suggest that at best around a quarter of current non-users of ICT can be 'included' by a policy of public provision alone: one authoritative report on the roll-out of UK online centres under the Capital Modernisation Fund, commissioned by the Department for Education and Skills, concluded that "in the UK at least, public Internet access is not well used and may not be a major method of longer-term access for excluded groups" (Hall Aitken 2003: 59-60). Another author, summarising one of the major shortcomings of most UK policy and practice, claims "It is simply not enough to expect the location of ICTs in public places to meet community need. Despite its importance, this is the main weakness of the currently dominant community services approach to policy development" (Day 2002: 91).

On the other hand, community centres do play a vital role in addressing the needs of *certain groups* of potential and new users, such as the established clientele of such facilities, for whom ICT can be important as a path to new learning opportunities and can generate new synergies between existing groups, activities and practices: a Hall Aitken survey of UK online centres highlights institutional synergy achieved in many local communities, with the setting-up of accessible on-line centres boosting the local profile of existing community facilities and intensifying linkages between community centres, colleges, libraries, etc. Public provision therefore has a critical complementary community-building and community-integrating role to play with the proviso that it is highly unlikely to enable comprehensive access among populations characterised by multiple forms of social exclusion. Centres - as public spaces - are important sites of social interaction and group formation, where peer support among users in an informal setting is often as valuable as formal support from tutors and staff (Hall Aitken 2003: 43) and where existing social groups, and even families, can be prompted to interact in new ways (Horrigan 2002: 21-2). A survey of users of 11 community technology centres in Portland found that while their clientele tended to be demographically or socio-economically quite narrow (and over half had the internet at home), their 'social dimension' and 'comfort level' were important reasons why (certain) people come to them (Horrigan 2002: 12). Community centres are also relevant to those who cite a lack of skills and confidence as reasons for not using ICTs, for whom some type of training and support, particularly if it is provided in a familiar setting and from their own peer group, is necessary (for a summary of survey evidence on this see Hall Aitken 2003: 67-77). In the case of the latter group, however, the emerging orthodoxy suggests that the role of public facilities is more modest than earlier policy initiatives envisaged: an introductory exercise in building skills and confidence which can then feed into greater home take-up and effective use of ICTs within the environment is increasingly seen as the most effective path for new users (Hall Aitken 2003: 61).

While public usage has failed to solve the 'digital divide', so home connections have reached a plateau of around 45% of British households since late 2001 (Hall Aitken 2003: 71-2). It is questionable whether market-driven expansion will take this figure much beyond 50% and, moreover, these percentages hide the substantial numbers of adults who live in households with PCs and internet connection, but do not use ICTs themselves: IT for All (DTI 1999, cited in Liff, Steward & Watts 2002: 79) reported that 12% of the UK population surveyed had a PC in their home which they never used, whilst other research reports that *children's* needs or preferences are often the reason why many parents and grandparents get connected, casting doubt on whether adults in such

households can be regarded as 'users' (Hall Aitken 2003: 77)[1]. Given the above-mentioned shortcomings of public facilities in terms of reaching the digitally excluded, and given the dominance of cost (of PCs and internet access) among the barriers cited by non-users of the internet (Eurobarometre 55.2 2001: 21), one response to these realities has been to shift policy away from community sites towards community resources, so that ICT infrastructure can be taken into people's homes and - in contrast to market-led provision - backed up by outreach support and centre-based training opportunities. The 2003 'policy framework' document of the Office of the e-Envoy heralds a divergence from earlier approaches to tackling the digital divide in the UK (Office of the e-Envoy 2003a, Loader & Keeble 2004: 6). This shift, which was paradoxically prompted by a reflection on positive trends and optimistic projections for the market-driven spread of home internet access in the UK, actually leaves current policy looking slightly self-contradictory: on the one hand the promotion of home access is seen as "vital if more sophisticated patterns of use are to become widespread"; on the other, public access points are "providing a valuable safety net" (Office of the e-Envoy 2003b: 5, 12). In fact, as seen, this is not where their strength lies: they rarely reach the most socially excluded sections of the population but are valuable community assets which can enhance people's on-line experiences, including by enabling people to develop more sophisticated use habits! Home use is more about convenience, entitlement and the formation of habits rather than sophistication, if the latter rests on skill acquisition. Nevertheless the policy shift is conceptually significant because it makes it more feasible and legitimate to influence patterns of household use in line with social inclusion, community participation and citizenship goals.[2] Arguments for promoting home access as a public policy initiative can therefore be simultaneously more user-friendly and more interventionist. An example of the former is the common argument that only home access constitutes full access, providing privacy, convenience and flexibility, i.e. the ability to access services when required by the user or consumer in the place where many services are already habitually accessed, using the telephone for example (Loader & Keeble 2004: 10, 34). Some research and policy advice has even extended this argument to suggest that it is necessary to promote universal *broadband* access to create the broadest possible conditions for digital inclusivity (Horrigan & Rainie 2002, Mason & Rennie 2004). A strategy to promote home access is also, however, by definition more engaged with the reality of social and cultural practice in communities and neighbourhoods: the concept of 'community network' is typically an important reference point, denoting the goal of integrating ICTs into the day-to-day life of communities and adapting provision according to a particular community's needs and potentials, ideally allowing enough flexibility so that policy implementation can be actively shaped by local people and groups. This makes sense not only in order to reach groups that rarely visit community facilities, but also because survey evidence shows that even relatives' and friends' houses are perceived as potential points of access to the internet by more people - and

[1] However the converse argument is equally plausible - that parents are more likely to become users than non-parents precisely because they are either 'nudged' into internet adoption and use by the children, or because they encourage their children to use the internet in the belief that it is a necessary life skill, and in the process learn themselves (Allen & Rainie 2002: 8), or because they are particularly attracted by certain benefits of the internet, such as 24-hour availability of health advice or information (ibid.: 16). It seems reasonable to assume that while parents in wired households may effectively be non-users at first, they will often gradually become users through one of the above processes. Nevertheless survey data show that while parenthood is a predictor of the likelihood that a household is connected, parents in wired households spend less time on-line than non-parents and derive less benefit from (or are less interested in) the internet's *communicational* facilities: lower proportions of on-line parents use instant-messaging and chat rooms, post to messageboards, use the internet to meet new people, or acknowledge that e-mail has improved their friendship and kinship networks (Allen & Rainie 2002). An interesting exception with particular relevance for West Johnstone is the lone parent household: both parents and children are more likely than their counterparts in two-parent households to use chat rooms and send instant messages, which could reflect the comparative youth of lone parent households, or could indicate that the internet has an important role as companion, dating service or babysitter (ibid.: 21).

[2] It is also politically bold, as it appears to go against the climate of public opinion in the UK, which, asked to choose between different policies to combat the digital divide in 2001 came out relatively strongly in favour of public access points but very sceptical on subsidies for computer purchase in comparison with other EU countries (Eurobarometre 55.2 2001: 13-14).

especially more people from lower socio-economic groups and more elderly people[3] - than public access sites of any particular type (Selwyn 2002, Eurobarometre 55.2 2001). Patterns of technology adoption in low-income communities are unlikely to flow across from the spheres of work and higher education, since more people there are excluded from these spheres; instead they are likely to rely on kinship and neighbourhood networks and for this reason alone it is more incumbent on project managers to find a 'hook' - a good reason for people to go on-line - since initially it will be an activity poorly - or differently - integrated with existing social practices[4]. One approach to the problem is illustrated by a scheme in Cleveland, where the West Side community development corporation has set up a training programme in PC repair, designed to "foster a culture of computer tinkering" analogous to the custom of car-tinkering which is both a social and an economic phenomenon in the neighbourhood (Horrigan 2002: 29). Thus the programme is modelled on a set of localised practices and networks which amount to an informal economy from which people draw both cash and social benefits: embed computers in the same 'culture of practice', the project leaders believe, and people are more likely to commit their time to acquiring the new skills, and hopefully in time this will provide at least some members of the community with a way into the more generalised community activism that the programme aspires to foster.

In the UK the first concerted attempt to increase home access among disadvantaged social groups was the programme, announced in October 1999, to offer low cost recycled computers to 100,000 low income families, although experimental local schemes had already been tried (DTI 2000). This was followed by the Wired Up Communities pilot schemes in England, and the Scottish Executive's Digital Communities pilots. The rationale for such schemes rests in the claim to be able to build upon existing family- and friendship-centred social networks in attempting to 'digitally include' disenfranchised communities[5]. EU policy is also starting to acknowledge the same realities: after polls indicated that cost, training and lack of useful content were the main disincentives for non-users of the internet (European Commission 2001a: 14) the 2001 e-Inclusion strategy document welcomed

[3] The single most common motivation for getting an internet connection among American senior citizens was encouragement from family members, according to a survey in 2000 (Fox 2001: 5), and three fifths of wired seniors felt the internet had improved their connections with family (ibid.: 6), which suggests a virtuous circle operating between extended family ties and internet adoption/use.

[4] A review of some of our survey findings illustrates this point: they show how the early development of repertoires of computer usage in West Johnstone has differed from 'normal' patterns. Among the EU population as a whole, for example, where about 76% of people used a computer at home in 2001, 37% used a computer at work, 15% at a friend's house, and just 7.6% at a non-commercial public access point (including libraries) (Eurobarometre 55.2: 2001). Among DIP participants (92% of our sample said they actually used the computer at home), a mere 9% used a computer at work, whereas 34% used a computer at a friend's house and 25% at the Community Learning Centre. The socio-economic conditions of the West Johnstone SIP area explain the first difference, with relatively few people (less than 30% of adults according to our sample) in work of any kind. The differences between use in social and community locations is more intriguing, however: given the (near) universality of home use among our sample, we might expect to find use in other locations to be lower than the EU average, when in fact it is 2-3 times higher. The explanation is likely to revolve around the particular ways in which computers and the internet are adopted and socialised in different types of community, and West Johnstone (thus far) evidently diverges markedly from the patterns observed in the market-driven spread of ICT technology in Europe. Whether future trends will converge is difficult to predict, but the strong role of the Community Learning Centre as a conduit for initiation and support, and of local configurations of neighbourliness and sociability as contexts for a distinctively collective form of technology adoption, suggest not. These are (formal and informal) institutions which exist apart from the DIP but seem to have structured the way the project has developed; therefore the project serves as a valuable test for the 'social shaping of technology' in a socio-economic context quite different from the communities and classes which were earlier adopters of home computing.

[5] Residents' testimonials in Bellsmyre, West Dumbartonshire, where one of the Scottish Executive's Digital Community projects has been operating, emphasise the catalytic effect of computers in homes on communication, collaborative learning and visiting within kinship networks, especially for grandparents and grandchildren: one resident echoed widespread sentiments when they wrote how computers provide "a new focal point within the family" (Bellsmyre Project Survey, available at <<HTTP://www.bellsmyre.com/bellsmyre/DisplayArticle.asp?ID=2973&r=17482>>, accessed 20/5/04).

Wired Up Communities as a timely initiative for targeting "disadvantaged local communities" through a more strategic approach, coordinated with broader neighbourhood renewal projects (ibid.: 18-19). What it particularly noted was the commitment to develop local content through community portals, a recognition that barriers to the wider use of ICT amount to more than conventional definitions of access.

The e-Inclusion strategy, summarising the evolution of policy across the EU, speaks of a triple mechanism: Public Internet Access Points are still seen as fundamental to the infrastructure of internet provision (conceived as a universal service), whilst incentives to the purchase of ICT equipment are seen as more effective ways of reaching certain groups - the recalcitrant minorities which still do not use the internet - and finally the importance of public commitment to connecting less-favoured areas which would not be covered by market-led expansion is stressed. Although the differences in tone are only slight, the EU and UK policy discourses diverge on the issue of targeting: are we spreading home access in pursuit of a 'universal service' goal, recognising that public access centres will inevitably be de facto 'targeted' at certain groups (as the UK government frames its initiatives)? Or are we deploying home access initiatives strategically, because we believe we can thus better target the internet refuseniks (as the EU has it)? Current Scottish Executive policy arguably fits more closely with the tone of EU than UK policy insofar as there has been less of a shift away from public access to measures to increase home connections: the former continues to represent the central plank of access policy, supplemented by home provision as a kind of safety net to catch those still 'excluded' (because "individual incentives [to purchase and effectively use ICT equipment] can be more *targeted* … [For example they are] more suitable for people needing special assistive technology" (European Commission 2001a: 24)). This is so despite the fact that home connectedness is lower in Scotland than the UK average (40% compared with 48% (Office of the e-Envoy 2003b: 6, 39)). The Executive's public internet access points initiative, on the other hand, is more expansive than its English equivalent: the Scottish initiative had established 700 out of a planned 1,000 new access points by the end of 2003, which, per capita, compares favourably with the 6,000 UK online centres established in England. Moreover, whereas 3,000 of these are libraries, and many others schools, the SE's programme targets "venues where people already go as part of their everyday lives, egg shops, hotels, post offices, community centres and pubs." (ibid.: 39) It could be argued that this distinction is appropriate given that the prevailing culture of public space in Scotland is often regarded as closer to parts of continental Europe than to England[6]. To that extent there may be more 'familiar places' used by a broader cross-section of society north of the border. Accordingly, Renfrewshire Council's information age strategy stresses that "community learning centres represent the fulcrum of our current response to digital exclusion". At the same time, various avenues are being explored for extending personal access in deprived areas (such as provision of digital access in all council housing stock, for example) (Renfrewshire Council 2003).

The contradiction between policy discourses is, however, more apparent than real: both strands are actually targeting certain users, but their effective deployment depends on different mechanisms and a mutually supportive combination. The Scottish approach is fully in keeping with the DTI's Policy Action Team report on ICTs in deprived areas (DTI 2000), which argues strongly for integrating digital inclusion strategies within an overall social inclusion strategy and for integrating new and existing community activities and initiatives. For example, one criterion for siting public internet access facilities should pay heed to a location's existing and potential function as *a fulcrum for community groups and organisations*: doctors' surgeries, local post offices, religious centres and neighbourhood learning centres are named as examples. This approach maximises the capacity of ICTs to improve the coordination of a community's social capital resources. An example of best practice cited in the PAT 15 report in this regard is the lottery-funded Grimethorpe Electronic Village

[6] Cultural factors in internet use are clearly evident from Eurobarometer polls showing striking differences in the extent of usage of public access points between countries: as stated above, about 8% of EU internet users frequent PIAPs, but this figure rises to 24% in Finland, 21% in Denmark, 18% in Sweden and 16% in the Netherlands, contrasts which are not explained by differences in the extent of provision alone (European Commission 2001a: 24-5).

Hall in a Yorkshire ex-mining village, which, aside from offering training to individuals had supplied equipment or training to no less than 500 community groups and 60 businesses in the first year of operation. By servicing the needs of existing local community groups in this way, public access facilities can play a vital role in community 'asset-mapping', thereby enabling more effective collective action. One of the irreplaceable functions of a well-managed public access facility is thus the targeting the *organisational* resources of a neighbourhood, where there is a much better prospect of comprehensive coverage than when the focus is on individuals, many of whom, as we have seen, will never be reached by this mechanism. However when the policy goal is to target broad socio-economic or demographic strata regarded as digitally disenfranchised or underserved, the more appropriate mechanism, according to the emerging research, is subsidised provision of ICTs to the home.

Recent evaluative research on community computing projects in the USA has identified a trend which points to a third dimension as a precondition for achieving real benefits for a community: thus following on from earlier projects building community networks (usually with free dial-up access for participants) and/or providing public access centres (usually known as community technology centres in the USA), some newer projects focused on providing relevant and interesting content for specific low-income groups (Beamish 1999, Pinkett 2002). A speech by the Commissioner for Social Policy sketching the European Union's e-inclusion policies in 2001 also stressed relevant and useful content as one of four key areas for political action (alongside awareness-raising, access and digital literacy) and called for public authorities to become a catalyst here (European Commission 2001b). For this is one dimension in which the World Wide Web, as it becomes increasingly commercialised, is weak, according to a systematic survey of on-line content for low-income and other 'underserved' groups in America: interviews and focus groups conducted in the same research project made a strong case for including local and ethnic communities in the development of content (via community portals, for instance) because this "helps ensure that online content incorporates what the community wants and will use, that content acknowledges residents' methods of acquiring information, and that the look and feel of the content works with the user's literacy and linguistic levels. Equally important, involvement of the community builds a group of users who sees the Web as a space that reflects their culture and values and is useful." (Lazarus & Mora 2000). Some of the positive examples in these regards are explicitly predicated on a constructionist approach of motivating people to adopt and use technology to accomplish their own needs and goals. The presumption here is to start from an analysis of the goals of a community (asset-mapping) or of the 'missing ingredient' (identifying service gaps and priority problems) instead of assuming that a standardised model of provision will bring community benefits without specifying how this will occur in a particular environment. In analysing community computing projects it is useful to distinguish between catalytic and content effects (both of which must be present for social capital formation to occur): introducing new technological means involves social innovation, the by-product of which can be found in collective action; but social capital formation will not be consolidated "unless the initial catalytic effect from Internet planning translates into content" (Horrigan 2002: 9).

Governance (the modernising government agenda)

Information and communication technologies are often promoted as enabling innovation in service delivery and information-availability between citizens and the state. Experience from early 'digital city' projects, developed in cities such as Amsterdam as a way of harnessing this potential (see Schuler 2002), suggests a public preference for the use of interactive public information websites to confront opinions or enable self-expression, whereas the ability to influence decisions was not a major motivating factor - perhaps reflecting the general state of apathy with formal democratic mechanisms.

A survey of US mayors and councillors found that e-mail played a modest role in their relations with constituents without qualitatively altering those relations: it was "useful for information gathering and sharing … [but had] yet to demonstrate a robust effect in consensus building and decision-making" (Larsen & Rainie 2002: 16). As such it was ranked below meetings/visits, telephone calls

and letters (in that order) as the means of communications "which carries most weight" and behind telephone calls, letters and meetings/visits as the most frequent means of communication received (ibid.: 11); councillors and mayors were mostly cautious in their evaluations of the potential of the internet to revolutionise their own dissemination and outreach activities. There is little reason to believe Scottish councillors' opinions would differ dramatically. From the perspective of citizens, the potential of e-mail to intensify two-way communication and debate with their local representatives or to enhance their own organising capabilities in local groups or campaigns was also surprisingly under-valued, and the vast majority of the Pew Internet and American Life Project's survey respondents show an inclination to regard e-mail and the internet as useful tools for engagement in global issues and networks but not local ones (ibid.: 4-5).

In this respect the ethos of the community network seems to go against the grain of the habits of the average internet user. As experiments that makes them interesting, because they counter some of the tendencies towards more distanced forms of political participation characteristic of late modernity, which the internet, paradoxically, may otherwise encourage. Whilst the separation of debate and decision-making represents a challenge to democratic systems, as they undergo a crisis of legitimacy and accountability, some have argued that expression of opinion is becoming an increasingly important form of political engagement and the existence of ICT-facilitated fora for open, non-expert-led debate is one way in which democracy can be enhanced as internet access spreads (Chambat 2000: 263, 269). In other words, ICT has the potential to render more effective the generation of community-based discourses which represents the first phase of collective action - networking. Other authors have argued that ICT does also have potential during subsequent phases of collective action - for 'collaborative planning' (linking description of the present situation to the generation of alternative scenarios of development and confrontation between them) and 'representation' (advocacy), where it has the capacity to 'voice' community demands in a variety of formats tailored to the discursive preferences of different target audiences, including decision-makers (Shiffer 1999, Day 2002). Yet this potential remains crucially dependent on the receptiveness of decision-makers themselves to this form of address, and the existence of accessible and legitimate channels between civil society and the local state - i.e. it is as much a matter of the transformation of organisational cultures within local government as it is of the development of new forms of collective action and self-representation.

The DIP fits neatly into the current European discursive model as formulated by the European Commission's Higher Level Expert Group on the Information Society, essentially an endogenous development model stressing community capacity building, and contrasting with the 'first wave' of European policy (Bangemann report) with its emphasis on 'hard' infrastructure. These first information society strategies deployed the metaphor of mobility and downplayed social interventions in keeping with a neo-liberal policy framework; however this obscured the spatial effects of a market-driven roll-out of a new network architecture and in particular the 'pump' effects for weak regional economies of a new era of increased capital mobility and the critical importance of human capital resources in intensified competition between places and regions. The creation of the HLEG was designed "to place social considerations at the centre of the frame", through "policy initiatives to develop locally attuned forms of public service" (Ducatel, Webster & Herrman 2000: 10, 16). European governments are urged "to build a humanitarian information society in which the key dynamics are those concerned with learning, social inclusion, community development and democratic participation. Perhaps the best way of achieving this vision is by giving people the tools (ICT-based tools and more conventional ones) and the support to build their own future in a productive and creative European information society" (ibid.: 17).

The issue then becomes the viability of initiatives at different scales: at what scale can the needs of communities most vulnerable to exclusion from the benefits of such a society be best addressed? An endogenous development approach cautions against being prescriptive: social practices on the ground are diverse, and creating community ownership necessitates having enough flexibility to reflect locally distinct communication and information needs (Day 2002); capacity-building efforts are more likely to succeed if they respect the natural boundaries of social and economic networks, while

networking between communities and external actors can take on a set of variable geometries as long as the appropriate support structures - framed by public service policies - are in place. Experience from one New York community networking project found that the project was failing to have much community impact because local 'cross-sectoral connectivity' was not being actively induced by the project steering group, and as a result such ties were underdeveloped compared with inter-organisational (hierarchical) connectivity, which subscribers predominantly used the network for: evaluation subsequently therefore recommended mandating cooperation among local organisations in order that the resource rich assist the resource poor to get connected (Venkatesh & Shin 2002).

One of the drivers behind the innovativeness of ICT policy is that the intrinsic logic of network architectures is to transform connectivity through the creation of distributed intelligence to the point where any demarcation between network boundaries and users' private space becomes meaningless (Neuman, McKnight & Solomon 1998: 106): the 'scale' of a local economy / local society then becomes much more a question of subjectivity and identity-building rather than critical mass. If it is accepted that local economic development is increasingly conditional not on 'smokestack shopping' or even its high-tech equivalent inward investment strategy, but on strategies that try to promote social networking as a stimulus to entrepreneurship (Horrigan 2002: 51), boundaries will be determined from the bottom up. Not only is there a logical connection between network architectures and endogenous development, ICT lends itself to an endogenous development strategy as a tool for mapping a community's assets (Horrigan 2002: 12-13, 21-2). This has two principal benefits: as a process it draws attention to relationships between people and institutions within the community and can therefore increase the efficiency of their networking and better coordinate their actions; and as an informational resource it becomes a marketing device when competing for inward investment or development grants, raising the probability of both acquiring resources and of matching assets and new investments to produce synergy rather than conflict.

Hitherto the development model followed in West Johnstone has arguably been more endogenous than intended, but the absence of external direction raises questions over its sustainability, particularly in relation to the small size of the neighbourhood the project serves. Does it have the 'critical mass' of users to be sustainable? Does it have access to the requisite skills within the community or will it have to seek more external support? Is it an appropriate size to develop a strong community identity through 'self-publishing' activities? Is there a stronger sense of local ownership in smaller community computing projects? Is there a higher ratio of producers to consumers than in larger projects? Evidence from a study of three Boston neighbourhoods suggests that "large community networking projects beyond a few hundred homes reduce the social pressure of geographic co-presence and limit the need for residents to maintain the 'neighbourliness' that appeared in Netville [an experimental suburban community computing network in Canada]" (Hampton 2003: 28). Comparison of a variety of US community computing networks suggested that different sizes may facilitate different functions: highly localised systems may have difficulty sustaining bulletin boards / e-mail lists because they lack the critical mass to generate a lively conversation, and a vicious circle develops between lack of messages and lack of participants. On the other hand very small networks are ideal for enhancing 'general public awareness' and countering the tendency of the internet towards the parochialisation or specialisation of discussion. The small volume of information on very local websites becomes an advantage because it is easily surveyable by individual users who are less prone to focus only on their personal interests than when browsing larger sites or indeed the entire web (Shiffer 1999: 205-6). One of the few UK projects of comparable size to West Johnstone, Manchester's Redbricks, is a small neighbourhood project which has nonetheless proved its viability in terms of communication levels and funding models, but a key role there was played by local animateurs and by the presence of a receptive audience stimulated to self-expression by a number of strong campaigning issues (Hellawell 2001: 24-9).

Collective action

A study of Redbricks also claimed that the action potential of the local community was enhanced by the addition of a 'fourth dimension' to community space - the virtual space of a computing network.

Social interaction was intensified, and self-expression was freer due to the relative impersonality of on-line communication. In other words the internet has value for organising more efficiently the hidden network phase of social movement formation - preparing the case among activist networks before it is presented in the public realm (Chambat 2000: 272). Other authors have stressed equally its role in empowering communities to choose and use the right media to 'translate' their own visions into discourses accessible to a range of strategic decision-makers and advocates, i.e. to facilitate the 'public representation' phase of collective action (Shiffer 1999). There are a number of factors involved here. US community activists who took part in a MIT Department of Urban Planning colloquium on Advanced Information Technology and Low-Income Communities were surprisingly enthusiastic about its potential to assist their work, one reason being that they saw in it potential to overcome some of the limits placed by spatiality on their own organisational capacity: by networking electronically with non-local actors they could more easily build a 'critical mass' of support for their efforts (Sanyal & Schon 1999: 374); at the same time, at the local level, IT could boost participation, for example by parents in the running of schools (ibid.: 386). The inverse, however, also applies: to ensure the poor's access to the digital world, "traditional, door-to-door campaigning by community activists … patiently explain[ing] how to utilize personal computers and demonstrat[ing] how they would provide access to information vital to the well being of the poor families" is essential (ibid.: 379). Street-level and on-line organising, word-of-mouth and electronic networking, thus have complementary roles to play - the latter can augment and empower, but not substitute the former. Collective action structures must satisfy specific communities' and groups' need for belonging: how do people relate to projects: as members, owners, visitors, directors, clients, customers, students? Which model and which symbols (cards, registration systems, conditions of entry) of association are most appropriate for a given purpose?

Secondly, social psychologists have argued that - contrary to predictions that computer-mediated communications (CMC) would produce de-individuation (loss of self) and inhibit sociability - "communication using CMC is no less social, and may actually be more socially regulated, at least at the group level, than face-to-face communication." (Watt, Lea & Spears 2002: 77). This occurs in certain communicative situations where the "filter[ing] out of many interpersonal cues that identify and individuate the communicators … [mean] more opportunity to influence interaction and the definition of the self and situation." (ibid.: 69) A combination of the situational specificity and the mutual anonymity typical of CMC can thus be facilitative for identification of the self with the group - as numerous experiments have demonstrated - resulting in "increased adoption of the norms of self-included groups" and promoting a range of group behaviours, both desirable and undesirable, such as social stereotyping, cohesiveness, ethnocentrism, altruism, empathy, social influence and collective action (ibid.: 70). The anonymous and situational context of a messageboard, for instance, can thus strengthen participation (because inhibitions due to visibility fall away), commitment (due to the effects of depersonalisation) and norm-creation (because the softening of interpersonal cues enhances conformity to local group norms, whose reproduction, moreover, may be more democratic due to the relative absence of status and power differentials). All of this may be particularly helpful in the context of a community like West Johnstone with a residual tradition of collective action and an embedded dependency on collective provision; and with a widespread perceived need for stronger social control alongside a fear of action in a neighbourhood of high mutual surveillance (see Listening Matters survey findings). CMC could be valuable in engendering greater self-regulation through collective actions, thereby simultaneously strengthening informal social control mechanisms and reducing dependency on external interventions. The concept of 'emergent group' (Kabele et al 1982: 14) may be especially relevant - a group strictly limited to the context of a 'situational act', lacking an independent 'group universe' (but not lacking high action capacity or strong commitment to temporally- or situationally-circumscribed collective goals): given certain preconditions e-mail seems to enable the formation and continual re-formation of this type of group in response to issues that arise in the development of the broader community - on the bases of weak ties which coalesce around situational opportunities and threats, but which traditional institutional opportunities for collective action are too cumbersome to pick up (see below, on Netville).

Evidence that organisational capacity is increased by CMC comes from other pilot projects: groups with special needs became more agitative as they gained confidence with ICT in Knowsley (Hellawell & Mulquin 2000: 13). The internet may thus reduce the threshold for participation among social groups traditionally under-represented in collective action: a Pew Internet telephone survey of US internet users found striking socio-demographic differences between those whom the author terms 'net joiners' (those who joined community networks after encountering the group online) and 'long-timers' (those who already belonged to a group before they used the internet to communicate with it): the former were a much more diverse group ethnically, and in terms of age, education and income (although both groups tended to have above-average on-line experience). This finding applied to both virtual and local groups, offering the interpretation that the internet lowers the barriers to association and community participation, enabling greater representation from social categories which are otherwise selectively excluded, and thereby diversifying the memberships of existing local associations (Horrigan, Rainie & Fox 2001). The internet could thus be a powerful recruitment channel for local groups, especially among the youngest age-groups, who make up a higher proportion of local 'net joiners' than the overall profile of online community members.

Social network data from Netville show how ICT (principally an e-mail list) increased density of weak ties (less so strong ties) among connected residents compared with non-connected ones (Hampton 2003: 14; Hampton & Wellman 2003). A much higher percentage of households got involved in active protest against the developer (concerning routine problems with a new housing scheme) than is typical for similar Canadian estates (Hampton 2003: 8), and collective protest against premature ending of the free internet trial period was extremely rapid and intense. The model hypothesised is one of connectedness producing an increased number of local weak ties, in turn producing greater informedness and action capacity (visibility of action by others produces a powerful demonstration effect and mobilises even those individuals with high 'thresholds'). But the process was not preconceived: initially the developer had expected the primary selling point of the wired neighbourhood to be access to (global) information via a high-speed, permanently-on internet connection. It was only later that residents re-appropriated the system to emphasise communication rather than information, pressing the developer to provide a means of local interaction online, the need for which had not been anticipated: a simple neighbourhood e-mail list was set up, which became the principal means of organising collective protests as well as serving as a means of exchanging introductions, organising social events, obtaining various kinds of support and getting help for kids with homework (Hampton 2003: 10-11). An incentive to use it for voicing demands or grievances was that corporate stakeholders in the project were subscribers, so it became a forum for negotiation with these partners. E-mail became an important channel for receiving validation of one's own position from a peer-group and exerting pressure on corporate partners by creating an impression of concerted feeling and action within the community. ICTs reduced the transaction costs of collective action around local issues as well as of more casual social networking: both activities declined once campaigning issues disappeared from the immediate agenda of Netville, and once social networks stabilised (a similar pattern has been observed in studies of 'non-wired' new neighbourhoods); however residents valued the e-mail list service highly enough to replicate it for themselves after the end of the trial (Hampton 2003: 26).

More evidence on the effectiveness of community bulletin boards for 'bringing the village back to an urban neighbourhood' comes from experimental project carried out in Newark, New Jersey, with support from MIT Media Laboratory: "using the network, residents have been able to organize numerous events and to come together during crises. They have organized talent shows, a recycling drive, flea markets, gardening projects, field trips and fundraisers … by and large most project ideas begin by being posted to the bulletin board" (Shaw & Shaw 1999: 330-1). In West Johnstone Cheryl Smith has observed the take-off of many collective projects thanks to the existence of e-mail connections among people she has encountered during the Listening Matters research project: of projects, social (a stag night in Prague), practical (organising informal childcare), self-educational (young addicts - who would reject drug counselling in an institutional setting - informing themselves and each other about drugs issues) and political (organising the representation of community views

on the design of the new Community School complex) which are being realised via the spontaneous creation of e-mail networks, where previously efforts would have foundered because the word-of-mouth networks which poor communities rely on have a much greater friction of distance (and time) (conversation with Cheryl Smith 8/3/04). This is highly significant because focus groups in Glasgow among internet non-users showed that although there was a broad awareness of the commercial, consumptive, information-seeking and dispersed family-centred communication possibilities the internet offered, there was a gap in people's perceptions where local community affairs are concerned. This was evident both in terms of formal and informal institutions: accessing public services was not mentioned when non-users were asked (unprompted) what you could do on the internet; and when asked how they keep abreast of local news some people cited community newsletters, but more common responses referred a range of 'third places' that heavily structure the public space of working class neighbourhoods - pubs, bookies and community meeting places (including very prominently the library, which most had been socialised into using as children) alongside word-of-mouth networks (Boyes & McCormick 2003: 7-8, 13). If it has been argued that e-mail and voice calling, far from being a threat, are ideal ways of enhancing these traditional communication media and fora, this is poorly appreciated among non-users. The positive articulation of traditional and new media is often only revealed to people as they adapt their own social and cultural practices during the adoption process. To the extent that subsequent community capacity building processes occur, as it were, 'by accident', contrary to expectations or against generalised scepticism and disinterest towards computing, then provision of computers for free and with few strings attached (as in the DIP) may be crucial in inducing a social situation where people are free to experiment with a new communication tool, thereby partially circumventing the difficult process of awareness-raising (about the benefits of the internet, for instance) on which many 'digital divide' strategies founder.

Digital divide policy themes

Awareness, access, skills (Scottish Executive's key performance criteria, based on identification of barriers to digital inclusion).

Both policy and research have hitherto been overly focused on access issues, employing a simplistic binary distinction between users and non-users of ICT. More recently studies and policy have begun to appreciate that the digital divide may be manifest in terms of differences between types of use. This turns attention towards questions of skills and confidence, and necessitates a long-term perspective. For instance, a major American survey found that while demographic factors can be correlated with internet use patterns, "the most useful predictors of the activities that users enjoy online are their length of experience with the Internet and their frequency of logging on from home" (Howard, Rainie & Jones 2001: 400-3). In particular, activities such as on-line transactions and on-line learning and job training were found to be primarily the domain of experienced and intensive users - those who have fully integrated the internet into their repertoire of communication and informational strategies. Similarly, a Pew Internet survey of parents' use of the internet showed consistently higher percentages of those who went on-line more than three years ago felt the internet helped them accomplish practical tasks such as planning family trips, shopping for birthday presents and taking care of their children's health than those who went on-line in the last year (by margins of 44% to 26%, 37% to 17% and 26% to 17% respectively) (Allen & Rainie 2002: 14). It may be unrealistic to expect significant take-up of these kinds of use among a population of new users until the internet use has become embedded in their lifestyles and they are fully convinced of its efficacy in helping them meet their life goals.

In addition it is essential to consider the social context into which any technology is to be integrated. Exclusive focus on awareness, access and skills risks over-balancing projects in favour of needs and aspirations of individuals (in train to an ideology of individualism), abstracted from the neighbourhood and community context. There is a critical thread in the literature arguing that the dominant discourse on the digital divide reduces the concept of access to the availability of technology, which, decontextualised, becomes only a means of receiving information and consuming

the goods and services it distributes. Without addressing questions of content and effective use (access for what?) it becomes a surrogate for increasing e-commerce markets. As well as corporate interests, civic freedoms are equally threatened by a powerful public discourse in which the agenda of public agencies is presented in terms of a response to inexorable technological change, but which in fact amounts to an imposition of new requirements for citizenship. Thus the National Telecommunications and Information Administration (NTIA), in one of its authoritative reports on the digital divide in the USA (NTIA 2000) maintains that 'Each year, being digitally connected becomes ever more critical to economic and educational advancement and community participation'. This fatalistic vision is compounded by and legitimises a 'myopia' commonly propounded from policy-making circles, 'that prevents society from perceiving that complete dependence on ICT is anything but positive, beneficial and desirable' (Mitchell 2002). However ethnographic research in Washington State which asked practitioners and opinion-leaders involved in strategies to address the digital divide to envisage future scenarios found considerable dissension from the general direction of US public policy, with many expressing worries about the establishment of new conditions for citizenship in society and membership of the dominant culture in the 'information age': their experience led them to take a much more complex view of the digital divide as a social problem which involves the erosion of personal rights, the evolution of new requirements for membership of socio-cultural systems and the exacerbation of existing social inequalities. Interviewees stressed that advances in information and communication technologies impinge on communicative practices in ways that contain both possibilities for new types and degrees of inclusion and threats of new forms of exclusion (Mitchell 2002). Increased access is not therefore of itself a public good: access only becomes a public good if it enables further activities relevant to people's needs - only if it enables self-representation of one's needs, and thus amounts to the integration of ICTs into 'the accomplishment of self or collaboratively identified goals' (Gurstein 2003: 8).

Some focus groups conducted by the Scottish Council Foundation for Scottish Enterprise Glasgow among non-users of the internet concur with these findings in a number of respects: that few are excluded from access through lack of awareness or through network poverty (almost all said they had somewhere to go - usually a friend or relative with home access - if they should want to use the internet); but that the perceptions of non-users about what the internet offers tend to give prominence to commercial uses and consumptive behaviour, while there is lower awareness of any public service function, any value to local communities, or any possibility of creative involvement by the user (Boyes & McCormick 2003: 13-14, 18). Non-users in these focus groups (held in late 2002) demonstrated varying degrees of interest in trying the internet, but also a (perhaps healthy?) suspicion that the 'surveillance' possibilities it offered were not necessarily to their benefit and that the information 'needs' it generated were not necessarily real social needs (most were comfortable living without the internet). The report concluded that measures to increase physical access are becoming increasingly irrelevant to the spread of internet use, and that instead there is a need for measures to promote awareness among 'excluded' and 'marginal' groups of the potential benefits of connectivity to themselves and their families and communities while allaying quite widespread fears concerning security and safety in 'virtual space'. This agenda concerns far more the way that learning opportunities are structured and the overall structure of support for new and potential users than the provision of new infrastructure. In this context the DIP acts as a useful test case: home provision might prove ineffective if it merely amounts to a physical relocation of an already acknowledged opportunity from friends' or relatives' houses to one's own. On the other hand this may itself have altered the opportunity structure in an unanticipated way - some of the focus group participants in Glasgow expressed unease or embarrassment at the thought of taking their first steps on the internet in any public or semi-public space, and felt their own home to be the only place where they could comfortably practice their skills initially (ibid.: 20, 22).

A Hall Aitken survey of UK online centres indicates the limited success of centre-based provision at reaching socially-excluded groups: whilst a large share of their use is indeed made up of the DfES's official target groups (people who need help with basic skills, lone parents, ethnic minorities, the unemployed, people with disabilities and over-60s), the majority of new users were people who

already had an interest or an incentive related to ICT prior to attendance - above-average numbers already had a computer at home, for example. As in America (Horrigan 2002: 12) women were over-represented and but unlike American experience the elderly were under-represented (Hall Aitken 2003: 18), which is probably an inevitable feature of provision which is mostly structured around traditional community institutions with limited opening hours and which may be difficult to get to for people with restricted physical mobility (often compounded by social isolation). Their accessibility to the hardest to reach groups in society is still limited by the institutional context and the traditional character of much of the learning programmes on offer (ibid.: 2003: 25). Moreover the authors reported managers' perceptions that budgetary pressures would increasingly force them to adopt more conventional packaged training, and the informal supportive atmosphere that had encouraged many new users in may be lost or diluted (ibid.: 2003: 49). The report therefore makes "a case for providing longer term [revenue] funding for these [community and voluntary sector] centres", where such difficulties were most acute (ibid.: 2003: 52), and which make up around 45% of the 3,000 or so Capital Modernisation Fund supported centres set up in England's 2,000 most deprived wards between 2000 and 2002 (ibid.: 2003: 55). Among the groups who have been reached - typically people with prior motivation but lacking confidence, and with limited recent learning experience (41% of new users surveyed had not attended a course in the last five years) - UK on-line centres have provided a successful (re)induction into a variety of learning activities (with 31% of new users surveyed having gained a certified qualification after a year (ibid.: 2003: 50)) as well as boosting self-confidence both in relation to computing and to study or employability - 8% of respondents in the follow-up survey after six months said attending the centre had helped them get a job, 7% that it had helped them get a better job or promotion (ibid.: 2003: 29-33). Liff, Steward & Watts' (2002) study of a smaller sample of public facilities concurs: community centres have a good record in achieving 'distance travelled': they tap existing social networks based around strong ties and can induce a sense of community ownership if they are appropriately located: one interesting American example was the renovation of a building in Washington D.C. previously known as a centre of the drugs trade, which gradually became a focus for residents' pride because it symbolised neighbourhood renewal, and yet always remained accessible for the most at-risk sections of the youth population as a place they could call their own - it thus came to serve as a bridge between the two communities, cemented by programmes whereby students with chequered backgrounds were trained to perform outreach work in the community, for example providing internet coaching for elderly residents (Horrigan 2002: 36-7). The best community facilities achieve a mode of social inclusion which leads to a "second stage of keeping users and developing their learning" because users have either shared interests ('attribute networks') or common activities ('transactional networks') as a basis for continued and deepening involvement (Liff, Steward & Watts 2002: 91). However their funding regimes usually put stress on learning outcomes and new users are gradually directed towards more or less formal course-based learning, stressing conventional computer skills - in contrast to patterns of usage at 'shop-front' (commercial) e-gateways, where internet use (either for information or communication) predominates.

Computers in themselves do not boost the social capital of a community. But increased access can form part of a strategic response to some of the adverse consequences for the social integration of territorial communities linked to the transition from traditional social architectures to 'networked individualism', in which, over the past thirty years or so first households and workplaces (but less so neighbourhoods) became important centres for networking, and person-to-person networks thereupon began to replace place-to-place networks (Wellman 2002). Meeting one's social needs in such a society depends increasingly on an individual's fund of network capital - the ability to activate latent ties to a variety of others for the tangible and intangible resources previously available (whether wanted or not) within the physical communities which dominated social life until relatively recently. Wellman defines the key skills an individual requires to mobilise this network capital in addition to having physical access to electronic networks: "networked individuals need to know how to maintain a networked computer; search for information on the Internet and use the knowledge gained; create and sustain on-line relationships; and use these relationships to obtain needed resources, including ties to friends of friends." (ibid.: 20) These are an evolving set of skills which cannot easily be taught

via formal education: they are often embedded in emerging communicational practices (ranging from the typographical conventions of e-mail and chat to the complex ways in which flows of e-mail traffic are regulated by users, and which generally work to extend the reach of networks). Most important, they are the product of distributed rather than centralised intelligence, and accordingly they are acquired and reproduced by participation: exclusion from networks can thus be self-reinforcing; however the barriers to entry are also more permeable than in the case of traditional groups due to the absence of both formal (e.g. literacy skills) and informal social controls.

Support, content, community involvement (additional 'softer' goals of Scottish Executive's Digital Inclusion policy).

In introducing these parameters, digital inclusion policy represents a clear advance on the discourse of earlier 'information age' policy in the UK, which essentially conceived ICT and computers as technical fixes for social problems. They promise to admit new thinking and new solutions at the interface between society and technology, breaking away from the economically deterministic rationale for digitising the country (usually framed in terms of employability and literacy/numeracy skills - a justification underpinned by a spurious assumption that everyone will be employed as 'symbolic analysts' in the future) and seizing the alternative trajectories ICT avails to communities and citizens, which lie not in skilling workforces or instilling 'effective' consumption habits but in more socially transformative goals linked to their actual needs (Selwyn 1999). In particular, according to Selwyn, an inadequacy of attention to the social context and social relations of technology adoption risks a pattern of diffusion driven economically by the creation of new markets for educational and entertainment applications, given the heavy involvement of commercial interests in the development of infrastructures such as the National Grid for Learning, and driven politically by an instrumental rationality of the internet as an information resource for acquiring economically-valuable social skills, given the absence of softer strategic goals from government discourse. Hence, according to one critical account, the construction of both its targets and the public-private partnerships to deliver the National Grid for Learning has been "commercialised and 'educational-ised'" such that the strategy "constructs users as a homogenous set of ready made consumers who are eager to make use of the information on offer if the barriers to access can only be removed." (Moran-Ellis & Cooper 2000). Questions of motivation - of the use-values specific social groups might bring to and/or derive from internet access - which would logically problematise the notion of access in relation to much more fundamental issues of social power relations and collective identities - are not addressed.[7] Such an absence would patently be a major flaw in any policy which purports to address problems of social exclusion, i.e. to address the problems of communities where education, learning, knowledge etc. are not typically accorded high value by among young people or their parents.[8]

[7] Moran-Ellis & Cooper pointedly note how, of the multitude of players positioned around the National Grid for Learning, the strategy document devotes disproportionate space to persuading business to participate but virtually none to enrolling children themselves, because "the traditionally available positions and constructions (child as learner, technology as non-social object) that are employed are unproblematic in the context of the policy the Government is pursuing." Business interests, by comparison, are more difficult to direct. (Moran-Ellis & Cooper 2000)

[8] Umberto Eco wrote recently of the difficulty of explaining to young people - and he was thinking of prospective university students - "why study is useful. It's pointless telling them that it's for the sake of knowledge, if they don't care about knowledge. Nor is there any point in telling kids that an educated person gets through life better than an ignoramus, because they can always point to some genius who, from their standpoint, leads a wretched life." (The Guardian, Review 3/4/04: 7) Yet the majority of government strategy documents, wedded to a dogmatic vision of the information (sometimes even re-named 'learning') society, fail to go far beyond such apparently self-evident 'truths'. For Eco, the most universal virtues of knowledge, and therefore its principle 'marketing hooks' lie in relationships and narratives: "it introduces us to parents other than our biological ones. It allows us to live longer, because we don't just remember our own life but also those of others. It creates an unbroken thread that runs from our adolescence (and sometimes from infancy) to the present day." It might be suggested that the accessibility of knowledge is related to the flexibility or variability of the structure of these relationships and narratives, if it thereby becomes possible for people unaccustomed to or excluded by traditional linear renditions of learning as a process and knowledge as a system to participate - to narrativise

Key questions for a more flexible and socially sensitive digital inclusion policy thus include: How does the home access model square with the community learning approach to digital inclusion? Is it an attempt to de-marketise the spread of internet provision or a concession to changed activity patterns in local communities (the privatisation of leisure time, loss of public space)? What can be done to ensure there is a matching commitment to the creation and enhancement of public fora within the community? How can the two approaches be combined to best reach target groups of social inclusion policy?

Support for home users is clearly a critical aspect of any programme like the DIP, because users are more physically isolated than if they were attending a public access facility. Home provision represents one possible response to the failure of public access schemes to reach certain target groups, while continuing to prioritise access to computers and the internet as the key outcome. Some research has questioned this goal, suggesting that access to services is key, and that this may be better facilitated by empowering community advocates, such as charities, voluntary groups and community organisations, as intermediaries who support these target populations in their interactions with public authorities and the market. To quote a very down-to-earth example, this was the rationale for equipping a charity in Texas with an internet-enabled computer for use in assisting the poor obtain cheap medicines (Strover 2003: 13). In theory they would be able to do this for themselves with a computer, but many would lack the specific knowledge required - thus the goal of access to services through the internet might be more effectively reached by ensuring community organisations are equipped, empowered and tasked to support target populations than by equipping the target populations themselves. Supporting members of a community computer network means mobilising the organisational infrastructure which is necessary to achieve tangible benefits for people from computers. This means recognising a community as a network of not only individual but also collective social agents, in accordance with social capital theses, i.e. using computers to improve linkages between social agents and the constituencies they serve and to reduce the transaction costs involved in their coordinated action.

One of the distinguishing features of the internet as distinct from other media is that "interactivity and user participation are the main strategies for the generation of content", to the extent that it has been argued that "users' labour is used to sustain the economic development of the internet" (e.g. by writing reviews, participating in mailing lists, uploading content and keeping virtual communities active) (Wyatt, Thomas & Terranova 2002: 24). This implies that the way internet use is embedded in social circles - i.e. the articulation between real and virtual social space - is critical in determining the use value of internet communication and therefore its sustainability. In a study of internet drop-out, Wyatt et al identify three sets of factors which promote continued use: time and money invested in equipment and learning; availability of alternative means of accessing goods and services distributed via the internet; and embeddedness of the user in social circles committed to internet use (ibid.: 35). These are clearly susceptible to considerable variation depending on social and geographic context. In West Johnstone it seems that the third factor is most critical, as people have not personally invested any money in acquiring the equipment (though they may have invested considerable time in learning how to use the internet both formally and informally), nor are their consumptive behaviour patterns, even after the DIP, particularly dependent on internet access (disposable income is low, many people do not even have bank accounts). Therefore the sustainability of the project as a whole seems destined to be determined to a large degree on its becoming a valued community resource which both intersects with existing networks and creates new relations (of variable geometry) valued for informational, companionship or esteem support (Nettleton et al 2002). This would necessarily seem to imply the incremental accumulation of user-driven content, such that the project acquires the

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their own experiences in a way which is meaningful to them. Computers and the internet do represent a potentially liberating and empowering force in this respect, principally because of the way information is archived (non-hierarchically) via such facilities as hypertext and the way it is archivable iteratively on personal data files. But discovery of these potentialities by low-income communities is not at all a straightfoward process: arguably it is the policy-makers' most important - and hitherto most neglected - task.

dimension of a narrativising practice operating simultaneously at the level of community building and at the level of individual identity construction.

Concluding remark: the difficulty of handling soft and unintended outcomes

In keeping with government modernisation trends emphasising the softer dimensions of public policy intervention, this evaluation exercise was commissioned by Renfrewshire Council not only to measure progress towards the above goals, but to track the overall '*impact on participants' lives'*. The 'value added' brought to individuals, communities and localities by ICTs as technologies with multiple uses are inherently difficult to quantify. There is a general assumption that they impact positively on participants' lives, but "we simply do not have [enough] evidence of the value to be derived from using them… [U]nderstanding … [this value] may require a different form of assessment" from the usual indicators used to track deprivation, regeneration and social exclusion (Southern 2002: 699, 702). According to a Hall Aitken survey of UK online centres, "the clearest outcomes for centre users were in soft outcomes such as increases in confidence and increased social contact" (2003: 35). Moreover these outcomes were unanticipated, even by the user themselves. Socialisation, communication and community involvement did not figure prominently among new users' expressed motivations for attending the centre in the first place (in fact more wanted to learn computing as a skill than use e-mail or the internet as a communication medium, with fewer still talking of becoming more involved in their local community (2003: 24)). After six months, however, meeting new people was cited by half of all users as the best thing about coming to the centre (2003: 36). Similarly centre managers reported synergies in terms of raising the profile of an existing community facility among the local public, improving the use of existing services (related or unrelated to ICT) and, in the case of college-based centres, expanding community based provision of learning (2003: 37). Liff, Steward & Watts speculate whether these outcomes are really instances of community-building as *new* networking, or whether they are the effect of a mode of inclusion which taps existing networks, achieves (to greater or lesser degree) some 'boundary-spanning' between heterogeneous networks based around an existing facility, and by building a "virtual presence that reinterprets their users' sense of the real place in which they are located … encourages people to re-engage with local networks" (2002: 96). From a policy perspective, however, the problem is that the further one moves towards softer goals and outcomes, the more difficult it can be to meet 'harder' social inclusion objectives defined in terms of the fullest possible access by all sectors of a community. Softer outcomes often involve quite exclusive groups even if they add to the stock of social capital in a community; harder social inclusion targets imply the mobilisation of a much more dispersed pattern of social networking but make it less likely that narrower networks can form a strong sense of ownership of any project.

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PART II: Working Documents

Home users' focus group (25 May 2004)

Reconfiguring space I: Domestic space

Computers are often located in common spaces in West Johnstone households, most typically in living rooms (40% of cases according to our survey). This is partly driven by parents' need to supervise and ration their children's computer use, and partly by a view of the computer as an object used collectively or successively by different family members and visitors, to whom it must be equally accessible (see Box 1). Such a model of adoption could be especially prevalent where no individual has actually purchased the computer, as in the DIP, in which entitlement to participation in the scheme pertained to households. The living room is chosen even at the cost of minor disruption to other activities performed there:

> Having it in the lounge doesn't interfere with family activities?
>
> I bought earphones so that when they [the children] are listening to music they don't disturb anyone else.

Co-presence is thus valued even if it does not lead to conversation, but in many cases the computer tends to generate rather than suppress communication among family members:

> They are generally doing their own thing … [but] my eldest son chats to me while he is on it and tells me all the gossip.

In relation to the evolution of children's computer-based communication repertoires, notably the use of instant messaging and chat, the location of computers enables public and private spaces to overlap. One parent noted that her children prefer messaging to phoning

> because it seems a bit more exciting and if they are typing it in we can't hear everything they are saying. We have to keep reading it but they talk [write] another language anyway.

This may have important benefits for family cohabitation, enabling children to inhabit 'their own' space where they can converse freely with friends, even in the physical presence of their parents, thus enabling the two sets of relationships to coexist without too much friction, since computer-based communication is less disruptive of the off-line environment than the phone, and alleviates any parental concerns about their children's safety when they are outdoors. From the child's perspective the ability of computer-based communication to blur the boundary between indoor and outdoor worlds effectively extends the limits of their own personal freedom in time as well as space:

> A lot of the kids use [the computer] for chat. It keeps them in and you know where they are.
>
> My son comes in and chats to the friends he has just left five minutes before, but it saves on the phone bill.

Reconfiguring space II: Neighbourhood space

Given the frequent location of computers in living rooms and their routine use by friends, neighbours and relatives it would be little exaggeration to say that the DIP has created dozens of new public internet access points. More accurately, they are semi-public spaces, because access is dependent on a relation to the householder. Computers have created new occasions for visiting, especially among children. This is most obviously relevant when neighbours who do not have a computer come round to use one in a DIP household:

> The good thing about so many [computers] going out in this area is that those who didn't get one, one of their friends will have.

However children who do have a computer also often use one at friends' and relatives' houses (the most common 'other' access points according to our school questionnaires):

> My son's friends use ours.
>
> Do they have their own computer?
>
> Yes, but they just like to go on it together.

The social characteristics of the off-line spaces where computers are used are important in understanding the use value gained from them by people, and vice versa, computers are being appropriated as an inherently social technology which render most DIP households a little less private and a little more public. Far from withdrawal from community life, growing computer ownership in West Johnstone has seen community life coming into the home environment (see Box 2).

Parent-child relations: Supervision and role reversal

In the majority of households, the main reason for applying for the computer was for children's benefit (59% of cases according to our survey), and adults often only became aware of its value for themselves subsequently. Accordingly, skills are most commonly transferred from children to parents, reversing the normal relation between parent and child. None of the parents in the focus group expressed any unease at this role reversal, accepting it as a feature of a generational divide:

> I don't need to use a computer but probably when they are older they will need to know.

Parents do, however, sometimes help their children with homework tasks using the internet as a research tool, and the accessibility of information on the internet has for both parties made homework a more appealing activity, often undertaken together and involving a two-way exchange of knowledge and skills (see Box 3):

> Would [your children] look up stuff for projects if they didn't have the computer?
>
> No because they would have had to go to the library.
>
> And they wouldn't have done that?
>
> No and I would have had to go to the library or take them so their homework became our homework.
>
> Now they can do it themselves?
>
> Yes.
>
> Do your kids ever ask you for help?
>
> Yes mine had to find out the highest mountain in the French Alps and the English word for it and he couldn't find it because there are hundreds of mountains in the French Alps.
>
> So you found out together?
>
> Yes. [But usually] I am the one who gets stuck and they help me.
>
> How does that make you feel?
>
> Fine.

Traditional parenting roles are also challenged by the difficulty of supervising children's use of a medium in which they are generally more fluent than their parents. Adequate supervision is achieved through a combination of strategies, involving the location of the computer in a common space and, usually, the setting of rules about when the computer can be used. For example, one parent switches the computer off at 9pm each night, another allows each of her children to use the computer for an hour a night, a third insists they do their homework before they can play games or chat on the computer. In other words, parental control is reasserted by the application of fairly rigid rules on how and when the computer may be used, which work in effect to maintain a traditional domestic routine and allow relatively little scope for innovatory practices such as multi-tasking, a pattern confirmed by other British research. International comparisons suggest the emergence of quite distinct trends,

which indirectly confirms the dominant influence of traditional national cultures of parenting and childhood on the way computers are domesticated (see Box 4).

Learning

The home functions as a valuable context for 'learning by stealth', enabling experimentation in a comfortable environment (see Box 5) and informal knowledge and skill transfer between members of the household. None of our focus group had taken any computer course at the Learning Centre, and only two (out of eight) had owned a computer before the start of the DIP. Yet all judged their skill levels adequate, not only for their own needs, but (for example) to be able to effectively supervise and regulate their children's computer use. They did not express any interest in formal classes, but were are aware of a constant learning progression through practice:

> Have you ever thought about taking any computer training?
>
> No I'm just not interested.
>
> You don't feel you need to learn anything more?
>
> You learn a bit every day.

The valuations placed on the computer by adults in the group were nevertheless intrinsically educational when it comes to evaluating the skills their children are acquiring and the importance for their future employment prospects of computer literacy. They encourage their children to develop these skills at school or college to bolster their career prospects and cited the importance of home access for their children's education as a strong reason why (in most cases) they will keep broadband even after the free period ends. The skills they perceive *themselves* to need are less overtly educational - the most common uses mentioned in the focus group were shopping, downloading music, chat, e-mail and voice-mail (the latter two are especially valued for contact with relatives overseas) - but indicate a range of practical and financial use values strong enough to motivate people to learn and update some fairly sophisticated information-handling skills (see Box 6).

BOX 1

Contrary to the popular 'disembodied' conception of virtual space (which is seen either as a poor imitation of the real or an opportunity to overcome the limitations of the real) recent research focuses on how on-line and off-line worlds are mutually constituted in unpredictable ways. Computers are not appropriated by users precisely according to manufacturers' designs but materialise in a variety of everyday contexts where they are given meaning by the communities of practice that partially pre-date them and partially emerge around them (as technology is 'socially shaped' and 'domesticated'). A number of contexts are particularly important - home, school, work, community centre, for example. A useful way to look at each of these is as 'translation landscapes' - "off-line spaces through which on-line spaces are produced, mediated and consumed" (Holloway & Valentine 2003: 11). Looking at the home as a translation landscape, Holloway & Valentine found that middle-class households (often owning several PCs) generally placed computers in bedrooms, conceiving them as private objects and, in the case of mothers, often wishing to protect shared spaces from 'unsociable' intrusions, whereas working class households often had them in a shared space such as the living room or kitchen, citing lack of space but also a strong sense of collective ownership and the expectation that all members would want/need to use the computer (2003: 109-10). Situated in a family room, use of a computer may be more socially acceptable in a household of computer 'novices' (ibid.: 113). An American survey did not explore class differences, but found that the location of computers in living rooms was common among families with children: 70% of parents reported placing the computer in a public space such as the living room, apparently for easier surveillance, as similar percentages said they either sat down with their children when they were using the computer or checked on their activities afterwards (Lenhart, Rainie & Lewis 2001: 31). Teenagers for their part mostly accepted such monitoring practices or were unaware of them.

BOX 2

The domestication of computers in British families with children has influenced the articulation of children's 'indoor and outdoor worlds' in ways which, according to one study, largely counter fears of withdrawal from traditional outdoor spaces for play or of a 'crisis' of local communities: children use computers (as informational devices) to enhance rather than substitute their off-line hobbies, and vice versa, their on-line activities are strongly mediated through local friendship networks, with even the 'techno-enthusiasts' among study groups often having friends round to use computers socially rather than individually (Holloway & Valentine 2003: 121, 123-4).

BOX 3

The Pew Internet Study's 2000 survey of teenage internet use in America (Lenhart, Rainie & Lewis 2001) threw up interesting findings on the roles of parents and children within the household in the process of internet adoption: many teenagers reported having been the pioneer in their household in learning how to use the internet and e-mail: 40% said they were self-taught (and 23% learned from friends), often then passing on their know-how to other family members, as against 30% who learned from parents (and just 5% who learned in class). However "a shift back to more traditional parent-child roles might be occurring [as the internet becomes a more established medium] because a plurality of *younger* teens … reported learning to use the Internet from their parents" (Lenhart, Rainie & Lewis 2001: 26).

BOX 4

In an international study of the social adoption of computer games, Suss et al (2001) found important variations between countries: for example, Spanish parents play a central role in children's leisure activities to a later age and accordingly tend to supervise and participate in their children's computer usage; Finnish children not only graduate towards autonomous youth cultures and individual identity-building activities at an earlier age, but have greater control over time and space to develop media habits independently of parents (school finishes earlier, more Finnish mothers are at work, and children tend to have better access to libraries and schools on their own during their free time). Meanwhile a British study based on detailed case studies of computer use in sixteen families with school-age children also demonstrates both the determination of computer use practices by traditional models of socialisation, and conversely children's harnessing of computing's innovatory potential to undermine aspects of those models. Thus regulations 'agreed' between family members often attempted to impose a linear organisation of time on the computer, setting aside times for games and times for homework, for example. Many children subverted these regulations by using the facility of computers for 'multitasking', arguably thereby demonstrating a more sophisticated comprehension of one key potential of ICT than their parents (Facer et al 2001).

BOX 5

In focus groups held among internet non-users in Glasgow participants expressed unease or embarrassment at the thought of taking their first steps on the internet in any public or semi-public space, and felt their own home to be the only place where they could comfortably practice their skills initially (Boyes & McCormick 2003: 20, 22).

BOX 6

Studies of gratifications gained from internet use among American adults indicate strong socio-economic and demographic patternings which suggest the importance of 'learning by stealth' among sections of the working class, especially when they first adopt the internet. Whereas young, higher socio-economic groups tend to be strategic in their internet uses (choosing the 'right' application in order to be able to interact, consume or retrieve information), groups hitherto poorly connected to the internet adopt more 'hybrid' or multiple patterns of use: young, low socio-economic status groups, for example, derive 'connection gratifications' not only from interactive uses, but also from consumptive uses of the internet; and both young and old low socio-economic status groups derive 'learning gratifications' not only from information retrieval but also from interactive uses (Cho et al 2003: 57).

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Computing course students and DIP participants 2002-4

1. Number of DIP households where an adult has participated in learning at CLC: 141
2. Number of DIP households where a child has participated in learning at CLC: 53
Total number of households where someone has enrolled as a learner at CLC: 169[9] (56.3% of total)
3. Number of DIP households where someone is known by CLC outreach staff to have used the computer for other forms of learning, outwith CLC (e.g. mentoring, further education, vocational training, voluntary work): 42
Total number of 'learning households': 205[10] (68.3% of total)

Adult students

Total number of adult students from DIP households: 180

When did these students first start?
Date of first registration (not including returning students)

Before Aug 2002	28
Aug-Dec 2002	109
Jan-Jun 2003	23
Jul-Dec 2003	12
Jan-Mar 2004	8

Different groups of learners by duration and continuity of study

2003-04		**2002[11]-04**	
Continuous learners	27	Continuous learners	27
Repeat learners	17	Repeat learners	17
One-off learners (3-6 m)	18	One-off learners (3-6 m)	44
One-off learners (1-2 m)	26	One-off learners (1-2 m)	92

Key
Continuous learners = people who studied for at least six consecutive months
Repeat learners = two or more enrolments of less than six months
One-off learners (3-6 m) = enrolment for 3-6 months
One-off learners (1-2 m) = enrolment for 1-2 months

How many DIP participants are studying at any one time? (randomly sampled months)

Jan 2003	54
Mar 2003	35
Nov 2003	38
Mar 2004	36

[9] This figure is less than the sum of 1 and 2 above, since a number of households contain both adult and child learners.
[10] This figure is less than the sum of 1, 2 and 3 above, since a number of households contain people who have engaged in both types of learning (within and outwith CLC).
[11] Up to 2002 records were only updated every six months, so the distinction between the two categories of one-off learners for this period can only be estimated. It was assumed that those doing the Beginners course studied for 1-2 months and the rest for 3-6 months.

How does this compare with numbers of non-DIP students from the West Johnstone SIP area?

Table 1

Month	Total number of students	DIP students (% of total)	Other students from WJ SIP area (%)
Aug-Dec 2002	308	44.5	6.5
Jan 2003	181	29.8	7.2
Mar 2003	178	19.7	6.2
Nov 2003	223	17.0	10.3
Mar 2004	188	19.1	9.0

Interpretations:

- high initial intake of students following launch of DIP in summer 2002
- success in achieving a high initial level of usage of CLC's resources by DIP participants ('over-representation' of DIP students out of total students in 2002)
- most students completed short beginners' computing courses and did not continue to other courses
- a 'hard core' of nearly 50 people have been engaged in continuous or repeated spells of formal learning for the duration of the DIP; about half of these were already in adult learning previously, and half have been directly recruited through the DIP
- during 2003-04 recruitment of new learners for one-off learning packages has been fairly low relative to the number who took part in initial training, however it would be wrong to conclude that the demand for introductory, taster or familiarisation sessions among DIP households has been fully saturated: in fact it is running at a level roughly equal to that for longer-term study
- over time representation of DIP students among total student numbers stabilised at around 20%
- this is still a significant 'over-representation' in comparison with other SIP area residents, who usually make up less than 10% of total numbers despite the fact that DIP households are only about a third of households in the SIP area

Possible explanations:

- DIP households comprise those more likely to take part in learning because they are more likely to be households with children
- DIP households comprise those more likely to take part in learning because they are a partially self-selected group of 'active' community members (they had to apply to the scheme, which itself constitutes activity). This may characterise a small core of community activists, but given the difficulties project workers had in persuading people to take up the offer of free computers (only about 70 people applied initially), which necessitated intensive outreach work during the summer of 2002, the majority of households cannot be regarded as previously having been active in a civic/social sense
- DIP households were encouraged to take up learning because they perceived a 'learning need' which previously did not exist - the need to 'skill up' to be able to use their computer effectively
- In addition the DIP may have boosted participation in the following ways:
    - the project has brought new opportunities to people's attention through marketing and networking
    - there is a natural path leading from experimentation with the computer at home to a desire to obtain more structured skills through courses at the CLC
    - there has been a 'community-building' effect of the project, whereby the CLC became a more attractive social environment (a sense that there is something exciting going on there)
- over time an active core of advanced learners has developed whereas the initial need for induction courses has largely been saturated
- for some former students a home computer with internet access may actually substitute for the learning needs they previously met by attending the CLC

Child students

The pattern is quite different if we look at the children's usage of the Learning Centre for computing purposes.

Use of the CLC by school-age children

Table 2: Primary after-school clubs

School Year	Total students	DIP students (%)	Other WJ SIP students (%)
2003	44	40.9	34.1
2003-04	44	36.4	29.5

Table 3: Secondary after-school clubs

School Year	Total students	DIP students (%)	Other WJ SIP students (%)
2002-03	39	33.3	23.1
2003-04	figs not available		

Comparing with Table 1, it is apparent that the local area is far more dominant in terms of children's usage of the centre than for adult learners. This reflects the more lower spatial mobility of children as well as the fact that they are channelled to the Learning Centre through the local schools: children from schools outside West Johnstone do not attend these computer clubs. Both of these factors are weaker for secondary school pupils: they are spatially more mobile and more independent than younger children, and in addition the two high schools in the area have larger catchment areas, so it is unsurprising that more of those who attend the clubs live outside the Johnstone West SIP area. However usage remains predominantly localised: a typical class at the high school contains a small minority of WJ SIP residents, whereas they make up the majority of after-school club members.
A second contrast between Table 1 for adult learners and tables 2 and 3 for children is the higher percentage of 'other WJ SIP' residents attending after-school clubs. Apparently, school networks are more effective at drawing in peers who have not benefited directly from the project than adult social networks and other promotion and marketing activities. In addition our surveys in schools suggest that households with school-age children are more likely to have bought PCs privately than households without children: thus the 'other WJ SIP' residents are more likely to have computers at home if they are children, which may make them more likely to use the Learning Centre after they have been exposed to the internet and computing both at school and at home (children tend to be 'multiple-location users', i.e. using a computer in one place, e.g. home, makes it more, not less likely, that they will choose to access computers in other locations).

What kinds of courses have adult DIP participants taken?

Table 4

Aug-Dec 2002		**Jan 2003**		**Mar 2004**	
Course (total student numbers)	DIP students (%)	Course (total student numbers)	DIP students (%)	Course (total student numbers)	DIP students (%)
F.L. + Begin (226)	47.3	F.L. + Begin (119)	24.4	F.L. + Begin (83)	2.4
Advanced comp (40)	22.5	Advanced comp (56)	35.7	Advanced comp (81)	22.2
Club activities (35)	34.3	Club activities (15)	40.0	Club activities (35)	60.0

Key: F.L. = Flexible Learning; Begin = Beginners' course
Advanced comp = Creative computing, digital media, web design, Dreamweaver, Sunday tech/A+, ITOA/W.I.T., photoshop, PC Fix It, ECDL, scanners & cameras
Club activities = Wednesday club, Thursday club, cybertots, digital video group

Interpretations:

- The table clearly shows the gradual saturation of demand for beginners courses or computer familiarisation courses undertaken under a flexible learning programme for DIP participants. Currently these types of learning are almost exclusively taken by non-DIP students
- There has been a steady growth in demand for and provision of advanced computing courses. DIP students have consistently been over-represented on such courses, although to a lesser extent now than a year ago. This is largely accounted for by increasing total numbers rather than declining participation among DIP residents, suggesting a spillover to other sections of the community either through personal networking, active recruitment, or as a consequence of increasing home PC ownership. A progression from beginners' to advanced courses is apparent among CLC users as a whole, and this is especially pronounced among DIP residents.
- The extent of club activities has also seen an increase with time (the first column total is not comparable with the others as it is a five-month aggregate). This reflects growing numbers in the Wednesday youth club and the establishment of the video group. DIP participants are dominant in both these groups. The DIP has provided a channel for a minority of DIP residents (around 20 people) to engage in collective activities which combine a creative and a social aspect, and could potentially produce new community leaders.

Where do DIP residents and CLC users live?
The 300 households which have (or have had) computers through the DIP are geographically distributed as follows:

Howwood Rd. 147
Cartside & Sandyflats 141
Tannahill flats 12

Of these, the following numbers have had at least one adult member involved in computer learning at the CLC (the figure in brackets is the percentage of DIP households within each area):

Howwood Rd. 81 (55.5%)
Cartside & Sandyflats 54 (38.3%)
Tannahill flats 6 (50.0%)

Amongst children the distribution is more skewed still towards Howwood Rd.:

Howwood Rd. 37 (25.2%)
Cartside & Sandyflats 16 (11.3%)
Tannahill flats --

Taking adult and child learners at the CLC together, accounting for households which contain both, the figures are:

Howwood Rd. 98 (66.7%)
Cartside & Sandyflats 64 (45.4%)
Tannahill flats 6 (50.0%)

However the 'home learners' known to outreach staff from the CLC are much more evenly spread throughout the SIP area, with Howwood Rd. residents slightly less engaged in non-CLC based learning:

Howwood Rd. 19 (12.9%)
Cartside & Sandyflats 21 (14.9%)
Tannahill flats 2 (16.7%)

Interpretation:
This pattern indicates quite a considerable 'friction of distance' associated with use of the CLC. DIP households from the Howwood Rd. and Tannahill parts of the West Johnstone SIP are much more likely to take up learning opportunities there than DIP households from across the railway. Unsurprisingly, this geographical concentration is even stronger for children, who are known to be less spatially mobile than adults. It is felt that evening classes and events are particularly problematic for Cartside and Sandyflats residents who do not have a car, as the footbridges across the railway line which they would have to cross to get to the CLC are notorious places for gangs to hang out, and many residents avoid them in evening hours. Differences in the social reputation of the schemes (public discourse in Johnstone constructs a clear hierarchy according to which the Howwood Rd. scheme is an especially socially stigmatised 'address', whereas Cartside and Sandyflats occupy an intermediate position) may also prevent more fluid spatial activity patterns for some residents, though this is less plausible for schoolchildren and their parents, as all local schools are located in the Howwood Rd. area.

Conversely, proportionately more households which received computers in the Cartside and Sandyflats areas have begun to use them independently, unsupported by the formal learning resources available through attendance at the CLC. One possible explanation is that a number of residents in Cartside and Sandyflats fall into the group for whom having a computer at home meets their learning needs in a more convenient way than attending a relatively inaccessible resource centre. A second, not incompatible explanation may be that learning opportunities are more fully saturated by the CLC for Howwood Rd. residents, and there is therefore less incentive to look for other learning options. It is important to note that the number of active learners outwith the CLC in Cartside and Sandyflats is only slightly higher than in Howwood Rd. and does not fully compensate for the differential in CLC learners, which suggests that the presence of an immediately accessible facility reduces the learning threshold to communities unaccustomed to formal learning - adults in Cartside and Sandyflats must make a greater effort to take up learning opportunities, and fewer of them have done so.

Website review survey results

A website review day was held at West Johnstone Community Learning Centre on Tuesday 9 March 2004 at 12.30-2.00pm. 16 people attended and filled in questionnaires while viewing the website in the computer lab. Most then stayed to participate in an open discussion about the website and its future development.

Of the three interactive sections of the website, the photo gallery was the most regularly visited, whereas people were less familiar with the messageboard and guestbook (6 had never looked at the latter).

	Visited recently (< 1 month)	Not visited recently
Photo gallery	13	2
Messageboard	9	6
Guestbook	9	6

Two-thirds of review participants had posted a message on the messageboard: the most common reason was to request help, advice or information about something (7), followed by comments on the DIP (2). One person had used the messageboard to try to organise an event. The majority of these said the response to their message was 'about what I expected'. However the would-be event organiser found the response less than expected. Messageboards elsewhere have become tools for community organisation, particularly where there is a 'hot' campaign issue to mobilise people (such as a planned development which would affect the locality). In West Johnstone the messageboard has not yet become a community network in this sense, even though such an issue exists (the new community school). It could be that the community is too small to support a critical mass of active on-line debate or that because people frequently see each other face-to-face there is therefore no perceived need to talk through serious issues on-line.

People generally evaluated all of the following aspects of the website highly: the lowest rating was for the way West Johnstone is presented, but even this gained an average mark of 4 out of 5.

Evaluation of website dimensions (on a scale of 1 to 5)

WJ presentation	Practical info.	Interactivity	Look and feel	Navigability
4.0	4.2	4.2	4.1	4.2

Asked to name their likes and dislikes about the website, people cited the layout (5) as the most positive feature. 7 comments can be summarised as commending the community-building role played by the website (people cited Memory Lane (2), the photo-gallery (2) and local identity (2) among their likes).
Apart from two comments relating to poor design (disapproval of the white background), dislikes related either to a deficit of information (lack of up-to-date news (2) and empty links) or a lack of interaction and communication (no chat room, no comments on many of the photos in the gallery).

People generally wanted more information on the website. Asked whether they wanted to see a number of different types of information - most of which are not currently available on the website - the vast majority said yes. The information most in demand was ‘what’s on’:

	Should it be on website?	Should it be an external link?	Is it unnecessary?
Local transport	9	5	0
Local shops and businesses	10	5	0
Local history	11	3	0
What’s on	13	3	0
Items for sale or swap	11	1	2

A separate question asked participants whether an on-line art and poetry gallery for kids and adults should be created as a permanent feature: all 14 people who answered that question said yes.

All these results should perhaps be taken with some caution: people are apt to think ‘more’ is always better when prompted in this way; this does not necessarily mean they would approve the addition retrospectively. However, people’s unprompted suggestions for new features corroborate the demand for more local information in particular: participants suggested drawing and writing competitions, a picture of the Learning Centre for the home page, and more information content - on local history (2), local heroes, local businesses and sport. During the subsequent discussion some declared themselves willing to get involved in developing some new sections of the website to provide these features (see transcript).

Computer use in West Johnstone schools: School policies and teachers' approaches

Boundary spanning between home and school, educational and non-educational skills

Neither the primary schools nor Johnstone High School have used computers actively to expand home-school links in terms of homework tasks, communication (via e-mail, for example) between pupils and teachers or among pupils involved in a joint project, stimulating parents to get more involved with children's school work, or communicating with parents electronically. The main exception was at Johnstone High, where the computing teacher has set up a question and answer forum for revision purposes, where pupils can not only ask him questions from home or outside hours, but can respond to one another's queries. Course notes are also available to download. Although the messageboard facility is not very well used yet (partly because the council-sponsored host software, think.com, is cumbersome in comparison with what many children have access to privately), it has evidently benefited some pupils who are poor at self-expression in class, but can overcome their shyness communicating via a computer. Teachers in all schools, moreover, agreed that computing in general can bring out hidden talents in pupils who do not otherwise appear academically gifted, helping to overcome barriers to the acquisition of standard literary skills such as dyslexia. With others the way educational software is designed to excite and provide "instant gratification" (St David's) makes computer-based learning more fun and more effective than traditional exercises.

Nevertheless there are signs that children's own use of computers blurs the boundary between home and school. Almost all teachers reported seeing evidence of children using home computers to research topics, to improve the presentation of their work, and some agreed that parents were keener to help children with computer-based homework than with other types. All these practices occurred on a voluntary basis, in part because teachers are loath to set tasks which would disadvantage those without home PCs. Nonetheless they are welcomed: asked to sum up the most positive aspects of computers for their teaching, the most common responses of teachers in both primary schools related in some way to the 'extension' of the learning environment - either because children were doing more work at home, had access to a source of instant help via the internet, or were more motivated to learn because computers blur the boundary between education and entertainment and prolong their attention span.

In this context it is somewhat paradoxical to find some severe reservations about the educational value of spanning the home-school boundary with computers, especially at St David's, Johnstone High and on the part of the Council itself. When asked to cite negative aspects of computing for teaching, two teachers out of seven at St David's mentioned the difficulty of supervising pupils' after-school use of computers as a concern. Such worries were heightened recently during a project (supported by Paisley University) to construct a website with P7 pupils because changes pupils were making at home, beyond the school's firewall, were seen as endangering the integrity of the project. Similarly, pupils' use of e-mail accounts provided through think.com was causing concerns because some were sending e-mails from 'unsupervised' spaces outside the school (in this case from the CLC after-school club) which contained abusive language.

In Johnstone High School, too, many of the computer practices children have developed outside the school are regarded as problematic if not threatening when brought into the school learning environment. For example, some pupils routinely interfere with the system settings of school PCs, which causes problems in class (because the teacher cannot assume everyone is looking at an identical screen) and especially in the library, where there is less specialised supervision and some pupils delight in making 'sticky windows' with rude messages come up. Teachers do not generally regard the skills pupils acquire at home as useful for the school education - "at home they would be playing games, going on the internet and going into chatrooms … whereas in here we would be doing

different aspects, in science we would be sitting using things you wouldn't even use at home, something to do with data, interfacing and measuring temperatures, so it doesn't matter what stage the kinds are at because the first time they use that software they are all a bit lost." Even with an apparently transferable skill such as internet searching, teachers complain "they are not particularly good at framing questions". Teachers at St David's judged children were reasonably skilled at internet searches, but then again they complained that they tend not to be able to critically assess the results, simply printing out what they find on a topic often without even reading it.

In sum, for teachers, especially at St David's and Johnstone High, children's home use is seen as overwhelmingly entertainment-oriented, which confers a different type of skills from that required in the school learning environment, and can on occasions threaten the integrity of that environment by introducing inappropriate skills. There is a sense of unease about where a medium inherently given to 'user-led' learning can lead if not carefully controlled. Therefore the primary concern is to protect rather than bridge the boundary between home and school, so that the classroom environment is not disrupted.

From the pupils' perspective such a boundary has a more ambiguous status. On the one hand, as described above, they often voluntarily 'taking learning home' or bring to bear the resources they can access at home (computers, the internet, and the more willing help of their parents) in school projects. They also transgress the boundaries deliberately established by the school by applying 'inappropriate' computer skills they have acquired at home in school (which nevertheless - as in the case of altering system settings on school PCs - often requires mastery of quite advanced skills). Yet the presence of these relatively clear boundaries can also be the cause of disruptive behaviour: damage to equipment by Johnstone High pupils is interpreted not as a rejection of computing, but "a general rejection of the education system" with which school-based computers are identified. Similarly disaffection with school rubs off on attitudes towards the institutionalised resource think.com, which is not as popular as pupils' own private e-mail and messaging accounts. Technical superiority may be one factor, but another is likely to be the identification of think.com with school[12]. The council's / school's refusal to sanction use of other e-mail systems and of all instant messaging may be counterproductive to the incorporation of electronic communication into the life of the school.

On the other hand, the relatively conservative policies of schools in West Johnstone - the fact that they have not attempted to 'commandeer' pupil's home ICT resources for their educational development - finds support in research showing that children and their parents, especially from lower socio-economic strata, seek to protect the 'domesticity' of the home environment as a family space rather than an educational space (see Box 1).

Role reversals between teacher and pupil

As a medium supporting user-led learning, and as a technology whose mass diffusion is a feature of the last decade (and whose universal availability and use in schools is even more recent), computers significantly alter the relationship between teachers and pupils. Often the latter have more advanced skills, and certainly more experience, with computers than their teachers. This can potentially undermine teachers' authority in class. The computing teacher at Johnstone High felt this was the case for some of his colleagues: "I think most of the kids know more than the staff and that causes problems". Teachers in the two primary schools admitted, via their citations of negative aspects of computing for teaching, concerns over their own loss of control of the classroom environment, often due to a lack of self-confidence with computers. However this related more to their experiences of equipment failures with the potential to ruin lesson plans than to any threat to their authority with the children. On the contrary they welcome the potential for role reversal and try to create situations which maximise its educational benefits:

[12] A series of focus groups run by the Children's Partnership in America contrasted adults' attitudes to the internet as a freely accessible 'public space' with young people's preference for semi-private on-line spaces such as chatrooms which they felt they owned. Emphasis on the internet's educational utility tended to threaten this sense of ownership (Lazarus & Mora 2000).

> It's not just children who are learners but adults are as well - it is good for children to see that model, that we don't know everything, that we know how to go about learning from someone else who is competent (Cochrane Castle)
>
> I think it is good for their self-esteem if they know something that you don't (Cochrane Castle)
>
> I was having problems running one of my programmes and I sent one of my best pupils [at ICT] to have a look … I didn't feel at all embarrassed about asking and the children take it in their stride (Cochrane Castle)
>
> If you have someone in your class who is very good at computers you use them to teach you as well. I have sent for a child from another class to come and sort out a problem (St David's)
>
> If you see them doing something and you say show me how to do that then they are happy to do so, I think it's quite good for our relationship with them (St David's)

Again, however, there is a limit to teachers' willingness to admit innovations in communicative practice, for example where e-mail is concerned. Enabling pupils to send e-mails to staff can be good for shy individuals, according to teachers at Johnstone High, but at St David's it is not encouraged: "I don't think it's a good idea to ask them to send you an e-mail when you are trying to get them to socially interact… when they have access to you all day". Even at Cochrane Castle, which seems to have the least strict controls on computer use, pupils' use of e-mail is seen as something of a gimmick - "mainly conversational, it's not about work".

Access, resources and curriculum design

Teaching staff at different schools had differing assessments about the adequacy of their computing resources. At Cochrane Castle there are at least two internet-connected computers in each classroom and this is regarded as sufficient. However three computers for a class in St David's was seen as insufficient. This implies that different teaching methods are employed. A use of computers which sticks closely to the ICT National Curriculum requirements in St David's may be more demanding on computer resources than a more flexible pattern for the integration of computers into subject teaching at Cochrane Castle, perhaps because the former requires mostly individual tasks whereas the latter can be more facilitative of group work. At Johnstone High there are two very well equipped computer labs (the computer studies / science suite and the business studies suite) plus a large bank of PCs in the library. This is usually adequate for one computer per pupil (which is seen as ideal).

Access policies differ at each school. Cochrane Castle has the most liberal system, with computers available out of hours to pupils who do not have computers at home. Use of computers out of lessons is not normally allowed at St David's due to concerns about supervision. At Johnstone High there is no formal policy for access outside lessons to the computer suites (other than the library) but pupils do make ad hoc arrangements with the responsible teacher. Thus access must be negotiated on the basis of trust, and is regarded as a privilege which can be taken away. In practice it is mostly restricted to a smallish group of computer enthusiasts.

All three schools make e-mail facilities available to pupils via the council-run think.com system. Usage is monitored by a school administrator, and at St David's and Johnstone High pupils' accounts have been stopped for inappropriate use (such as sending abusive messages to other pupils). All schools either have or are (re)constructing websites, and in Johnstone High it is intended to put a vast amount of course materials on the website over the next couple of years, including visually exciting material and quizzes to make learning more fun. Access is a critical issue for schools in relation to digital inclusion, the role of the school in the community and the extent to which pupils are empowered (permitted) to structure their own learning, either individually or collectively (see Box 2). It may be that West Johnstone schools could revisit this issue in partnership with other community partners and resource providers, notably the DIP, in order to achieve the maximum benefits for pupils' education and community development.

Peer group networks and 'pupil cultures'

Pupil cultures, research shows, tend to play a greater role in structuring the dynamics of classroom learning and social interaction during computer-based learning, whether by design or independently (see Box 3). These processes were evident in the primary schools especially, where the limited supply of computers requires 'negotiated' access and use in class. On the whole teachers observe activity patterns they regard as healthy and stimulating as pupils use the computers together, with a transfer of skills taking place between more and less confident users:

> I think it works in a positive way. The kids who do have [computers at home] and are confident tend to help [the others] (Cochrane Castle)
>
> Does it happen spontaneously, that one person likes to help another? Yes, that can happen, they don't mind getting help from one another (St David's)

Sometimes the process requires the teacher's mediation:

> Some like to work on their own whatever they are doing and some like the support of others. I sometimes try to pair someone who is quite skilled at computers with someone not so experienced (St David's)
>
> I tend to put the ones who are most confident on first and say you are going to stay and teach the next two and possibly the two after that and work down. Hopefully by the end of the year everyone could take a mentoring role (Cochrane Castle)
>
> I have to monitor them and say I don't want you to do it for them, I just want you to talk them through it, let them use the keyboard [but] they really enjoy that, peer learning in a group (Cochrane Castle)

However the tendency of some children to gravitate towards group work with computers is not always regarded as helpful. In both Cochrane Castle and Johnstone High teachers noted how someone, typically one with better computer skills, will monopolise the keyboard during group work and prevent others from gaining experience via hands-on learning. Therefore individuals and pairs are usually preferred to ensure a reasonable equity of access.

In the primary schools, however, any rearrangements in social relations caused by the introduction of computing are generally seen as positive - as integrating rather than divisive. When asked to cite positive features of computers for teaching, about a third of teachers referred to changes which had partially overturned the educational hierarchy among pupils, enabling low-achievers to find a new way to participate or even excel. Three negative comments on the theme of inter-pupil relations referred only to the difficulty of ensuring equal access to all when there are not enough computers to go around. Computer-based classes were on the whole *more* inclusive, while pupil subcultures - in terms of differentiated attitudes toward computers - do not seem to have emerged. Every child shares basically the same positive attitude towards computers as an object of fun, discovery and rapid communication (which is evaluated ambivalently by a lot of teachers, who regard the popularity among pupils of computer games and instant messaging - both at home and in after-school clubs - as excessive and not contributing in any way to educational aims). However at Johnstone High there was more evidence of a distinction between different subcultures forming (partially) with reference to computers and the internet, and resembling Holloway & Valentine's 'techno boys' and 'lads' (no gender difference was noted, but all the examples given were of boys). Firstly, a group of computer enthusiasts had won the physics teacher's trust and often spend lunchtimes - unsupervised - in the computer lab. Then there are two 'camps' whose attitude toward computers is expressed in different kinds of transgression:

> There are those who mess about with the computer settings [who] are generally the ones who are taking computing to a higher level, they enjoy working with computers and they can do a lot at home so they want to try and do a bit of that in here. Generally it's not a problem … I suppose it is a good thing that they have the level of skills and the confidence to go into the system settings.

> The problem arises with those [other] children who don't have the skill to go in and change the system settings, they may take it a step further and do some physical damage such as taking the earphones or the mouse balls… I think it's just a general rejection of the education system it wouldn't matter what it was you gave them [they would want to damage it]. I wouldn't say they were technophobes.

Nevertheless the attitude of the latter group would seem to be formed by a rebellion against computers *in school*, which they identify with an authority they reject, an attitude typically reproduced through peer group interaction. For some subgroups at secondary school level, computers (as objects in the classroom rather than at home) take on a set of negative connotations given by a generalised anti-establishment pupil subculture, whereas for others (probably the majority of boys at least) computers carry positive associations that can help overcome negative attitudes towards education evident in non-computer-based classes ("there are those who give us no problems at all in science but will cause havoc in English, French and Maths [where computers are not much used]"). These attitudes are likewise reconfirmed in the course of interaction among sub-groups such as the informal clubs that meet at lunchtime in the computer suites. Thus the reproduction of both subcultures is a matter of the socialisation of technology, in which the significations of technology are more determined by than determining of the communication practices of peer groups.

However steps could be taken to allow more children to develop positive and constructive attitudes towards computers: it might, for instance, be productive to give greater scope to pupils to influence the design and practice of learning and thereby remove the temptation to subvert authority, by relaxing the school's (or the council's) rules and regulations on access and use and encouraging the use of pupils' own resources (such as their private e-mail accounts) rather than insisting on maintaining an enclosed, supervised online environment for school work. Research in the USA shows that many pupils reject the institutionalisation of computers and the internet in the school curriculum not because they reject education per se, but on the contrary because they regard the ways they are instructed to use the internet as rudimentary and cumbersome in comparison with their own learned practices (see Box 4). The ICT teacher's comment that many Johnstone High pupils reject think.com because it is slow and boring implies that this may be part of the explanation here too. One strategy which might be attempted is to let pupils use the same communication channels in school which they use at home (including the popular instant messaging), and in general to be more open to educational spin-offs of the spontaneous (and rapidly evolving) ways children employ computers in their lives.

BOX 1

Using a combination of empirical evidence and structural analysis, Kenway (1996) revealed how the 'networked home' - a concept championed in terms of consumer empowerment, choice, interactivity and accessibility - is often in fact materialised as the networked workplace, infringing the boundaries between public and private space and the lifeworlds of individuals, families and neighbourhoods, reducing local actors' control over their terms of involvement with regional and global socio-economic systems. For children the consequences may be the same when the networked home becomes the networked classroom, and research indicates that children are especially sensitive to such transgressions. Government strategies promote ICT as a tool to "help link school and home", to "enable learning to take place more easily beyond the bounds of the formal school organisation" or to enable parents to "become vital members of the school community" ('Fulfilling the Potential. Transforming teaching and learning through ICT in schools': DfES Publications 2003). One of the research projects within the ESRC programme on children as social actors questions these goals by demonstrating how "home and school were often posed as contrasting experiences involving different sets of values in the children and young people's accounts". For example, children (particularly those from working class backgrounds) were observed evading or resisting their parents' involvement in their education, strategies seemingly conditioned by a strong sense of the privacy of their home lives and the distinct value placed on the relationship with their parents (Edwards, R. 'Children's understandings of parental involvement in education': Children 5-16 Research Briefing no.11, April 2000). Similarly a predominance of non-educational uses of computers at home needs to be interpreted in the context of children's understandings of their own social worlds, and should not necessarily be seen as a failure to engage children in 'serious' on-line activities.

Our observations confirm that in West Johnstone games predominate in the home computer use of children and young families (which tallies with Holloway and Valentine's (2003) findings that most collective computer activities in family households are oriented towards leisure), whilst parental involvement in homework has in fact not shown much sign of increasing. What this may indicate is that computers have not overcome a longstanding aversion towards education in working-class communities. However they have facilitated a form of 'learning by stealth', and offer additional social and community benefits, since game-playing, for example, frequently involves friends as well as family members, which facilitates "sharing computer knowledge [and] is the basis on which some friendship groups are built" (Valentine, G. & Holloway, S. 'Cyberkids: children's social networks, 'virtual communities' and on-line spaces': Children 5-16 Research Briefing no.2, October 1999). Furthermore children's computer skills tend to be socially valorised to a greater degree in the home than in school and children can thus be more motivated to perform and develop these skills in the home environment. This may be because the types of confidence-boosting role reversal which occur within the household (whereby children are typically the pioneers of internet use and act as instructors or troubleshooters to their parents (Lenhart, Rainie & Lewis 2001)) are more limited in scope (though not absent) in the more heavily institutionalised context of school. If educators strive to structure children's use of computers even when they are at home, they must be careful that this does not threaten two of the most gratifying and empowering benefits computers have been shown to bring to children: enhanced social status within the household and greater control and autonomy in managing their own lives.

BOX 2

A British study of computer usage among secondary school children based on detailed case studies of three schools found widely different access policies in place with highly significant implications for the function of the school within the local community and in relation to issues of social inclusion. Schools which, informed by an agenda of academic attainment, regard computers as privileged tools and restrict access within and especially outside of class risk exacerbating initial skills differentials often based on who has home access. Schools on the other hand which have access policies informed by explicit social inclusion goals, have successfully targeted groups of pupils who may otherwise be liable to fall behind and opened facilities to the wider community such that computers have become important centres for social networking (altering the 'foot traffic' around community institutions). According to the study's authors, many schools' and LEAs' access policies conflict, in practice, with the Labour Government's stated policy of using IT in schools in order to prevent the emergence of social inequalities based around the disenfranchisement of the technologically poor (Holloway & Valentine 2003: 34-41).

BOX 3

This is an example of how computers can affect collective action potential not only by constituting a 'virtual space' where new types of action and interaction are possible, but also because they change or stabilise social relations in real spaces. Studies have shown how "the introduction of computers into the classroom tends to be associated with a shift in teachers' roles away from didactic whole-class instruction towards more individualized and student-centred interaction" (Holloway & Valentine 2003: 49, citing Schofield 1997). An unintended consequence of changes in teaching practice has therefore been to permit the emergence of 'pupil cultures' as key determining influences on classroom social practices, sometimes, though not always, against institutional norms. The relaxed atmosphere of computer-based classes, in which children are often given more time and space to undertake work tasks as well as to experiment and communicate, allows group formation processes such as collaboration and boundary-marking to come to the fore. According to Holloway & Valentine, this tends to produce greater internal differentiation between sub-groups within the class - "social relations between children are more evident here than in strictly controlled classrooms" (ibid.: 49) - of which the most pronounced manifestation is often based around a division between technophiles and technophobes. However it is the social meaning of technology that is at issue for children. Thus technophobia in their studies of three English secondary schools, was "not a fear of computers per se but a fear of how ICT may transform their individual social identities and relationships within the everyday context of the school and their peer group cultures" (ibid.: 66). The way in which computers articulate with group formation processes in children's lifeworlds can easily be misinterpreted if due attention is not given to the latter's specificity. The consequence of this could be either to miss motivational opportunities or to overlook the reinforcement of patterns of social exclusion as the various time-spaces within which children meet computers and the internet are reproduced.

BOX 4

In a US study of middle- and high-school students, based on a series of focus groups (Levin & Arafeh 2002), the 'internet-savvy' among them (estimated in a related Pew Internet survey (Lenhart, Rainie and Lewis 2001) to comprise 30-40% of teenagers) cited numerous frustrations at what they perceived to be the under-use or misuse of the internet in their school education. Examples included teachers who limit or forbid students' internet use in order to prevent them leaving their less savvy peers behind, who are themselves less capable than students of judging how and when to employ on-line resources and therefore assign inappropriate or uninspiring projects for research via the internet, or who are never (or seldom) available to answer questions outside class via e-mail or instant messaging. Many teachers, according to the students, simply do not know how to accommodate the new and innovative ways in which students are employing on-line resources in their learning. These are characterised by the authors using five metaphors - internet as virtual library, virtual tutor, virtual study group, virtual guidance counsellor and virtual locker. Each of these facilities taps into the potential of computers to support user-led learning. However this potential may be disabled (or only partially enabled) if institutionalised practices are too inflexible to respond to the changing needs and demands of users. Given that the communicational and (self)educational practices of children are changing much more rapidly than the structure of school curricula and the teaching practices of a still largely pre-internet generation of staff, this presents a particular danger today. Even in the USA, where by 1998 the vast majority of classrooms were already wired up, the internet was much more deeply integrated in teenagers' lifestyles than in the life of schools themselves (Levin & Arafeh 2002). Evidence from this study suggests that the principal educational benefits of the internet to date have been led by users rather than providers - "we found that the overwhelming majority of student use of the Internet for education happens outside of schools and outside of teacher direction" (ibid.: 23). If this is the case, schools need to find ways to support these practices and to even to learn from them in designing in-school teaching models.

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Results of Questionnaire from Johnstone High School, Year 1: Randomly selected, unsetted, compulsory subject class

Home:

West Johnstone SIP area	Elsewhere
7	18

Home ICT provision:

Computer	24	96%
Internet	21	84%
DIP beneficiary	3	12%

Computer use outside the home:

	Total (25)
School	22
Learning Centre	3
Library	8
Internet café	6
Friend/relative	19
Neighbour	5

The average number of access points other than the home per pupil is 2.52. Surprisingly it is actually lower for those without home internet access (1.75) than for those with home access (2.67). This is the opposite of what was found for primary school pupils, but the numbers involved are too small to deduce a general pattern. The lower number of access points used by secondary school pupils is more significant, and may suggest that as children get older they may grow more reliant on home access. However broadly the same interpretations apply, and again the importance of friends' and relatives' houses as supplementary, and inherently sociable computer access points is clear.

Internet use

Time spent on internet daily	Home internet	No home internet
0	3	1
< 30 min.		3
1 hour	1	8
2-3 hours		5
> 4 hours		4

Use of the internet clearly forms a major part of children's lives, at least those who have the internet at home (which is the vast majority). The median daily time spent on the internet is one hour, but more than a third of this class said they spend at least two hours online a day, and more than four hours is not uncommon.

Email

18 out of the 21 who have home internet access said they had their own e-mail accounts, but none of the four without home access do. Estimates of the intensity of their e-mail correspondence are as follows:

Ave. no. of e-mails sent per week	Ave. no. of e-mails received per week
2.8	5.6

These levels are considerably lower than for primary school pupils. The reasons for this are unclear, since if anything e-mail use is more strongly encouraged in connection with learning at Johnstone High. Pupils can submit questions and work to some teachers through think.com. A number of pupils reported that they have e-mail accounts but left this question blank: possibly they do use e-mail but found it difficult to estimate levels of use (due to irregular patterns of use?).

Instant messaging

18 out of 25 pupils (but none of those without home internet access) said they ever sent instant messages. The average number of different people messaged per week by these pupils was 16, which is much higher than for Cochrane Castle and St David's pupils. This corresponds to emerging evidence that this new form of communication is especially gratifying for older children and teenagers. It may also reflect the differences between peer group cultures which emerge in the social environment of a large secondary school (Johnstone High has 1,400 pupils) and those which prevail in small primary schools like St David's and Cochrane Castle. Asked who they were mostly messaging, the pupils responded as follows (multiple answers were possible):

School friend	15
Friend from other school	5
Friend elsewhere	10
Relative in Johnstone	2
Relative elsewhere	4

This seems to confirm the importance of in-school peer group cultures in shaping communication habits involving instant messaging, but some pupils have clearly also integrated messaging into their management of more spatially distant social relationships, such as those with friends outwith Johnstone. By contrast instant messaging plays only a small role in communication within pupils' extended families.

Chatrooms

Use of chatrooms is least widespread of the three types of online communication examined. Only 11 pupils said they ever use them (including one without home internet access); 14 said they did not. However those that do, use them regularly - daily or several times a day for seven, and at least once a week for the remaining four. We did not ask the same question in primary schools, though a slightly higher proportion there claimed they ever used chatrooms.

Communication repertoires

We asked pupils at Johnstone High School to rank six types of communication according to the relative importance each plays in their patterns of communication with school friends (outside of school itself). From this we constructed the following hierarchy of communication preferences (points are out of a theoretical maximum of 6):

Rank	*Home internet (21)*	*No home internet (4)*
1	meeting and hanging out (5.0)	visiting (4.0)
2	phoning (4.0)	meeting and hanging out (3.8)
3	visiting (3.8)	phoning (3.5)
4	messaging (3.5)	messaging (1.3)
5	e-mailing (2.4)	e-mailing (1.3)
6	chatrooms (1.2)	chatrooms (0.5)

While the number of pupils without home internet access is too small to draw firm conclusions from any comparison, it is interesting to note the more important role played by visiting in their communication repertoires. However those with home internet access are more likely to meet to hang out and to phone one another. Moreover, for those with home access, instant messaging came close to overtaking visiting and phoning: this has clearly become an important means of communication among school friends in Johnstone, while hanging out (out of doors) remains the most important forum for conversation and peer group socialisation. E-mail and chatrooms were generally ranked in the bottom two positions.

Finally, the pupils were again asked to choose their favourite similes for the internet from a list of options (the question was 'How do you think of the internet?'): as in the primary schools, the most popular was ***library***, followed by - in descending order - ***meeting-place, shopping mall,*** *parliament, highway* and *maze*. The only difference is the greater preference for 'shopping mall' among the older children, who are likely to have had more experience using the internet to browse for products if not to purchase online. Other similes for the internet suggested by children themselves were 'games hall', 'fun', 'dictionary', 'encyclopaedia', 'magazine', 'a whole world in itself' and 'Glasgow town centre'.

Results of Questionnaire from:
Cochrane Castle Primary School, class P5 (28 pupils)
St David's Primary School, class P6 (21 pupils)

Home:

Cochrane Castle

Howwood Rd. and Tannahill flats	Cartside and Sandyflats	Elsewhere
18	7	3

St David's

Howwood Rd. and Tannahill flats	Cartside and Sandyflats	Elsewhere
6	8	7

Home ICT provision:

Cochrane Castle

Computer	26	92.9%
Internet	23	82.1%
DIP beneficiary	12	42.9%

St David's

Computer	18	85.7%
Internet	18	85.7%
DIP beneficiary	10	47.6%

Computer use outside the home:

Cochrane Castle

	DIP (12)	non-DIP (16)	Total (28)
School	11	16	27
Learning Centre	3	2	5
Library	4	10	14
Internet café	0	4	4
Friend/relative	11	13	24
Neighbour	4	7	11

St David's

	DIP (10)	non-DIP (11)	Total (21)
School	10	10	20
Learning Centre	4	4	8
Library	3	3	6
Internet café	0	2	2
Friend/relative	8	9	17
Neighbour	1	4	5

On average, pupils use 2.9 access points other than their own home (the question did not ask how regularly they used each access point). The average for DIP beneficiaries is 2.7, for non-beneficiaries 3.1. For the nine pupils without internet and/or computer access at home, the average number of access points is also 3.1. If we assume, on the basis of anecdotal evidence, that DIP beneficiaries have on average had home access for longer than non-beneficiaries, the suggestion may be valid that home access produces a gradual substitution effect for access outside the home, especially in purpose-specific settings such as libraries and internet cafés. However the more significant finding is that the majority of pupils are highly mobile and sociable in their use of computers, i.e. that home access does not and perhaps cannot replace the rewards they get from using computers in more social settings, notably at school and at friends' and relatives' houses. Use of the Learning Centre is slightly higher among DIP beneficiaries, indicating a possible 'channelling' through the scheme into wider learning opportunities, but overall it is low in P5 and only slightly higher in P6 (after-school computer clubs start from P6).

E-mail

Every pupil at Cochrane Castle and almost every pupil at St David's has an e-mail account at school (think.com), and most have another personal account (some claimed to have up to five different e-mail addresses!). Their own estimates of the intensity of their e-mail correspondence is as follows:

Cochrane Castle:

	Ave. no. of e-mails sent per week	Ave. no. of e-mails received per week
DIP beneficiary (12)	8.9	13.6
Other home internet (11)	6.1	6.5
No home internet (5)	1.8	3.0

St David's

	Ave. no. of e-mails sent per week	Ave. no. of e-mails received per week
DIP beneficiary (10)	4.1	7.4
Other home internet (8)	5.3	6.5
No home internet (3)	0	0

A fairly clear pattern of e-mail use is apparent. Pupils generally receive more e-mails than they send. Those without home internet access send and receive the fewest, followed by those with privately obtained PCs and internet access, who send and receive almost one e-mail per day on average. But DIP beneficiaries are the clear leaders in e-mail use, especially at Cochrane Castle. This could reflect the growth in e-mail use with time (assuming most private purchases were made more recently than the start of the DIP) or the stimulatory effect of initial instruction, home mentoring or involvement in training at the Learning Centre (for the five pupils at Cochrane Castle - three of them DIP beneficiaries - who claimed to use a computer at the Learning Centre, the average numbers of e-mails sent and received were the highest of all, at 12.4 and 17.0 respectively, although this pattern was not observed for St David's pupils). A third possibility is that, as DIP households all have broadband internet

access, whilst an unknown, but probably significant number of other home internet users have dial-up access, the differential in use of e-mail and messaging (see below) reflects a technological divide, and, moreover, the factor of cost, since those parents who have acquired PCs privately must pay for their internet access. Among the St David's pupils use of e-mail is lower overall, which may be the result of a stricter school policy after some pupils had their school accounts blocked for sending abusive e-mails. Interviews with the teaching staff revealed an ambivalent attitude towards e-mail as a useful learning medium for primary school-age children, and suggested that the incident might have led to a reduction in use of think.com by pupils - until then many of them had not apparently been aware their e-mails could be monitored by teachers.

Instant messaging

Cochrane Castle

18 out of 28 pupils at Cochrane Castle said they ever used chat-rooms or instant-messaging services. Asked to estimate the intensity of messaging, in terms of number of messages sent per week, they gave the following response:

	Ave. no. of messages sent per week
DIP beneficiary (12)	14.2
Other home internet (11)	7.6
No home internet (5)	3.8

Although these figures are only indicative, as the children found it difficult to assess what constituted a distinct message, or messaging session (the question was not worded clearly), the same scale is again apparent, whereby DIP beneficiaries are the most intensive messagers and those without home internet access the least (although 3 out of 5 said they do use instant messaging services).

St David's

14 out of 21 pupils at St David's said they ever sent instant messages and 12 said they used chatrooms. On the basis of experience from Cochrane Castle the question was reworded for St David's to make it clear that we wanted to know how many different people pupils estimate they message per week. The figures are therefore not directly comparable with the table above:

	Ave. no. of people messaged per week
DIP beneficiary (10)	11.8
Other home internet (8)	6.0
No home internet (3)	0

The scale is again the same, with DIP beneficiaries showing a clear lead in their use of instant messaging. On this occasion none of the pupils without home internet access use instant messaging at all. Given that we asked St David's pupils how many different people per week they message, these figures can be compared more readily with those for e-mail, and what seems clear is that instant messaging is used more regularly and connects a larger circle of friends than e-mail, at least for this cohort. Other research among children has suggested that the gratification from communication via messaging is different (less utilitarian and more performative) because it is based upon co-presence (temporal simultaneity). Therefore

children can use messaging as another form of ‘hanging out’ with friends (some pupils related how they would often continue to chat on-line with the same friends with whom they played out earlier in an evening).

Finally, the pupils were asked to choose their favourite similes for the internet from a list of options (the question was ‘How do you think of the internet?’): the most popular was ***library***, followed by - in descending order - ***meeting-place, parliament***, *highway*, *shopping mall* and *maze*. However a number of pupils took up the invitation to suggest their own similes, and a popular choice was ***gameshow / game station***. Discussion with the two classes revealed that entertainment and fun prevail in the children’s uses and attitudes towards the internet, both at home and at school, where learning involving computers is regarded as much more appealing than most other classroom exercises. Other similes for the internet suggested by children were ‘a quiet room’, ‘a good site’, ‘exciting but sometimes boring’, ‘a good place to talk to people’ and ‘ a place where you can help’.

Responses to Questionnaire Survey

1. SOCIOECONOMIC PROFILE OF RESPONDENTS

Table 1: Respondents by Age

Age of adult respondent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-24	13	12.7	12.9	12.9
	25-44	54	52.9	53.5	66.3
	45-64	27	26.5	26.7	93.1
	Over 65	7	6.9	6.9	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		
Total		102	100.0		

Table 2: Respondents by household status

type of relationship

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single living alone	23	22.5	22.8	22.8
	couple	38	37.3	37.6	60.4
	lone parent with children	30	29.4	29.7	90.1
	living with parent(s)	7	6.9	6.9	97.0
	other living arrangements	3	2.9	3.0	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		
Total		102	100.0		

Table 3: Respondents by employment status

Work and education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	paid FT work	15	14.7	14.9	14.9
	paid PT work	13	12.7	12.9	27.7
	self employed	2	2.0	2.0	29.7
	retired	13	12.7	12.9	42.6
	looking after home and family	16	15.7	15.8	58.4
	full time education	2	2.0	2.0	60.4
	health or disability	13	12.7	12.9	73.3
	unemployed	27	26.5	26.7	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		
Total		102	100.0		

Table 4: Respondents by education:

Educational qualifications

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NC units/standard grades	13	12.7	38.2	38.2
	highers	3	2.9	8.8	47.1
	HNC/HND	2	2.0	5.9	52.9
	diploma/degree	2	2.0	5.9	58.8
	adult learning	6	5.9	17.6	76.5
	Other	8	7.8	23.5	100.0
	Total	34	33.3	100.0	
Missing	System	68	66.7		
Total		102	100.0		

2. COMPUTER AND INTERNET USE PATTERNS OF RESPONDENTS

Table 5: Frequency of use of computer

Computer is Used

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	several times a day	49	48.0	48.5	48.5
	daily	29	28.4	28.7	77.2
	at least once a month	11	10.8	10.9	88.1
	less than once a month	4	3.9	4.0	92.1
	never	2	2.0	2.0	94.1
	6	6	5.9	5.9	100.0
	Total	101	99.0	100.0	
Missing	System	1	1.0		
Total		102	100.0		

Table 6: Location of computer use apart from home: *Apart from at home, where else do you regularly use a computer (at least once a month)?*

Access to other computer	Use at work	9
	use at school/college	27
	use at the learning centre	25
	use at the library	6
	use at an internet cafe	2
	use at friends or relative's	35
	use at neighbours	12
	use elswhere	1

Table 7: Level of Satisfaction with DIP Equipment

satisfaction with equiment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly satiisfies	38	37.3	41.3	41.3
	reasonably satisfied	45	44.1	48.9	90.2
	unsatisfied	9	8.8	9.8	100.0
	Total	92	90.2	100.0	
Missing	System	10	9.8		
Total		102	100.0		

Table 8: Sources of Technical Support: *When you need help or technical support with the computer, who do you usually turn to?*

Tecnical support	fix ourselves	29
	fix by friends/neighbours	19
	learning centre staff	49
	DIP technicians	32
	helpline	2
	on-line help service	1
	other	
	never needed	7

Table 9: Forms of Computer Use: Proportion of respondents using the computer for the following purposes

computer used for	E-mail	74
	internet	86
	wordprocessing and other	52
	entertainment	82

Table 10: Respondents Using Computer for Voice Calls

voice calls

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	34	33.3	100.0	100.0
Missing	System	68	66.7		
Total		102	100.0		

frequency of voicecalls

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	several times a day	7	6.9	21.2	21.2
	about once a day	1	1.0	3.0	24.2
	at least once a week	8	7.8	24.2	48.5
	at least once a month	5	4.9	15.2	63.6
	less often	12	11.8	36.4	100.0
	Total	33	32.4	100.0	
Missing	System	69	67.6		
Total		102	100.0		

Table 11: Forms of Internet Use: Proportion using the internet for specified activities

internet activies	goods and services	55
	educational	55
	buying goods and services	34
	banking/financial	14
	looking for work	30
	downloading software	54
	playing music or video	75
	government or public service	29
	chatrooms	65
	uploading and design	15
	surfing	69

Scores: Proportion using internet for: 1-2 activities; 3-4; 5-7; 8-11

grouped scores

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-2 activities	12	11.8	13.5	13.5
	3-4 activities	21	20.6	23.6	37.1
	5-7 activities	34	33.3	38.2	75.3
	8-11 activities	22	21.6	24.7	100.0
	Total	89	87.3	100.0	
Missing	System	13	12.7		
Total		102	100.0		

Table 12: Number of email users per household; and Average number of emails a week sent and received: Proportions: 1-5; 6-10; 11-20; over 20

number of e-mail users

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	3.9	4.9	4.9
	1	35	34.3	42.7	47.6
	2	19	18.6	23.2	70.7
	3	18	17.6	22.0	92.7
	4	5	4.9	6.1	98.8
	5	1	1.0	1.2	100.0
	Total	82	80.4	100.0	
Missing	System	20	19.6		
Total		102	100.0		

sent e-mails per week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	fewer than 5	15	14.7	19.5	19.5
	5-20	33	32.4	42.9	62.3
	21-20	18	17.6	23.4	85.7
	more than 50	11	10.8	14.3	100.0
	Total	77	75.5	100.0	
Missing	System	25	24.5		
Total		102	100.0		

received e-mails per week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	fewer than 5	10	9.8	13.9	13.9
	5-20	26	25.5	36.1	50.0
	21-20	14	13.7	19.4	69.4
	more than 50	21	20.6	29.2	98.6
	5	1	1.0	1.4	100.0
	Total	72	70.6	100.0	
Missing	System	30	29.4		
Total		102	100.0		

3. IMPACT OF DIP ON HOUSEHOLD BEHAVIOUR AND INTERACTION

Table 13: Did you have a computer at home prior to the DIP?

computer prior to DIP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	16	15.7	15.7	15.7
	no	86	84.3	84.3	100.0
	Total	102	100.0	100.0	

Table 14: Who has benefited the most from the computer?

who benefits most

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	children	55	53.9	55.0	55.0
	adults	17	16.7	17.0	72.0
	others	4	3.9	4.0	76.0
	one child/adult	24	23.5	24.0	100.0
	Total	100	98.0	100.0	
Missing	System	2	2.0		
Total		102	100.0		

Table 15: Has having a computer influenced the amount of time you spend together as a family in the home?

time spent together

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	more time	27	26.5	27.0	27.0
	no difference	59	57.8	59.0	86.0
	less time	14	13.7	14.0	100.0
	Total	100	98.0	100.0	
Missing	System	2	2.0		
Total		102	100.0		

4. SELF-ASSESSMENT BY PARTICIPANTS OF IMPACT OF COMPUTING/INTERNET ON THEIR LIVES

Table 16: Impact of the Internet on Social Links: Proportion Reporting improvement in specified areas

connection to family

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A lot	47	46.1	51.6	51.6
	some	24	23.5	26.4	78.0
	not at all	17	16.7	18.7	96.7
	negative impact	3	2.9	3.3	100.0
	Total	91	89.2	100.0	
Missing	System	11	10.8		
Total		102	100.0		

info on local events

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A lot	21	20.6	25.9	25.9
	some	33	32.4	40.7	66.7
	not at all	25	24.5	30.9	97.5
	negative impact	2	2.0	2.5	100.0
	Total	81	79.4	100.0	
Missing	System	21	20.6		
Total		102	100.0		

ability to shop

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A lot	16	15.7	18.4	18.4
	some	19	18.6	21.8	40.2
	not at all	43	42.2	49.4	89.7
	negative impact	9	8.8	10.3	100.0
	Total	87	85.3	100.0	
Missing	System	15	14.7		
Total		102	100.0		

ability to connect

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A lot	11	10.8	13.1	13.1
	some	25	24.5	29.8	42.9
	not at all	38	37.3	45.2	88.1
	negative impact	10	9.8	11.9	100.0
	Total	84	82.4	100.0	
Missing	System	18	17.6		
Total		102	100.0		

5. LEARNING

Table 17: How would you describe your computer skills when the DIP started?

computer skills before

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no skills	72	70.6	70.6	70.6
	basic skills	12	11.8	11.8	82.4
	moderate skiils	14	13.7	13.7	96.1
	advanced	4	3.9	3.9	100.0
	Total	102	100.0	100.0	

Table 18: How would you describe your computer skills now?

computer skills now

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	no skills	13	12.7	12.7	12.7
	basic skills	23	22.5	22.5	35.3
	moderate skiils	57	55.9	55.9	91.2
	advanced	9	8.8	8.8	100.0
	Total	102	100.0	100.0	

Table 19: What is your main source of information about each of the following? (Numbers)

Sources of information	Community Newsletter	56
	Word of mouth	46
	TV and radio	2
	Newspapers and Magazines	5
	Internet/community website	33

Table 20: Children's usage of computer, and use of the computer for School Work by Households with School-Age Children

children's usage of computer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	every day	55	53.9	76.4	76.4
	at least once a week	10	9.8	13.9	90.3
	at least once a month	3	2.9	4.2	94.4
	never	4	3.9	5.6	100.0
	Total	72	70.6	100.0	
Missing	System	30	29.4		
Total		102	100.0		

access study materials

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	every day	13	12.7	21.0	21.0
	at least once a week	27	26.5	43.5	64.5
	at least once a month	6	5.9	9.7	74.2
	less often	2	2.0	3.2	77.4
	never	14	13.7	22.6	100.0
	Total	62	60.8	100.0	
Missing	System	40	39.2		
Total		102	100.0		

use for homework

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	every day	11	10.8	17.7	17.7
	at least once a week	26	25.5	41.9	59.7
	at least once a month	9	8.8	14.5	74.2
	less often	4	3.9	6.5	80.6
	never	12	11.8	19.4	100.0
	Total	62	60.8	100.0	
Missing	System	40	39.2		
Total		102	100.0		

6. WEST JOHNSTONE COMMUNITY LEARNING CENTRE AND SERVICES PROVIDED BY DIP

Table 21: Use of the Community Learning Centre: prior to the start of the Dip and Now

use LC prior to DIP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	26	25.5	26.3	26.3
	no	73	71.6	73.7	100.0
	Total	99	97.1	100.0	
Missing	System	3	2.9		
Total		102	100.0		

use LC nowadays

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	32	31.4	32.7	32.7
	no	66	64.7	67.3	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

Table 22: Do you feel better informed about the activities at the Learning Centre as a result of the DIP?

feel better infomed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	75	73.5	80.6	80.6
	2	18	17.6	19.4	100.0
	Total	93	91.2	100.0	
Missing	System	9	8.8		
Total		102	100.0		

Table 23: Are you satisfied with the level of service provided to participants in the DIP?

level of service in DIP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	highly satisfied	29	28.4	32.6	32.6
	reasonably satisfied	53	52.0	59.6	92.1
	unsatisfied	7	6.9	7.9	100.0
	Total	89	87.3	100.0	
Missing	System	13	12.7		
Total		102	100.0		

7. IMPACT OF DIP ON ECONOMIC PARTICIPATION.

Table 24: Do you use your computer at all in relation to your work, i.e. to do work from home?

use for work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	regularly	14	13.7	15.4	15.4
	occasionally	9	8.8	9.9	25.3
	no	68	66.7	74.7	100.0
	Total	91	89.2	100.0	
Missing	System	11	10.8		
Total		102	100.0		

Table 25: Do you feel your job/career prospects have improved due to the DIP?

career prospects

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a lot	9	8.8	10.6	10.6
	a little	10	9.8	11.8	22.4
	not at all	65	63.7	76.5	98.8
	not relevant	1	1.0	1.2	100.0
	Total	85	83.3	100.0	
Missing	System	17	16.7		
Total		102	100.0		

How carreer prospects have improved

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	found a job	3	2.9	15.8	15.8
	prepared CV	3	2.9	15.8	31.6
	better information	12	11.8	63.2	94.7
	other	1	1.0	5.3	100.0
	Total	19	18.6	100.0	
Missing	System	83	81.4		
Total		102	100.0		

8. IMPACT OF DIP ON COMMUNITY ACTIVITIES AND SOCIAL NETWORKS.

Table 26: Does anyone in your household do any voluntary work with a community group?

voluntary work

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	17	16.7	18.5	18.5
	no	75	73.5	81.5	100.0
	Total	92	90.2	100.0	
Missing	System	10	9.8		
Total		102	100.0		

Table 27: Have you increased your social or business contacts via internet/e-mail?

increased contacts in community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a lot	16	15.7	17.4	17.4
	alittle	31	30.4	33.7	51.1
	not at all	45	44.1	48.9	100.0
	Total	92	90.2	100.0	
Missing	System	10	9.8		
Total		102	100.0		

outwith community

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	a lot	15	14.7	16.9	16.9
	alittle	29	28.4	32.6	49.4
	not at all	45	44.1	50.6	100.0
	Total	89	87.3	100.0	
Missing	System	13	12.7		
Total		102	100.0		

Table 28: Are you aware of any of the following user/interest groups related to the DIP?

	% Aware of named group
Video group	21
Website group	30
Newsletter group	33
Technicians forum	29

9. IMPLICATIONS OF DIP FOR E-GOVERNMENT

Table 29: Have you used the internet (including e-mail) to access any of the following public services? (Numbers)

Implications for e-gov	housing repairs	19
	road and lighting	5
	free school meals	
	benefit enquiry	14
	childcare enquiry	4
	job applications	9
	health advice	14
	GPs surgery	
	booking sports	3
	library books	
	writing to council	9
	coucillor, MSP, MP	5

Table 30: How do you generally prefer to contact the council?

prefer to contact council

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	e-mail	7	6.9	7.1	7.1
	via website	4	3.9	4.1	11.2
	by phone	49	48.0	50.0	61.2
	by letter	1	1.0	1.0	62.2
	in person	35	34.3	35.7	98.0
	6	2	2.0	2.0	100.0
	Total	98	96.1	100.0	
Missing	System	4	3.9		
Total		102	100.0		

Table 31: Has Renfrewshire Council ever contacted you to ask for your views on the design and content of online public services (e.g. invitation to website consultation open days)?

has coucil contacted

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	17	16.7	17.9	17.9
	no	78	76.5	82.1	100.0
	Total	95	93.1	100.0	
Missing	System	7	6.9		
Total		102	100.0		

Selected Cross-Tabulations

A. COMPUTER SKILLS BEFORE DIP AND NOW, BY ATTENDANCE AT LEARNING CENTRE COURSES

Table 32: Computer skills before DIP, by attendance at Learning Centre IT Courses

			Attended IT courses		Total
			no	yes	
computer skills before	no skills	Number	58	14	72
		%	73.4%	60.9%	70.6 %
	basic skills	Number	9	3	12
		%	11.4%	13.0%	11.8 %
	moderate skills	Number	9	5	14
		%	11.4%	21.7%	13.7 %
	advanced	Number	3	1	4
		%	3.8%	4.3%	3.9%
Total		**Number**	**79**	**23**	**102**

Table 33: Computer skills now, by attendance at Learning Centre IT Courses

			Attended IT courses		Total
			no	yes	
computer skills now	no skills	Number	12	1	13
		%	15.2%	4.3%	12.7 %
	basic skills	Number	22	1	23
		%	27.8%	4.3%	22.5 %
	moderate skills	Number	37	20	57
		%	46.8%	87.0%	55.9 %
	advanced	Number	8	1	9
		%	10.1%	4.3%	8.8%
Total		**Number**	**79**	**23**	**102**

Table 34: Computer skills before DIP, by attendance at Learning Centre Non-IT Courses

			Attended non IT course at LC		Total
			yes	no	
computer skills before	no skills	Number	10	61	71
		%	76.9%	70.1%	71.0 %
	basic skills	Number	2	10	12
		%	15.4%	11.5%	12.0 %
	moderate skills	Number	1	13	14
		%	7.7%	14.9%	14.0 %
	advanced	Number	0	3	3
		%	0%	3.4%	3.0%
Total		**Number**	**13**	**87**	**100**

Table 35: Computer skills Now, by attendance at Learning Centre Non-IT Courses

			Attended non IT course at LC		Total
			yes	no	
computer skills now	no skills	Number	1	12	13
		%	7.7%	13.8%	13.0%
	basic skills	Number	2	21	23
		%	15.4%	24.1%	23.0%
	moderate skills	Number	10	46	56
		%	76.9%	52.9%	56.0%
	advanced	Number	0	8	8
		%	0%	9.2%	8.0%
Total		**Number**	**13**	**87**	**100**

B. Increased Contacts by Users and Non-Users of Email

Table 36: Increased contacts in the Community

			E-mail		
			No	yes	Total
Increase of contacts in community	a lot	Number	3	13	16
		%	15.0%	18.1%	17.4%
	a little	Number	3	28	31
		%	15.0%	38.9%	33.7%
	not at all	Number	14	31	45
		%	70.0%	43.1%	48.9%
Total		**Number**	**20**	**72**	**92**

Table 37: Increased Contacts outwith the Community

			E-mail		
			No	yes	Total
Increase of contacts outwith community	a lot	Number	2	13	15
		%	10.0%	18.8%	16.9%
	a little	Number	5	24	29
		%	25.0%	34.8%	32.6%
	not at all	Number	13	32	45
		%	65.0%	46.4%	50.6%
Total		**Number**	**20**	**69**	**89**