SPACE, TIME, AGENCY AND THE TEXTURE OF SERVICE IN THE DIGITAL CITY

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Elisabeth Davenport and Keith Horton are members of the Social Informatics Research Group in the School of Computing, Napier University (www.soc.napier.ac.uk) . Members of the group have been involved in a number of projects concerned with virtual and material spaces, including the EC Presence programme, and a UK AHRB funded interdisciplinary project that explores Auge's concept of 'non-space' (This project involves exchanges between architects, engineers, information scientists, sociologists, designers and artists). Davenport and Horton are also research affiliates of the International Teledemocracy Centre (ITC) at Napier. Much of the ITC's work concerns the design and implementation of systems for e-democracy and e-government, and the in situ evaluation of these systems at different levels of community. As sociotechnical researchers, Davenport and Horton seek to understand e-government in the digital city as configured activity (Fleck, 1993; Williams, 1997) in a material/online continuum; this approach challenges a prevailing frame that uncouples the virtual and material. Two recent workshops at Napier are relevant to the theme of the workshop: Understanding Sociotechnical Action (see Horton, Davenport and Wood-Harper, 2005), and Space, spaces and technology. (Turner and Davenport, 2005).

Introduction

The notion of agency is ambivalent in the discourse of digital cities. Though an extensive literature gives accounts of the technical infrastructure, and the design rationale for augmentation, the details are under-explored of work to maintain and manage the multiple layers that must be installed, and to meet the challenges of public service delivery: the agency of municipal officers is opaque. In contrast, consumer agency is highly visible in digital city discourse, and, thereby, the agency of producers of commodities and services that satisfy consumer desire. Augmentation is also addressed in the context of civic communities, where agency is presented in terms of participation and membership. In both these cases (consumer and community), a utopian version of agency prevails, emphasising empowerment and engagement, increased opportunity and choice, and strength through cohesion. We suggest that this somewhat asymmetric reporting is typical of the discourse of social movements, where transformations in social order are presented in beneficial visions that elide shifts in power. In the digital city, as in any technology

implementation, the infrastructure that 'empowers' or 'augments' one group may dis-empower others, or empower them in ways that they have not sought. In the text that follows, we present the case of a group of municipal service workers whose work is being transformed in a particular version of digital cities discourse – 'e-government'. Before reporting the case, we present a brief history of 'modernising government' in the UK, and discuss e-government as a discursive form described by Kling and Iacono (1994) – the 'computerization movement'.

According to Gröndlund, e-government emerged in the 1990s. He takes the establishment of the NII in 1993 as a starting point, and traces a trajectory in Europe through the Bangemann report, to the eEurope vision laid out in 2000 and beyond. A comprehensive review of this trajectory is provided by van Basterlaer (2001), who describes these programmes as examples of 'persistent technological utopia and determinism.' (p. 4) She continues, 'the political discourse…simplifies in an exaggerated way the social reality, neglecting many differences, and erasing most difficulties. The absence of references is a way of simplifying texts and discourses.' (p. 23) For Grönlund, a Swede, technology is clearly the driver of e-government. In the UK, the phenomenon is better explained in terms of a privatization movement that has evolved over almost twenty years, starting with the publication of a UK government report in 1986 paving the way for the privatisation of government data, and the establishment of an industry-government nexus that has continued to expand under both Conservative and New Labour administrations. In addition, an uncompromising deployment of e-commerce and business models and applications has produced a service ecology dedicated to improved efficiency and quality of service; this can as easily support private as it does public administration: E-government in the UK thus promotes itself as process-oriented and customer-focused'

Choices and decisions surrounding information technology acquisition and configuration are rarely straightforward, but in the UK public sector can often involve the spending of hundreds of thousands, or millions of pounds over the course of the project. This can be considered as a part of the gamble of technology (Hamelink, 1988), where ICT outcomes are uncertain but spending is perceived as necessary. Within the UK public sector there is considerable scrutiny and reporting of such practice, often unfavourably. Increasingly, public services are faced with tasks involving information service integration, which in essence is concerned with addressing complex technology needs with particular configurations of technologies that reflect, and are reflected in the socially and historically situated nature of the proposed usage (Fleck, 1993). What interests us is the deterministic assertion that institutional activity can be 'modernised' through the

introduction of ICTs (Cabinet Office, 1999). Modernising Government, as a policy, sets out to ensure that public services are joined up and strategic, responsive to citizens, and be high quality and efficient (ibid.). ICTs have a central part to play in this, requiring for example that all councils and government agencies deliver government information services online by 2005, and facilitating 'joined up working' through data sharing. The case that reported upon here is, it is argued, not untypical of many ICT initiatives in the UK public sector (past and current) where a local council seeks to embrace the 'modernising' of it's own local government activities through the utilisation of, in this instance mobile, ICTs. The association between 'modernisation' of institutional activity and the introduction of new ICTs is an over-simplification of complex sociotechnical interactions.

Selective reporting of performance and utopian visions are characteristic of Kling and Iacono's (1994) 'computerization movements', a powerful concept that entails a long view and large scale approach to the study of technology while acknowledging that these are often based on cumulated micro studies; those who study computerization movements can thus explore how observations of the local and specific intersect with de-contextualised high level versions of events. Those who work with the concept may combine work on social movements with sociotechnical analysis, exploring areas of interest to both traditions – such as political opportunities, mobilising structures and the framing process (McAdam et al., 1996) that shape the work of technology at different levels of organisation. Drawing on their own and their colleagues' earlier work of sociotechnical analysis, Kling and Iacono suggest that CMs communicate 'key ideological beliefs about the favourable links between computerization and a preferred social order which helps legitimate relatively high levels of computing investment for many potential adopters. These ideologies also set adopters' expectations about what they should use computing for and how they should organize access to it' (Kling & Iacono, 1994).

In the context of CMs, ideologies are always complex (they must meet the demands of many interest groups), though what is made explicit often masks complexity. In e-government, for example, in the UK, the rhetoric of 'modernising' government is preferred to 'privatising', or 'totalising' though 'modernising' entails an ambitious programme of outsourcing and integration that has boosted indigenous computer, consultancy and software industries (the consultancy and computer/telecoms vendors in the case presented here), and supports high resolution and

pervasive profiling of citizens. Ideology mobilises resources, and shapes technology in many different ways.

Current mainstream approaches to design and implementation, sustain the efficiency myth by employing standardised protocols (such as project planning templates) that smooth the lumpy texture of social life, leaving little or no room for the negotiation and adjustments that collaboration inevitably requires (Davenport, 2004). Many post-installation studies of technology describe 'organisational culture' as a barrier to the realisation of the benefits that technology brings. Culture is made a scapegoat, as are the vagaries of local practice, and the workarounds and tweaks that characterise technology-in-use and constitute a process of ongoing validation and development. This elision of the social is consolidated in norms for evaluation within project planning protocols, as these are rigorously constrained to address the validation of pre-scribed functions and features. Emergent and contingent localised behaviour is thus construed as problematic – the phenomenon of the 'problematization of the user', explored in depth by Lamb and Kling (2003)[1]. In addition, the current trend in e-government (and organisational computing generally) is to assemble components designed and validated elsewhere – these exogenous assemblages have emergent local effects that are not acknowledged in the utopian planning stages of implementation. There is clearly a need to explore notions of technology configuration and technology trajectories (or 'material realisation' (Munir & Jones, 2004) in municipal e-service provision.

Goffman's (1974) concept of framing, as elaborated by Snow (2004) can help explain the power and persistence of e-government discourse. Snow states that social movement adherents and their leaders 'frame'. Re-using the terms of an earlier study co-authored with Benford (1988), Snow says that to frame is to 'assign meaning to and interpret relevant events and conditions in ways that are intended to mobilize potential adherents and constituents, to garner bystander support, and to demobilize antagonists.' Snow and Benford describe the resulting products within the social movement arena as 'collective action frames' (CAFs). CAFs specify what is in the frame and what is out of the frame – one set of meanings rather than another is conveyed, or one story rather than another is told. Kling and Iacono use the term 'technology action frames' (and see Orlikowski and Gash, 1994), to describe a similar collective process that is 'more agentic and contentious' (Snow, 2004) than everyday interpretive frames. Collective action frames and

[1] These issues observations have been fully explored by SST and CSCW analysts; see contributions to Luff, Hindmarsh &Heath, 1997).

technology action frames are both amenable to the methods of analysis described in Snow's review. These accommodate multiple levels of inquiry, and involve a range of techniques to analyse different factors that affect the dynamics of social movements such as political opportunity, discursive fields[2], opportunity structures, narrative identity.

Ideology (one item in this array) is particularly pertinent to our paper as we note above, defined by Snow (2004, p. 396) as 'a cover term for a relatively stable and coherent set of values, beliefs, and goals associated with a movement or a broader encompassing social entity.' These are an important part of frame articulation, or 'the connection and coordination of events, experiences and strands of one or more ideologies so that they hang together as a kind of collective packaging device that assembles and collates slices of observed, experienced and/or recorded reality'. We suggest that the selective reporting of positive outcomes in project reports, even in the face of alternative accounts, is an instance of such frame articulation: when accumulated, such accounts are an important element in the alignment of those who make high-level decisions for technology policy.

In several sociotechnical accounts of technology configuration, two types ('interest' and 'practice') of community can be identified (Davenport, 2004; Gallegher & Procter, 2000). The ideology (or discourse that defines) an 'interest' community will tend to simplify the issues involved in systems implementation, and downplay risk by emphasizing the track record of those who share the rhetoric. This discourse is what the public (or external 'bystander' audience, that is any constituency that needs to be mobilised) will hear. The discourse of a 'practice' community, will, in contrast, focus on the artifact, the difficulties of implementation, and on ways of working around infeasible features, and of informal education in these processes for newcomers to a workplace. This process well analyzed in studies of 'articulation' or 'invisible' work (Suchman, 1996; Suchman et al., 1999). The audience for this discourse is internal, though containment may be leaky, when, for instance, apologetic 'officers' share details of the 'work-around' with clients.

The ecology of communities of interest is partly shaped by social network factors. There are, for example, a few very strong players who have links to most of the networks in the relevant field. This elitism is manifest in the small and oligopolistic market that has developed for e-government service implementation, where repeated contracts are awarded to large corporate developers whose previous contracts have not been delivered either to budget, nor on time or to a

[2] Wuthnow (1989) explores the links between discourse and ideology in depth.

performance standard that satisfies agreed criteria.[3] The 'winning' discourse among competing rhetorics of interest will draw its strength by association with proven players, who can offer 'integrated off-the-shelf solutions' in the form of implementation plus training and economies of scale that undercut the costs of those involved in detailed local user requirement analysis.[4]

The Rapid Response Team

The case that is reported here is not untypical of many ICT initiatives in UK municipalities where a local council seeks to embrace the 'modernising' of it's own activities through the utilisation of, in this instance mobile, ICTs. The Council in this case (a Scottish municipality) aims to have "30% of peripatetic staff … mobile working by 2005" (Council, 2004). Whilst this broad aim was '*at the back of the mind*'[i] of some senior staff with an interest in ICT utilisation, it was the unforeseen availability of £200,000 that prompted the decision to introduce mobile ICTs into several areas of work. (This is an example of the opportunism that sometimes consolidates collective framing). Negotiations with the council's outsourcing partner (one of the 'big' consulting firms that constitute a monopolistic elite in UK e-government contract work), with whom the council have a ten year partnership agreement for provision of ICT services, led to the identification of both technologies and services that could be introduced. Discussions within the council identified the areas of council work to which the new ICTs could best be applied. One of the areas identified was a social services rapid response team.

The Rapid Response team is a small unit of six people who normally operate in pairs, that is responsible for community care, working with clients, often at short notice, with a view to providing support services, and equipment, that will allow the client to remain living within the community (as opposed to moving into a hospital, or other form of institutional care facility. In spring 2004 we were invited to undertake a quick and dirty evaluation of a pilot 'mobilisation' project, which ended at the beginning of 2005. Team members were issued with notebook and tablet PCs, and given access to a (limited) number of information services, and canvassed for their opinions.

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[3] Under European Union procurement rules, past performance cannot be considered when awarding public sector contracts.

[4] User requirements analysis is an atavistic presence, however, in most of the approved methodologies for e-government systems development and design (it is, for example, a staple component of project management protocols in UK public sector (Prince) and EC 5th and 6th Framework projects).

The communication facilities worked well, allowing the team to communicate, while out working with clients, with other departments in the council as well as with other public agencies with whom they were required to share data. Less successful was the client database, on a CD-ROM, which was never updated during the pilot. As a consequence, this data fairly quickly became of little use. The staff were disappointed that they had not been consulted before being given the technology. The team did find that they were able to spend much more time out working with clients, although some of the main services they required were not made available on the mobile PCs. After the six month pilot study, an evaluation was undertaken by the outsource partner, and published (internally only) as a collaborative effort between the council and the outsource service partner. The criteria in the evaluation were restricted (a typical manoeuvre in the discourse of justification in computerization movements), having been defined by the outsource partner, and evaluation focussed upon the Return on Investment. The outcome of this evaluation was the calculation of a time saving of 10.4%, and a net 'productivity saving' of £2280 per worker per annum. This evaluation document demonstrated a 'successful' pilot project, with a demonstrable financial benefit. The document has been circulated within the council, and now form an important part of the discussion between the council and the outsource supplier as they endeavour to roll out mobile technologies, and integration of information services across groups within the council.

From our brief evaluation, the a number of areas were highlighted, and discussed with senior management within the Council, who were responsible for instigating the project as well as for authorising subsequent development. The first of these was technology. There were significant differences in the experiences with the technologies used (from Compaq, Toshiba, and Acer). The functionality provided (before the service was 'turned off' by the outsource service provider) was seen as very helpful. However, it was interesting to note that perceptions of reliability and battery life were a key factor in determining whether a technology was used in-situ with clients. The Rapid Response Team members would not take the chance of a technology failure impairing the interaction between themselves and their clients.

Problems were identified with the information services. The issue here was the importance of access to both key information (e.g. client file, stores), as well as to communication services (e.g. email, fax) for mobile working to be feasible. The Client file was central to the Team's role, yet because it was uploaded only once at the start of the pilot study it was redundant within days.

Effective, and timely communication was paramount to the Rapid Response Team's role, and the Fax facility was heavily used to contact NHS care providers. The email service was problematic, and hence little used, primarily because the main form that the Rapid Response Team had to use to record Client information (and that formed the basis of inter-agency liaison - the ABC form) would not email, for reasons unknown. For the future, the provision of all required forms in a format amenable to electronic completion, sharing, and dissemination was viewed as essential. Similarly, there were certain core services that the Rapid Response Team relied upon, such as stores, which they could not access electronically. The perception of those involved was that the basis of the role (mobile or otherwise) was one reliant upon access to certain information services, and access to effective (and varied – email and fax) forms of communication. Team members commented that it was not possible to utilise electronic versions of the forms that they had to complete and share with other agencies, noting that it was *"a shame that no-one had ever thought about using the forms electronically or delivering them electronically when they were designed … which seems crazy"*. This reflected a general disquiet about the consultation that had taken place, with Team members commenting for example, *"They did it back to front … it would have been nice if they'd asked us what we needed, but instead they imposed it on us. Other forms would have been more useful"*, and *"We weren't consulted at the start as to what we wanted on it … having the link to stores would have been really useful"* Mobile working required that all of these facilities (and in particular, accurate data) be available electronically. The views of team members had not been sought in defining which information services and modes of communication were required.

Inadequate infrastructure was also identified as an issue. Contrary to comments made in an existing evaluation of the pilot project (Evaluation Paper, issue 1.0, pg.51), there was a perception that the technology was indeed "a solution thrown over the wall". This was reinforced by perceived lack of consultation about process, as well as about technology requirements. Lack of training in the early stages meant that technology functions, as well as confidence in use, were not maximised.

A further significant problem with the pilot project was the lack of attention to work practices. The ability to utilise the mobile technologies with the client in-situ, was viewed as providing a speedier, and thus enhanced level of service (i.e. enabling more people to be independent in the community). The mobile technology enabled some remote working (i.e. undertaking a task from a 'remote' location) – but mobile working much less so (i.e. being able to work without having to

return to an office/base). Ultimately, the Rapid Response Team's activities remained unaffected by the introduction of the mobile technology. While access to the mobile technologies meant that the Team members felt able to meet up with their own team, and other team members while out of the office (e.g. a client's home to complete an ABC form), apparently this did not affect significantly the time they spent in/away from the office. Rapid Response Team members spent 50% of their time on Rapid Response duties, and the other 50% 'picking up cases' within the office. With Rapid Response Team duties seen as extremely arduous, it meant that team members could foresee only spending limited amounts of time working away from the office anyway – irrespective of technology availability. So far as those involved were concerned, a key service performance measure was how long it took to get a client the equipment/care required to keep them 'independent' (13 days at the time of this study). None of the documentation seen to date that has sought to assess the pilot study makes any reference to such service performance evaluation criteria. Furthermore, it did not attempt to evaluate the qualitative aspects of the project, such as the reported (by the team) improvement in the service to clients. Nor were aspects of the electronic information exchange considered, because whilst in some aspects this was valuable, for example in exchanging data with the National Health Service through faxes, in others it was less so – for example in completing online report forms for sharing with other agencies, and in ordering resources to support clients.

Historically, the social work team has worked from a local council office, where cases are picked up and discussed, where expert judgment is exercised, and where much of the coordination of services from different agencies is arranged. Work in the office is imbricated with home visits, where initial assessment happens to be discussed with colleagues back at the office before a plan of action is agreed. Traditionally, one might say, a response is 'configured' in the office after a more or less lengthy series of moves and deliberations. The response team are qualified professionals, and office meetings are also occasions for exchanging and updating knowledge, alerting colleagues to new developments, and discussing client circumstances 'off the record'. The mobile initiative will diminish information exchange in the team, as it is intended to shift this part of the process to the client's home, where an individual client and one, or two individual team members can configure what is required on the spot, in a process of in situ consultation and coordination. The configuration that is agreed will be entered on the relevant form, and activates a series of data transactions – the configuration is compiled, the relevant resources are coordinated and a response is composed that indicates what will arrive when. While this may

'augment' service for an individual client, as they may be given material support sooner by means of the digital service than in the traditional service, we suggest that service across a group of clients may be diminished.

Discussion

We suggest that an important question that is rarely asked in the context of modernisation and visions of virtual services is 'where and when does a response get made'. Such issues of material realisation underlie the effective exploration of agency. Those who commission and design virtual services, (for example, senior service managers) will respond: 'by means of an integrated transaction process that is mostly handled within an IS'. This fits well with the technology action frame that drives prevailing policy in the municipality, a response, as we imply above, to a mandatory UK 'modernising government' initiative (Cabinet Office, 1999), which has introduced the concept of the 'managed citizen' into council thinking. The management of citizens is achieved by means of process modelling that combines representation of services and representation of individual profiles. There is little room in this componential model to apply the collaborative knowledge of grounded professionals (the output of rapid response team consultations in the office), as it is premised on the satisfaction of profiled consumer 'needs' The TAF frame takes little account of the micro-geography, of expert social care work, as the 'workers' are modelled as ancillaries, whose location when they input, retrieve or report is of little interest.

If the question is asked of the frontline social care workers, the response comes from a different frame, one that is based on notions of solidarity and shared practice. From this perspective, the response emerges over time (one might compare the process and human versions of rapid response with 'fast' and 'slow' food), and happens in multiple locations where people interact. It is supported by a number of activities and events, more or less computerised (some data is entered into databases, some is held in notebooks and folders of case notes) and more or less mediated (by e-mail, telephone). The office is the primary site for picking up cases, and checking on their progress, and eliciting help from colleagues when cases get out of hand. Places in the sense of 'articulated moments in networks of social relations and understandings' (Massey, 1993) are thus important in rapid response teamwork, as the 'response' is a socio-technical interaction, not merely a computerised transaction. Individuals within teams work on several rapid response

cases at once, though at any given time the trajectories of the multiple responses that make up a caseload will look different. Places as locations are profoundly important to these frontline professional service workers. However, the 'process imperative' that characterises modernising government initiatives across the UK is closely coupled with visions of the elision of space: it is quite literally 'utopian'. The mobilisation project is not exempt, as the city council intends to make savings on real estate by closing some local social services offices. The rapid response teams will become migrant or nomadic workers who must find space where they can, and who will operate as dispatchers rather than flexible specialists. Since the council construes the process of response as a one-stop interaction between two individuals (and it suits them to do so) it believes that this can be done in the client's home by means of a laptop, or possibly a PDA. Rapid response team members will thus find themselves lost for social space, and must meet in cafes, public libraries, or each other's cars. It is perhaps fitting that these displaced professionals should operate in the classic 'non-spaces' (Auge, 1995) of the twentieth century; malls, cafes, car parks, where memory has no purchase and transience is the prevailing experience.

Conclusion

We have briefly presented the positions of two of the agents involved in the case study (senior managers and social care workers in the form of the rapid response team and the council information services directorate), as these were the focus of our pilot. The 'mobilization' of the rapid response team implicates a larger group of players; the council social services IT department; the social services directorate; the council leaders; the national health service (including: hospital trust managers; hospital trust IT departments; general practitioners); the outsource partner; the government (through policy initiatives); the providers of prostheses and other material aids to the housebound. It was interesting within the official pilot evaluation to note that no mention was made of the outcomes for the citizen, as the service recipient. The changes mooted by the council, and piloted with the rapid response social services area of provision, require us, it seems, to attend both to issues of technology, agency, and interaction, and also to the locale and the moment. This may be interpreted as an action net (Czarniawska, 2004; and see Kling and Scacchi, 1982), a virtual and material continuum that is the fabric of service in computerized municipalities. Service is not primarily in virtual mode or material, but happens between and across texts in both – in what some analysts have described as the 'interspace' (Crabtree, 2000). We may therefore, tentatively, begin to ask whether more penetrating questions should be asked by those commissioning (and those investigating) service projects in digital cities

– not 'How can we integrate service provision and save money and time?' but, 'Where and when does service happen? In whose interest? Who benefits, and how? Who loses, and how?' The degree to which questions such as these are posed, and indeed the extent to which there are opportunities for asking such questions, are important for the development of services in digital cities – that is, if we care to see the ideologies of powerful elites, such as those highlighted in this brief case, subjected to, and informed by, scrutiny.

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[i] Interview with an informant