1. Towards a Critical Theory of Telecentres: In the Context of Community Informatics

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Globalisation and particularly 'globalising' enterprises such as Wal-Mart are driven by their Information and Communication Technology (ICT) infrastructures. The underlying technology processes and infrastructures create the possibility for highly efficient and continuously expanding global enterprises which allow for both centralised control and dispersed, localised decision making. The notion is presented that Telecentres represent a different and community-based approach to the implementation and development of ICTs. By adopting a Community Informatics approach telecentre developments have the opportunity to enable local development processes and facilitate the empowerment of local communities. These developments may in turn provide the means through which local communities are able to resist integration and subordination into globalising and centralising ICT and commercial networks.

Introduction: Globalisation and ICT*

As we drive forward into the 'information society' the overwhelming force of globalisation, not simply as a metaphor but as a defining condition of the dominant structures of the emerging economy, becomes increasingly evident. *Globalisation* in this context means the creation of centrally coordinated, globally distributed networks of producers and consumers, supply chains, and distribution networks. Necessarily and crucially these processes in their late 20th and early 21st century manifestations are enabled and empowered by Information and Communication Technologies (ICTs).[1] The very rapid rise to national and increasingly

* In several places in the following, parallel arguments can be found in Gurstein (2007).

1 'Globalisation' as a term has no standard and universally agreed upon definition. Rather, it can be understood to occupy a general conceptual space and is adapted to particular circumstances as required. A fairly typical definition as applied within the context of Information Systems would be the following: "globalisation of business refers to a qualitative departure from traditional approaches to doing business internationally. An important distinction is the size of the new business entities. Another, and significantly more interesting aspect, is the attempt to set up such entities in various countries functioning as single, 'seamless' business operations. For example, while a corporation's market in the international trade is usually considered to be composed of many, country-defined markets, in the globalised approach it is defined as one, huge globe-encompassing mammoth. Closely related to this notion is the global business corporation's approach to management of business operations in various countries, as elements of a unified system, regardless of the location and the national boundaries. A significant implication of this approach is the expected ease of transfer of goods, services, capital and labor across the globe, unencumbered by excessive local and national regulations" (Mahdavi 2002). A further and more Information Systems (and less 'academic') definition would be the following: "We define globalisation as the responsible development of a geographically balanced network of business units that are fully integrated within both our worldwide business structure and within the local societies in which they operate" (STMicroelectronics 2001).

global dominance of a select number of massively electronically enabled corporations, of which the most visible (and successful) is Wal-Mart (in the retail sector), is the defining example of these processes.

In this context, Wal-Mart is less a company than it is an electronic infrastructure for managing the flow of goods from producers in low-cost countries to consumers in higher-cost countries while extracting profit from the 'arbitrage' between the two sides of the transaction.[2] A defining characteristic of Wal-Mart (and its like) is the efficiency, scope, and depth of its ICT infrastructure and the continuous internal drive to enhance these efficiencies. By creating a relatively seamless supply chain internally and a low overhead relationship linking producers and consumers, it has mastered the central elements of a consumer economy.[3]

Information Systems and Globalisation

One characteristic of Wal-Mart and all of the companies linked into its webs of alliances, suppliers, and sub-suppliers, as well as the companies whose own drives for globalisation emulate or parallel that of Wal-Mart, is the very high degree of centralisation and centralised control which they exert even throughout what are highly dispersed operations.[4] It is this globally integrated reach and control that is characteristic of the modern age and of the role of ICTs in the current globalising economies.[5]

Wal-Mart notably as well is not only a 'globalised' enterprise; it is also 'globalising' in that it is working towards continuous global expansion and including integration of its globally dispersed components into its unified and integrated ICT and other operational systems. This includes the drive to create ever more efficient structures for information flow and information management along its supply and sales chains and of course towards an ever

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2 The technical and management literature on Wal-Mart's supply chain is large and of course extremely laudatory. An interesting example is from Beatty's (1997) piece, which examines what the US Army can learn from Wal-Mart's logistics. The significance of these global supply chains, and specifically Wal-Mart, in the area of Management Information Systems (MIS) cannot be over-emphasised, to the point where a colleague in private conversation suggested that all MIS research now was in one form or another concerned with the management and deployment of the Wal-Mart infrastructure! (siliconfareast.com).

3 There is a very large technical and commercial literature on Supply Chain Management. A useful and accessible introduction can be found at on Wikipedia (2008).

4 This 'control' takes the form of either contracting or not contracting — i.e. either a company conforms to the technical requirements and standards of Wal-Mart or it doesn't do business with Wal-Mart, and given the massive significance of Wal-Mart as a purchaser, this means that conformity is not voluntary but a compulsory aspect of staying in business (Colin Henderson, Internet Changes Everything blog, comment posted 8 September 2003).

5 Much of the conceptual approach concerning the role and operations of Wal-Mart and other electronically enabled enterprises comes from the very useful introduction to e-Business volume by Kalakota and Robinson (2002), although of course, their conclusions following from their analyses are quite different.

smoother integration of the two.[6] Thus not only is the reach of Wal-Mart global and massive, but there is an internal logic of cancer-like growth, and the incorporation of ever larger swaths of retail distribution (because of its highly competitive supply chain driven prices for the consumer) and consumer goods production (because of the size of the markets within which it is the dominant player). Equally, its dominant role in its marketplace allows it to continuously force down its purchasing costs, which in turn allows for reductions in prices to consumers, further fueling increases in market share, and thus closing and continuously driving and tightening the circle.

The very fact of this integration coupled with the intensive centralisation and overwhelming drive to expansion has meant not only that Wal-Mart has integrated its suppliers into its 'value chain', but in addition, it has put significant pressure on its suppliers to integrate *their* suppliers into their value chains as well, similarly using Wal-Mart's designated electronic platform and integrated information systems. The overall effect of this is that a very significant and increasing component of the overall US economy and elements of the global economy are becoming integrated into a single, ever increasing, technologically driven and efficiency seeking electronic infrastructure, including internal processes of cost-reduction and profit maximisation all cascading into the Wal-Mart retail behemoth.[7] Parallel, although not as extensive, electronically enabled supply chains can be found in other industrial segments and particularly the automotive and electronic industries. As well, the banking and financial industries are of their very essence more or less pure electronic infrastructures, lacking as they do of course, a material supply chain as a physical counterpart.

Not surprisingly, these technology drivers at the core of contemporary advanced economies have their organisational, management, and 'human resource' counterparts. At the organisational level, the decision making structures – primarily concerning technology and financial issues – that emerge, as we have already noted, are highly centralised. Contrary to traditional 'industrial' production processes, however, the actual physical (production and distribution) components of the system can be, and are, globally dispersed and decentralised, with the centre maintaining a role as coordinator and standard setter. In practice, this coordination is done less through specific direction and more through the establishment of targets or standards (production, cost, and quality). Local or dispersed 'nodes' are then

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[6] The integration of the sales 'chain' with the supply chain is probably Wal-Mart's most significant single retail innovation. Developing the capacity to directly link sales with supply has allowed it to achieve massive efficiencies by effectively eliminating the need for inventory and warehousing. The 'joke' in the industry is as follows: Q. Where are Wal-Mart's warehouses? A. The US Interstate Highway System. This of course is no 'joke', as Wal-Mart tries to keep much of its inventory on the road in trucks to maintain low costs and flexibility. This is the ultimate in just-in-time delivery, with Wal-Mart keeping only 24 to 36 hours of inventory on its store shelves. Three to four days of inventory are in constant motion on the US Interstate Highway System, moving directly from manufacturers or wholesalers to Wal-Mart stores while Wal-Mart itself avoids the real estate, labour, and carrying costs of maintaining this in warehouses. Many however, are now doubting the viability of this model given the rapidly escalating energy costs of Wal-Marts' 'warehouses on wheels'.

[7] According to widely circulated calculations in 2002, Wal-Mart sales represented some 2.1 percent of the entire US Gross National Product (Bergdahl 2004, 5).

responsible for achieving the centrally established targets or responding to the external standards in ways that are reflective of and responsive to local conditions, opportunities, and resources.

Viewed from this perspective, the technology infrastructure operates more as an 'enabling' than as a 'control' environment, i.e. it enables those at the local or dispersed levels to execute their own responsibilities in the most efficient and effective manner taking into consideration local conditions. At the same time they are ensuring that their actions are consistent with the requirements and standards (including both quality and profitability) established at the centre. This means in practice that local 'nodes' – suppliers, producers, retail outlets – have considerable autonomy in how they achieve their results as long as the results *are* achieved. Equally, the core of employee relationships and of work activities is not necessarily externally coordinated or framed in an aggregated fashion (in contrast of course, to traditional assembly line production where all production staff are treated as a 'mass' and subject equally to external coordination, i.e. management) (Wal-Mart's Position on Unions). This eliminates, and not accidentally or incidentally, the basis for earlier processes of, and drivers for, worker organisation and unionisation.

In this latter case, the central direction is towards support for a process of individuation or particularisation of employee management and of the relationship of the employee to the employer. The 'employees' in these enterprises are not 'workers' (in Marx's sense) or even employees; rather they are 'Associates' (Public Broadcasting Corporation). In this way, at least nominally, the illusion (and to some degree the reality) is presented of employee autonomy within the larger coordinated framework. In the current iteration of course, the overall coordination is administered within an increasingly technological framework (rather than, for example, through direct oversight).[8] In the current formulation, each employee/ 'Associate' has her separate 'Associate's' contract (and output quotas) with the employer maintaining the right to monitor against these quotas (technology giving the employer increased opportunity for such individualised monitoring) rather than, for example, the more traditional collective output requirements leading inevitably to collective labour agreements (Castells 1997).

So what has all of this to do with Telecentres…

An Introduction to Telecentres

Networked communities may take either of two forms. They may be communities that only exist in and through the electronic networks which enable them, or they may be physical communities that are enabled both internally and in their relationship with the outside world with ICTs. In the latter case, among the most common manner in which these 'networked communities' are realised is in the form of Telecentres.

[8] This coordination is done through continuous monitoring of employee behaviour and particularly through the monitoring of employee outputs against norms (Kalikota and Robinson 2002), concerning this type of employee 'management' as being the characteristic form for electronically enabled business.

In the first instance, these communities may also be known as 'virtual' or 'electronic' communities, indicating their origins in the act of networking and of inter-individual communication as between peers. In many cases these communities reflect a deliberate, though frequently resisted (by the owners and managers of these networks), re-purposing of top-down centrally driven e-networks where individuals as end users/participants in these networks begin to bypass the central authority and enter into direct peer-to-peer communication (as for example in the creation of hacker communities or the communities through which open source software has been developed).

Centrally driven networks are almost universally structured (by their implementers) so as to preclude the possibility of peer-to-peer connections, recognising that this type of 'organising' would be of little advantage to themselves and could potentially present threats.[9] Equally of course, this attempt at retention of control at the end user/producer level has created the phenomenon of virtual communities as communities of resistance and of self-organised, self-managed independent production.[10]

In the second case, physical communities are enabled in a variety of ways and for a variety of purposes through the use of ICTs. In these instances, the 'community' as on-going peer-to-peer connections may exist over a long period of time. However, the application or introduction of ICTs as supportive of these processes (as for example through Telecentres) and particularly as supportive of the various outcome-oriented activities of these communities may be relatively new.[11]

Further, as the use of ICTs to support electronically enabled communities becomes commonplace and as experience in enabling physical communities with ICTs is acquired, there is emerging a convergence or an overlap between these. Thus, for example, electronically enabled communities begin to seek out ways of becoming linked more directly into physical interactions and physical processes, and where ICT-enabled physical communities begin to enhance and extend their activities and reach by incorporating elements of virtual relationships as aspects of the on-going physical and face-to-face relationships (e.g. the networking of Telecentres for collaborative development, purchasing, transaction management, and so on).[12]

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9 A number of companies in the DotCom boom and period immediately after created on-line forums giving customers the opportunity to present feedback to the company and with the intention of creating 'communities' around the various products or brands, as is promoted by Hagel and Armstrong in their very influential book, Net Gain: Expanding Business Through Virtual Community (Hagel and Armstrong 1997). Most of these were quickly shut down when the customers began to interact with each other to form groups of customers, many of which were directly critical of individual company offerings. A number of these eventually re-emerged in the 'xxxsucks.com' phenomenon as in http://www.mycarsucks.com/ for example.

10 See the range of independent electronically enabled networks in information intensive areas such areas as news and information (Indymedia), software development (open source and Linux), and publishing (open access) among others.

11 These processes have been quite well examined in Gurstein (2000), and also the variety of articles in the Journal of Community Informatics at http://ci-journal.net.

12 A very interesting and emerging example of this can be found in the iMalls proposal to use local Telecentres, particularly in rural Latin America, as focal points for managing local e-commerce transactions and distribution (iMallsGlobal).

Telecentres and Globalisation

Whether consciously or not, Telecentres[13] have come to be placed in the midst of processes of networked globalisation and the concentrations of control, power, and wealth that they represent. On the one hand Telecentres can be seen as making available to large segments of the population bottom-up opportunities for 21st century employment and wealth creation, innovation, and entrepreneurship. On the other hand they can be seen as ways of extending into ever broader and more remote areas the totalising networks of consumption and the integration into the centralised networks of control, which the Wal-Mart phenomenon so strikingly exemplifies.

However, and for the most part, Telecentres as they are currently introduced are not perceived as either of these. Rather, they are seen as one tool among others in the larger processes of externally supported (and induced) economic and social development. That is they may simply be the newest tool being provided to communities in support of broader strategies of 'development' and of the ongoing attempts to find means for improving the opportunities of those who, for whatever reason, have been identified as the targets and presumed beneficiaries of development interventions.

Most of the academic or research work concerned with Telecentres has been either of a descriptive nature or linked more or less directly to one or another phase of the project cycle (primarily monitoring, evaluation, or impact/outcome assessment). The result has been a somewhat useful collection of case studies and occasional compilations or attempts at syntheses of empirical results, themselves focused on 'lessons learned', 'good' or 'best practices', planning recommendations, and so on.[14]

In this paper, rather than attempting to synthesise the rather vast amount of (often repetitious) case study material I will attempt to pose a set of questions or propositions, which might situate our understanding and broader questions concerning Telecentres into a larger theoretical context, and specifically into those considerations presented by the notions of globalisation introduced in the first section of this paper.

Understanding Telecentres

What is the nature of Telecentres? The Telecentre experience? The longer term significance and impact that Telecentres will have in their local communities and beyond? What are the linkages among Telecentres? Are they in fact externally created points of technology and Internet access within communities or are they part of the process within communities of

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13 Telecentres includes here the range of community-based technology initiatives, and particularly Internet access sites, which go by a variety of names including Community Access sites, Community Multimedia Centres, Telecottages, and others.

14 Google Scholar lists some 3000 'Recent Articles' under the rubric of Telecentre/Telecenter. One useful place to start might be the Special Telecentre issue of the Journal of Community Informatics (2006).

self-definition (through the use of technology) – of emergence, of self-organisation, and potentially of *resistance*?

Central to responding to these questions is the existence or not of a 'dialectical' relationship between the self-organised and locally controlled Telecentre as an expression of community capacity on the one hand, and the extension into the community of telecommunications infrastructures and the creation of Telecentres with their imposition of enforced dependency on outsiders for expertise, training, maintenance, and support on the other. Fundamental to this is the externally structured means by which Internet 'access' is provided into the community, where such access may simply be 'access as passive consumption', i.e. a technological linkage, or whether it represents the creation of a conduit from the local into the centrally controlled network, through which the local can find its voice and other forms of ICT-enabled empowerment. The degree to which the control is local and the Telecentre is a place of production and not simply consumption, of *(effective) use* (Gurstein 2003) and not simply *access,* is the degree to which the Telecentre can be said to be the basis for local 'development' rather than simply the continued extension of the globalising network and the incorporation of more and more of the *local* into the totalising *global.*

The current 'development' approach to Telecentres is that of *top-down push* from the centre; that is, those at the centre with resources determine that there is a requirement (or an opportunity) for introducing ICTs or Internet access into a community with the effect of linking that community into broader external organisational, technology, service delivery, and other systems as determined by the sponsoring agency. The notion is clearly one of providing communities with the means to 'access' the information (or services). Not incidentally, this approach has the effect of ensuring that the end Telecentre user is in this way ascribing to and even affirming the existing structures of power and control which underlie the funding but also underlie the service which is being provided.

The result is that Telecentres for the most part reproduce, in the social structuring of the Internet or ICT access, the ways in which access to any other good or service is structured as it enters into the community. By and large those who already *have* get more, and those with *less* get less based on existing discriminatory structures of education, age, income, gender, and so on. Notably as well, interaction around externally accessed information or services is largely one way, from the outside in.

There is nothing too surprising about this; however, suppose we start from a different perspective, which is not that the Telecentre is the place for passive 'access' to information and services generated elsewhere and as it were 'pumped down the pipe' into the community. That is, suppose that we start from the perspective (and notably one which is quite common among those fully immersed in technology development) that access (including local access) is perhaps most importantly the basis for being a *producer* in the information society. This approach is based on a recognition that the resources being processed are in large part information (or information intensive) goods and services, and the tools being used to forge and process these information goods and information services are in fact Information Technologies. It follows then that through interactive networks it is as technically

simple to produce and distribute information goods and services through Telecentres as it is to use them to consume information goods and services produced elsewhere.

Moreover, increasingly information goods and services are content related, linked to the capacity to create text, image, or sound contents of interest and value to others. The vast and even explosive development of 'You'- (as in Time Magazine's Person of the Year in 2006) based (user generated) goods and services – i.e. those produced not just by those with specialised technical skill but those with a message to express and distribute, a local voice to articulate, or local knowledge to apply and present for broader use – suggests one possible direction in which this may evolve.

This possible shift from centrally developed information goods and services to networked or community-based goods and services is also a process (both a cause and an effect) of very widely distributing the means (tools) for production in an information society. This shift from *access* and *consumption* to *use* and *production* is also in large measure an element in what appears to be an ongoing but by no means unchallenged transfer of power and control from central knowledge agencies to dispersed knowledge (and content) producers. The resistance of the medical profession to use ICTs to support localised medical services as for example through self-ministering or nurse practitioners; the covert reluctance of the educational establishments to creating means for structured self-learning and self-education via Internet access; and perhaps most important, the clear reluctance of governments to shift from the use of the Internet to deliver government services to using the Internet to more broadly include citizens in the act and process of governance; all attest to the degree to which centralised structures of power and control are unwilling to follow the technology affordances down the path of decentralisation, power dispersal, and local empowerment.

The challenge arising from the empirical examination of Telecentres is that so few of them in fact can be approached as (actual or potential) centres of local production, probably due to the fact that most Telecentres are externally funded and thus externally designed and developed. Perhaps inevitably, the specific uses and information and service applications of most are concerned with *access* rather than *use* – *consumption* rather than *production*.[15]

Telecentres and the Characteristics of Networked Communities

Community-enabling Telecentres, as with 'networked communities', have a variety of 'essential' characteristics which differentiate them from other centrally determined networks and networked individuals. In this context, telecentres may act as the hinge linking ICT networks to communities, which may be self-managing, self-directive, and self-propagating and where the ICTs may have the further effect of enabling and empowering with respect to information intensive activities.

[15] In fact, it is quite possible that those who are using the Telecentres (or locally using ICTs) for 'production' may be using them for what might be considered 'outlaw' purposes – for generating scams, for propagating spam, for participating in multi-player games, – with the creation and management of global teams , for example, for undertaking image or sound 'piracy' and so on.

Communities are by their nature bottom-up and voluntary, with goals and processes that are collaboratively determined with the community partners. In addition, they function in an autonomous rather than a dependent manner. Networked community structures may be self-managing and Telecentres, which enable electronic access, supporting this while further facilitating a local capacity for the independent initiation of action. In this context, community Telecentres function as being the 'edge' of the various larger networks in which they are participants. As in the Internet itself, the notion is that the intelligence (and relatedly the capacity for autonomous action and independent, i.e. non-coerced, participation in the network) is found at the edges of the network. This is in contrast to coercive, top-down, centrally coordinated networks, where only the centre is capable of autonomous action while those at the edges are capable only of action within a coordinated centrally determined set of parameters, standards, and code.

Electronically enabled networked communities are 'emergent' in that they come into existence through the creation of various institutional or structural forms (such as Telecentres). These become the temporary physical manifestation of the community rather than, for example, having a formal substantive reality over time. That it is often developed in response to some external condition or circumstance (including a funding opportunity) doesn't meant that the community hasn't persisted over time. Rather it may have lain nascent until called forward into formalised existence by the external stimulus or by internal processes of, for example, 'social entrepreneurship' or self-initiated problem solving or through knowledge and service enrichment by means of the Telecentre.

This approach provides a means to understand the 'sustainability' paradox. While the formal structures of communities may or may not be 'sustainable' (Simpson 2005) over time, nevertheless the 'community' itself is sustaining. Thus it may 'spring to life', i.e. re-emerge in the form of formalised structures at a future but as yet unpredictable occasion. This suggests the obvious but frequently overlooked conclusion that 'communities' are not defined simply by their structures, but rather they are the connections which persist over time as between members of the community, with structures (including of course, Telecentres) being simply formalisations of these connections. In this context then, the creation of a Telecentre may have the effect of precipitating the *emergence* of the community (in the form of various kinds of other formalisations), with the formalised community in turn having the effect of supporting the ongoing sustainability of the Telecentre. Equally, the emergence of a community may find its formalisation (or precipitate) in the creation of a Telecentre, with the Telecentre acting so as to support the sustainability of the community (there are many examples of this in electronically enabled diaspora communities). But it should also be noted that the existence of a community within which a Telecentre is embedded does not necessarily mean that the Telecentre will be sustainable, since the processes for enabling the continued operation of a Telecentre will for the most part operate in parallel with the range of other formalisations present within a community (local governments, NGOs, small businesses, and so on).

Resistance

Ontology has to do with the nature of fundamental 'being' (Gruber), the primordial base from which other phenomena derive or which provides the basis for the continued persistence

of other phenomena or activities. In this context, the question would be what are the ontological foundations for an understanding of the current structure of action/reaction, extension (propagation), and resistance within the Telecentre domain.

Within Wellman and Hampton's (1999) model of 'networked individualism', the only ontological mover (independent agent or source of independent action/agency) is the *network* itself. The *individual* in Wellman and Hampton's formulation is simply the sum of the fragments of her participation in the various externally driven networks (of production, consumption and even socialisation) of which she is a member or with which she has contractual relations. In this world, the *network* is all and everything.

Remembering that the characteristic mode of human participation in information networks is through a necessarily fragmented participation as an individualistic networked electronic 'profile', it is not surprising that the resistance to totalisation through integration into externally driven electronic networks comes from opportunities and frameworks which enable the individual to overcome this fragmentation and to integrate her identity, and more importantly to find the means for entering into collaborative relationships with others. This process of re-integration or overcoming contractually structured and fragmented 'networked' relations in favor of organic and holistic coordinated relationships is in fact what takes place in 'communities' and is in some senses the defining characteristic of communities – where *Communities* are places where others know your 'name' and not just your 'sig' (electronic signature) and where others interact with you as an integrated person and not simply as an electronically mediated 'profile'.

Moreover, in the real world, the externally driven network is only one element of reality. In addition there are the self-initiated (self-organised) and participatory networks which inter-link individuals not on the basis of fragments of identity but on the basis of self-initiated and self-realised identities. These networks function as 'communities' through which action may be undertaken, projects realised, and reality confronted and modified.

At the local level, the question is whether Telecentres function as the electronically enabled basis for these 'communities', challenging the centrally controlled and totalising agency of externally coordinated electronic networks. Alternatively, the Telecentre may be a 'Trojan horse', providing the electronic means by which totalising externally driven networks obtain access to a local community, previously isolated and with a considerable degree of autonomy as a consequence. The result of this is the opening up of a portal through which the local community becomes integrated as consumers into national and global markets.

Thus the structure of 'resistance' to the totalising forces of technology and network-enabled capitalist accumulation as per Wal-Mart is necessarily and theoretically (as well as in practice) the discovery or rediscovery of 'community' and the realisation of organic and integrated inter-individual relationships rather than purely contractual and electronically fragmented inter-networked connections.[16]

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[16] Wellman's references to contractual or 'gemeinschaft' relationships as per Durkheim's notions as the defining characteristic of his 'networked individualism' postulate (Wellman and Hampton 1999).

It is notable that we are seeing manifestations of resistance and even coordinated resistance from community-based networks, resulting from the perceived impacts on individuals and particularly in the context of the impact that these centrally controlled networks are having on physical communities throughout the US and elsewhere. Notably, the most effective resistance to the Wal-Mart juggernaut and including competitive resistance in the marketplace has come initially from place-based communities and in general, integrated relatively small communities which have mounted active resistance to the location of a Wal-Mart store within their immediate environment.

Resistance and Ontology

An argument of this paper is that 'communities', as for example represented by Telecentres, both as physical and electronically enabled 'access points' within local communities, may (or may not) represent an additional (and structurally oppositional) ontology to the 'network' ontology as presented in the current media-supported drama of market and production globalisation. In some instances we are suggesting, Telecentres may provide a foundation or contributing element for the construction of an alternative reality – a set of organisational, economic, and social structures capable of operating autonomously in relation to the centrally controlled networks. These structures have the capacity to support opposition to and the creation of alternative structures (organisations, institutions, and enterprises) as means for resistance to the totalising processes of globalisation.

These structures are then capable of opposing and creating different structures and realities to those being imposed (and forcefully reproduced and extended) through the centralised/individualised networks and which are being realised by such corporate agents as Wal-Mart and Microsoft.

The conclusion is that 'Telecentres', as locally based, electronically enabled ICT access points for communities, may have an independent ontological status. Thus in this context they could and should be seen as potentially free-standing and foundational, as the platform or (from a conceptual perspective) the agent on the basis of which one could and should undertake technical – i.e. hardware and software, and service – design and development as the basis for autonomy and self-determination at the grassroots.

In this way, one can, for example (and this is the conceptual foundation for a 'Community Informatics'), develop information, communications, and networking systems which enable and empower communities to effect action in the world in a manner directly parallel to the use of information, communication, and networking technologies to enable and empower 'corporations' (or 'individuals') through the design and development of the variety of information intensive goods and services.

What this means in practice is that the requirements which reflect community (collaborative) characteristics can and should become an integrating assumption for hardware, software, networking, and service design. In this way community ICT use and application as based in community Telecentres would be enabled – with these processes being designed to reflect a different set of assumptions from those built into management- or corporate-oriented

information and technology systems – and capable of autonomy in relation to, and where necessary, resistance as a response to outside encroachment (Gurstein and Horan 2005).

The Policy Implications of this Approach to Telecentres

Approaching Telecentres within a perspective where the intention is not simply to achieve 'development' (at any cost) but rather to support development within a perspective of self-development and resistance to, or providing an alternative path away from, centralised and externally controlled globalisation suggests a number of policy directions with respect to Telecentre development.

Enabling the Local

A first priority in this context would be that Telecentres should be developed and in the long-term given priority through support for the locally-based and emergent rather than the external and pre-packaged. Thus one should see efforts which are supportive of local initiatives through which Telecentres may be developed or towards strengthening the local element in broader local Telecentre development partnerships.

Networking as Peer-to-Peer

For local Telecentres to be effective and to grow in their usefulness they need to be networked with organisations and other access points outside of the local, including social and organisational networking in addition to (and enabled by) electronic networking. This should be seen as enabling the development of peer-to-peer networks, i.e. networks of equals involved in collaborative development, rather than towards the simple consumption of development support from outside sources. Policies of supporting self-organised and grassroots-initiated networks and peer-to-peer relations would be indicated.

Service Provision through Enabling the Local (for Effective Use)

Outside agencies and particularly governments see Telecentres as vehicles for service delivery. However, in the digital sphere there is the open question as to whether services, as provided to the end user as a consumer of activities and products, must be managed and developed elsewhere or whether users (local communities) can be partners in the development, implementation, and delivery of these services through appropriate design strategies (as for example designing to ensure for local 'effective use').

Partnering with the Local

ICTs have the capacity to dramatically amplify and magnify local capacity for self-management and self-service. Since the development and implementation of this capacity at the local level often involves local empowerment, this is frequently the cause of conflict and competition (even 'struggle') in relation to the distribution of power and control over the deployment and direction of the service or facility. An alternative approach would be for the service provider (in most cases governments) to see local service self-management in a partnership mode, where self-development and self-management (as for example enabled

through the use of ICTs) lead to much more efficient and effective service deployment and availability. An effective stance for government is to see this approach as a potential contributor to overall policy goals and to support such developments, including, for example, through payment of fees for services provided by the Telecentre in service delivery.[17] As well as providing other benefits, this approach to service self-development and management in many cases would almost immediately provide the basis for the 'sustainability' of many community Telecentres.

Conclusion: Telecentres and the Revitalisation of Local Citizenship (Gurstein 2005)

Citizenship in the age of ICTs seems to be visibly eroding, both from the perspective of the citizen and from the perspective of the democratic system of which the citizen is meant to be a part. From the perspective of the citizen, there would appear to be ever diminishing opportunities to influence or even to participate in the central elements of democratic governance. While the individual becomes enmeshed in ever larger networks of communication and interpersonal contact[18] (and with it, senses of personal influence and efficacy), little of this is experienced in relation to the modalities, structures, and instruments of governance.

From the perspective of governments as they attempt to shift over from manual systems to electronic systems, and particularly in their relationship with their larger environment through e- systems, governments increasingly look on their primary 'stakeholders' not as *citizens* but rather as *consumers*. Thus they perceive the end users not as collaborators and co-participants in the process of developing and maintaining the institutions and structures of democratic order, but rather as consumers of the 'goods' and 'services' produced by government as a quasi-corporate entity empowered for these purposes through periodic elections.

If we see Telecentres as potential contact points for ICT-enabled self-development and self-management as above, then they equally can become focal points for self-governance and local empowerment. Thus to a degree, one can anticipate that the necessary role of the citizen in a democracy may shift in its focus, from centralised and more distant institutions to local institutions and locally enabled modalities for aggregating and exerting influence in the larger environment. A result of this process, with potentially great long term significance, is that the focus for the exertion of this influence need (and in all likelihood will) no longer be based simply on the longer standing structures of governance and inevitably on structures with fixed geographical referents. Rather one might expect (and in fact this is rapidly beginning to emerge) that the exercise of this new form of 'citizenship' will be electronically

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17 One example of this among many would be that community Telecentres provide a place for accessing government information. This service provision at the local level relieves governments of some of their obligations and the related costs of providing this information in other, and likely more expensive, ways as well as providing opportunities for making available information in much greater depth than would otherwise be possible. Governments should see this as a 'service' which Telecentres are providing to the public on behalf of government and should be compensate for the provision of this service.

18 For example, through social networking sites such as MySpace and Facebook.

mediated and thus in many parts of the world will be undertaken by means of Telecentres. As Telecentres form themselves into distance (and globe) spanning electronic peer-to-peer networks, this exercise of electronically mediated citizenship is as likely in the longer term to take a global as a national form. The result may be the development of an ICT-enabled sense of 'pan' global citizenship accessible to those even in the poorest and remotest rural regions and thus the formation of a new and grassroots-based process of globalisation, but one which responds to the needs and hopes of the multitudes.

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