Wireless Building: The Socio-Spatial Implications of Information Communications Technology in Postcolonial Societies

ITOHAN OSAYIMWESE
University of Michigan

MODERNIZATION AND THE EVOLUTION OF ACCELERATED INDUSTRIALIZATION

The process of technological development is demarcated by several specific social, economic, political, and ideological factors including the European Enlightenment, the western project of modernity, and the Industrial Revolution of the nineteenth century. These factors came together to produce a pervasive, sequential, and highly constructed process of modernization, mechanization, and industrialization that was experienced simultaneously by European societies.

Although traditionally obfuscated in historiography, colonial societies played a significant role in European modernization. In fact, imperialism or "the practice, theory, and the attitudes of a dominating metropolitan center ruling a distant territory," and colonialism ". . . which is almost always a consequence of imperialism . . . the implanting of settlements on distant territory,"[1] can be defined in the context of modernity. Beginning in the Renaissance, modernity is inextricably linked to the active construction of European identity in relation to the non-European, uncivilized, *other*. Likewise modernism and the associated development of urban-industrial capitalism[2] are embedded in the ideology of empire and its specific political and economic implications. Thus, by extension, varying levels and specific forms of industrialization occurred in colonized societies. From the imperialist point of view, these forms of industrialization were not transcendental social phenomena occurring at will in the Orient. Instead, there was a belief that industrialization came into being only through imperial benevolence. Indeed, history shows that these some particular forms of industrialization were cultural impositions that partially collapsed when the supporting structures and knowledge bases were withdrawn through decolonization. Unfortunately, decolonization did not leave a *tabula rasa* condition in its wake. Instead, decolonized societies were caught in the middle of incomplete modernist projects, which newly-independent, groomed indigenous elites reformulated as nationalist, developmental imperatives.

The capitalist metanarrative of development evolved alongside the narrative of modernity-as-Liberal Democracy and the "state-centered liberal reformism"[3] that it spawned in response to the problems of industrial urbanization. In this response, developmentalism theorized a relationship between continuous human progress, modernization, economic growth, technological innovation, moral betterment, improved public health, and so on.

The totalizing praxis of development achieved its most potent form in the era following decolonization. It was implemented through a primarily economic system, fomented by (the image of a) global society, whereby ideologically prescriptive foreign aid or *relief* packages were distributed to economically and socially needy decolonized nations. The infamous *structural adjustment programs* that required privatization, the development of industry, the reduction of government expenditure and numerous other *democratic* capitalist measures are the most touted examples of the paradigm of development.

Though largely successful as a metanarrative, development has proved to be problematic outside of its western locus. Governments find it difficult to implement the prescribed models in accordance with the countless strictures that accompany them. Although there are many factors involved in this failure, conventional critique locates the problem in the decontextualization of the praxis of development when applied to societies outside of Europe and North America.

Development contributed to partial socioeconomic success in a few publicized cases like Ghana in the 1980s, and Korea in the 1990s. In these cases, the industrialization experience differed

significantly from earlier European and North American experience. However, the reifying power of the metanarrative of modernity makes this a moot point. Regardless of the potential effects of development, the collective consciousness of modernity engenders and maintains the sometime subconscious quest for modernization within formerly colonized nations and other marginal societies. The consequent processes of industrialization are remarkably similar to those experienced through overt developmental strategies. These forms of industrialization are unique because they are dependent on the accelerated development of advanced technologies.

Advanced technologies differ from other technologies in that they are not dependent on monumental infrastructures and massive amounts of non-renewable energy resources. Contemporary *lightweight* technologies require less extensive, less massive, and less temporal infrastructures. The amounts of energy required by these technologies remain significant, but are arguably less than the requirements of early industrial technologies. Advances in component production, where mass production of separate components is dispersed over the global industrial network and assembly is only the final phase in a series of spatially and temporally disrupted processes, make the new technologies highly attractive to less industrialized societies. Through the paradoxical nature of globalization, the same forces that create these technologies in advanced industrial societies (including, but not limited to the availability of cheap labor and the existence of foreign markets), make them relatively accessible to other societies.

This form of industrialization – accelerated industrialization, is radically different from previous forms in its characteristic speed (the time period between conception, production, and delivery of goods and services using these technologies) and evolutionary non-linearity. Because of its non-sequential nature, accelerated industrialization is cast in a negative light. It is perceived to be less radical and less meaningful in its effect on social processes and social organization. This negative perception is implicit in cultural discourse, in global socio-political interactions, and in the persistence of west-east/south and core-periphery tropes. It overlooks the fact that accelerated industrialization is also a historically determined process that is created by and reflective of past and present conditions. In fact, this problem is built into discourse – to the extent that the very language used to describe this process, *accelerated industrialization*, participates in a self-undermining project.

ACCELERATED INDUSTRIALIZATION, RECONSTITUTION, AND RESPATIALIZATION

My main interest in this paper is the potential reconstitutive role of accelerated industrialization in post-apartheid South Africa. I would argue that analogies can be drawn between South Africa, Cuba, Bangladesh, and other societies that function on the peripheries of the global system. South Africa and Cuba share what I define, perhaps rather hyperbolically, as a post-apocalyptic condition. This condition is characterized by the recent and ongoing disintegration of anachronistic and insular nationalist ideologies (apartheid in the case of South Africa, and communism in the case of Cuba), and the subsequent reopening of real and imagined borders to the flood tides of democracy, capitalism, and their associated economic, political, social, and cultural forces. This state can be understood as merely one aspect of the general condition of postcoloniality in which these societies are embroiled. In other words, these societies exhibit characteristics that reflect "a state of being that is the combined outcome of external pressures (globalization, the post-Cold War order and so on), and locally and historically specific characteristics and struggles arising out of the (neo)colonial relationship."[4] The most critical features of postcoloniality, as described by Homi Bhabha and others, are the "multiple scales of hybridity"[5] that are inscribed in the simultaneous production of the nation-state, local identity, and other newly negotiated and disruptive positions. The rest of this paper focuses on some specific forms that these scales of hybridity may take on.

RECONSTITUTION

Postcolonial discourse critically merges a positivist approach to capitalist development and globalization that promotes social change and economic growth, with an essentially socialist critique of the negative ramifications of global industrial capitalism. In particular, it focuses on the processes through which social and economic marginalization are reproduced – whereby the haves and have-nots constructed by imperial ideology have, for the most part, evolved into the haves and have-nots of the postmodern era. Postcolonialism promotes the subversion and inversion of these processes, not necessarily through narratives of and strategies for inclusion (inclusion being the purported strategy of development), but also by means of 1) the active construction and pursuit of possibilities for subversion and inversion that are inherent in the existing system – a *recombinant* 6 approach, and 2) an alternate tactic that celebrates exclusion, develops strategies of intervention to mitigate the stifling effects of global capitalism, and produces alternate modes of survival for a postmodern world.

The concept of reconstitution grows from an awareness of these goals. Reconstitution refers to the actual processes (both existing process, and those that are projected for the future) through which the aforementioned goals are accomplished. Other terms like *reconstruction* and *restructuring* have been used to describe these processes. In my opinion, these terms are not adequately removed from the problematic metanarratives of modernity and development. Unlike these other terms, reconstitution does not attempt to delineate the specific form(s) of social change. For instance, it does not assume the necessity for

capitalist industrialization as a prerequisite for change – as change is imagined in the minds of the disadvantaged masses. However, the use of this term is not entirely unproblematic. *Reconstitution* clearly attributes a remedial nature to the process of social change in postcolonial societies – in the guise of the will to rectify some existing social malaise.

Respatialization, a related concept, takes the discussion of reconstitution one step further. This concept has its roots in the larger discourses on spatiality, which have experienced renewed cross-disciplinary interest as a result of the increasing recognition of the interconnection between the social, historical, and spatial facets of human existence. Edward Soja presents a concise explication of this phenomenon in *Postmetropolis: Critical Studies of Cities and Regions*. In Soja's view, spatiality is the "product of both human agency and environmental or contextual restructuring." It involves both process and form, especially as they relate to the production of *cityspace* and the resultant "spatial specificity of urbanism." Thus, spatiality arises from the interaction between the built environment, in all its physical manifestations; "the mappable patterns of land use, economic wealth, cultural identity, class. . . ."; as well as the "evolving, intentionally planned, and politically charged [spatial] contextualization. . . of social life in its broadest sense."[7]

If spatiality is produced and constructed through human agency, then it stands to reason that spatiality and space can be (re)produced and (re)constructed by similar means. Within this context, respatialization can be understood as the reconstitution of spatiality, which, I argue, must occur hand-in-hand with the broader project of reconstitution in postcolonial societies.

THE APARTHEID CITY

I would like to introduce the concept of the urban spatial specificity of the *apartheid city* at this juncture. South African cities present us with some of the most exacerbated expressions of the contemporary urban crisis. The critical rethinking of urban history relative to the socio-political history of the South Africa, as presented in the work of Alan Mabin and Dan Smit, Hilton Judin and Ivan Vladislavic, and others; provides an entry point into this topic.

The potential of *cityspace* as a hegemonic tool was recognized from very early in South Africa's colonial history. At the beginning of the twentieth century, a series of well-constructed ideological associations amalgamated apartheid or the ideology of *separate development* with the western modernist agenda, as a means of rationalizing and implementing a racist, theocratic, and autocratic vision of South African society. In particular, the desire to reconcile chaotic industrial urban society with a vision of continuous human progress and social order was perceived to be in tune with Afrikaaner nationalism in its most extreme form. Consequently, the ideas and methods of modernist urban planning were applied to the chaotic and rapidly growing cities of a hyper factionalized society. The most notable of these methods were the misuse of zoning in the creation of *buffer* zones or *green* urban areas that served to physically separate *races* in the fabric of city; the development of state-sponsored, inequitably allocated low income housing on the urban periphery and in the hinterland; and the creative but pejorative implementation of numerous other spatial constructs and controls. The resultant *apartheid city* facilitated the reproduction of cheap, controllable, urban labor power; generated inefficiencies in land use, industrial production, commercial development, job creation, taxation, transportation, service provision, and housing; and ultimately reproduced and continues to reproduce the inequities in the distribution of wealth and power that were inherent to the apartheid system. Thus, the apartheid city has been described as the most wasteful and dysfunctional urban system ever devised.[8]

This is the inherited condition of South African cities in the post-apartheid era. The hegemonic structures of the city are so firmly entrenched that the displacement of apartheid ideology has had a minimal effect on spatiality. This observation supports a view of spatiality that sees it as a participant in a triadic relationship with "sociality" and "historicality". In essence, the (post)apartheid city presents a singular yet banal manifestation of urban spatial specificity in a postcolonial context.

The post-apartheid city exhibits substantial differences from and commonalities with its European and North American counterparts. The postmodern metropolis, successor to the modernist industrial capitalist city, displays several identifying traits, the most striking being: 1) the expansion of the urban periphery with its characteristic blurring of urban-suburban-rural boundaries; 2) the "increasing significance of exogenous forces shaping cityspace...." characterized by simultaneous internalization and externalization; and 3) the "rise of cities without traditional traits of cityness."[9] The post-apartheid city, by nature, represents and partakes in all of these operations. Yet, there are conspicuous differences. The diagrams below present some of these differences, in simplified form, in terms of socio-spatial morphology or *metropolarity*. They indicate a pattern of apartheid urban development and form that is almost an inversion of western urban geographies. The implied spatiality of the least solvent and most historically underprivileged factions of society is of particular interest in light of the issues broached in this paper.

WIRELESS TECHNOLOGY AND THE APARTHEID CITY

The most interesting aspect of accelerated industrialization is its latent reconstitutive promise. As a society, South Africa appears to have recognized this potential. The recent history of the South African telecommunications industry provides a compel-

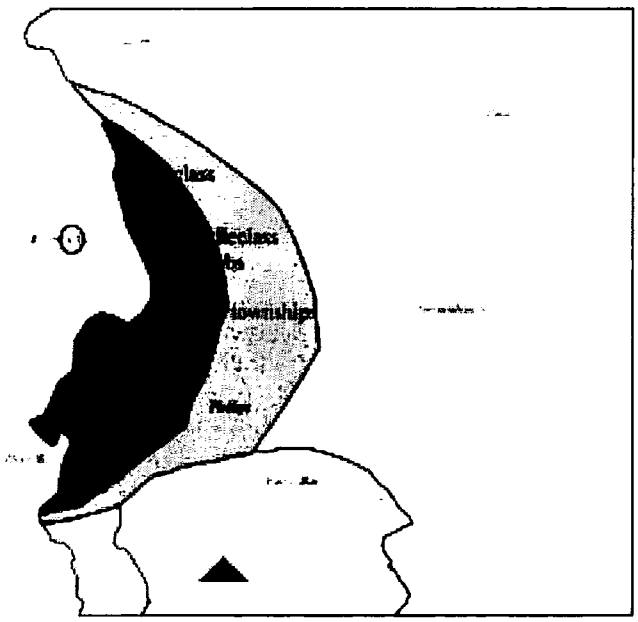

Fig. 1. Socioeconomic morphology of Cape Town, SA.

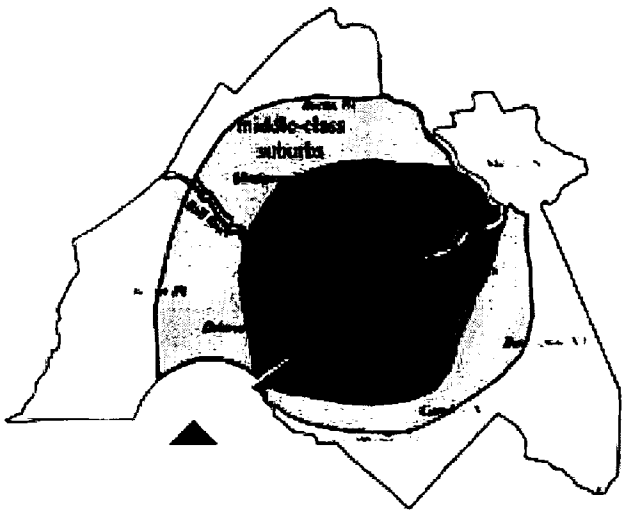

Fig. 2. Socioeconomic morphology of Philadelphia, USA.

ling case study of accelerated industrialization as a reconstitutive strategy.

Wireless communications is characterized as one of the recent *lightweight* technologies that require minimal or *soft* infrastructure. It belongs to the larger group of advanced technologies sometimes referred to as Information Communication Technologies (ICTs). Conventional discourse on the evolution and role of ICT in global capitalist society, conceptualizes it in relation to the post-industrial shift to service-based economies in which the buying, selling, and management of information have supplanted traditional capitalist production and manufacturing.

The acclaimed revolutionary nature of ICT has inspired extensive cross-disciplinary debate, and earnest consideration in most fields of praxis from the banal to the esoteric. In general, these dialectics tend to focus on the specific nature of the personal computer, the world wide web, and their role in contemporary life. This tendency is also prevalent in the spatial disciplines where the emphasis on the personal computer precipitately closes alternate discursive avenues and blinds critics and practitioners to alternate forms and effects of ICT.

Cellular telephone technology certainly ranks amongst the most influential forms of wireless technology and ICT. This argument is especially applicable to South Africa, where cellular telephone technology appears to have had a greater impact than any other form of ICT. The speedy, complex yet highly accessible development of cellular telephone technology makes it ideal for use in South Africa and other postcolonial societies.

The advent of wireless technology as a major industrial strategy in South Africa is a post-apartheid phenomenon. Privatization and the opening up of the South African economy for investment allowed accelerated industrialization to occur in the local telecommunications industry. This process was supported by the policy-making sector because of the potential for economic growth with minimum relative public investment. The government also played an important role by reformulating national telecommunications policy in the late apartheid and early post-apartheid periods. More recently, the South African government has taken measures such as the establishment of a *Universal Service*, whose principal goal is to extend telecommunications networks to disadvantaged areas.

Cellular telephones have become the personal communications device of choice for South Africans since the demise of apartheid. Global System for Mobile Communications (GSM) is an almost universal, constantly evolving platform for wireless communications. Over 10 million people are GSM subscribers in Africa. This represents approximately 1 percent of the total population of the continent. 60 percent of these subscribers are in one country-South Africa.[10] In addition, South Africa boasts one of the highest automobile accident rates in the world. 25 percent of these accidents are attributed to cellular telephone related inattention.[11] For the purpose of comparison, it was projected that there would be over 50 million cellular telephone service subscribers in the U.S in 2000 and 50 percent of automobile accidents in the country would be potentially cellular telephone related.[12]

Despite these negative associations, cellular telephones are contributing to reconstitution in South Africa. The minimal infrastructural requirements of cellular telephone technology facilitate the speedy, *remedial* distribution of services and information. The *affirmative action* program initiated by Vodacom, South Africa's largest cellular telephone service provider, is an illustrative case.

Vodacom, one of South Africa's most profitable companies, was created during the transition to democracy. When the conditions for Vodacom's license were negotiated with the fledgling government in 1993, one of the conditions required Vodacom to participate in a Joint Economic Development Program (JED) in order to contribute actively to post-apartheid reconstitution efforts. The JED required Vodacom to incorporate strategies that would "boost foreign investment, job creation, research and development, local exports, developing local value added technology, training, and forging international linkages."[13] The company surpassed its ten-year R1 billion ($100 million) commitment within three years. It has also achieved its pledge to add local value to imported technology.

Vodacom's strategy for fulfilling some of the conditions of the JED is based on a *top-down*, community development approach. The technological innovation of pre-paid wireless service is being used in innovative ways to facilitate this approach. Vodacom cooperated with two multinational telecommunications enterprises, Siemens and Psitek, to jointly develop a mobile community telephone unit known as the *Sigi* (Siemens GSM Telephone Interface) using this technology. This makes it possible for Vodacom to deploy telephone services to communities that lack basic telecommunications infrastructure. Mobile units are pre-loaded with airtime minutes and purchased at subsidized rates by local entrepreneurs, who then sell telephone time to community members. These entrepreneurs are required to locate their units in strategic locations like taxi ranks, convenience stores, cafes and other central locations in townships and other disadvantaged communities. These small, medium, and micro enterprises (SMMEs) can take the form of a *Phoneshop* containing 5-10 telephone units, or a single, self-contained (including electrical supply), mobile unit. The single unit is an alternative to the greater commitment required to operate the Phoneshop, since it requires truly minimal infrastructural provisions. Thus, the single mobile unit can be operated by an individual sitting on a strategically located street corner (see fig.5-5.5). This kind of service is minimally profitable to Vodacom and associated investors in the short-term (it represents a heretofore untapped market which is potentially profitable in the long-term), and is only viable because Vodacom subsidizes unprofitable markets with more profitable, conventional, urban markets. Today, Vodacom delivers cellular service to 3.6 million South Africans, cutting across socioeconomic, spatial, and cultural boundaries.

Several other companies are participating in this venture that challenges preconceptions of the role of corporations in industrial capitalism and the promise of private and public, nationalist, and socially motivated initiatives. MTN and Eskom, two other telecommunications companies in South Africa have agreed to collaborate to bring stable electrical and telecommunications services to rural areas. According to the agreement, Eskom will supply electricity for a community payphone system that MTN will provide.

Fig. 3. No Cellular Phones, public sign in Cape Town, SA.

Although study in this area is in its early stages and there is little statistical evidence to support definitive assertions, it is obvious that these cellular community payphones have the potential to transform the lives of residents in the disadvantaged and dislocated communities of the apartheid city by providing a mechanism for overcoming disparities in access to information, and by supporting intra-, trans-, and inter-community socio-spatial relationships. Hence, an argument can be made to the effect that cellular telephone technology is contributing to the respatialization of the post-apartheid city.

Going back to my earlier discussion of respatialization, cellular telephone technology has implications in the production of cityspace, the physical manifestations of the built environment, and patterns of land use, labor, wealth, class, and socio-cultural identity. In terms of the built environment, the physical form and spatiality of the Phoneshop provide an interesting case. Like the single mobile unit, the Phoneshop can be equipped with its own sources of electricity where no other sources are available. Architecturally, the Phoneshop takes the form of a digitally networked 6m (20 ft) steel shipping container that houses the telephones and associated equipment. It is transported to the approved location and can re-located if necessary. The ventilated container houses 5-10 telephones in separate booths, a shop counter, and storage space. The smooth lines and contained cleanliness and security of the Phoneshop

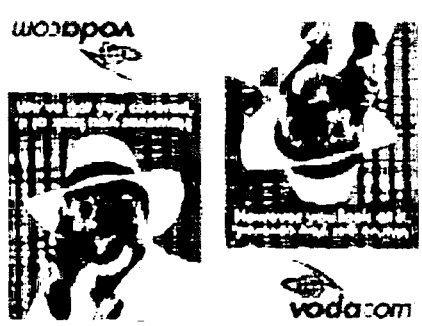

Fig. 4. Vodacom advertisement showing affirmative action spokesperson.

Fig. 5. Self-contained Vodacom mobile.

presents an oasis of progressiveness and order in a sea of apparent chaos. The visibility and mobility of this anomalous structure in the fabric of decrepit low-income housing and homegrown, makeshift dwellings that make up the average urban township, instigate the process of respatialization through exposure, education, and the creation of opportunity. What distinguishes this oasis is the fact that it is operated by a member of the community and is accessible to all. Members of the community have a vested interest in the success of the Phoneshop. Additionally, the locational importance of the Phoneshop, as alluded to in the stricture that the Phoneshop site be "visible and accessible to the general public,"[14] and in the identification of taxi ranks, convenience stores, and cafes as ideal sites and contexts, signify the recognition of the inherent spatiality and positive potential of this technological initiative. A multiplier effect has been observed in Phoneshop neighborhoods. Satellite SMMEs develop around Phoneshops, turning them into hives of entrepreneurial activity and ultimately into economic and social hubs—the new community center? Through Sigis, historically unemployed township residents can potentially participate actively in the existing albeit insufficient job market, gain access to information on schooling and government, and maintain relations with rural and emigrant relatives and friends as well as other factions of South African society. Thus, certain aspects of the informal economy are formalized and new spaces of production are created through

Fig. 5.5. Street corner signage phone unit located at street corner.

this venture. Cellular telephones in the apartheid city are creating new forms of contact, and extending and redefining the "sphere of interaction and inhabitation...."[15] To paraphrase and expand on the words of one expositor of digital technology and space, William Mitchell, traditional "spatial and temporal linkages" are "loosened", and new patterns begin to emerge.

It is very important to emphasize that this venture is not occurring in a vacuum. In "Social Empowerment through Community Networks," Alan and Michelle Shaw point out that advanced information technologies, specifically, digital communication networks and systems of data collection, storage, and analysis: are approached from the point of view of the consumption of goods and services. Information technology is rarely conceptualized in terms of production by the user. This approach severely limits the applicability of information technology for lower income communities. The Shaw's argument is applicable, albeit less so, to wireless technology. It raises the fundamental questions of relevance and accessibility of ICT for economically, politically, and socially disadvantaged groups. To describe the problem succinctly—access to ICT is a concern, but mere provision of access is not the solution. Questions of

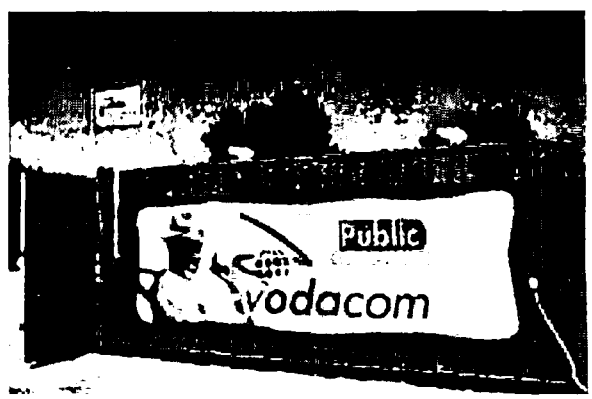

Fig. 6. Vodacom Phoneshop.

education, knowledge, motivation, and work-readiness of individuals in low-income communities are important in analyzing the potential of ICT as a socioeconomic tool.

Vodacom, MTN, and Eskom address this issue by conceptualizing and implementing the community telephone venture as a multi-faceted project. To begin with, Phoneshop operators undergo a competitive selection process. Vodacom then provides business management training and product training to the selected individuals. In a innovative move, the Graduate Business School at the University of Cape Town presented a training program to 210 Phoneshop operators in Cape Town and Gauteng in 2000. The program offered intensive training in record keeping, cash management, marketing, planning, business communication, and computer skills.[16] This collaborative initiative is representative of an attempt to move beyond the issue of ICT accessibility in order to challenge some of the fundamental structural problems that produce social inequality in this society. Additionally, Vodacom complements the community telephone venture by participating in other, more conventionally philanthropic initiatives including the construction of clinics and schools in several of the newly *connected* low-income communities.

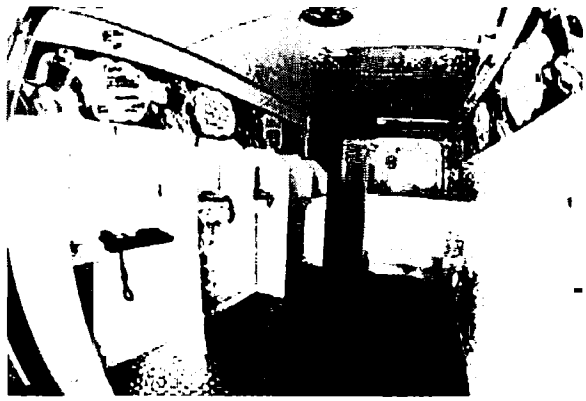

Fig. 7. Interior of Vodacom Phoneshop.

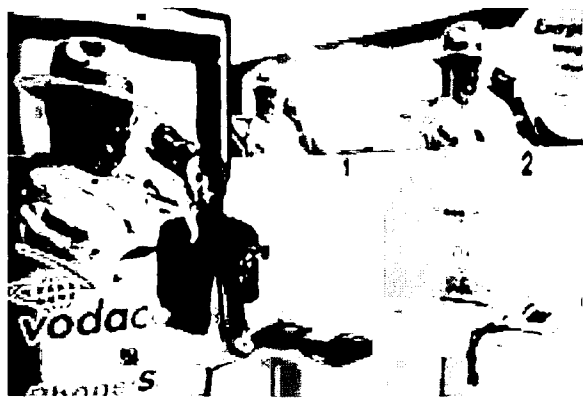

Fig. 8. Interior of Vodacom Phoneshop.

GRAMEENPHONE: ICT AND RESPATIALIZATION IN BANGLADESH

I would like to divert the geographical focus of this discussion in an attempt to draw out the postmodern specificities and shared memes of this phenomenon. The case of GrameenPhone in Bangladesh is another example of the reconstitutive use of accelerated industrialization in postcolonial society.

GrameenPhone is an initiative that ostensibly grew out of the entrepreneurial inclinations and humane visions of several individuals. These individuals developed an agreement with Grameen Bank – a *developmental* organization formed by a Bangladeshi philanthropist for the sole purpose of empowering the disadvantaged by providing *microcredit* for entrepreneurial ventures – to provide cellular telephone service in rural Bangladesh. The idea is to provide opportunities for economic growth and social change through a self-employment opportunity called the *village phone* system. The system works by selecting women, the historically disadvantaged sector of Bangladeshi society, as candidates for retailing telephone services. These women are often selected on the basis of their borrowing records with the Grameen Bank and the evaluation of previous entrepreneurial ventures. The selected women borrows the requisite sum from the bank, purchases a cellular telephone, and sells telephone services to other villagers. A pilot program proved the viability of the system such that village telephone operators, at an average of $700 per annum,[17] were able to cover their costs and make a profit.

Like its South African counterparts, Grameen Bank was able to implement this program by operating as a commercial enterprise that provides service to both highly profitable and less profitable urban and rural markets. The interesting distinction is that GrameenPhone, unlike it South African counterparts, evolved as an inversion of the conventional capitalist paradigm where a large, highly profitable corporation repays society through rare symbolic acts of philanthropy. The negligible participation of government and the local policy-making sector in Bangladesh is another interesting distinction.

In terms of respatialization, the GrameenPhone case also displays some convincingly spatialized qualities. In fact, one of the primary requirements of the village phone system is the centralized location of the phone operator's home within a particular village or locale. Likewise, existing patterns of class identity and gender are also *repolarized* and *refragmented*, as is the case when a wealthy male villager, who has recently returned from living as a migrant worker in Qatar, walks into a poor woman's home to request the use of her cellular telephone. Although Bangladesh does not display some of specificities of the South African situation, the problems of postcolonial and postmodern society are clearly at work as evinced in the high levels of poverty, crime, homelessness, and the polarities between urban and rural spatialities in Bangladesh. Respatialization is playing a role in the attempt to

ameliorate these conditions through the socio-spatial possibilities of cellular telephone technology.

CONCLUSION

In evaluating the positive potential of ICTs in postcolonial societies, it may be useful to briefly look at the issues raised by advanced technologies in post-industrial society and the postmetropolis. In Europe and North America, ICTs are raising spatial and environmental concerns. The most critical questions have to do with the need for ICT regulation, the un-inhabitability and social value of virtual space, and the aesthetic and environmental impact of cellular phone towers and other paraphernalia on the urban and suburban landscape. Other concerns include the question of whether or not ICTs are complicit with the continued disconnection of the individual from the *life of the street*. This concern is reflected in a *New Urbanist* desire to re-find lost community and recreate the *urban village* through advanced technologies. However the insufficient nature of this approach is recognized and there is some acknowledgement that ICT poses a greater philosophical problem for contemporary society. In the words of M. Christine Boyer, "Telecommunications are being orchestrated by interest-specific market niches at the expense of more generalized commentary, and their former collective nature is being further eroded by commercialization and corporate control."[18] Thus, Boyer calls for the interjection of a critical social agenda in the conceptualization and implementation of advanced technologies in advanced capitalist, post-industrial society.

Boyer's call is answered in the explicit social agenda of the postcolonial response to wireless technology, as presented in the two examples in this paper. However, my analysis of the positive potential of cellular telephone technology should not be interpreted as a blanket endorsement of the glories of the Information Age. Unless ICT can be proven to challenge, subvert and invert postcolonial spatiality, especially as it affects historically disadvantaged communities, then the long-term benefits of accelerated industrialization through ICT are questionable. Accelerated industrialization should be viewed as a multi-edged sword, which can be complicit in the "attempt to contain contested terrains and to absorb excluded parts, thus allowing the whole to reorganize without challenging its fundamental assumptions. . . "[19] This is at best a partial answer to the problems of exclusion and marginalization in the contemporary global social order.

NOTES

[1] Edward W. Said, *Culture and Imperialism* (New York: Alfred A. Knopf, 1993): 9.

[2] My use of this term reflects Edward W. Soja's definition where urban-industrial capitalism describes the link between the evolution of the urban environment and capitalist development in Europe from the sixteenth century onwards. (Soja, 2000: 71)

[3] Edward W. Soja, *Postmetropolis: Critical Studies of Cities and Regions* (Oxford, UK: Blackwell Publishers, 2000): 75.

[4] Ankie Hoogvelt, *Globalization and the Postcolonial World: The New Political Economy of Development* (Baltimore: The Johns Hopkins University Press, 2001): xvi.

[5] *ibid*, 211.

[6] Here, I am extending Soja's use of the term "recombinant" from a definition that applies to the epistemological mood that encourages the rethinking of "internalist-externalist epistemologies and related micro-macroanalytical approaches" to produce ". . . a new and different concept that selectively breaks down the original opposition and opens up another mode of inquiry . . . ", to a broader application that encompasses both theory and praxis. (Soja, 2000): 199.

[7] *ibid*, 9.

[8] Henning Rasmus, "The Dis-Location," Metropolis Now! (New York: Springer, 2000): 162.

[8] Edward W. Soja, *Postmetropolis: Critical Studies of Cities and Regions* (Oxford, UK: Blackwell Publishers, 2000): 250

[9] Anoop Khanna, *Cell Phones & Road Safety* [online]. Chennai, Chennai Interactive Business Services (P) Ltd. 1997-2002 [cited 13 April 2002]. Available from World Wide Web: (http://www.chennaionline.com/columns/safety/safety3.asp)

[10] *Regional Interest Groups – GSM Africa: Untapped Potential. . . The Work of GSM Africa* [online]. GSM Association, 1999-2002 [cited 13 April 2002]. Available from World Wide Web: (http://www.gsmworld.com/about/structure/Africa.shtml)

[11] *An Investigation of the Safety Implications of Wireless Communications in Vehicles*, [online] November 1997. [cited March 2002]. Available on World Wide Web: (http://www.nhtsa.dot.gov/people/injury/research/wirelss/nht0198.html)

[12] *History of Vodacom* [online]. Vodacom, 2001 [cited March 2002]. Available on World Wide Web: (http://www.vodacom.net/about/history.asp)

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