Reviewing universal access in South Africa

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Abstract

This article reviews the progress towards universal access to telephony and other information projects in South Africa between 1996, when the last Telecommunications Act was passed, and 2000. It draws on the results of the Telecentre 2000[1] study and the Community ICT[2] research project. The Telecentre programme of the Universal Service Agency (USA) is examined in detail, with statistics on the progress of their 65 telecentres being provided. This programme is critiqued, focusing both on the problems of the telecentres and a misunderstanding of their role in creating a model for universal access. Initiatives, such as Vodacom Phone shops and the Multi-Purpose Community Centres of the Government Communications & Information Service, are also covered to show other models for community ICT projects were possible. The statistics on universal access since 1996, showing a major increase in access to telephony, are given though this has little to do with the work of the USA.

The idea of a "Dig-it-all divide" is introduced. The challenges facing the country in this sector are very different from what they were in 1996, and the focus of the work in this area must shift from chasing numbers to finding real ways in which these technologies can support people-centred development.

Introduction

The Telecommunications Act of 1996[3] had as its first objective to "promote the universal and affordable provision of telecommunication services", with the third out of 17 objectives being to "make progress towards the universal provision of telecommunication services". So, providing access to telephony to all in the country (universal access) was a principle enshrined in the policy that led to the formation of the regulator SATRA (now renamed ICASA following its merger with the IBA) and the Universal Service Agency (USA).

The USA was a small body set up "to promote the goal of universal service; encourage, facilitate and offer guidance in respect of any scheme to provide universal access or universal service" (1996 Act, p 49). The Agency is also tasked with making recommendations to the Minister, and SATRA; and stimulating public awareness of the benefits of telecommunication service. It is instructed to conduct research and "continually survey and evaluate the extent to which universal service has been achieved". Further, it was to manage the Universal Service Fund, up to R20 million per year contributed by the telecomm operators.

The first concern of those involved in the development of the Green Paper, White Paper, Bill and finally the Act was telephony. Apartheid had left a massive inequity in telecommunications – with good levels of service for urban whites and practically no services for rural Africans. The White Paper spells out this concern

> The apartheid system left the vast majority of black South Africans, particularly in rural communities, without access to basic communications services. ... Members of historically disadvantaged communities, and particularly those in rural areas, must be the immediate targets for the delivery of universal service. The

[1] The Telecentre 2000 study was commissioned by MTN and led by Peter Benjamin and Aki Stavrou. It conducted detailed studies at 20 sites, including Vodacom phone shops, Telecentres, Multi-Purpose Community Centres and Phone Bureaux. The aim was to compare the usesand effectiveness of the different approaches, and the SA experience was compared with examples from Peru, India, Bangladesh, and dher African countries.

[2] The Community ICT study was funded by the IDRC and led by Peter Benjamin. This survey aimed to find details on projects providing access to ICTs in disadvantaged areas of SA. Detailed questionnaires were received from 250 sites, and it is estimated that there arearound 500 such sites in SA.

[3] Telecommunications Act, Republic of South Africa 1996 b, p10.

universal service agency is a South African response to this very particular South African social, economic and political environment (White Paper on Telecommunications, 1996, pp.7-9).

There was also concern about the need to increase access to other Information and Communication Technologies (ICTs), so that the Information Age would be of benefit to all in South Africa.

Telecentre Programme of the Universal Service Agency

Though not mentioned in the Act, from its inception the USA was urged by the Department of Communications to set up telecentres. In practice, this has been the USA's main activity even though there are many other elements to its mandate.

By the end of 2000, in total, 65 USA telecentres had been established, 11 "mini-telecentres" and 54 full telecentres (described below). They were in all of the nine provinces of South Africa, though primarily in the poorer provinces, as shown below in Figure 1:

Northern Province	13	Eastern Cape	10
KwaZulu-Natal	10	Free State	6
Western Cape	6	Gauteng	5
Mpumalanga	5	North-West	5
Northern Cape	5		

All are in disadvantaged areas of South Africa, the great majority in rural areas.

Mini-telecentre: The minis cost around R15 000. Each was half paid by an entrepreneur and run as a private small business. The equipment consisted of one moveable cabinet with a Pentium computer and a 3-in-1 (printer, copier and scanner). Two Vodacom "Zigi" phones provided telephony. The mini was placed in whatever building the owner preferred.

Full telecentre: These were more substantial, costing between R150 000 – R250 000. Most of these telecentres were owned by community organisations, such as women's groups, civics or community forums. A few were privately owned by entrepreneurs. Many of the newer ones are owned by government institutions such as schools, post offices or Information Points (with the Government Communication and Information Service). The USA telecentres are expected to provide a community service, as well as being successful small businesses.

They are mainly based in existing buildings that are refurbished, painted in the USA's white, purple and green colours, and have security bars and alarms fitted. Furniture, to provide cubicles for telephone and computer use, is installed. The equipment they receive varies, but usually consists of 3–5 telephone lines (either Telkom lines or the Vodacom Zigi phone) together with a management system to know the cost of a call; 2–4 new computers; printer, photocopier, fax machine; and usually a scanner, TV and video recorder.

From this brief overview of the telecentres, it can be seen that there was little variation in the equipment provided. In particular, there was little or no effort to match the equipment provided with the specific needs of the local area. This was partly due to the needs of centralised purchasing of equipment from the USA's central office.

The telecentres received at most four new computers from the USA. There had been a plan to provide a few new computers and then 10 to 20 older recycled computers to allow for computer training, but this ended when a computer recycling initiative failed in 1998. A few telecentres were able to get more computers, through applying to other organisations (such as Schoolnet/Netday), linking with colleges, or making deals with computer suppliers. However, most did not have the facilities for computer training.
In the following section the 65 telecentres established by early 2001 will be reviewed. The information comes from the national survey of Community ICT Projects, USA records, personal

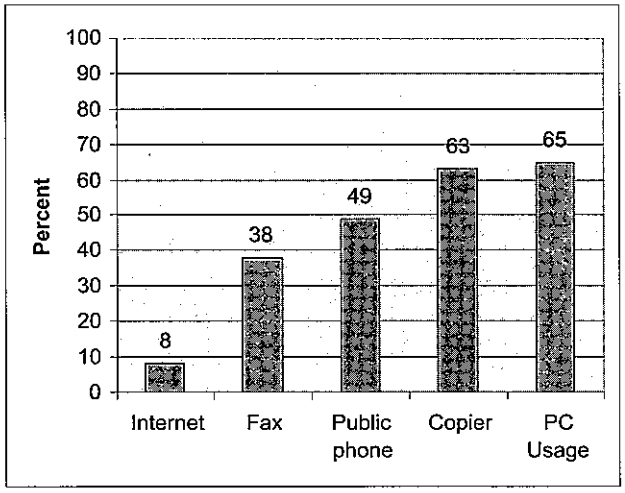
observation and interview. It was reported at, and validated by, a workshop of 50 telecentre managers in March 2001.

Operation and working equipment

As mentioned earlier, there are 11 mini-telecentres and 54 full telecentres. For each of the telecentres, it was determined whether the following equipment was currently working: Internet access, personal computers, public phones, faxes and photocopiers. The percentages of telecentres with this equipment working, is illustrated by Figure 2.

Equipment	With	Without	% With
Internet	5	60	8 %
Fax	24	40	38 %
Phones	32	33	49 %
Copiers	41	24	63 %
PC Usage	42	23	65 %

Figure 2: Equipment working in USA Telecentres.



There is a surprisingly low level of Internet usage (which requires both phone connection and computers to be working). Only 49 % have telephones working – half are centres without the "tele"! Nearly two-thirds have PC usage and also two-thirds have photocopiers.

In consultation with the USA fieldworkers, the telecentres were allocated to one of four categories:

- **Not operating:** basically the telecentre has shut down;
- **Partial with phones:** The centre is operating, but only with telephone services (effectively a phone shop);
- **Partial without phones:** The centre is operating, but with no phone connection (so no fax or Internet). It has computers and a photocopier.
- **Phone and computer:** The centre offers both computing and telephone services.

The breakdown is shown in Figure 3.

Classification	Number /65	Percentage
Not operating	21	32
Partial (no phone)	12	18
Partial (with phone)	2	3
Phone & computer	30	47

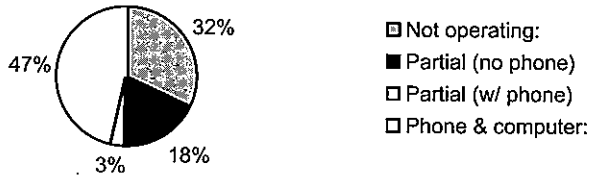


Figure 3: Operating status of the 65 USA Telecentres.

About a third of the USA telecentres were not operating at all at the time of this study. These 21 cases were followed up, and the primary reasons for their not operating are given:

- **Four – burglary / theft:** A major burglary had taken all, or a majority of, the equipment and there was not insurance of alternative sources of equipment, so the centre disbanded.
- **Four – technical problems:** For technical reasons, the centre did not function. There were two main reasons – lack of power supplies for rural areas off-grid electricity where generators or other alternative supplies were not possible; and no telephone lines supplied by the phone company (and no skill to operate, or demand for, the computers).
- **Four – managerial weakness:** Unskilled or otherwise incompetent management had led to the collapse of the centre.
- **Four – financial problems:** These centres had an insurmountable debt – mostly a Telkom bill they could not pay. A debt of many thousands of rand was impossible to pay. Whether this was generated through fraud, incompetence or Telkom problems was impossible to verify.
- **Three – community conflict:** Major tensions in the community between different factions over who should own the telecentre led to the centres closing down.
- **One – fire:** Catastrophic fire led to damage to the building and destruction of the equipment.
- **One – repossessed:** A telecentre was housed in the building of a community radio station (to promote synergy). However, the radio fell into debt, their building was repossessed, which took the telecentre equipment too. A legal case is pending, but people are not hopeful.

So, under half (47%) of the telecentres have both computers and phones working, though all had initially been provided with this equipment. This emphasises the difficulties of maintaining ICT equipment in rural and township areas, combined with the difficulties of centralised procurement.

Sustainability

Whether telecentres are sustainable is an important and much asked question. As yet, this question cannot be answered directly. Studies have been neither over a long enough period, nor in sufficient depth. However, this study does allow some tentative discussion through using three indicators as loose measures of the sustainability of the centres:

- **Salary:** Whether the telecentres paid a salary to the managers. The USA gave no recurrent funding of the centres – all operating costs, including salaries, had to be generated by the telecentres themselves. Where salaries are paid, they tend to be low, somewhere between R500 and R1 000 per month. The highest salary known to the author is R2 000 per month.
- **"Profit":** Whether the telecentre produces a monthly profit. This is bare operating project (income – immediate expenses). It does not consider reserves (e.g. for maintenance), depreciation, and almost all centres do not pay tax.
- **"Success":** Whether the telecentre managers and/or the USA fieldworkers feel the centre has been successful. In most cases the managers' and fieldworkers' views coincided (where in two cases even after discussion they could not agree, the telecentre manager's view was recorded). Of course, this is very subjective. The author hopes that in future more in-depth studies of these centres will be carried out, but until then this is a useful gross indicator.

True sustainability is clearly more than economic viability, and the success indicator captures a little of that. However, without proper studies into how the users (and non-users) viewed the centres, these indicators are largely silent on how useful, relevant and "socially sustainable" the centres are. The figures for these three indicators for the 62 telecentres where data was obtained, are given and illustrated in Figure 4.

Indicator	YES response	NO response	% YES
Pay salary	20	42	32%
"Profitable"	23	39	37%
"Successful"	30	32	48%

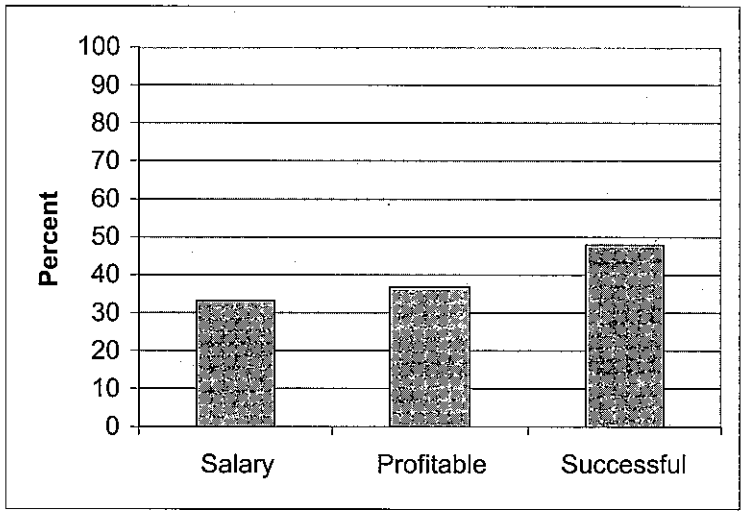


Figure 4: "Sustainability" measure of USA telecentre.

Eighteen of the 62 telecentres (29%) had "Yes" for all three of these indicators (which shows that they are clustered – 29% is little short of the 32% paying salary). These fortunate few, unsurprisingly, were closely correlated with the ones with more equipment functioning.

Remember that the full telecentres cost around R200 000. Only a third of the telecentres pay a salary – the other two thirds are run purely on a voluntary basis. It is impressive that not more than the 21 (32%) have ceased operating. In general, the author has been struck by the dedication of the telecentre managers he has known.

Well under half make a bare operating profit, and just under half consider themselves to be successful. The figures for "success" are noticeably higher than for the other two more

economic measures. From further discussion this did seem to be owing to the centres seeing themselves as offering a useful service in their areas – bringing computers, and in some cases telephony, to their communities for the first time. (There was also certainly a psychological factor of not wanting to admit failure of an activity undertaken).

From this admittedly imprecise data, it might be possible to say that around a third of the centres seem to have a reasonable chance of ongoing self-sustainability. Before drawing out the characteristics of these centres, and discussing other factors, we will discuss the differences between province and ownership.

Provincial breakdown

The telecentres in nine provinces of South Africa were compared, using the sustainability indicators already described. Results are illustrated in Figure 5.

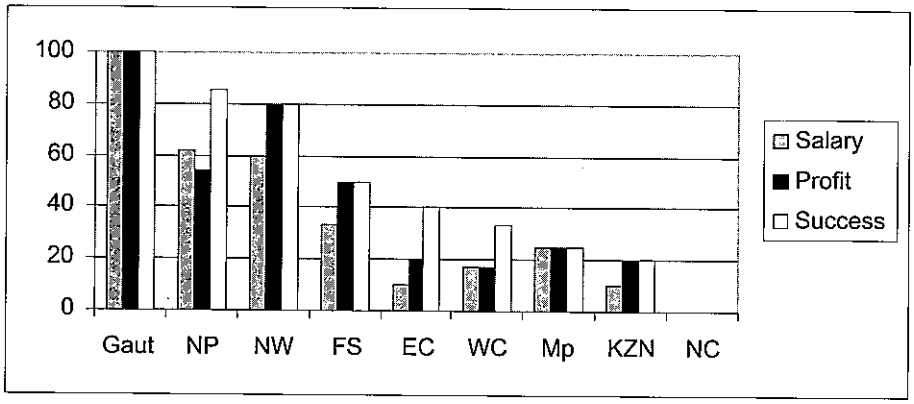


Figure 5: Telecentre sustainability by province.

This graph show a marked difference between the provinces, from all five telecentres in Gauteng being successful to none of the five in the Northern Cape attaining this measure. This is not simply explained by the nature of the province. Gauteng is both the richest province in the country and the one where the USA national office is located, so it is not too surprising that all the telecentres there are working better (on our stated measures). However, the next richest province is the Western Cape, where telecentres are not doing well. The two poorest provinces are the Eastern Cape (where 40% of the telecentres are successful) and Northern province (where over 80% of the telecentres are successful).

These figures suggest that there are factors other than random chance at work. This study was not sufficiently in-depth to be able to identify all the factors, however one is tentatively suggested. The impact of the USA fieldworker assigned to the telecentre is key to the clarity of its role and consequent success. Each of the three fieldworkers was assigned three provinces. Other than Gauteng which is a special case (as already noted), the next three provinces that seem to be performing well are the Northern Province, Free State and the North West. These were the provinces assigned to the impressive fieldworker Aubrey Mathinjwa (who was promoted to manager of projects for the USA), and replaced by Joshua Manemela.

Ownership breakdown

The majority (50) of the USA telecentres were community owned, which in practice means they were owned by a committee of local residents, in most cases an existing organisations (such as a civic, women's group or development forum). Fifteen of the telecentres were privately owned (which includes all of the 11 mini-telecentres). Figure 6 illustrates their equipment functioning and indicators of sustainability.

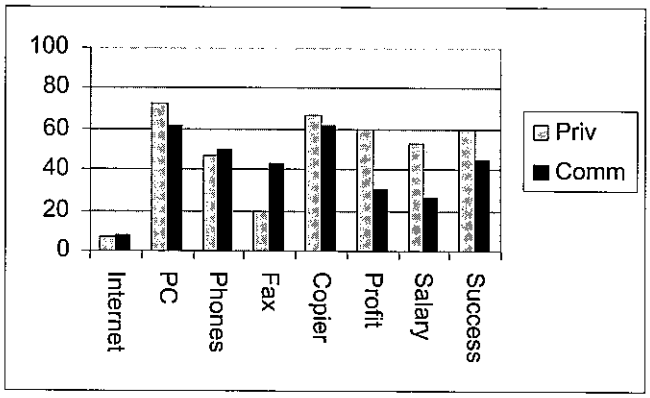


Figure 6: Equipment and sustainability by ownership type.

This shows that the level of equipment functioning was quite similar between the two types (other than the fax). This is not too surprising – who owns the centre does not affect: what service they get from Telkom; the equipment suppliers response or the likelihood of breakdowns in rural areas. However, the indicators of sustainability are noticeably higher for the privately-owned sites – 60% profitable as opposed to 30% for the community-owned sites. Again, this is not very surprising – the primary purpose of the privately-run centres is to make a profit. Also, 60% of the private centres claim to be successful, as opposed to 44% of the others.

Success factors for a telecentre

These factors were identified from the study of the telecentres. They were then discussed in focus groups, at the national workshop of telecentre managers in March 2001. While the causal links between various variables and particular outcomes are far from clear in such complex projects, certain factors emerge from the more successful centres.

Good management

The single most critical factor seemed to be energetic, responsible and trusted managers. A local "champion" of the project, who will do whatever they can to make the project work, is known and accepted in the community, and will bring people in to use the centre. This is not the same as the most educated person. Computer and other skills can be taught – drive and respect cannot.

Development of new services

The better centres were able to develop new services. The USA provided equipment, not services. The middling telecentres offered equipment usage (make a phone call, fax or copy, or type a letter). Most of the more successful telecentres were able to learn what services were needed in their community and adapt the centre to provide this. In Gaseleka they set up a local post office, Home Affairs office and started a local newsletter; in many sites they set up

computer training; Botlokwa sells stationery, newspapers and cleaning products; Mkwakwalia prints registers and test papers for the local school; Mamelodi produces a community directory. The ability to innovate, and use the equipment as a tool to produce a needed service, is crucial to the success of telecentres.

External linkages

Another clear characteristic of the more successful centres was that they had links to external organisations, as well as the USA. Various other donors and partners also supported some centres – the Dutch Nepostel provided some equipment and training; the Canadian IDRC provided extra equipment and follow-up visits to 12 telecentres; the Government Communications and Information Service (GCIS) jointly supported some telecentres as MultiPurpose Community Centres; and six telecentres were part of Wits University's Information Literacy computer training programme. These linkages tended to greatly increase the chances of success of the centre.

Networking

The better telecentres tended to be the ones that linked with other telecentres to share experiences, ideas and solutions. At the end of 2000, the telecentres in the Northern Province formed a committee and started meeting regularly (in Pietersburg, the main central provincial city), with Peter Lebepe as the chairperson. This committee shared experiences (e.g. on the best and cheapest place in town to repair computers) and as a group lobbied the USA and Vodacom to get Vodacom phones to replace their Telkom ones.

Phone service

Telkom is the main phone company in South Africa and has a monopoly on fixed lines. Vodacom is one of the two cellphone companies. Most of the telecentres had Telkom lines, while a few were supplied with Vodacom community service lines (in a unit known as a Zigi phone). For three reasons the Vodacom phones worked out better[4]:
1) They proved to be more reliable.
2) Vodacom phones were pre-paid, meaning that it was impossible to run up major debt, unlike the crippling bills some telecentres ran up with Telkom post-billing. Pre-payment enforced financial discipline.
3) Vodacom allowed a much greater mark-up of phone charges for the operator. For most of the period under study (until price rises in 2000), the user paid 60c per phone unit on the Vodacom system. Of this money, 40c went to Vodacom, and 20c to the telecentre operator. On the Telkom system the tariffs (which could be manipulated by a knowledgeable operator) were usually around 62c per unit, of which 60c went to Telkom. So the Telkom phones were marginally more expensive to the user, but significantly less profitable to the operator. In fact, with Telkom also charging monthly rental charges for the lines (unlike Vodacom) it was almost impossible to make a profit on Telkom telephones.

Critique of the USA programme

It is not possible to compare the USA's telecentre programme against the USA's legal mandate, because as already mentioned the USA was not charged by the Telecommunications Act (1996) to establish telecentres.

The USA did produce targets for the number of telecentres to be established in its first two annual business plans (60 in its first year, 100 in its second year). In reality, one was established in the first year (Gaseleka), 18 by the end of the second year, leading to 65 over

[4] For disclosure, the author should mention that he works in South Africa at the Vodacom funded LINK Centre at Wits University.

four years (to early 2001). However, the quantity of telecentres is less the point than how effective they were.

However, little can be said of the wider impact of the USA telecentres. There have been no real studies on the impacts and usage of telecentres, and evidence of community effects is mainly anecdotal. Most centres do not keep records of users, usage or wider impact, and the USA has run no studies on this. However, from the sites running computer training, there is limited evidence of people getting skills and then jobs. So, any assessment of the wider social impact of the USA telecentre programme is premature. We can, however, discuss areas where there is some evidence.

Finances of telecentres

Thirty-eight per cent of the centres consider themselves profitable, which means a bare operating profit. Of the 34 telecentres asked these questions, only six said they paid insurance and four paid tax. Fewer than half paid a (low) salary. This has led to many cases of trained staff leaving for better paying jobs, which does threaten sustainability where there is not systematic passing on of skills.

Of particular concern is that the depreciation of equipment is not covered by the financing of telecentres. Computer equipment tends to have a limited life – both from increased breakdowns, and the sales-induced push to continually upgrade. If the marketing hype is ignored, it is still likely that computer equipment in hot and dusty areas would need to be replaced within four years (which the earliest established telecentres are starting to approach). No one (the telecentres or the USA) has budgeted for such replacements.

There are a few telecentres that do generate strong revenue, such as Bhamshele (KZN), Tembisa (Gauteng), Gaseleka (N Prov), Siyahluma (E Cape) and Mkwakwalia (N Prov). The more successful centres tend to have a combination of competent managers, strong local demand, good location, the ability to innovate and develop services to meet local needs, and linkages with supportive institutions.

Services

Clearly USA telecentres are not an appropriate model if the intention is just supplying telephony. The investment is too large – pay phones of Vodacom-type phone shops (see the following section) do this better. Telecentres are set up with an advanced technological infrastructure, which creates a large overhead.

In the USA telecentres without computer literate staff, the computer-based services are currently rarely used. In a number of telecentres, computers and modems gather dust, having never been connected, and scanners, printers and overhead projectors are barely touched. By far the most popular service is telephony and thereafter the use of the facsimile and photocopier. In reality, the demand in rural communities is largely for telephones. However, where accredited, quality computer training is offered by telecentres, this service does tend to be in demand. Currently demand for such advanced services as document creation, scanning, overhead projection and so on is limited or non-existent.

Electronic information services are not prioritised by communities themselves. The current telecentre model is meant to be economically self-sufficient. With little or no existing community demand and no national support services, Internet services are currently not deliverable in this manner. If this is a development priority of the USA, or elsewhere in government, then this area needs to be encouraged. This could be achieved through training, content generation, subsidised Internet accounts and telephone calls, promotions, publicity and other mechanisms. The current telecentre model will not provide useful access to Internet services as the services are both unsupported, and ahead of market demand.

Top-down programmes

From the start the USA used the language of supporting local empowerment through technology. Its selection procedure, through encouraging applications from organisations, shows it had an understanding of the importance of responding to local need. However, unintentionally, many of its procedures created dependency and stifled local adaptation and ownership.

Crucially, the contract with the suppliers of the telecentre equipment, were signed by the USA and not the telecentres. This was done for understandable reasons of centralised discount purchasing and simplified tender procedures. However, this took away control from the telecentres when things went wrong. To respond to equipment failures, all the telecentre managers could do was contact the USA.

There was almost no systematic needs analysis at the telecentre sites, and the equipment installed at each centre was not based on a consideration of local requirements. While it is true that most of the sites did prepare business plans, these contained little indications of what equipment would be needed, or how social or economic sustainability would be achieved. Methodologies for conducting local needs assessment and market research, that would feed into equipment and services design, have not been developed. In particular, the local telecentre owners and managers were not involved in deciding what equipment was to be selected.

The original USA business plan (and the proposal for a joint project with the Canadian IDRC) suggested different models of telecentres would be tested. In practice, each of the telecentres was set up with similar equipment. This "one size fits all" model appeared to be applied through pressure to deliver faster from central suppliers. In some telecentres, more Telkom lines were installed than were actually used. As rental had to be paid on each line, this caused a major recurring drain, and in at least the case of Makuleke, contributed to disconnection as the bills become more than the centre could generate. This problem became known as being "killed by over-capitalisation".

A different problem showed how the interests of a local telecentre can be different from the national plan to set up universal access. A centre in the Northern Cape did not want a payphone installed in the community, as this would provide competition and undercut the telecentre. This led to the Telkom payphone being vandalised. The telecentre became a block to universal access to telephony – the opposite of its intended role.

As a national system, the USA found it hard to provide a telecentre product that was effective at a local level. National supply was not effective at meeting local need and demand. From the experience with telecentres, one could say that top-down planning is very unlikely to achieve bottom-up development.

Beyond their control

It is true that many things were beyond the control of the USA. In particular, Telkom did not fulfil many of its obligations, leaving the USA frustrated, and the telecentres powerless.

Many of the actions of the USA originated from a push and pull of forces above them. These included not receiving money in the Universal Service Fund for a long time, then being obliged to spend it quickly to show delivery for the Ministry.

Misunderstanding of role

The USA did appear to misunderstand the role that its telecentres could play. In 1998 the USA estimated that South Africa would require of the order of 5 000 telecentres for there to be true

universal access – a number clearly out of the reach of a small agency. Therefore, its task was more appropriately to run demonstration pilot projects to establish what is possible, using a combination of market forces and subsidy. The USA telecentres could have been clear experiments to see what works and what does not. However, without a variation of design to try different models, proper evaluation of usage and impact, or openness with the results, this demonstration role was missed.

This was particularly evident the relationship of the telecentres to equivalent projects from others. If the USA saw itself as the body trying to promote national coverage of ICT access points, then Vodacom phone shops and the Telkom equivalent (called Dial-Inns) would have been allies. In practice, they were seen as competitors against the USA brand. As such, there were few attempts at sharing information between the different initiatives for their improvement, or strategies for the USA to support other ICT-access centres, offer wider services, or improve their training. The USA defensively saw their telecentres as their only concern, and so lost sight of their responsibility towards wider national provision.

Setting up projects was not the main function for which the USA was set up. The Telecommunications White Paper was clear in setting out the functions with regards to delivery. The Agency has no enforcement powers but should identify more creative and innovative methods to promote universal service within the broad framework of development planning.

The millions in the USF are small compared to the billions involved in telecommunications roll out, and the USA was not able to influence the wider industry through providing good models and sharing information.

Most of the USA telecentres are faltering or failing, and without greater support are very unlikely to be sustainable. A few, however, seem to be both serving a useful function and prospering. They were experiments on multiple levels – technical, social, service, organisational and financial – and many were expected to fend for themselves before a working blueprint was developed. The USA was caught between knowing it had a weak model that needed refining, and the political pressure to deliver more telecentres before it was ready. The longer-term viability is uncertain, especially as replacement equipment is needed.

Although the USA's foray into telecentre delivery has had more failure than success, the very fact of there being an Agency active in supporting telecentres has influenced the public debate in South Africa. The USA was established before the current enthusiasm for "Bridging the Digital Divide". It can claim some part in encouraging the many initatives currently involved in setting up telecentre-type projects, such as numerous government departments, businesses and donors. In the policy review of the USA conducted in early 2001, the telecentre managers have been strongly supportive of the USA, urging that the USA should continue driving the telecentres towards sustainability.

Other community ICT programmes

As well as the USA programme of telecentres, a number of other initiatives attempted to provide access to telephony and other ICTs in disadvantaged areas in South Africa in the late 1990s. Some are described in this section.

Vodacom phone shops

The cellphone company Vodacom was given Community Service Obligations (CSOs) with its license to set up 22 000 lines in "disadvantaged areas" of the country. They chose to do this through establishing phone shops. By the start of 2001, there were over 2 000 of these, primarily in townships, though also in some rural areas. Although there have been modifications over time, these phone shops are containers (big metal boxes used for

transporting goods) painted in the Vodacom green, usually with between five and ten phone lines installed. The phones are all Vodacom GSM (cellphones, though in this context at a fixed location). The phone units are the Zigi phones already mentioned, with a management unit that allows easy billing of the different handsets.

The phone shops are run as profit-making privately-owned businesses, without community development requirements on the owners. It costs the owner around R24 000 to establish a telecentre, of which R5 000 is usually directly invested, the remainder coming from a soft loan with a development bank. From the records of Vodacom (which are independently audited) these phone shops tend to be very profitable. The loan is usually paid off within six months, after which the owner makes a handsome profit. Several owners now run several phone shops. Stories of these people buying Mercedes cars within a few months of starting operation are not uncommon! Vodacom claims over 95 per cent of the phone shops established are profitable.

The users are charged (before price rise in 2000) 60c per phone unit, of which a third is operating profit for the owner. (Vodacom believes that it is heavily subsidising these phone shops, estimating the real costs to their network at 80c per unit rather than the 40c per unit that Vodacom receives). From the Telecentre 2000 study, users tended to prefer the staffed Vodacom centres to simple pay phones, saying they provided better service, higher reliability and were cheap. From a small survey of ten phone shops, the owners usually employ staff to operate the phone shops at wages between R500 – R1 000 per month.

The Vodacom phone shops have a clear business plan to provide telephone access. Someone can be trained in the usage and management of the system in an hour. If anything goes wrong, there is only one person to call – Vodacom. The managers interviewed tended to be satisfied with the support they received. The majority just offer telephone services, though a few are experimenting with fax and computer facilities, as in Khayelitsha. Approximately 40 per cent of the phone shops offer faxing, while around a half offer photocopying.

Schoolnet and other school computer programmes

From the late 1990s there have been a number of initiatives to provide schools in South Africa with computers. The leading NGO in this area is Schoolnet which estimates that just under 6 000 schools have one or more computer, out of the 27 100 schools in the country. Most of these initiatives, such as the Telkom 1 000 Schools Project, provide one computer and limited training to a school. Recently, the two richest provinces, Gauteng and the Western Cape have announced plans to put computers in all their schools. This move has been welcomed by some, while considered a wasteful extravagance by others. A study on Computers in Schools of the University of the Western Cape (2000)[5] estimates that there are around 1 500 schools with 11 or more computers in a computer lab.

These are not seen primarily as cost-recovery projects. The main aim is to provide computer awareness and skills to school learners. Computers are supplied outside of school budgets (by the Department of Education, donors or organisations such as Schoolnet). The ongoing costs then become part of the school's budget. In some projects, attempts are made to run adult computer training in the evenings to open up the resources of the school, and to generate money. This is for additional salary to the computer teachers and to cover maintenance and upgrade costs of the computers.

In the evaluations carried out by Schoolnet, a wide range exists for the effectiveness of these projects. In some, the computers sit unused for lack of training, maintenance or running costs. In others, thriving computer classes have made a major difference in skilling and motivating learners. Again, the major determining factor seemed to be the enthusiasm of a local champion.

[5] Computers in Schools (2000), University of the Western Cape Education Policy Unit & IDRC, 2000.

GCIS multi-purpose community centres

The Government Communication and Information Service (GCIS) is a part of the presidency responsible for communicating government information. It was formed in 1997, replacing the former SA Communication Service that had been discredited by its role in the apartheid years. From 1999, it was mandated by a decision of Cabinet to establish Multi-Purpose Community Centres (MPCCs) as points for integrated service delivery.

By early 2001, around 15 of these centres had been established. The models differ (some owned by government departments, others by community organisations) but all of them have a range of different government services. These include a Home Affairs office, Welfare payment point, Housing or Water information, small business and employment advice centre, library, post office, training and government information. All of them have phones, computers, e-mail and photocopying, which is made publicly available. Physically, the centres range from small rooms to major building complexes, all in disadvantaged areas.

Much of the work of the GCIS in establishing the MPCCs has been in co-ordinating the efforts of a range of government departments (over 15 of the "delivery departments" that impact directly on people's daily lives). There are meetings most months, in Pretoria, of representatives from these departments to plan new centres and ways of combining their services. (The USA is one of the departments that attends and it has been involved with several of the MPCCs, which are also considered as telecentres).

It is intended that these centres will generate much of their running costs, with some support from the government departments involved. The MPCCs are all quite recent, having been established less than a year ago, so their impact or sustainability is impossible to assess. However, the planning stresses that the range of government services should provide core services that will attract people, with hopes of synergies between the different services.

While it has been difficult, the GCIS has found it possible to achieve a level of information-sharing and co-operation between the different departments of government that, historically, have not worked together, largely for bureaucratic and petty political reasons. The USA was not able to do this as effectively when it attempted to work with other government departments in its early years. This is partly due to the position of the GCIS – it is part of the Presidency and so has an elevated political status that allows it to call other departments together. The USA, being a small agency under one department (the Department of Communications), had less authority in dealing with the other departments.

Other community ICT projects

Between October 2000 and March 2000, a study (funded by the IDRC) surveyed Community ICT projects throughout South Africa. It looked for community ICT projects in South Africa – any place where people could use ICT systems (especially for Internet access and training) in disadvantaged areas. It did not count phone shops, urban cybercafes, or school sites only used by the school, but did count libraries with computer access, telecentres with computers and schools with community classes. Community Radio initiatives were also included, owing to the synergies between these and other ICT projects. Table 1 shows the type of sites, how many have proper contact details, how many have data filled questionnaires, and the "best guess" or estimate of how many exist.

Type of Centre	Have address	Have data	Best guess
USA telecentres	65	44	65
Libraries	62	18	80
GCIS	6	3	10
Community radio	74	52	80
Information Literacy (InfoLit) sites	29	25	30
Digital villages	12	7	15
Education centres	23	19	30
"Old" multi-purpose community centres	6	5	10
DoC WIL Labs (Schools & Technikons)	44	33	46
ISPA sites	2	2	20
Schoolnet (with community access)	2	2	20
Social Change Assistance Trust (Cape Provs)	5	3	10
Sangoco – individual NGOs	4	3	30
Others	35	30	50
TOTAL:	**368**	**243**	**526**

Table 1: Details of types of centres.

It is certain that some sites have been missed. So, the estimate is that there are somewhere over 500 community ICT projects in South Africa.[6] The full analysis of these sites is outside the scope of this paper, but it can be said that there are a great variety of models – public, private and community owned. Most of these projects seem to have focused more on providing the technology than how the technology would be used to support development. The most effective services seem to be computer training, and there are few examples of electronic community information services.

Summary

This section does not go into much depth on the other Community ICT projects that there are in South Africa. It does however show that there were alternatives to the model chosen by the USA.

The Vodacom phone shops demonstrate that it is possible to set up profitable small businesses offering a simple model of telephone services, and roll it out with over 2 000 sites. The Schoolnet projects show that computer projects can be established through existing organisations (schools) without cost-recovery profit being the main mechanism. The experience from GCIS shows that with sufficient political authority (and hard work) it is possible to bring about co-operation between a range of government departments in local information and service projects. And the many other community ICT projects in the country show that what is needed in SA is not simply a few dozen more centres. Rather, there is a clear need for developing models that are effective in meeting local needs and developing information services of relevance to local people.

In the studies comparing different models, some lessons were apparent. One important factor was whether the centre was entrepreneurial. Entrepreneurial means that the person or group who undertake the project stand to make a profit or risk loss – the people running the project directly have an interest in whether it succeeds. A project being entrepreneurial is not synonymous with it being in the private sector. Large businesses can be bureaucratic and rule bound, and some community organisations can be very entrepreneurial and risk taking. However it is true that in this sector, the centres run privately tend to be much more

[6] For more information and to see the online database of sites, check http://www.communitysa.org.za Check the 'Projects' link

entrepreneurial than the community-owned ones. If the primary concern is to ensure the economic self-sufficiency of the centre, an entrepreneurial model is much more likely to be successful. Centres are managed better where the owners have a stake in them. In several areas, fully donated equipment was lying around unused. The entrepreneurial instinct is a strong force in making a centre be run effectively.

There is a great demand for telephony. Anywhere that a centre is a local monopoly, business is strong. Where there is competition, customers are sophisticated and quickly learn which is cheaper and take their custom there (other factors being equal).

Simple business models are more likely to be successful than complicated ones. The Vodacom phone shops are a very simple business model that everyone understands. The idea of a multi-purpose telecentre is much more ambitious, and often harder to comprehend. Without more extensive training and support, many of the wider aims of telecentres are difficult to reach.

Computers by themselves are not an information service. Very few of the centres looked at used IT systems to provide information for local use. In some centres, computers were used by a few local businesses for typing letters or accounting but overall there was very little evidence of computing being used for local social or economic development.

Very few of the centres were using their network potential to find information electronically from national sources or other centres. When asked in the research, all areas expressed a very clear need for information – job opportunities in town, government benefits, tender opportunities, health and education services – but often the information requested came from elsewhere, and could not be provided by the telecentre itself. However, where there was proper equipment, training skills and accreditation, there is a great demand for computer skills courses. In other places where there is no one trained or motivated to use the computers, they lie around gathering dust.

Another given is that it is hard to keep computers and other electronic equipment working in rural areas (townships are much easier). Repair companies charge a great deal if they are prepared to come out at all. Some suppliers do not honour warranties for remote areas, and taking equipment into town is expensive and time-consuming. The cost in training a local person to be able to maintain equipment (such as the A+ course) is very worthwhile.

Trends in universal access

While there are no national figures on access to computers, there are figures for telephony. In South Africa, official national statistics are released by the Statistics SA (formerly Central Statistical Services) usually two years after the data was collected. In 1996, there was a full national census, and in the other years there was a smaller sample, known as the October National Household Survey. From this data, figures for access to telecommunications can be derived. These statistics are more useful than those of the telecommunication companies, which know the number of lines very accurately, but not how many households can use them. The most frequently quoted figure in this area is the teledensity (the number of phones per 100 people), which is not a useful figure for discussion of universal access. The most recent figures we have are from October 1999.

When looking at these figures for access to telephony, the picture is confused by the fact that definitions changed during the period and so comparisons are difficult between the years. In 1996 people were asked "can you access a phone"; in 1997 whether there was a phone they could use "nearby" and in 1998 and 1999 how long it took to walk to a phone they could use (the figures given are those who could walk to a phone within 30 minutes).

Percentage of households with Access to telephones

	1996	1997	1998	1999
SA overall	81.6	68.1	79.7	83.1
Black	75.4	59.4	74.0	78.2
Coloured	94.3	72.4	95.9	96.3
Indian	98.7	89.1	93.8	99.2
White	99.1	91.5	93.9	99.6
Definition:	*"Say can*	*"Nearby"*	*"Walk in*	*"Walk in*
	access"		*30 mins"*	*30 mins"*

Table 2: (Data from Statistics SA, Census and October Household Surveys, analysed by author).

The high figures for 1996 are due to the less strict nature of the question. The figures for the last few years do show a marked increase. The best estimates are that today (in 2001) the overall figure for South Africa would be around 90% for universal access, within 30 minutes walk. The USA telecentre programme, in establishing 65 telecentres has had a minimal impact on national universal access.

Some of this increase is from the roll out of Telkom. However, the major change in telephony in disadvantaged areas in the last few years has been the explosive growth of cellular phones. While this is mainly for individual use (referred to as "service" rather than "access") this does have an impact for others who can use the phone of a friend.

In 1995, South Africa had 535 000 cellular subscribers (13% of all phone subscribers); by 1998 the number had grown to 2.5 million cellular subscribers (33% of all phones); and during 2000 the number of cellular users is expected to exceed the number of fixed phone subscribers. When cellular phone services were introduced to South Africa all users had to have a contract (usually for at least two years), and the cellphone instrument was usually given free or heavily subsidised as an inducement to sign the contract. This system required the user to have a credit rating, usually through a bank account. This effectively excluded many of the poor from the market.

In 1998, both MTN and Vodacom introduced "pay-as-you-go" services, meaning airtime could be bought as people had the available money. With this system, a cellphone instrument had to be bought separately. This did not require a contract or credit check, and it greatly increased the market for cellphones. However, the pay-as-you-go services were actually more expensive than the contracts (another example of it being more expensive to be poor). Having a cellphone became a real status symbol, particularly in townships, and Vodacom particularly expanded in this market.

In the Telecentre 2000 study, in a survey of 20 disadvantaged communities, 24% of all households asked said that they had a new phone within the past year. Of this number one-third had a new Telkom phone while two-thirds had a new cellphone.

Conclusion

So, the level of access to telephony has greatly increased since 1996, though not by the actions of the body set up to do this (the USA). The USA has largely focused on establishing its own 65 telecentres, which have had varying degrees of success. A few USA telecentres are impressive and can be considered examples to be learnt from, while many others are failing. However, the USA programme has had very little impact on the wider development of universal access, either to telephony or other ICT development services.

The recent review of the USA, organised by the Department of Communications and led by Aki Stavrou[7], has proposed extending the life of the USA but changing its role from implementation of projects to research and advocacy. This approach appears in the policy directives. The size of the Universal Service Fund will be increased. While this is to be welcomed, the focus of work in universal access should shift from "chasing numbers" to finding ways to use ICT to really support development.

Much of the community ICT work in South Africa seems more interested in the technology than people. To use American slang, we "dig" all the broadband, multi-media, real-time, interactive systems before seeing how they will be applied. There is a "dig-it-all" divide – a division between the hype of the technology and how it can be used by people in poverty.

Seven years into the new era in South Africa, there is still massive inequality and absolute poverty. Placing a few more computer centres in poor areas might benefit a fortunate minority with the ability to learn, get jobs and leave those disadvantaged areas. However, to use ICT to benefit wider development will require a different agenda.

So far, we do not know if electronic ICTs are an appropriate medium for the information-poor people, and if so what is that information and how can it be developed. We have not developed health, education and other services that can be delivered through the ICT centres established. We have not properly linked ICT centres with other information systems that have a wider reach, such as community radio, newspapers and mass organisations. We have not developed a network (electronic, paper-based and face-to-face) of those community activists engaged in this work, for them to exchange ideas and experiences, and for them to have a collective voice to exert pressure on those making policy and organisations like the USA. We have not developed mechanisms to ensure that women and girls are not excluded from the skills and access that ICTs can provide. We have not developed ways of creating local content on the Internet so each community can express itself in the new media and link with others in this country and globally.

In short, while we are learning how to establish centres in rural areas to get this technology out, we have not found how this technology can be used for supporting development. Where the community ICT projects have not failed, they have served to diffuse the technology. To use the phrase of Manuel Castells[8], we have increased the spread of Global Informational Capitalism. The next question is whether these technologies can increase the capacity and freedom of people to bring about their own development. [9]

[7] The other members were Marcia Wilson, Archie Whitehead, Mike Seloane & Peter Benjamin.
[8] Manuel Castells (1996). The Information Age: The Rise of the Network Society. Blackwell, Oxford.
[9] Referring to the work of Amartya Sen (1999) *Development as Freedom*, Oxford University Press.

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