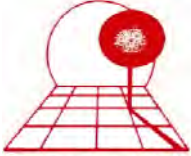**INTERNATIONAL TV THINK PIECE**
D Rushton, Institute of Local Television (UK) 2004
Interim Document for Community Television – a scoping Study

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Introduction
The following looks at the technical side of introducing a new TV service – a channel or programming – into countries with existing television networks in varying stages of development. With the exception of suggesting an existing satellite service might provide a feed or sustaining service I have not considered satellite for a separate service, and I've not looked at cable either – although I've considered a role for small communal or ad hoc cable systems to help bring signal in from terrestrial transmissions. I don't think cable is widely available – although broadband TV will probably arrive a few years after it does here. Any longer term plans for introducing digital television would provide a useful entry point to making changes or adding services – though digital is still some way off.

The first part of this study is something of an unpolished overview of how existing analogue terrestrial television reception might be drawn upon to provide a service, or as least to offer the framework into which a new service (channel, programme etc) might be added. I've considered the value of a favourable sustaining service into which messages might be inserted.

There are several pages of articles etc on TV in development - plus some statistics, starting with the Ghana, Tanzania, South Africa and Honduras. As much for me to get a sense of what's going on – so please skip if familiar. There's more of a focus on the TV infrastructure of Honduras (because it was found) and less detail but a comprehensive view of analogue terrestrial TV systems in each country. I've included the transmitters and relays for a transmitter in the UK – Wenvoe – as an illustration, this is the area within which I've a study underway (in Merthyr Tydfil). The inadequacy of the Merthyr TV analogue TV network has prompted looking at other means of delivering television.

The study also includes several (somewhat overlapping) accounts of 2.4GHz TV – drawn from studies in

the UK – which give an idea of how this very low key service might be used, requirements of surveys to set up a system etc. The 2.4 surveys show – on a small scale – what's required for building a VHF or UHF television network, so a train set of the real thing!

I've included some prices for kit, the details from AEI (on 2.4) – other PDFs proved to big for my computer to shuffle into this Word file. I've plumped for including kit that claims a 5000 metre range – still at 10mW: I've not been able to find a list of countries which allow greater signal strength, but for modeling purposes the grid of transmitters and relays gets bigger.

The various location surveys also include kit prices and I've included some material from the Merthyr Tydfil study which offers indicative kit for studio, a remote studio set-up and details of a server which would be suitable for studio or operation at the transmitter – controlled remotely by phone (mobile if needs be/available).

All in all a little less well ordered and edited than I'd like – but if there's anything incomprehensible please get back in touch.

DR

Characteristics of terrestrial TV transmission and reception

Analogue TV is transmitted in the VHF or UHF bands in the PAL, NTSC or SECAM formats with minor variations of each (**see later for country transmission systems and formats).**

Regardless of national and regional differences the characteristics of terrestrial TV signal distribution are much the same. The saturation of VHF or UHF coverage will vary for each country (and neighbouring countries) but essentially the characteristics of the present use will shape prospects for fitting in a new television service. In some countries interference from ground based analogue transmitters might not be as much a concern as it is in (say) Europe because satellite delivery may have overtaken terrestrial delivery as the preferred network and/or domestic television delivery system.

The objective when setting up television transmitters is to reach as many people as possible from the minimum number of sites. Gaps in reception can be filled in later with less powerful and sometimes more directional repeaters or relays.

A good location will seek to offer the broadcaster extra free height so the signal can be transmitted further over hills and deeper into valleys. TV transmitters are therefore usually located either on high ground or when in cities on tall buildings or masts. Steel and concrete buildings and hills impede the progress of television signals - requiring in many built-up high rise areas cabling to run from a shared or communal roof-top aerial into each flat, apartment or hotel room.

This communal cable infrastructure can readily be adapted to add very localised neighbourhood television services based on small VHF/UHF transmitters or the 2.4GHz systems trialed by the Institute of Local Television (**See later for 2.4TV site surveys, costs, applications and technologies**) or video players and more recently on domestic hard disc video recorders. The question to ask in cities is what path does the TV signal follow to get to each home? If there is poor localised TV reception requiring simple ad-hoc cable runs

to take the signal below the reception point or around obstacles - then there will probably be capacity on this cable to introduce a local TV signal.

National TV infrastructure
A country's main terrestrial television mast utilises very powerful transmitters - 500-1000kW. Signal strength is measured as Effective Radiated Power (ERP). **(See later for TV systems and contry-by-country transmitter information)**

If mounted inland these large transmitters will usually broadcast an omnidirectional signal, if on a border or near the coast the signal will be directed into the landward or facing quadrants. An omni-directional signal pattern reaching out across level terrain should be received equally as well at the same radius whether north, south east or west. Hilly terrain and the characteristics of the transmitter panels or antenna will ensure that a signal is seldom propagated to provide a regular pattern. Some parts of the signal will also travel further than require
 where uninterrupted and will be detectable causing interference. This will often be at many times the useful reception distance. It is largely regulate interference so as to maximise spectrum reuse that international frequency clearance issues abound. With analogue television transmission the signal can weaken to a point of ineffectiveness but still continue to be capable of causing interference both to the same frequency used elsewhere and neighbouring frequencies.

Those households on the margins of terrestrial signal reach will need to resort to devices designed to boost gain to improve viewing - if these households have no alternative nearby transmitter or relay offering better reception. Sometimes where signal noise compromises a weak signal a filter might help achieve better reception.

Television reception and interference is subject to local physical terrain, the emerging built-environment and variable atmospheric conditions - and a frequency plan should take account of these as well likely future frequency use.

In some countries - Spain springs to mind - VHF and UHF television services continue side by side. Signals from a variety of transmitter sites require the householder to erect aerials of different strengths and design to pick up a collection of channels coming in from different directions. In Spain the onus is on the householder to find the signal, in other countries with policies favouring cable and or universal reach enshrined in public service broadcasting the commitment is made nationally to provide each household with as good a signal as possible.

Like radio the analogue television signal fades over distance but unlike radio television reception requires an aerial to be horizontal in alignment (with horizontally or vertically aligned 'fins') and pointed towards the transmitter site - and aimed with greater accuracy the further away the reception location or the more 'hidden' reception is by buildings or hills. The aerials on portable television sets are less directional and as a result work best only in strong reception areas.

In the UK (at the last count) there were almost 1200 television transmitters and relays. Reception for most of the population is available from just a few hundred of these. Channel 5 was able to reach some 60% of the population from fifty or so transmitters. This big to small arrangement has the majority of sites running low powered relays with signal patterns designed to fill-in signal for

smaller communities and neighbourhoods hidden from larger transmitters by hills or steel structures, high buildings and so on.

In the early terrestrial television broadcast systems - those completed without benefit of satellite delivery or a network of cable links - each large transmitter cascades its signals down to smaller transmitters which in turn pass the signals to relays nearby - each picking up the signal off-air from its most powerful neighbour and retransmitting the signal for more local reception. Regional services opt-in and intercept the national signal and replace it in most cases at the second tier of transmitters before relaying the new signal onto the next regional tier.

As each signal is re-transmitted its frequency is changed to avoid causing interference for television receivers and for those transmitters or relays near enough to be able to pick up signals from two or more sites.

WENVOE – example of main transmitter and relays

Wenvoe Television Transmitter

Company	BBC 1	BBC 2	ITV	S4C	Ae Gp	Power	Grid Ref	Tx no.	Landlord	Ae Ht	BBC Region	ITV
WENVOE	**44**	**51**	**41**	**47**	**BH**	**500kW**	**ST110742**	**106.00**	**CCIC**	**353**	**Wales**	**HTV**
Aberbeeg	40	46	43	50	BV	8W	SO215029	106.37	NTL	290	Wales	HTV
Abercynon	64	66	58	54	C/DH	6.2W	ST093952	106.68	NTL	188	Wales	HTV
Aberdare	21	27	24	31	AV	500W	SO034013	106.06	CCIC	333	Wales	HTV
Abergavenny	39	45	49	42	BV	1kW	SO244126	106.18	NTL	485	Wales	HTV
Abertillery	22	28	25	32	AV	280W	SO224023	106.12	CCIC	430	Wales	HTV
Abertridwr	57	63	60	53	C/DV	50W	ST123886	106.31	NTL	300	Wales	HTV
Alltwen	40	46	43	50	BV	8W	SN716039	106.36	NTL	159	Wales	HTV
Bargoed	21	27	24	31	AV	300W	SO145010	106.08	CCIC	341	Wales	HTV
Bedlinog	**21**	**27**	**24**	**31**	**AV**	**10W**	**SO102005**	**106.43**	**NTL**	**381**	**Wales**	**HTV**
Blackmill	22	28	25	32	AV	10W	SS930867	106.53	NTL	220	Wales	HTV
Blaenau Gwent	57	63	60	53	C/DV	12W	SO215049	106.46	CCIC	286	Wales	HTV
Blaenavon	57	63	60	53	C/DV	150W	SO277063	106.17	CCIC	413	Wales	HTV
Blaenllechau	21	27	24	31	AH	4W	SS998977	106.62	CCIC	292	Wales	HTV
Blaina	40	46	43	50	BV	100W	SO196083	106.14	CCIC	352	Wales	HTV
Brecon	58	64	61	54	C/DV	1kW	SO054287	106.49	NTL	274	Wales	HTV
Briton Ferry	46	40	43	50	BV	20W	SS747956	106.71	NTL	91	Wales	HTV
Burry Port	58	64	61	54	C/DV	3.1W	SN449019	106.79	CCIC	106	Wales	HTV
Cilfrew	39	45	49	52	BV	15W	SS775986	106.16	NTL	117	Wales	HTV
Clydach	33	26	23	29	AV	1.7W	SO227125	106.11	NTL	345	Wales	HTV
Clyro	51	44	41	47	BV	160W	SO204432	106.51	CCIC	264	Wales	HTV
Craig-Cefn-Parc	46	40	43	50	BV	6.3W	SN682020	106.70	NTL	179	Wales	HTV
Crickhowell	21	27	24	31	AV	150W	SO207202	106.52	NTL	244	Wales	HTV
Crucorney	21	27	24	31	AV	11W	SO323221	106.75	NTL	244	Wales	HTV
Crumlin	56	66	60	68	C/DV	8W	ST228984	106.94	NTL	350	Wales	HTV
Cwm Ffrwd-oer	39	46	43	50	BV	4W	SO265014	106.45	CCIC	218	Wales	HTV
Cwmafon	21	27	24	31	AV	70W	SS798936	106.24	NTL	245	Wales	HTV
Cwmaman	39	45	49	42	BV	1.4W	ST000993	106.58	NTL	207	Wales	HTV
Cwmfelinfach	52	45	48	42	BV	6W	ST184909	106.65	NTL	228	Wales	HTV
Deri	22	28	25	32	AV	50W	SO121022	106.57	NTL	420	Wales	HTV
Dowlais	**58**	**64**	**61**	**54**	**C/DV**	**13W**	**SO073088**	**106.72**	**NTL**	**423**	**Wales**	**HTV**
Ebbw Vale	55	62	59	65	C/DV	500W	SO159088	106.13	CCIC	505	Wales	HTV
Ebbw Vale South	27	21	24	31	AV	2W	SO176073	106.33	NTL	293	Wales	HTV
Efail Fach	39	45	49	52	BV	8.4W	SS786958	106.77	NTL	181	Wales	HTV
Ferndale	57	63	60	53	C/DV	80W	ST006970	106.19	CCIC	436	Wales	HTV
Fernhill	55	62	59	65	C/DV	3W	ST030993	106.38	NTL	181	Wales	HTV
Gelli-fendigaid	55	62	59	65	C/DH	16W	ST070935	106.81	CCIC	226	Wales	HTV
Gilfach	21	27	24	31	AV	50W	SS982890	106.28	CCIC	319	Wales	HTV
Kilvey Hill	33	26	23	29	AV	10kW	SS672940	106.01	CCIC	243	Wales	HTV
Llanfach	57	63	60	53	C/DH	2W	ST217947	106.54	NTL	149	Wales	HTV
Llanfoist	57	63	60	53	C/DV	18W	SO308143	106.66	NTL	144	Wales	HTV
Llangeinor	55	62	59	65	C/DV	190W	SS905886	106.22	CCIC	358	Wales	HTV
Llanharan	21	27	24	31	AV	1.7W	SS998831	106.78	NTL	81	Wales	HTV
Llanhilleth	39	45	49	42	BV	30W	SO213004	106.26	CCIC	311	Wales	HTV
Llyswen	21	27	24	31	AV	30W	SO137361	106.25	NTL	259	Wales	HTV
Machen Upper	55	65			C/DV	160W	ST211897	106.44	NTL	181	Wales	
Machen Upper		62	68		C/DV	10W	ST211897	106.44	NTL	181		HTV
Maesteg	22	28	25	32	AV	250W	SS841913	106.04	CCIC	307	Wales	HTV
Merthyr Tydfil	**22**	**28**	**25**	**32**	**AV**	**125W**	**SO057065**	**106.07**	**CCIC**	**311**	**Wales**	**HTV**
Monmouth	55	62	59	65	C/DV	59W	SO526128	106.63	NTL	219	Wales	HTV
Mynydd Bach	58	64	61	54	C/DV	250W	ST168925	106.42	NTL	356	Wales	HTV
Mynydd Machen	33	26	23	29	AV	2kW	ST223900	106.03	CCIC	410	Wales	HTV
Nant-y-Moel	21	27	31	24	AV	2W	SS934935	106.34	CCIC	268	Wales	HTV
Nantyglo	57	63	60	53	C/DV	0.125W	SO189106	106.67	NTL	349	Wales	HTV
Neath Abbey	66	48	42	56	EH	6.3W	SS731980	106.92	CCIC	96	Wales	HTV
Neath Abbey	66	48	42	56	EV	8W	SS731980	106.93	CCIC	96	Wales	HTV
Ogmore Vale	57	63	60	53	C/DV	100W	SS929894	106.30	CCIC	336	Wales	HTV
Pennar	40	46	43	50	BV	100W	ST209958	106.48	CCIC	276	Wales	HTV
Pennorth	33	26	23	29	AV	50W	SO103266	106.55	NTL	294	Wales	HTV

Penrhiwceiber	57	63	53	60	C/DV	2W	ST066966	106.39	NTL	155	Wales	HTV
Pontardawe	58	64	61	68	C/DV	125W	SN732037	106.56	NTL	206	Wales	HTV
Pontypool	21	27	24	31	AV	250W	ST284990	106.15	CCIC	298	Wales	HTV
Pontypridd	22	28	25	32	AV	500W	ST085905	106.05	CCIC	247	Wales	HTV
Porth	40	46	43	50	BV	59W	ST029919	106.20	CCIC	305	Wales	HTV
Rhondda	33	26	23	29	AV	2.5kW	SS990938	106.02	CCIC	366	Wales	HTV
Rhondda B	66	39	49	68	EH	5W	SS990938	106.80	CCIC	366	Wales	HTV
Rhondda Fach	22	28	25	32	AV	1.5W	ST007939	106.73	NTL	275	Wales	HTV
Rhymney	57	63	60	53	C/DV	150W	SO127042	106.09	CCIC	463	Wales	HTV
Risca	40	46	43	50	BV	3.2W	ST240905	106.40	NTL	93	Wales	HTV
Sennybridge	40	46	43	50	BV	80W	SN914295	106.50	NTL	398	Wales	HTV
South Maesteg	55	62	59	65	C/DV	6W	SS860897	106.83	CCIC	141	Wales	HTV
South Tredegar	52	45	49	39	BV	12.5W	SO155060	106.10	NTL	310	Wales	HTV
Taffs Well	55	62	59	65	C/DV	52W	ST123848	106.29	NTL	194	Wales	HTV
Ton Pentre	58	64	61	54	C/DV	80W	SS960955	106.60	CCIC	375	Wales	HTV
Tonypandy	55	62	59	65	C/DV	10W	SS986924	106.35	NTL	255	Wales	HTV
Tonyrefail	55	62	59	65	C/DV	25W	ST009874	106.76	NTL	190	Wales	HTV
Trebanog	21	27	24	34	AV	4W	ST020907	106.41	NTL	200	Wales	HTV
Trecastle	22	28	25	32	AV	7.5W	SN885274	106.61	NTL	343	Wales	HTV
Trefechan	**39**	**45**	**42**	**49**	**BV**	**6W**	**SO030085**	**106.74**	**NTL**	**300**	**Wales**	**HTV**
Treharris	**56**	**48**	**52**	**68**	**C/DV**	**50W**	**ST103964**	**106.23**	**NTL**	**205**	**Wales**	**HTV**
Tynewydd	55	62	59	65	C/DV	25W	SS931993	106.69	NTL	270	Wales	HTV
Upper Killay	21	27	24	31	AV	4W	SS590927	106.59	CCIC	94	Wales	HTV
Usk	52	45	48	42	BV	22W	SO384006	106.64	NTL	70	Wales	HTV
Van Terrace	39	45	49	42	BH	1.25W	ST168865	106.87	NTL	117	Wales	HTV
Wattsville	63	57	60	53	C/DV	6W	ST215911	106.21	NTL	226	Wales	HTV
Ynys Owen	55	62	59	65	C/DV	80W	ST082992	106.32	NTL	365	Wales	HTV

Aerial groups: H=Horizontal polarisation, V=Vertical polarisation

Lower down the distribution chain the shape of the signals is often tailored to the terrain and made more directional to minimise interference problems by unnecessarily reaching out to where they will not be beneficially used.

The UHF band has signals grouped so that (in the UK) the BBC 1, BBC 2, ITV and Channel 4 signals can be broadcast from a narrow close range of frequencies in each area. Domestic aerials are built to be especially sensitive to one aerial group - although in good reception areas wide-band aerials can receive signals across the UHF spectrum. For most installations - and for older aerials - signals encountered outside an aerial's preferred band will appear weak or noisy and reception will be worse the further out of band the signal.

A new terrestrial television UHF signal should therefore be located in or close to the prevailing band from which the current services are being broadcast locally and the signal will need to be ofsimilar power to the present signals.

When locating a spare frequency for a new service - to be delivered (say) from just one TV transmitter site - it is necessary to determine whether the proposed frequency is already in use and establish whether the new signal will cause interference with reception of other signals. The pattern of interference is in practice more complex with signals at intervals up and down the range being capable of causing interference and of being interfered with. In addition because the analogue transmitter signal tends to spread the frequencies to either side of the possible selection should be unused to provide a safe area.

In the UK and most of Europe and North America a neighbourly convention prevails so as not to cause interference to existing users although this spirit to avoid interference to existing users may not apply elsewhere either within or between neighbouring countries.

Notwithstanding the possible absence of national or international agreements on frequency clearance the extent to which interference might be tolerated in practice would need to be explored.

Interference arises at the outer limit of a signal's range usually as the result of unusual and adverse atmospheric conditions. The extent of the allowance to be made for this may thought to be over engineered if European frequency planning is the model.

There are other solutions such as satellite delivery and eventually digitalization which might encourage television engineers in less developed environments to be less precious with current analogue terrestrial use and to be more concerned with maximising channel availability to develop a television viewing market.

Frequency spread
The analogue television frequencies also spill over into its neighbours resulting in co-channel interference. To avoid this in-between frequencies are not used - so in effect 8-9 frequencies are in play or tied up in the delivery of just four analogue television channels.

A high level of television access and universal availability of analogue in developed countries means we have utilised most and in some cases all the available UHF portion of the radio spectrum - at least for large scale services. Hence the problems encountered in the UK with the introduction of the local TV restricted services licences (RSLs) and Channel 5.

Looking at figures for television transmission in other parts of the world there may be less analogue frequency congestion. **(See later Honduras TV transmitters)** But with less regulation there is no guarantee that once used a competitor might not usurp or interfere with your signal from somewhere near or close by. The other extreme from what I've suggested is an overzealous and protective regulation in Europe is the prospect of spectrum anarchy.

The minimal requirements for satisfactory television reception are:-

• the direction of the TV aerial in use in the home/communal building determines the line of sight and direction along which any 'new' TV signal should be sent

• the television signal should be broadcast/received in the band (or near to the band) prevailing

for the other locally received TV signals•   the signal should be as powerful or nearly as powerful as the other local TV signals in order to reach the same scale of audience

One caveat:-

•   if the signal is only for reception close to the transmitter there is greater tolerance in aerial direction (portable reception will apply) at reception and a new signal might useable a little further from the prevailing band

It is important to establish whether the prevailing national regulatory culture tends towards the ultraconservative or the anarchic (as described above) and to establish what guarantees there are to ensure that for the prevailing reach of the frequency chosen the new service will have some protection, ideally taking the form of a broadcasting licence.

A new broadcaster
If a new broadcaster was interested in reaching a population relatively unpolluted by strong TV signals the following might be recommended.

Consider a relatively underdeveloped television landscape with one or two large scale channels, some pockets of strong television ownership, some cable served areas stretching to high mounted aerials to pick up signals from far off transmitters.

The broadcaster would set up a TV transmitter with high signal strength at the highest point in the target area. They would take some TV signals from satellite or from a distant TV transmitter and retransmit three or four channels. If satellite or terrestrial signals were not available then transmission would be from a server - though absence of live coverage would be an issue. Either way the objective would be to and provide a comprehensive three or four channel relay TV service combined with the new channel.

Ideally the four or so in band signals would be of sufficient power to be picked up by portable TVs (or fixed TVs with poorly aligned aerials).

With four or more frequencies in an unused band a variety of channel types could be included - the value of four or five channels being to stimulate local acquisition of TVs, to create an audience to whom the specific local channel can be addressed and to provide appropriate programming and messages for the distinct audiences watching the different channels.

In areas where TV use is becoming strong
If space for a single television channel can be found to fit into an existing band already providing three or so channels - then the objective would be to devise a wider cultural (or sporting etc) theme into which your programming, the local content or intended service, would fit comfortably.

Whether launching several channels or just we stress the point: viewers will not want to watch your programming exclusively and a single channel on its own will not stimulate domestic TV acquisition.

One channel then or parts of a channel?
It will be difficult at least initially to sustain a 24/7 channel with local content alone (should that even be desirable). There is balance between providing local and specialist content (and possibly local production content) and achieving the high percentage of viewers watching - bringing viewersto your programmes might be better done with programming other than your own!

Browser TV
A new channel is a TV rich environment might be offered as a browser channel. Browser TV is based on short video clips with short regularly repeated messages, MTV a primary example.

Another model that can be quite persuasive is for a local channel to mimic local radio - 90% national or regional music interspersed with local/community news/ chat/personality/documentary-features etc. A music video station with a video DJ able to provide the messages live and in conversation with local agencies.

The local content is the glue which binds an otherwise larger cultural contribution together.

Single transmitter or many - which way to reach your community
Each broadcast or re-broadcast requires a new transmitter and to operate on a non-interfering frequency. Setting up a TV service to reach an entire local population (especially in hilly terrain) would require a new frequency and relay for the new channel as it cascades outwards and into gaps over several relays. This might be justified if the number of TV households in each area approached saturation - in which case the transmitter masts and relay sites would already be established and viewers would have their aerials facing the right way. The major issue would be frequency availability to fit the new service into the prevailing transmission bands used at each transmitter and relay.

However, figures suggest that TV roll-out in Africa, Asia and in parts of S America is patchy. **(See later detail for Tanzania, Ghana, Souith Africa and Honduras)** Detailed information on domestic and community uses for television should be investigated before any commitment might be made to TV's general developmental credentials.

There is a possible caveat to these figures on TV households though. The national figures based on TV sets per 1000 population are likely to be skewed: TV's per household need to be measured (for the purpose I imagine here) in terms of their location, the prospects of receiving a watchable signal and likelihood of further take-up among the receiving population. **(See later estimate of television, radio and phones per head of population in developing countries)** So, TV households will be clustered within TV reception areas. Low numbers of transmitter areas and low-to-average numbers of TV households in national figures should (fingers crossed) point to high take up in those areas where signals can actually be received. In other words national TV household figures are less likely to be reliable in countries with a poor TV network.

Ideally coverage of a large population by a single large transmitter requiring few if any relays will already be in place - it is the usual starting point for a TV network.

Any new proposal would mean adding an additional channel (or a few additional channels) in

alongside the existing established service - to reach the available audience.

The other choices are cable and satellite or on a small (perhaps self-help) scale 2.4TV.

2.4TV
By international agreement the 2.4GHz band is licence exempt. The four or more frequencies operating at 2.4 have both digital and analogue applications - the former for Wi-FI, Bluetooth and wireless internet and the latter for RF or FM transmission of video and audio in domestic video senders and for CCTV - indoors and outdoors. The Institute of Local Television ran a year long trial using 2.4 to deliver TV signals across the small Perthshire town of Aberfeldy, to a hotel where the signal continued by cable to each of 24 bedrooms and for reception up at a bunkhouse high on a neighbouring hill.

2.4GHz is limited to 10mW ERP in the UK for outdoor use. In the field trial we increased the range of the signal from the domestic equipment's limit of 100 metres outdoors up to 2.5Km by attaching high gain parabolic antenna to the receiver. For the shorter 500 metre hop to the town's hotel a yagi antenna was used.

The Aberfeldy trial is set to continue with a small tower-block TV service in Leith in north Edinburgh. Recently it was decided to go ahead with a school's TV service in Doncaster **(See later Doncaster location survey as example of two-way use of 2.4TV)** and a university service for Winchester awaits a decision **See later Doncaster location survey as example of university/town use for 2.4TV)**. The survey to assess the best means to install a community TV service in Merthyr Tydfil is under way. 2.4 may have a role here too.

The Institute describes 2.4 in its UK applications as an 'interim technology' answering an unfulfilled wish by many community video and educational video users to experience broadcasting, to teach and understand the limitations of scheduling and the benefits of engagement with an audience who can become broadcasters themselves. The model of exploitation of 2.4 we favour is that of a 'social franchise'. The Institute assists with surveys' and blueprints and by setting up the initial transmitters and relays and some receivers and provides (or assists) with instruction and access to suppliers to set up the service, run it and - hopefully - build it further, hopefully encouraging neighbouring communities/colleges and users to take up and run their own systems. **(See later Postgraduate Small-scale TV Course Outline).**

In the UK context 2.4TV is a stand-alone model - designed for schools, colleges, community centres and other buildings - and in particular suited to delivery of TV to public places, schools (in Doncaster) pubs, clubs and halls of residence (as proposed for Winchester) and a mix of schools and community centres as proposed for Merthyr Tydfil.

In the UK environment at present - where there is no new local access to analogue - a mixture of 2.4, broadband (if available), DVDs of local material distributed through video shops and public libraries provides a mixed technology solution to a grassroots enthusiasm to be broadcasters.

Small-scale college, school and community projects using 2.4 offer a nursery slope towards the imminent but not yet available possibilities of broadband TV and local digital public service

broadcasting. But ..... in the thinking about the potential of 2.4 the opportunities to develop longer term development oriented communication tools have arisen.
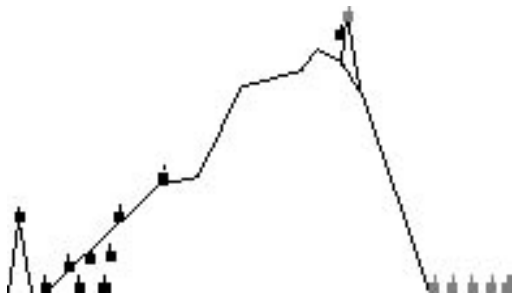
See Figures 1 and 2.

Figure 1
A 2.4Ghz transmitter to the left of the hill puts out a 10mW signal on one of four available frequencies. It can be received at several locations within 100 metres on the standard (domestic) receiver 2.4 antenna as well as on the nearby hilltop. To be picked up on the top of the hill the received signal is amplified using a high gain antenna - allowing a distance between transmission and reception of >3Km. At the hilltop the signal is retransmitted on one of the three unused 2.4GHz frequencies and received at the foot of the hill on receivers - also with high gain antenna. Each receiver and antenna is connected via scart or din to the TV.

In the experimental service at Aberfeldy the hilltop relay was powered for a short period by 12 volt battery charged by solar panels. Alternatively wind powered generators could be used (eg those used for 12 volt caravan and boat electrics).
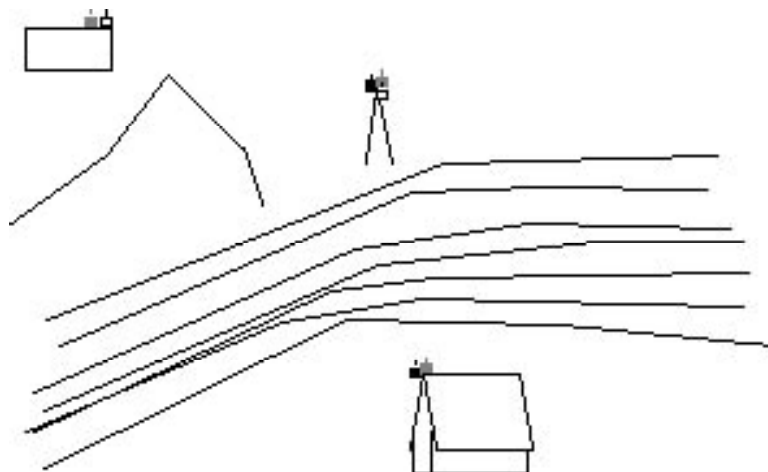
Figure 2
A variation on the possibility in Figure 1 suggests that the intermediate relay might help bridge water or a ravine and help to take the signal around a hill. The setup here - using three of the available four frequencies and appropriate antenna to increase distance - effectively provides a video conferencing or two way link between remote buildings. One application might to provide 'distance learning' to

an isolated community or medical advice/support to an isolated settlement. As an alternative the rebroadcasting at the furthest site could be picked up using the basic antennas which offer good reception at line of sight at 100 metres. With 12 volt batteries and renewable energy at transmission, relay and reception this two-way 2.4GHz link would be independent of mains electricity - and into areas without mains electricity services assuming access to 12 volt TVs.

Open access - or defining our service
Borrowing from Professor Nick Jankowski's definition an open access channel can be broadly defined as offering:-

- access to production equipment, training and resources;
- access to management and decision making;
- access to transmission and airtime and;
- access to broadcasting policy.

Outside Germany few countries combine these elements to form this ideal type. Instead variations of open access appear on community, public or local and commercial services - with a varying inputinto management which rarely influences directly government policy. In spite of convergence, access to broadcasting policy is largely the preserve of existing stakeholders. With open access in its purest form the 'broadcaster' is not liable for transmitting unlawful utterances, obscenity, racism etc because legal responsibility resides entirely with the programme maker or producer. This approach should be positively endorsed, as it has been in the reconstruction of post-war Germany, as a sophisticated way of enabling an open society to emerge while alerting civil interests to any resurgent political interests likely to damage the democratic fabric. While to all intents and purposes the open channels might appear anarchic free-for-alls they demonstrate a political maturity not found in less or unregulated broadcasting environments.

In Spain the development of local television has taken place in an 'a-legal' framework: neither legal or illegal a floating set of small-scale services have grown up and remain unlikely to be prosecuted if they avoid interfering with other larger (state recognised) broadcasters. The federal government have devolved responsibility for TV regulation to the regional administrations which in turn have not put in place any policy!

Lord Reith's public service broadcasting (PSB) model was adopted (at least) by Canada, Australia, South Africa and Isreal. PSB has many merits in its civil ambitions (as outlined in 1987 by the Broadcast Research Unit) to achieve universal access to broadly the same body of news and debate upon which an enlighhtened citizenship can deliberate, decide and determine the politrical and cultural landscape. Television however crosses frontiers and can bring with it commercial as well as enlightened perspectives.

The motivation for crossing borders - readily achieved with satellite services is mostly to achieve a commercial objective. The Reithian model was established without competition in the UK and the Commonwealth countries in distinction to the more commercial model favoured in the USA. The introduction of PSB models in many countries were not then in direct competition for viewers with less channels focused on less civic objectives. In short, it is doubtful that public service broadcasting will retain the cornerstone principle to balance education, entertainment and information unless a

country has rolled out at arm's length, relatively uncontested by commercial entertainment and - most importantly - trusted in advance of the arrival of commercial television.

It is probably worth examining the PSB environment in selected countries. From my UK experience the problem with the mature PSB models is that they had outlived and to a degree suppress the rights to demonstrate differences within the national political realm. Outside of the German experience - where Lande are ceded licence fee funds to develop local access - the hold on the national character of PSB has been to the exclusion of localised and positive expressions of diversity and especially at the expense of participation in the local news realm.

PSB has an enviably trusted role in news provision but (in the UK) has not created local news operations tending rather to protect a regional scale only justified by the goeography of scale and location as befits the installation of television transmitters put in place fifty years ago to deliver a national service.

A detailed analysis of PSB in six countries by Tony Mendel, 'Public Service Broadcasting. A comparative legal survey' can be found at
http://www.unesco.org/webworld/publications/mendel/compatb.html

Looking abroad (somewhat blindly)
As a starting point I've copied some extracts from articles by authors working much closer than myself to community TV in some of the four countries initially identified (Honduras, Tanzania, South Africa and Ghana) and in addition from India.

These articles touch on the use of existing television broadcasting channels to provide development information and in some cases they extend development to include media awareness.

(See later articles of TV use in development in South Africa and India)

Taken together these examples highlight a significant additional point which in Europe is usually taken for granted once access to a channel has been secured, that is:

• 	access to an audience and;
• 	access to the appropriate audience and particular groups within an audience.

In the 'ideal' type of European open access channel control of programming is vested in users who are also likely to be active among the channel's viewers. What is taken for granted in the German model is that there is already access to an audience who may or may not be watching.

In Berlin1.5 million homes are connected to the cable network and the local open channel or Offener Kanal is just one of thirty or so channels reaching each home. There are some 80 Offener Kanalan in Germany.

That said though, in homes where open access is available there is heavy competition for viewing from 30 or so channels. A strong argument of these channels is that they primarily provide an outlet for freedom of expression and are not concerned with viewing figures. Perversely, freedom of

expression finds itself talking into a vacuum since the widespread view is that in multi-channel households families settle on eight or so channels of which perhaps half of these are the most regularly watched.

The introduction of a television channel, and television programming as envisaged in developing countries would need some understanding of the local physical landscape but also of local viewing patterns and programme preferences.

In what we'll loosely call 'access television for development' the access priorities will probably be somewhat different than those found in Europe.

The German open access model's great virtue is that it provides a positive space for contribution and argument but (perhaps more important) while being 'open' puts on display the 'open society of democratic principle'. In nations without a diverse press opening up broadcasting to PSB and especially a devolved or localised PSB or open access is one way of simultaneously encouraging and demonstrating the democratic quality of public debate and the importance attached to this by civil society.

Outside the developed countries it cannot be taken for granted that 99% of all viewers will have terrestrial television (a position reached by public service broadcasting in the UK before the advent of cable). The univerality principle of access to television and radio for all citizens of substantially the same programming, permitting involvement in the same debates, knowledge of the same news and issues has been that central principle of public service broadcasting. This has become open to question insofar as commercial entertainment television can occupy the space a more finely grained and localised set of television discourses could also occupy. It is my contention - though how appropriate here I don't know - but that the PSB initiative must follow through to all layers of democratic process, to regional and local layers. Recently with universality achieved nationally - and in a multi channel and more market oriented broadcasting environment - the emphasis has been to maintain plurality, a diversity of voices and views against the threat to PSB programming. Public service broadcasting has been consigned to a cornerstone rather than encouraged to build from its foundational principle.

In Europe (though not in the UK) cable penetration of 80-90% households in town, city and small regional configurations provides ready-made means to provide possible access especially in many of the northern contentential European countries (and the USA and Canada).

But the issues might outweigh media literacy
The requirements of 'access television for development' might not be those of media literacy and media empowerment but of simpler message dissemination to achieve a development objective.

The European priority for 'access' to deliver consciousness raising, social inclusion, capacity building and representation of diversity in a broadly democratic media environment won't always be directly transferable either.

That said - the objective to have media empower (either the supplier or the receiver) will underpin the manner of delivery of any message. Its voice, tone and commitment can (I guess) be expected to

have longer lasting impact if it is promoted through a shared or lived experience from among those within the area to which the information is addressed.

Television signals achieve a variety of scales of wide ranging geographical audiences or smaller scale culturally linked communities. Reaching dispersed audiences - in particular a dispersed minority of language speakers or people infected or liable to particular illnesses - these are communities of interest whose numbers might only be reached viably through larger scale transmission methods: reception of much of the signal may fall not on deaf but indifferent ears.

Broadly the scale of delivery is something like this:

- satellite - continental, national or regional scales of coverage, dispersed communities of interest spread among the host population
- terrestrial TV network (analogue or digital) - national and regional
- cable - regional and local
- individual terrestrial TV transmitter - very local to regional
- municipal cable - often used to relay otherwise poor terrestrial signal into communal housing
- impromptu cable - self-help initiatives to cable a community - often from a terrestrial transmission (eg) to take TV into valleys etc
- 2.4TV - using 10mW to 10W microwave transmission to relay services, small-scale and can be extended with impromtu or municipal cable

Also -
- DVD - though not a distribution platform can be used in partnership or as an alternative where there is a large installed base of TVs and DVDs - and used for distribution to community, education and health centres with such facilities

Where television services are already being provided through public or commercial networks this network has achieved access and through the content of the channels secured and accessed particular audiences. A new intervention in such channels requires an interpretation and understanding of the demands from programming made by the target audience.

The authors of the few articles found and copied here on 'development TV' **(See later articles of TV use in development in South Africa and India)** seem to suggest that it is not merely sufficient to place appropriate programming or messages on a watched channel (programming must of course be visible) but it must also be scheduled at the right times to be seen by the target group and (if only to be shown once, unlike a TV commercial) must be engaging to the group

To achieve this programming needs to be in or near any peak viewing times for a general audience while bearing in mind that proposals to provide programmes to large scale channels at these times would be in competition with the existing public or commercial provisions.

If a new channel were a favoured option there would be twenty four hours of programming to find and a long term plan required to build and sustain channel loyalty.

In many countries a new channel offering an alternative PSB message to that implicitly condoned (if not actually supported and paid for) by government would seem to raise questions that the television channel might well not want to address.

Alternatively, satellite transmission on a pan-country basis might be the best option if messages are regularly required to run counter or to show up failings in the prevailing public broadcasting services of individual governments.

The 'access development' articles touch on a fundamental point: that programming not only needs to be well-placed in a favoured TV schedule but to be seen as attractive and as comprehensible as the popular programming liked by the audience. This in turn can mean that for all audiences and in different ways the forms of the programming should share production values with those programmes being watched or - wanted - by the targetted audience.

A possible model service type is suggested for a young (at heart) audience
In a local television service running in Dundee for just over a year we used a server to transmit pre-loaded music videos and other local programmes. In effect this was a televised video juke-box, with requests from viewers changing the schedule by phone.

Our audience were predominantly 14-35 years of age with an emphasis on late teens and early twenties. This 'MTV-like' channel was immensely popular.

Whether a music channel is an appropriate vehicle for development messages is another issue, but there's no doubt that music - with its potent mix of local, national and 'global' contents - does compete successfully for attention with national and regional TV channels among this particular age group. (This channel was second in viewing figures to BBC1 for the over 35s).

Such a service has several advantages in its construction and funding.

Music videos provide:-

• short attention span programmes that are not language critical
• they are regularly available and provide high-quality programming
• they can be national, global, regional or highly local in character - and all of these in one channel
• music videos are tolerant to repetition - highly visual, relate to other cultural interests - can engage viewers in contributing their own content
• a video juke-box approach to transmission is free of studios etc
• the service can be run from server with a schedule downloaded by phone
• a server can sit at the transmitter site transmitting to a small or large area - it doesn't have to be networked, a different server at different locations
• the schedule can be over-written by viewer requests (where mobile's are in use)
• simple on screen messages can be overlaid onto the videos - these can be updated and controlled by phone

- the cost of programming is controllable - the fee for music rights, videos are supplied by record companies - offering a strong incentive for local music videos to be made and screened
- short-form video (3-4 minutes) can include messages, programmes, news, cartoons, and shorter commercial length messages etc - all cycled throughout the day - to catch peak viewing for different groups (some additional cartoons for young parents with kids etc)
- music offers 'browser' television service - operating in a multi channel environment it is is the channel viewers will turn to by default, to fill the troughs in attention grabbing material found on other channels.

Dominance of 'western' music videos is not a necessary feature. In a service in which the viewers can control the content by dial-up selection their choice will include local tastes - which would probably mean (from the Dundee experience) a mix of local and regional as well as global influences - and replacement videos can over time better reflect this local collective taste.

The server can be built to include a switch so that it can cut-into a relayed satellite feed - making it possible to run a very local service as an opt-out providing retransmission of an existing satellite feed (or a new pan country music satellite service offering generic messages etc) with the opt-out catering to the needs of very local audiences.

Then by coincidence the following:

MTV Set to Start Africa Version
The Nation (Nairobi)
October 26, 2004
Posted to the web October 26, 2004
Nairobi
MTV Networks Europe is to launch a localised version of its urban music service, MTV Base, in Africa.

The advertiser-supported channel will be broadcast via satellite to 48 countries in sub-Saharan Africa from February, next year, via operators, including MultiChoice's DStv.

The news was announced in London yesterday by MTV Networks Europe president and chief executive Brent Hansen.

The 24-hour, English language music TV channel will reflect the tastes and interests of African youth. It will combine African and international music videos with local content, complemented by MTV's UK and US long-form programming such as "Cribs" and "Making The Video".

MTV Base will also provide a platform for a variety of African music genres, including Kwaito, Hip-Life, Mbalax and Zouk. These will be featured alongside diverse international urban artists, such as Alicia Keys, Jay-Z, Sean Paul, IAM, Passi and Saian Supa Crew.
The channel will also premiere local HIV/Aids awareness and prevention messages.

A more general approach

For a more general approach the choices seem to be a variety of structured forms of intervention:-

- seek airtime from a favourable regional television station and opt regional programming into an otherwise pre-dominantly national stream (the Tanzania suggestion) - with programming inserted at main regional transmitter
- intercept and relay a terrestrial/satellite signal at a remote transmitter and relay this out to local TV households unable to take the terrestrial/satellite signal - add local material at re-transmission
- intercept and insert new programming and relay a satellite signal via cable and/or 2.4GHz to densely populated areas where there is cabling supplying existing terrestrial channels (channels who are not supportive of having your programme interrupt theirs, or where that's not appropriate)
- in remoter areas where there is no TV service supplied by terrestrial, cable or satellite (there may be little inducement to own a TV) and it may be necessary to run independently a server based TV channel using 2.4GHz/cable - primarily to deliver the service to community centres - schools, meeting places etc

For most of these approaches there has to already be an appropriate level of TV take-up in the households being targeted and a willingness of channels to provide appropriate air-time (from commercial breaks to short programmes) on which to build a platform.

My view is that if intervention requires a whole new channel, this channel should satisfy specific but unrequited popular demands in order to bring large numbers of viewers to the programmes and the messages you want them to see - hence the music channel (and MTVs push on HIV/Aids too).

Whether this 'platform' is provided off the shelf - or if local elements of the message-making are built up through media classes - can be determined according to the purpose and the urgency of the exercise, access to channels cost of transmitters and numbers of relays subject to available frequencies.

In the longer term self-built and locally delivered messages are likely to benefit from ensuring greater cultural flexibility where there can be message transformation into local styles, across conventions and attitudes. That is, more localised services can be flexible and better focused than larger scale options.

So some models
A small scale TV service based on a mix of ad hoc or municipal cabling and 2.4GHz relays would enable communities living close together to be linked in a crowded urban setting.

Alternatively there is a model being tried in South Africa - a commercial model - in which a television screen is used to provide commercial messages at taxi stops as part of purpose built trading kiosks, sited initially on church land.

(See later articles of TV use in development in South Africa and India)

Sample overview

I've included some lengthy lists of TV standards, TV households and technical factors applying in as many countries as time allowed. **(See later)**

GHANA

Radio broadcast stations: AM 0, FM 49, shortwave 3 (2001)
Television broadcast stations: 10 (2001)
Ghana – community radio
Ghana Broadcasting Corporation. Address: PO.Box 1633, Accra, Ghana
TV stations: 7
Population (mid-1998 estimate) 18.4 million average growth @ 2.8% per annum. Urban population as % of total 37.
Television Coverage Ownership as known
Channel

Name	No	Coverage	Ownership
GTV	9	National	Government
TV3	12	Accra area, East & Central	Private
Metro TV	26		Private

Number of TVs (1997 estimate):   1.9 million
Number of radios (1997 estimate):   12.5 million

TANZANIA

Radio broadcast stations: AM 12, FM 11, shortwave 2 (1998)
Television sets: 103,000 (1997)
Television broadcast stations: 3 (1999)
ITV – Independent Television Ltd Channel 24 Dar es Salaam
ITV-Independent Television Ltd And Radio One Ltd PO Box 4374, Dar es Salaam, Tanzania
TVZ – Television Zanzibar
Population: 36,232,074
http://www.uneca.org/aisi/nici/country_profiles/tanzania/tanzinfra.htm Broadcasting/Media
Television broadcasting by ITV - Independent Television and Radio One Ltd.: Radio One transmits to Moshi, Mwanza and Dodoma Moshi on FM, and ITV covers Dar es Salaam, Moshi, Mwanza and Dodoma.
Radios per 100 inhabitants: 27.6 (1995)
Television receivers per 100 inhabitants: 2.1 (1998)
Pay TV decoders: 500
Cable TV subscribers: na
Home satellite dishes/antennas: na
Satellite TV: Multichoice Tanzania
UNESCO ISP Project **Television Zanzibar information network** Time period: 1999 - 2001
Approved IPDC budget: $40,000
Source of Funds: IPDC Special Account Project description: The objective of this project was the integration of Television Zanzibar information system and the development of a local ISP network within Zanzibar.

SOUTH AFRICA

Radio broadcast stations: AM 14, FM 347 (plus 243 repeaters), shortwave 1 (1998)
Television sets: 6 million (2000)
Television broadcast stations: 556 (plus 144 network repeaters) (1997)\

HONDURAS

Radio broadcast stations: AM 241, FM 53, shortwave 12 (1998)
Television sets: 570,000 (1997)
Television broadcast stations: 11 (plus 17 repeaters) (1997)
Telephones - main lines in use: 190,200 (1996)
Telephones mobile cellular: 0 (1995)
Telephone system: inadequate system domestic: NA international: satellite earth stations - 2 Intelsat (Atlantic Ocean); connected to Central American Microwave System
Radios: 2.45 million (1997)
Televisions: 570,000 (1997)
Internet Service Providers (ISPs): 14 (1999

Analogue terrestrial TV broadcasters - Honduras
The Honduran TV station and transmitter information is relatively comprehensive - and can serve as a guide for basic information required of any country in which a local intervention was proposed. To give some sense of reach for the transmitters described the following is a guide for coverage - qualified by the terrain's tendency to reduce signal strength and for hills to halt signals. Across flat terrain a 500W transmitter would reach >70-90Km, 200W > 30-40Km, while a low power 2W transmitter might reach >10Km.

No	Channel Name	Location	EIRP	Address (where known)
Atlantida Province / La Ceiba, Honduras				
3	Telesistema Hondureña	Tela	100W	
3	Telesistema Hondureña	La Ceiba	1kW	
5	Canal 5	Tela	250W	
5	Canal 5	La Ceiba	1kW	
7	Teleceiba	La Ceiba	-	4a Calle E. Telephone: (504) 443-2753 Fax: (504) 443-2353 Email: teleceiba@psinet.hn
13	Telecadena 7 y 4	Tela	250W	
13	Telecadena 7 y 4	La Ceiba	1kW	
Choluteca Province, Honduras				
7	Telesistema Hondureña	Choluteca	500W	
9	Canal 5	Choluteca	1kW	
13	Telecadena 7 y 4	Choluteca	1kW	
33	Telesur Canal 33	San Lorenzo	1.5kW	
Colon Province, Honduras				
9	Canal 5 // [R]	Sonaguera	1kW	
Comayagua Province, Honduras				
7	Telesistema Hondureña	Comayagua	500W	
9	Canal 5	Comayagua	1kW	
52	Metrovision	Comayagua	-	
52	Metrovision	Siguatepeque	-	
Copan Province, Honduras				
5	Canal 5	Santa Rosa de Copan	250W	
Cortes Province / San Pedro Sula, Honduras				
2	Vica Television plus 3 relays Blvd. Morazán Telephone: (504) 32-3615 Fax: (504) 31-0007	San Pedro Sula	25kW	
3	Telesistema Hondureña // [R]	Puerto Cortés	100W	

4	Telecadena 7 y 4	San Pedro Sula	10kW
5	Canal 5	Puerto Cortés	500W
6	CBC Canal 6	San Pedro Sula	

Telephone: (504) 53-1945

Fax: (504) 53-1810

7	Telesistema Hondureña	San Pedro Sula	10kW
9	Canal 5	San Pedro Sula	12kW
13	Telecadena 7 y 4	Puerto Cortés	500W
21	Canal 21	San Pedro Sula	-

Apdo 1089, San Pedro Sula   Telephone: (504) 56-6684

Fax: (504) 56-9255

Email: tele21@netsys.hn

54	Metrovision	San Pedro Sula	-

La Paz Province, Honduras

52	Metrovision	La Paz	-

Olancho Province /Juticalpa, Honduras

9	Canal 5	Juticalpa	1kW

Santa Barbara Province, Honduras

5	Canal 5	Santa Barbara	250W

Tegucigalpa, Francisco Morazan Province, Honduras

3	Telesistema Hondureña	Tegucigalpa	12kW
4	Centroamericana de Television	Tegucigalpa	2kW
5	Canal 5	Tegucigalpa	10kW

Address: Apt. Postal 734
Telephone: (504) 39-2083
Fax: (504) 32-1475
Email: tn5@televicentro.hn

7	Telecadena 7 y 4	Tegucigalpa	5kW
9	Vica Television	Tegucigalpa	25kW
11	SOTEL Canal 11	Tegucigalpa	-
13	Cruceña de Television	Tegucigalpa	20kW

Address: Casilla 3424
(11am-2pm)

39	Cosecha Vision (religious)	Tegucigalpa	
45	RCN	Tegucigalpa	
51	JBN TV (religious)	Tegucigalpa	
54	Metrovision (HRHT)	Tegucigalpa	

Address:
PO. Box 2336;   Col. Lomas del
Mayab,   Senderos Madreados,
                                                           Tegucigalpa
                                                                    Telephone:
(504) 239-3966   Fax: (504) 239-
6156   Email:
            canal54@yahoo.com

| 57 | National Evangelical Christian TV (religious) | Tegucigalpa | |
| 63 | Telenisa | Tegucigalpa | |

Yoro Province, Honduras

| 7 | **Telesistema Hondureña** | **Olanchito** | 100W |

TV broadcast standards, country by country, ca 2000

Europe:

PAL-B & G:	Albania, Austria, Estonia, Faroe Islands, Finland, Germany, Gibraltar, Iceland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland
PAL-B & H:	Belgium, former Yugoslavia
PAL-B:	Azores, Denmark, Malta
PAL-I:	Ireland, United Kingdom
PAL/SECAM L & G:	Monaco
PAL-D & K:	Hungary, Poland, Roumaina
SECAM-L:	France
PAL/SECAM B, G & L:	Luxembourgh
PAL/SECAM-B & H:	Greece
SECAM-D & K:	Bulgaria, Czech, Slovakia, former USSR

Africa:

PAL-B:	Algeria, Cameroon, Ehtiopia, Ghana, Kenya, Liberia, Libya,Madeira, Mozambique, Seychelles, Sierra Leone, Somalia, Sudan, Tanzania, Uganda, Zambia, Zimbabwe
PAL-B & G:	Canary Islands, Nigeria, Swaziland
PAL-I:	Angola, Lesotho, Namibia, South Africa
PAL-K:	Guinea
SECAM-B:	Egypt, Equatorial Guinea, Mauritania, Mauritius, Morocco
SECAM-B & G:	Tunisia
SECAM-D:	Chad, Congo

SECAM-K:	Benin, Botswana, Burkina Faso, Burundi, Cote d'Ivoire, Gabon, Madagascar, Mali, Mayotte, Niger, Reunion, Senegal, Togo, Zaire
SECAM-V:	Djibouti

Asia:
PAL-B:	Bangladesh, Brunei Darussalam, India, Indonesia, Malaysia, Maldives, Nepal, Pakistan, Singapore, Sri Lanka, Qatar, Turkey
PAL-B & G:	Bahrain, Israel, Jordan, Kuwait, Oman, United Arab Emirates
PAL-B & PAL-M:	Thailand
PAL-D:	China
PAL-D & K:	North Korea
PAL-I:	Hong Kong, Macau
PAL-M:	Laos
PAL & SECAM-B:	Afghanistan
PAL & NTSC-B:	Yemen
SECAM & PAL-B & G:	Saudi Arabia
SECAM-B & PAL-G:	Syrian Arab Rep.
SECAM-B:	Iran, Iraq
SECAM-B & G:	Cyprus, Lebanon
SECAM-D:	Mongolia
SECAM-M:	Cambodia
NTSC-M:	Diego Garcia, Japan, Myanmar, Philippines, South Korea, Taiwan
NTSC-M & SECAM-M:	Vietnam

Australia/Pacific:
PAL-B:	Australia, Cook Islands, New Zealand, Norfolk Island
PAL-B & G:	Papua New Guinea
NTSC-M:	Fiji, Galapagos Islands, Guam, Hawaii, Micronesia, Northern Mariana Islands, Palau, Samoa
SECAM-K:	New Caledonia, Polynesia, Whallis Island

America:
NTSC-M:	Alaska, Antigua, Aruba, Bahamas, Barabuda, Barbados, Belize, Bermuda, Canada, Chile, Colombia, Costa Rica, Cuba, Dominica, El Salvador, Equador, Grenada, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, Netherlands Antilles, Nicaragua, Panama, Peru, Puerto Rico, St Kitts & Nevis, St Lucia, St Vincent, Surinam, Tobago,Trinidad, USA, Venezuela, Virgin Islands
NTSC-M & N:	Bolivia
PAL-B:	Greenland
PAL-I:	Falkland Islands
PAL-M:	Brazil
PAL-N:	Argentina, Paraguay, Uruguay
SECAM-K:	Guadelope, French Guiana, Martinique, St Pierre et Miquelon

National analogue television transmission systems
Will send by post – doesn't format well in Word

Global Indicators of Information Technology (per 1000 persons)

Country	TV Sets (2000)	Daily Newspapers Readership (1998)	Radios (2000)	Phone Lines (2000)	
India	78	48	121	32	
USA	854	213	2118	700	
Australia	738	293	1908	525	
Japan	725	578	956	586	
Canada	715	159	1047	677	
UK	652	329	1432	589	
France	628	201	950	579	
Germany	586	305	948	611	
Sweden	574	432	932	682	
Italy	494	104	878	474	
Russia	421	105	418	218	
Korea	364	393	1033	464	
Brazil	343	43	433	182	
Israel	335	290	526	482	
Singapore	304	298	672	484	
China	293	--	339	112	
Mexico	283	98	330	125	
Egypt	189	35	339	86	
Philippines	144	82	161	40	
Pakistan	131	30	105	22	
Sth Africa	127	32	338	114	
Sri Lanka	111	29	208	41	
Kenya	25	10	223	10	
Bangladesh	7	53	49	4	

source: http://www.nri-worldwide.com/cgi-local/ts.pl?action=fetch&area=statisticsofindia

Dominican Republic	90	-	173	-	
USA	817	-	2122	-	

source:
http://www.prb.org/Content/NavigationMenu/PRB/Educators/Child_6_Billion/The_World_of_Child_6_Billion.htm

	2001/2		1997/8		
Ghana	52.6	-	257.3	-	
Honduras	119.4	-	411.1	-	
Sth Africa	177.2	-	336.0	-	
Tanzania	44.6	-	406.4	-	
D/ping	190	-	257.3	-	

Counties Av
source: http://genderstats.worldbank.org/external/dgcomp.asp?rmdk=110&smdk=473895&w=0

The World Factbook, 2003.

Television broadcast stations
While listed as 'stations' these will be transmitter sites and relays (repeaters) – some stations operate from a main transmitter site – probably as described in Afghanistan. But (eg) France does not have 584 TV stations, and the UK certainly

Country	Television broadcast stations
Afghanistan	at least 10 (one government-run central television station in Kabul and regional stations in nine of the 32 provinces; the regional stations operate on a reduced schedule; also, in 1997, there was a station in Mazar-e Sharif reaching four northern Afghanistan provinces) (1998)
Albania	3 (plus 58 repeaters) (2001)
Algeria	46 (plus 216 repeaters) (1995)
American Samoa	1 (1997)
Andorra	0 (1997)
Angola	6 (2000)
Anguilla	1 (1997)
Antarctica Network-	1 (cable system with six channels; American Forces Antarctic McMurdo) note: information for US bases only (2002)
Antigua and Barbuda	2 (1997)
Argentina	42 (plus 444 repeaters) (1997)
Armenia	3 (plus an unknown number of repeaters) (1998)
Aruba	1 (1997)
Australia	104 (1997)
Austria	45 (plus more than 1,000 repeaters) (2001)
Azerbaijan	2 (1997)
Bahamas, The	1 (1997)
Bahrain	4 (1997)
Bangladesh	15 (1999)
Barbados	1 (plus two cable channels) (1997)
Belarus	47 (plus 27 repeaters) (1995)
Belgium	25 (plus 10 repeaters) (1997)
Belize	2 (1997)
Benin	1 (2001)
Bermuda	3 (1997)
Bhutan	0 (1997)
Bolivia	48 (1997)
Bosnia and Herzegovina	33 (plus 277 repeaters) (September 1995)
Botswana	1 (2001)
Brazil	138 (1997)

British Indian Ocean Territory
        1 (1997)
British Virgin Islands
        1 (plus one cable company) (1997)

Country	Stations
Brunei	2 (1997)
Bulgaria	39 (plus 1,242 repeaters) (2001)
Burkina Faso	1 (2002)
Burma	2 (1998)
Burundi	1 (2001)
Cambodia	6 (2003)
Cameroon	1 (2002)
Canada	80 (plus many repeaters) (1997)
Cape Verde	1 (and 7 repeaters) (2002)
Cayman Islands	1 with cable system

Central African Republic
        1 (2001)

Country	Stations
Chad	1 (2002)
Chile	63 (plus 121 repeaters) (1997)
China	3,240 (of which 209 are operated by China Central Television, 31 are provincial TV stations and nearly 3,000 are local city stations) (1997)
Christmas Island	NA

Cocos (Keeling) Islands
        NA

Country	Stations
Colombia	60 (includes seven low-power stations) (1997)
Comoros	NA

Congo, Democratic Republic of the
        4 (2001)

Country	Stations
Congo, Republic of the	1 (2002)
Cook Islands	2 (plus eight low-power repeaters) (1997)
Costa Rica	6 (plus 11 repeaters) (1997)
Cote d'Ivoire	14 (1999)
Croatia	36 (plus 321 repeaters) (September 1995)
Cuba	58 (1997)
Cyprus	
Greek Cypriot area:	4 (plus 225 low-power repeaters) (September 1995); Turkish Cypriot area: 4 (plus 5 repeaters) (September 1995)
Czech Republic	150 (plus 1,434 repeaters) (2000)
Denmark	26 (plus 51 repeaters) (1998)
Djibouti	1 (2002)
Dominica	0 (however, there is one cable television company) (1997)
Dominican Republic	25 (1997)
East Timor	NA
Ecuador	7 (plus 14 repeaters) (2001)
Egypt	98 (September 1995)
El Salvador	5 (1997)
Equatorial Guinea	1 (2002)

Eritrea	1 (2000)
Estonia	3 (2001)
Ethiopia	1 plus 24 repeaters (2002)
Falkland Islands (Islas Malvinas)	2 (operated by the British Forces Broadcasting Service) note: cable television is available in Stanley (2002)
Faroe Islands	3 (plus 43 low-power repeaters) (September 1995)
Fiji	NA
Finland	120 (plus 431 repeaters) (1999)
France	584 (plus 9,676 repeaters) (1995)
French Guiana	3 (plus eight low-power repeaters) (1997)
French Polynesia	7 (plus 17 low-power repeaters) (1997)
Gabon	4 (plus four low-power repeaters) (2001)
Gambia, The	1 (government-owned) (1997)
Gaza Strip	2 (operated by the Palestinian Broadcasting Corporation) (1997)
Georgia	12 (plus repeaters) (1998)
Germany	373 (plus 8,042 repeaters) (1995)
Ghana	10 (2001)
Gibraltar	1 (plus three low-power repeaters) (1997)
Greece	36 (plus 1,341 low-power repeaters); also two stations in the US Armed Forces Radio and Television Service (1995)
Greenland	1 publicly-owned station, some local low-power stations, and three AFRTS (US Air Force) stations (1997)
Grenada	2 (1997)
Guadeloupe	5 (plus several low-power repeaters) (1997)
Guam	5 (1997)
Guatemala	26 (plus 27 repeaters) (1997)
Guernsey	1 (1997)
Guinea	6 low-power stations (2001)
Guinea-Bissau	NA (1997)
Guyana	3 (one public station; two private stations which relay US satellite services) (1997)
Haiti	2 (plus a cable TV service) (1997)
Holy See (Vatican City)	1 (1996)
Honduras	11 (plus 17 repeaters) (1997)
Hong Kong	4 (plus two repeaters) (1997)
Hungary	35 (plus 161 low-power repeaters) (1995)
Iceland	14 (plus 156 low-power repeaters) (1997)
India	562 (of which 82 stations have 1 kW or greater power and 480 stations have less than 1 kW of power) (1997)
Indonesia	41 (1999)
Iran	28 (plus 450 low-power repeaters) (1997)
Iraq	13 (1997); note - unknown number were destroyed during the March-April 2003 war
Ireland	4 (many low-power repeaters) (2001)

Israel	17 (plus 36 low-power repeaters) (1995)
Italy	358 (plus 4,728 repeaters) (1995)
Jamaica	7 (1997)
Japan	211 plus 7,341 repeaters
	note: in addition, US Forces are served by 3 TV stations and 2 TV cable services (1999)
Jersey	2 (1997)
Johnston Atoll	commercial satellite television system, with 30 channels (2002)
Jordan	20 (plus 96 repeaters) (1995)
Kazakhstan	12 (plus nine repeaters) (1998)
Kenya	8 (2002)
Kiribati	1 (not reported to be active) (2002)
Korea, North	38 (1999)
Korea, South	121 (plus 850 repeater stations and the eight-channel American Forces Korea Network) (1999)
Kuwait	13 (plus several satellite channels) (1997)
Kyrgyzstan	NA (repeater stations throughout the country relay programs from Russia, Uzbekistan, Kazakhstan, and Turkey) (1997)
Laos	4 (1999)
Latvia	44 (plus 31 repeaters) (1995)
Lebanon	15 (plus 5 repeaters) (1995)
Lesotho	1 (2000)
Liberia	1 (plus four low-power repeaters) (2001)
Libya	12 (plus one low-power repeater) (1999)
Liechtenstein	NA (linked to Swiss networks) (1997)
Lithuania	27 note: Lithuania has approximately 27 broadcasting stations, but may have as many as 100 transmitters, including repeater stations (2001)
Luxembourg	5 (1999)
Macau	1 (2003)
Macedonia, The Former Yugoslav Republic of	31 (plus 166 repeaters) (1995)
Madagascar	1 (plus 36 repeaters) (2001)
Malawi	1 (2001)
Malaysia	1 (plus 15 high-power repeaters) (2001)
Maldives	1 (1997)
Mali	1 (plus repeaters) (2001)
Malta	6 (2000)
Man, Isle of	0 (receives broadcasts from the UK and satellite) (1999)
Marshall Islands	2 (both are US military stations) (2002)
Martinique	11 (plus nine repeaters) (1997)
Mauritania	1 (2002)
Mauritius	2 (plus several repeaters) (1997)
Mayotte	3 (2001)
Mexico	236 (plus repeaters) (1997)
Micronesia, Federated	

States of	2 (1997)
Moldova	1 (plus 30 repeaters) (1995)
Monaco	5 (1998)
Mongolia	4 (plus 18 provincial repeaters and many low power repeaters) (1999)
Montserrat	1 (1997)
Morocco	35 (plus 66 repeaters) (1995)
Mozambique	1 (2001)
Namibia	8 (plus about 20 low-power repeaters) (1997)
Nauru	1 (1997)
Nepal	1 (plus 9 repeaters) (1998)
Netherlands	21 (plus 26 repeaters) (1995)
Netherlands Antilles	3 (there is also a cable service, which supplies programs received from various US satellite networks and two Venezuelan channels) (1997)
New Caledonia	6 (plus 25 low-power repeaters) (1997)
New Zealand	41 (plus 52 medium-power repeaters and over 650 low-power repeaters) (1997)
Nicaragua	3 (plus seven low-power repeaters) (1997)
Niger	3 (plus seven low-power repeaters) (2002)
Nigeria	3 (the government controls 2 of the broadcasting stations and 15 repeater stations) (2002)
Niue	1 (1997)
Norfolk Island	1 (local programming station plus two repeaters that bring in Australian programs by satellite) (1998)
Northern Mariana Islands	1 (on Saipan and one station planned for Rota; in addition, two cable services on Saipan provide varied programming from satellite net works) (1997)
Norway	360 (plus 2,729 repeaters) (1995)
Oman	13 (plus 25 low-power repeaters) (1999)
Pakistan	22 (plus seven low-power repeaters) (1997)
Palau	1 (1997)
Panama	38 (including repeaters) (1998)
Papua New Guinea	3 (all in the Port Moresby area) note: additional stations at Mt. Hagen, Goroka, Lae, and Rabaul are planned (2002)
Paraguay	4 (2001)
Peru	13 (plus 112 repeaters) (1997)
Philippines	75 (2000)
Pitcairn Islands	0 (1997)
Poland	179 (plus 256 repeaters) (September 1995)
Portugal	62 (plus 166 repeaters) note: includes Azores and Madeira Islands (1995)
Puerto Rico	18 (plus three stations of the US Armed Forces Radio and Television Service) (1997)
Qatar	1 (plus three repeaters) (2001)
Reunion	35 (plus 18 low-power repeaters) (2001)
Romania	48 (plus 392 repeaters) (1995)
Russia	7,306 (1998)

Rwanda	NA
Saint Helena	0 note: television programs are received in Saint Helena via satellite and distributed by cable (2002)
Saint Kitts and Nevis	1 (plus three repeaters) (1997)
Saint Lucia	3 (of which two are commercial stations and one is a community antenna television or CATV channel) (1997)
Saint Pierre and Miquelon	0 (there are, however, two repeaters which rebroadcast programs from France, Canada, and the US) (1997)
Saint Vincent and the Grenadines	1 (plus three repeaters) (1997)
Samoa	6 (1997)
San Marino	1 (San Marino residents also receive broadcasts from Italy) (1997)
Sao Tome and Principe	2 (2002)
Saudi Arabia	117 (1997)
Senegal	1 (1997)
Serbia and Montenegro	more than 771 (including 86 strong stations and 685 low-power stations, plus 20 repeaters in the principal networks; also numerous local or private stations in Serbia and Vojvodina) (1997)
Seychelles	2 (plus 9 repeaters) (1997)
Sierra Leone	2 (1999)
Singapore	6 (2000)
Slovakia	38 (plus 864 repeaters) (1995)
Slovenia	48 (2001)
Solomon Islands	0 (1997)
Somalia	4 note: two in Mogadishu; two in Hargeisa (2001)
South Africa	556 (plus 144 network repeaters) (1997)
South Georgia and theSouth Sandwich Islands	0 (2003)
Spain	224 (plus 2,105 repeaters) note: these figures include 11 television broadcast stations and 88 repeaters in the Canary Islands (1995)
Sri Lanka	21 (1997)
Sudan	3 (1997)
Suriname	3 (plus seven repeaters) (2000)
Svalbard	NA
Swaziland	5 plus 7 relay stations (2001)
Sweden	169 (plus 1,299 repeaters) (1995)
Switzerland	115 (plus 1,919 repeaters) (1995)
Syria	44 (plus 17 repeaters) (1995)
Taiwan	29 (plus two repeaters) (1997)
Tajikistan	13 (2001)
Tanzania	3 (1999)
Thailand	5 (all in Bangkok; plus 131 repeaters) (1997)
Togo	3 (plus two repeaters) (1997)
Tonga	2 (2001)
Trinidad and Tobago	4 (1997)

Tunisia	26 (plus 76 repeaters) (1995)
Turkey	635 (plus 2,934 repeaters) (1995)
Turkmenistan	3 (much programming relayed from Russia and Turkey) (1997)
Turks and Caicos Islands	0 (broadcasts from The Bahamas are received; cable television is established) (1997)
Tuvalu	0 (1997)
Uganda	8 (plus one low-power repeater) (2001)
Ukraine	at least 33 (plus 21 repeaters that relay broadcasts from Russia) (1997)
United Arab Emirates	15 (1997)
United Kingdom	228 (plus 3,523 repeaters) (1995)
United States	more than 1,500 (including nearly 1,000 stations affiliated with the five major networks - NBC, ABC, CBS, FOX, and PBS; in addition, there are about 9,000 cable TV systems) (1997)
Uruguay	20 (2001)
Uzbekistan	4 (plus two repeaters that relay Russian programs), 1 cable rebroadcaster in Tashkent; approximately 20 stations in regional capitals (2003)
Vanuatu	1 (2002)
Venezuela	66 (plus 45 repeaters) (1997)
Vietnam	at least 7 (plus 13 repeaters) (1998)
Virgin Islands	2 (2002)
Wake Island	0 (1997)
Wallis and Futuna	2 (2000)
West Bank	NA
Western Sahara	NA
Yemen	7 (plus several low-power repeaters) (1997)
Zambia	9 (2002)
Zimbabwe	16 (1997)

Merthyr Tydfil Study – 2.4TV
The objective of a recent Merthyr Tydfil Technical Study was to evaluate the best current technical options for introducing a community TV service to the town. In addition - to provide an assessment of the longer term means for such a service to be available to as many homes as possible in Merthyr Tydfil.

This Merthyr study included two local area surveys - of the town centre and surrounding area and of the town centre in relation to the outer communities in the Borough. These surveys have focused on possible locations transmitter and receiver equipment and relays.
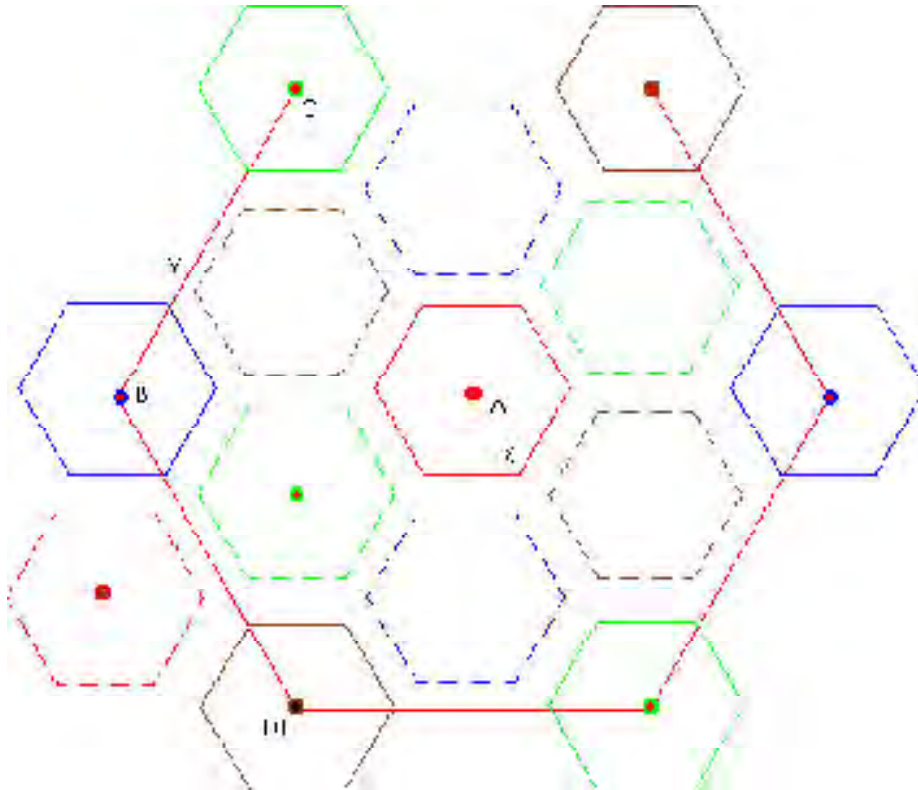
Idealised 2.4GHz TV neighbourhood transmission, retransmission and reception model using yagi antennas with 14db gain at six reception sites. Additional infill reception using medium gain antennas and reusing frequency for low gain reception. This is effectively the model tested on a small scale in Aberfeldy between 2002-2003.

The 10milliwatts transmitter is mounted on a high point in the centre of the town (A).

Receivers are mounted with high gain (14db) directional yagi antennas at six high points (B, C, D, B1, C1, D1) in line of sight and pointing directly towards (A).

The outer red ring Y denotes the effective radius of the reception area of the 2.4GHz signal transmitted from A using14db yagi antennas at reception. The distance A- B, C, D, B1, C1 or D1 is >500 metres.

The inner solid red ring denotes the effective radius of the reception area of the 2.4GHz signal transmitted from A for externally mounted domestic 2.4GHz receivers. The radius A-X is >100 metres line of sight.

At B, C, D, B1, C1, D1 the signal from A is retransmitted using one of the three remaining unused 2.4GHz frequencies. The smaller solid rings surrounding B, C, D, B1, C1, D1 represent the effective radius of reception for viewers with domestic receivers in line of sight of B, C, D, B1, C1 or D1.

The area denoted by a broken (eg) green line receives the signal from A on a yagi or similar medium

gain antenna and retransmits the signal on a frequency that is not used in an adjoining area.

The area denoted by the red broken line receives the sigtnal from D1 on a yagi or similar medium gain antenna and retransmits the signal on a frequency that is not used in an adjoining area.

This is repeated - ideally with each only one intermediate retransmission between transmission of the signal at A and final reception and viewing.
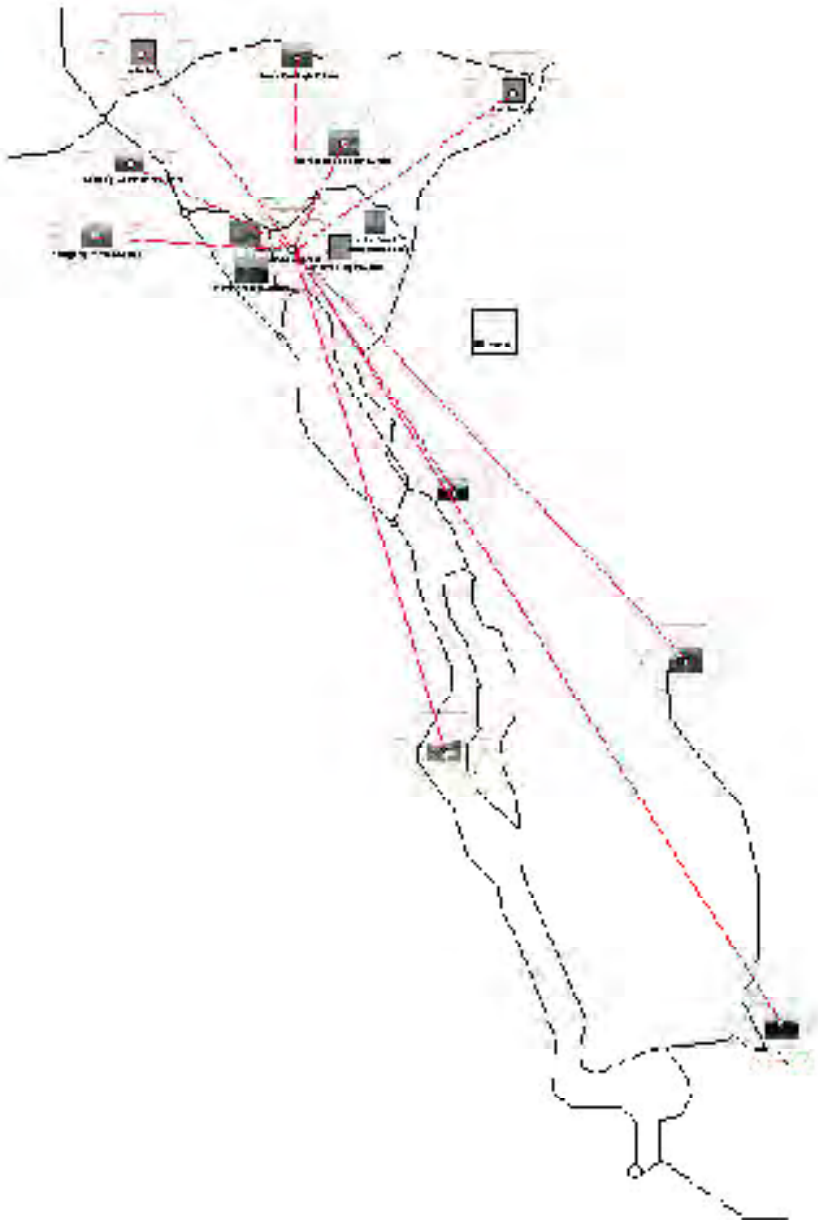
With yagi at 500 metres
Possible location of central and peripheral 2.4TV systems overlaid on map of Merthyr Tydfil
Red Line = probable cable (telecoms ADSL) link
Broken red line = Possible line of sight link using 26db parabolic antenna at reception
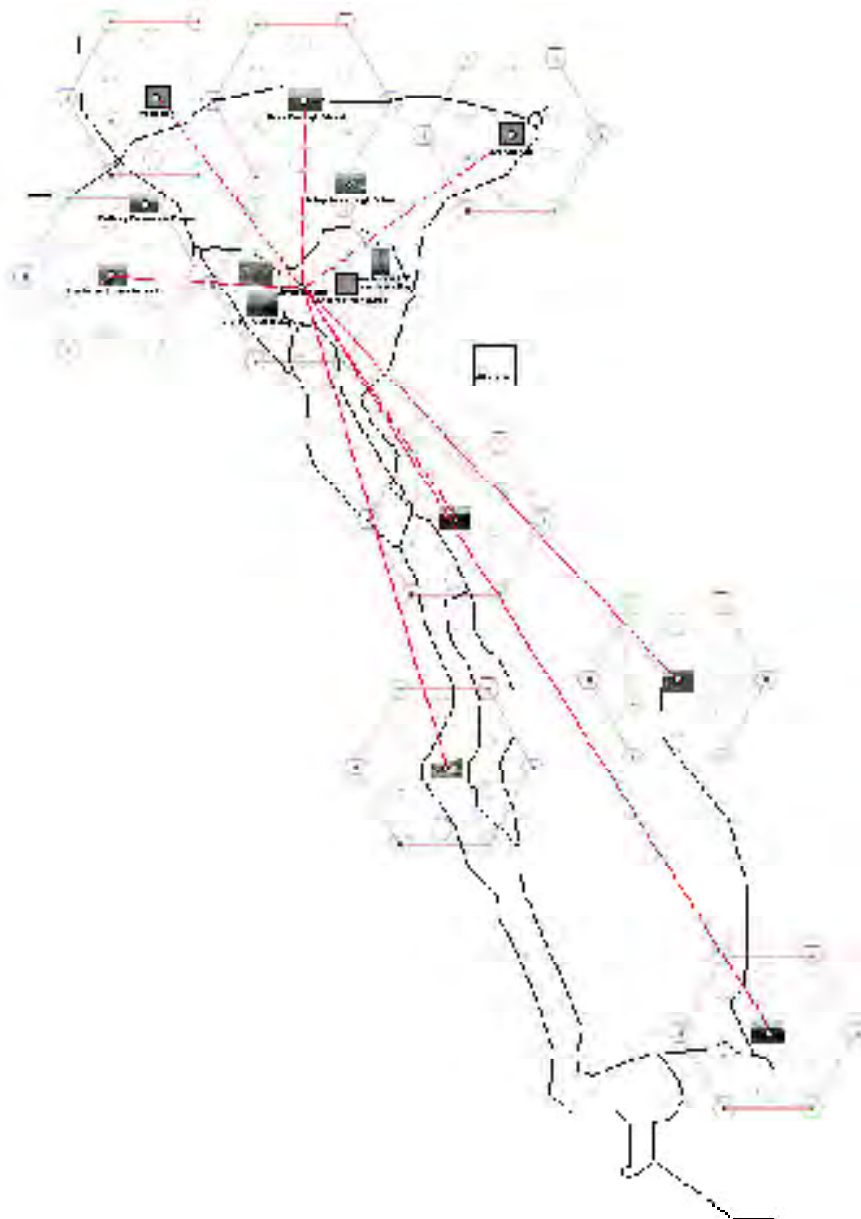
With yagi at 1000 metres
Possible location of central and peripheral 2.4TV systems overlaid on map of Merthyr Tydfil
Red line = probable cable (telecoms ADSL) link
Broken red line = Possible line of sight link using 26db parabolic antenna at reception
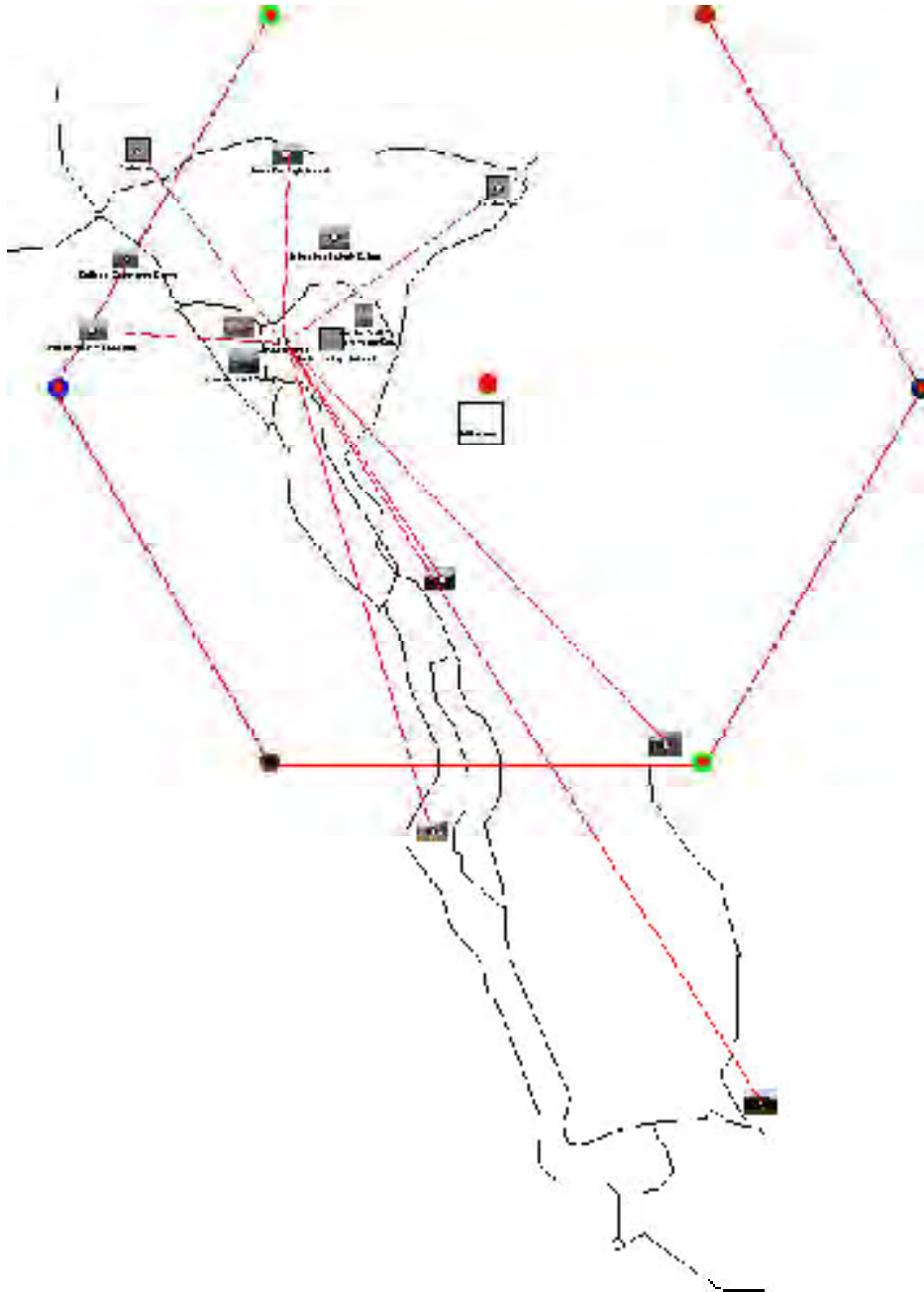
With parabolic at 5000 metres range
Possible location of central 2.4TV system overlaid on map of Merthyr Tydfil

2.4TV
The 2.4GHz band had been designated as 'licence exempt' and was already widely in use in many countries to redistribute TV and video signals without cabling around hotels and houses using 'video senders'. Other TV related uses for 2.4GHz are to be found in CCTV and home security and monitoring.

Further on 2.4

The licence exempt use of 2.4GHz is restricted in the UK and Europe to low strength signals with an effective radiated power (ERP) of 10 milliwatts. This output restricts the signal range to thirty metres through lightly constructed buildings or one hundred metres line of sight in an unobstructed environment.

The 2.4GHz band used for TV transmission and video sending is a modulated analogue RF transmission. The signal can be broadcast omni-directionally or directionally from a small antenna fixed directly to the transmission board. The signal cannot be picked up directly by a television aerial or receiver and requires an intermediate FM modulator in order to convert the signal to UHF for viewing.

To increase transmission range a variety of high gain antenna can be attached to the receiver. With a 'yagi' type antenna signal gain is boosted by 14db and the reception distance increased from 100 metres to 500 metres. With the 26db parabolic antenna fitted reception can be increased still further up to 2-3 kilometres. A variety of suppliers claim this distance can be increased to 5 kilometres.

For its year long field trial in Aberfeldy the Institute of Local Television modified widely available domestic and security 2.4 video senders and receivers to increase the range of the signal while remaining compliant with the 10 mW EIRP signal limitation under licence exemption.

In 2004 one of the principle importers of 2.4GHz equipment in the UK (AEI) began to supply modified receivers for external uses offering a choice of yagi or parabolic antenna and an appropriate modification to the receiver's board.

These bench-built systems consistently provide a low-loss connection between antenna and board not so readily achievable when modifying 2.4 kit in a garage-build way for the Institute's Aberfeldy field trial.

While the more critical aspect of the engineering has been taken in-hand by AEI there remain some basic electrical tasks still to be undertake in the assembly and installation of 2.4TV equipment.

Building a 2.4TV network could therefore provide valuable instruction in simple but accurate assembly and in the set-up and signal testing operations.

The use of 2.4GHz for a television transmission service is not without some drawbacks. The most significant of these is the prospect of signal interference caused by other 2.4 users.

The 2.4GHz band is used by video senders as well as in digital Wi-Fi and WLAN. The prospects for avoiding interference depend upon careful siting and assessment of likely future uses of digital 2.4 in the immediate area. WLAN applications are less evident in areas - like Merthyr Tydfil - with cable broadband.

The Institute of Local Television's engineer Asif Naseer has written on the consequences of interference in 'Short-Range Wireless Devices'. [REF School of Computing and Advanced Technologies, University of Abertay Dundee, 2003].

'Most emerging radio technologies for wireless networks such as Bluetooth protocol and WLAN are designed to operate in the 2.4GHz ISM [Industry, Scientific and Medical] band. Since both Bluetooth and IEEE 802.11 devices use the same frequency band with other wireless AV (Audio Video) devices and may likely come together in a laptop or be close together at a desktop, interference may lead to significant performance disturbance.'

In laboratory conditions interference between mixed uses of 2.4 has a serious adverse impact upon the 2.4 video signal. The interference to the analogue signal is greater than to the digital wi-fi. Wi-fi employs a spread spectrum technique which 'hunts' for unused spectrum to avoid interference from incoming signals operating on a limited part of the bandwidth.

However, the laboratory experiment did not set out to mimic the operating conditions in which 2.4TV (as distinct from 2.4 AV) would be used - primarily 2.4TV is for transmission and reception outdoors. Here the 'competition' is more likely to be between other 2.4 AV users and 2.4 as a digital wireless link - offering wireless broadband as an alternative to cable.

Wireless broadband presents the greatest potential problem to 2.4TV - should the operating environment for 2.4TV be such that wireless broadband is already in operation or is soon-to-be a viable competitor to an area's cable broadband network. Interference between 2.4TV, 2.4 video senders and security camera systems can be resolved by selecting a transmission frequency in the immediate operational area which avoids interference to either party. In addition 2.4 transmitters can be used in the relay form which produce a narrow cone of signal at transmission, so avoiding causing interference with existing users.

The down-side of using licence exempt frequencies is that there is no regulation or control of their use and interference issues can only be avoided by planning and diplomacy. The licence exempt frequency is perhaps the only current prospect for the hard pressed wannabe small-scale TV broadcaster where access to all other licensed frequencies or cabled channels is denied or (with digital) not available for several years.

The risk of interference can be avoided altogether by

- careful siting of the 2.4 transmitter and receivers

- by using an unused frequency within the 2.4 band (where other AV users are operating)

- by negotiation with telcos using or planning to introduce 2.4 wireless broadband.

Individual cost implications for all platforms.

a) transmitter options and costs
Typical analogue transmitter costs are in excess of £15k per annum for a leased service from (in UK) either Crown Castle or NTL. Analogue terrestrial transmitter purchase costs vary upwards from c.10k-250k. Mast and antenna panels for signal will add substantially to this sum. An assessment of costs should be made in light of tecvhnologies used in country – to ensure spares to particicular

models and familiarity among local TV engineers. A well respected supplier is Contintential Microwave – but all kit is built to fit the requirements, notched to avoid causing interference. So more would be need of local conditions ….

b) server options and costs
The Channel 6 server used for the Dundee service was £50k. With Datavision Ltd the Institute of Local Television developed the video juke-box which Datavision currently markets for about £1600. With this server a computer is required to provide scheduling and the same computer can carry an encoder card to encode analogue and digital video into MPEG2 - the file format read by the video juke-box. As an alternative NvTv in Belfast use a Panasonic video recorder - recording up to 160 hours of video to hard disc. They also play their service from the DVD player built into this model of video recorder. Again the solution is inexpensive.

c) microwave links to transmitter site from studio/server
2.4GHz provides a good substitute for traditional licence requiring microwave. 2.4GHz is used by Channel 9 in Derry to provide an outside broadcasting link from the Council House

d) ISDN control of server at transmitter site
ISDN or DSL or even basic telephone links can be used to connect to the transmitter and to a remote server. The 'phone link' could be mobile and is used to update schedules and - where a dial-up option for selecting programme clips is adopted - to allow access for dial-up selection by viewers (at premium or standard rate).

e) automated server based studio
The NvTv (small TV station in Belfast) and Aberfeldy experiences have shown over time that a remote server (conveniently based at the transmitter site) can provide an inexpensive solution to small-scale TV delivery. NvTv provide a two hour loop of programming running from 5.00pm each day with a compilation of the week's programming from the hard disc in the server over weekends. At Stads TV in Rotterdam and in Brussels TV services were/are based on a live half hour news broadcast at 6.00pm followed by a documentary repeated till the next day (till 12.00 noon in Brussels when other documentaries are shown).

f) A cost effective solution for remote camera control studio - Approximate cost £10k
A couple of single chip mini DV camcorders plus a locked off camera and a scanner or PC feed may give the ideal complement. Link this to Visual Communicator Studio and output to the video juke box to complete the setup.

This would provide a one man (woman) studio operation, bit like a video DJ setup, which would have green screen chromakey, 2 x Remote Head controllable camcoders, running off 2 networked PCs, a single chip 'locked off' camera (for location news gathering as well) plus the jukebox for playout.

g) impact of location options of studio/transmitter/server
These cannot be assessed until a studio is located. But the server/transmitter (for 2.4TV) should be located centrally and on a building/hill. The RSL and local digital transmitters should be located at or near the existing TV transmission sites.

h) equipment levels

Summary of equipment needed for studio the rough assessment - Approximate cost £25k

2X	JVC DV 3000E Pro DV Recorder Player
1X	Sennheiser 416 Mic
2X	Suspension Windshield
2X	Radio Mic Kits
4X	JVC TM-1010E Field Monitors
2X	Cam Jib
4X	3-head lighting kit
2X	Autocue
2X	Windows Laptops
4X	Apple Laptops OS-X
4X	JVC GY-DV300 cameras
4X	Manfrotto tripods
1X	Focus Dolly and Track
2X	Apple/PC computer edit suites – running Final Cut Pro or Premier

DigiSender 5000m Audio/Video Link Part Number: DG300YG2425CB12

This pack contains all you need to create a wireless audio/video link with a range of up to 5000m.

- Retail packed
- Supplied with a 24dB parabolic receiving
- Supplied with the DigiSender DG300 transmitter & Receiver pair
- Supplied with cable pre-fitted with connectors for minimum installation times
- Tough construction means the antenna can be mounted in the harshest weather conditions
- Range up to 5000m clear line of sight, subject to sight survey
- Stunning picture quality and Hi-Fi stereo sound
- New product for 2004

This pack is supplied with a specially modified DigiSender transmitter & receiver

fitted with an external SMA antenna connection. Using the supplied 24dB parabolic dish connected to the DigiSender receiver, incredible ranges can be achieved.

The pack also contains 12.5 metres of high frequency/low loss cable pre-fitted with the required SMA and N-Type connectors. This means no cable construction need be done and the system can be constructed & installed in under an hour.

The parabolic dish is suitable for mounting externally and can withstand the harshest environmental conditions. Please note that quoted ranges may vary according to local site conditions and you should always conduct a site survey prior to installation.

ANT Front-Back Ratio	30dB
ANT Gain	24dB
A/V Channels	2.414, 2.432, 2.450, 2.468GHz
Audio Input Level	1V PP (10Hz-22KHz -1dB)
ANT Input Impedance	50 Ohms
ANT VSWR	<1.5:1
Modulation	FM
Antenna Type (RX)	Parabolic High Gain Dish
ANT Dimensions	600x900mm
ANT Wind Resistance	60 m/s
Antenna Connection (TX+RX)	SMA
ANT Frequency Range	2.400-2.483GHz
Antenna Type (TX)	100mm Unity Gain Dipole
ANT Bandwidth	84MHz
TX Input Type	3xRCA Phono
ANT 3dB Beam Width	10x14 degrees
Video Input Level	1V PP/75 Ohm CCIR
ANT Max. Power	100W
RX Output Type	SCART + 3xRCA Phono
Sensitivity	-90dB

DigiSender 1000m Audio/Video Link

This pack contains all you need to create a wireless audio/video link with a range of up to 1000m.
•   Supplied with the DigiSender DG300 transmitter & Receiver pair

- Retail Packed
- Supplied with a 14dB Yagi antenna
- Supplied with cable pre-fitted with connectors for minimum installation times
- Tough construction means the antenna can be mounted in the harshest weather conditions
- Range up to 1000m clear line of sight, subject to sight survey
- Stunning picture quality and Hi-Fi stereo sound
- New product for 2004

This pack is supplied with a specially modified DigiSender transmitter & receiver fitted with an external SMA antenna connection. Using the supplied 14dB Yagi antenna connected to the DigiSender receiver, incredible ranges can be achieved.

The pack also contains 12.5 metres of high frequency/low loss cable pre-fitted with the required SMA and N-Type connectors. This means no cable construction need be done and the system can be constructed & installed in under an hour.

The Yagi antenna is suitable for mounting externally and can withstand the harshest environmental conditions. Please note that quoted ranges may vary according to local site conditions and you should always conduct a site survey prior to installation.

ANT Front-Back Ratio	18dB
ANT Gain	14dB
A/V Channels	2.414, 2.432, 2.450, 2.468GHz
ANT Elements	15
ANT Beamwidth	36 (H) 39 (E) degrees
Audio Input Level	1V PP (10Hz-22KHz -1dB)
Modulation	FM
Antenna Type (RX)	Parabolic High Gain Dish
Antenna Connection (TX+RX)	SMA
ANT Length	650mm
ANT Frequency Range	2.400-2.483GHz
Antenna Type (TX)	100mm Unity Gain Dipole
ANT Bandwidth	84MHz
TX Input Type	3xRCA Phono
Video Input Level	1V PP/75 Ohm CCIR
RX Output Type	SCART + 3xRCA Phono
ANT Max. Power	100W
ANT Weight	800g
Sensitivity	-90dB
ANT Polarity	Vertical or Horizontal

Course: Small-scale TV: Broadcasting, Production and Representation

Introduction
Local Television is relatively new to the UK. In Europe, North America and Australia community and educational as well as local commercial TV services have been around for upwards of twenty years. Cable is the favoured delivery platform for Europe's local channels - with high levels of penetration (typically 80-90% in the Netherlands).

'Small-scale' TV is distinctive in combining the skills of TV production, with those required for scheduling and transmission. Small-scale services are local or community, from video servers or as web based channels - community of interest or geographical communities. By using new flexible digital production and editing methods the small-scale supports and encourages new patterns of professional and voluntary TV production: and overcomes barriers to community communications.

Over the last three years local and community television has become an important site for innovation in the fields of programming, software design, graphics, broadcast server design as well in supporting alternative distribution patterns with appropriate technologies. These new services have reflected as well as helped define new audiences for television. Low-cost servers are able to deliver television programming across a variety of platforms including the evolving 2.4ghz frequencies. Viewers are able to dial in and request programmes. TV stations based on these emerging small-scale digital technologies - developed by (among others) the Institute of Local Television and the Community Media Association - have encouraged the introduction of services for very small geographic communities, for housing estates, hospitals and campuses. Telephone delivered TV, web-streaming and other new digital TV platforms will continue to require innovative technical, managerial, social ownership solutions as well as relevant content: local and community television offers a major learning opportunity based in Scotland for the development of innovative cultural and social solutions for the new small-scale and digital TV stations.

Requirements for a postgraduate programme
Undergraduate and postgraduate TV and media courses are not focused on the broadcasting experience - but on programme or video making. Very few courses are allied to setting up, developing and running TV stations. Therefore the key element of broadcasting which differentiates 'television' from 'video' is mostly missing from current undergraduate and postgraduate experience - this is not the case for radio where student radio and short-term radio licenses are available to offer the student experience in all aspects of the broadcasting process. Access to 'broadcasting' and to particular audiences and scales of audience effectively dictates what is produced; what transforms 'video' into 'television'.

The Institute's postgraduate programme supports graduate students' needs by offering (up to) a year to work in a practical learning environment to setup, develop and run a small-scale television service. Learning is focused on production, research and management of programming within a 24/7 TV station. Opportunities are also available for exchange, placement and dissertation projects working with other local and community TV channels across Britain and Europe. The course in Aberfeldy will focus on the skills and expertise required to run and support small-scale television channels. The course encourages social entrepreneurs to form public-private partnerships in order to setup small-scale TV stations. The skills acquired - especially in the broadcasting area - ensure that

our graduates are also well placed to be employed within the medium-to-large scale TV sector.

The course is modular in character. We will be developing further module options as the course matures. For the most part the core modules are in place and the course is now recruiting to commence in January 2003.
The Television Trust for Scotland will contribute airtime on its e-tv service in Aberfeldy to support the first year of the course. Other small-scale TV stations across the UK are willing to take students on placement. Reciprocal arrangements are being put in place for student exchange with local TV stations in Gothenburg and Berlin and elsewhere.

Course Structure
The Small-scale TV Masters consists of three elements each with a duration of three months. The Masters element is based on a dissertation which (typically) will require the successful completion of a 70% practical project with 30% theoretical element.

The award of Masters requires successful completion of the first two elements (Certificate and Diploma) plus the Dissertation. Students can opt to commit to or exit at Certificate, Diploma or Masters levels.

		Modules (select 4 per Semester)
Semester I	Certificate	Graphics for Television
		Community Programming - Theory and Practice
		Shorts and Docs
		Music Video I
		Research Methods I (for students continuing to
Diploma)		
Semester II	Diploma	Server based Systems (0.5 module)/
		Teletext with Fastext (0.5 module)
		Policy and Management
		Advertising, Sales & Marketing
		Advertorials, Infomercials & Shopping Channels
		Music Video II
		Local News and Current Affairs
		Research Methods II (for students continuing to
Masters)		

Short courses/visiting lectures and placements will be offered on the following:-
European Media Policy
Fund Raising through Grant Aid
Station Administration and Regulatory Compliance
Networking the Community

Semester III Dissertation   By consultation between tutor and student (eg) a TV
production   for a particular station or community
(70% of mark) backed by   market research, with

broadcast followed up by audience research
(30% of mark)

(Modules are subject to change according to experience and level of attainment of annual student cohort.)

Student Fees

	Duration	EU Fee	Overseas Fee
Certificate	3 months	1050.00	1750.00
Diploma	3 months	1170.00	1870.00
Dissertation (Masters)	6 months	1250.00	1950.00

Entry Requirements
Entry is by competition based on academic attainment, letter of interest moderated by assessment of portfolio in relation to cohort strengths. Applicants should be graduates with a good qualification demonstrating expertise in at least one or more of the areas covered by the course. Students will initially be selected on their own merits and then in combination with others in order to help ensure a rich and varied learning environment.

In the first instance interested applicants should submit their CVs together with a letter of no more than 500 words outlining their interest and their learning expectations together with the name and e-mail address of two referees (at least one of whom should be an academic tutor). The 'paper' application should be sent to local.tv@virgin.net to arrive not later than 10th December 2002.

Those applicants whose paper submissions are of a high standard will be contacted for interview and/or request for submission of a portfolio comprising example(s) of work.

In the first year the course will be restricted to 10 students. The course will only go ahead in 2003 if there are sufficient numbers.

The course will start in Aberfeldy in January and students currently living beyond daily travel distance will be offered suggestions for accommodation.

Dave Rushton
Director Institute of Local Television
local.tv@virgin.net October 2002 Registered office 13 Bellevue Place Edinburgh EH7 4BS. Company Number: 186051

INTRODUCTION - 2.4 TV Location Surveys for Winchester (2003) and Doncaster(2004)
Until a TV studio and main transmission location are chosen and a possible mix of delivery selected a more detailed Location Survey cannot take place.

Therefore, as a guide to what may be required (should 2.4TV be adopted) the following provides two 2.4TV Location Surveys from earlier studies. These also offer an introduction to the two way video-

conferencing capability of 2.4 as well as some costings related to options for each detailed study. The basic figures for components identified at the end of the Annex stand regardless of location but the number of components involved will depend upon the complexity of any network.

MICRO-TV STUDY FOR KING ALFRED'S COLLEGE WINCHESTER
Location Survay 16/17 January 2003

Neither King Alfred's College (SU293472) nor the tallest building at West Downs Student Village (SU295468) has line of site with buildings proposed for a studio in the town centre of Winchester.

However, the Hampshire Police HQ on Romsey Road (SU296473) does provide line of sight into the town and

Police HQ Romsey Rd with tower of HM Prison

line of sight to West Downs Student Village some quarter mile westwards.

West Downs main building from tower looking eastwards to Police HQ

Chris Richards, Radio Operations Manager Block A Ember House Moorside Road Winchester SO23 7RX Tel: 01962-871324 has indicated that it would be possible to locate a micro-TV relay on the Police HQ subject to current plans to consolidate cellular radio masts (results of which are anticipated in two weeks). Chris would therefore welcome a College proposal indicating an early expression of interest to help retain suitable space.

Hampshire Police HQ (Site J) is visible for direct transmission to/reception from as follows:

A   From seven storey flats – Braxton, Craddock, Bennett and Earle – in Winnall (NGR: SU300496). (Top of photo below.)

Winnall seven storey tower blocks at top, industrial estate to north with Art School in foreground.

B   Textile Museum or Art School – top floors/roof (SU298488)

Art School looking towards Textile Museum – both offer direct line of sight to Police HQ

View from Textile Museum (as arrowed above) top floor to Police HQ
C   Hampshire County Council offices

Hampshire County Council Building –the municipal array of antenna is behind aerial on roof of Police HQ

D   Laundry Chimney – Brook Street (SU297485)

Laundry Chimney might offer scope for low wind resistance relay transmitter
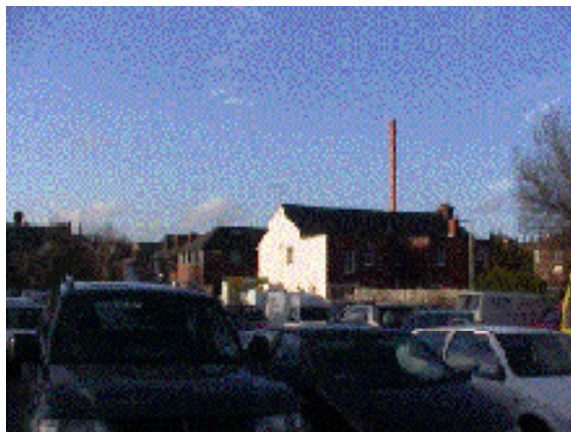
Wide shot of Laundry Chimney shows prospects for relaying signal to low lying buildings to east of town centre

E   West Downs – Main Building and student blocks (SU295468) (As pictured above)

F   Stair Well Car Park Royal Hampshire County Hospital (SU295472)

Police HQ towards Hospital Car Park Stair Well

King Alfred's St Elisabeth Hall rear towards Hospital Car Park Stair Well from ground

G   Peter Symonds' College (SU305477) from Police HQ

Peter Symonds' College from Police HQ looking North

However, the tentative sites for town studio –

H   Church in St Peter Street and (SU297482) and;

I   Former club adjacent to Byte Netcafe (SU297483) – would require establishing access and whether or not there is a view of Police HQ from their roof-lines.

because on inspection from the ground both seemed unlikely to be able to receive/transmit a signal to the Police HQ without relying on an intermediate relay.

Also there was no building at

K   King Alfred's College (SU293472) that was directly in line of sight of Police HQ

Rough Schematic Plan of these Sites across Winchester

West   East

        G

                                                B   A

E   J   C   H I   D

    F   K
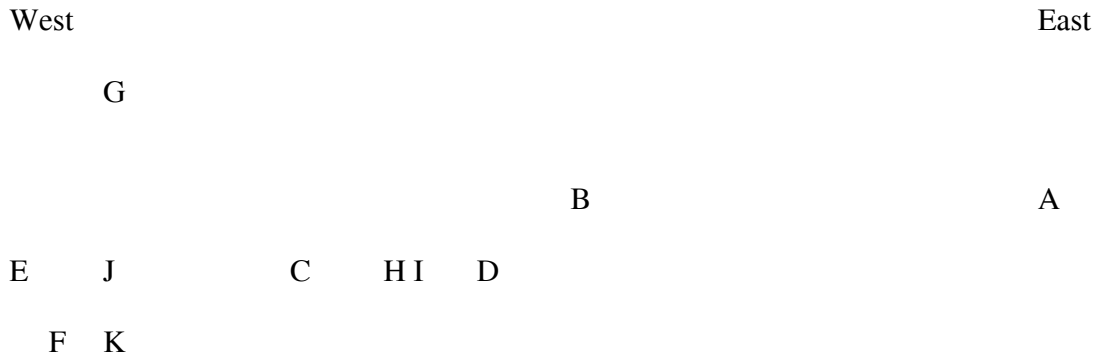
Rough Section of the key Sites across Winchester

E   J   A
                            C
                                                B

    F   K
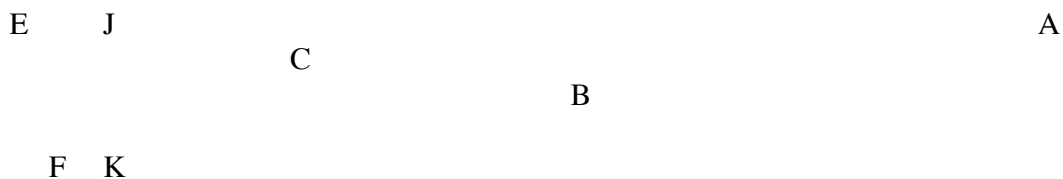
NB: With the exception of Peter Symmonds' College the principal sites of interest lie within a north south corridor which is less than half a mile wide with its two furthest points (West Downs and Winnall two and a quarter miles apart.

Options to secure reception in pubs – Bar Iguana, Mash Tun, The Railway, The Pub by the Bridge? – would require intermediate relays preferably close by since the majority of these buildings are only two storeys high, rendering reception difficult. The Railway may be in line of sight to the Police HQ (no site visit undertaken) or Hampshire Council Offices. Others (Mash Tun and The Pub by the Bridge?) may be in line of site of (eg) Textile Museum roof and/or Laundry Chimney.

Distances and Antenna
As a first impression the topography of the town suggests a short string of transmitters and relays running West-East across Winchester. The Police HQ and Winnall (or similar but closer) are important sites to enable 'delivery' of the signal into the basin occupied by the town. Police HQ in particular helps negotiate access down the two slopes (at right angles to each other and away from the town) – on which are located West Downs Student Village and King Alfred's College.

To maintain an efficient service Yagi or panel antenna of 13-15 db gain (TDJ2400C15 or TDJ2400BKC-YI) can be used at approx half mile intervals (eg the distance J to H – Police HQ to Church in St Peter St approx half mile).

If retransmission were to utilise the Police HQ it is recommended that the studio (source of signal) be not more than half mile from this site with the source signal emanating from a transmitter mounted as far above surrounding rooflines/buildings as possible. This will ensure maximum possible reception among surrounding buildings.

The long hop up to Winnall from the centre of town is 1.5 miles or 2.25 miles from the Police HQ and would require an antenna of 24 db gain either a parabolic grid or a panel antenna type (TDJ2400A or TDJ2400SPL18 (30.5db) for security over the longer distance).

The Winnall site would add approximately 120 households to any service assuming the house blocks are served by one or more communal antenna for UHF, into which the local signal can be inserted (as in The Palace Hotel in Aberfeldy). Perhaps a more important early role for Winnall is retransmission for a returning signal to (eg) King Alfreds College. While this path will be longer it could cut a further relay to return the signal to the College from transmission either in the town or from West Downs (see below for options).

Q   On inspection this option seems unlikely - unless one of the buildings at King Alfreds offers line of sight of Winnall over the Military Museum buildings running down into Winchester?

Preliminary survey of key sites with view to forming a 'grid' of transmitters and relay transmitters

Primary transmission
The primary transmission of the service and subsequent relay transmissions use a 10mw sender mounted clear of immediate and adjacent buildings to permit good line of sight for exterior receivers and indoor window receivers positioned up to 100-metres away (200 metres if suitably modified). Where retransmission is appropriate the receiver is mounted some distance (typically two metres) from the relay to avoid interference. Coaxial cable distances for carrying signal to initial transmitter and between receivers and retransmitters and between receivers and RF convertors need be kept to a minimum and use high quality low loss coax.

Transmitter   *Receiver & Relay Transmitter*
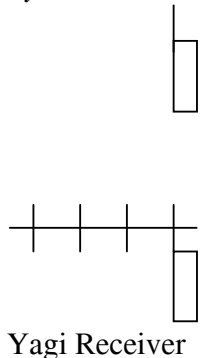
Yagi Receiver

Siting of Relays and Relay Transmission
The siting of relays should ensure highest quality signal is received at the important sites – West Downs and King Alfred's College. These sites should therefore be accessible to the signal with a minimum number of 'hops' involving relays.

Some scenarios
West Downs TV Centre – Transmitter Site
Locate server and transmission at West Downs – will ensure highest quality reception to students in halls. (Less relevant if broadband solution envisaged.)

Relay I
F Stair Well Car Park Royal Hampshire County Hospital
  Relay II to K King Alfred's College
J Hampshire Police HQ
  Relay II to A-G above
    Either C, D or B to provide
    Relay III to Church in St Peter St or Club in Parchment St

The signal is running through too many re-transmissions before reaching primary sites.

A mast mounted on one of the King Alfred's Halls might provide sufficient height to enable a signal from either the tower at West Downs or the Police HQ to be seen.

Doubts remain over ability to 'see' Police HQ roof from Club in Parchment St. I suggest if signal were to be transmitted from here would then it would require relay from Hampshire CC Building (C) to Police HQ (J) then further relay to West Downs – Main Building and student blocks (E).

To reach King Alfred's College (K) would require a relay from Police HQ to Stair Well Car Park Royal Hampshire County Hospital (F) and from there to College.

Q Is it possible to see Winnall towers from Parchment Street roof?

Q If not possible to view Police HQ from Parchment St roof, is it possible to see Hampshire County Council array of antenna from Parchment St roof?

Winnall might present a potential relay site for a long hop back to King Alfred's College (K)

Q Is it possible to see Winnall towers from higher up in the King Alfred's Buildings?

View from King Alfred's Halls from steps NE towards town centre and Winnall

Art School – or better still Textile Museum
The Textile Conservation Centre/Museum is visible to both Police HQ and Winnall and is more or less midway between the two.

Q   The same sight lines may apply to roof of Riverside Leisure Centre – as an alternative?

The Laundry Chimney
Line of sight to Police HQ and probably Winnall – but structure may be hot when in use and offers no obvious close-by site for studio or for source of power.

Hampshire County Council
The array of antenna is visible from across much of the town spreading eastwards. This site would prove very useful as a relay – visibility is good for Police HQ and Winnall. This may be the only site so far of which The Railway has line of sight.

County Council from Orams Recreational Park

Hospital Car Park

Corner of Hospital Car Park closest to teaching blocks of King Alfred's College offers good prospect for location of relay to/from Police HQ (subject to sharing electricity with existing CCTV mounted nearby). This site may also be accessed by cable from King Alfred's permitting the College to be transmission site. If cable solution appropriate then electricity (12 volt supply) can run up within bundle including video and audio signal.

Car Park to Police HQ – Holm House lies between the building in middle ground – training base for Hospital? – and Police HQ.

Holm House

This King Alfred's building on St James Lane is between the main campus and Police HQ. This may be an alternative transmission site – there is an antenna/pole of some sort on the roof of this building. This may also be in line of sight from West Downs.

The advantage of this site would be that West Downs, Police HQ and main campus would be able to receive signal on primary transmission.

Q   Is Holm House a realistic option as initial site for service?
       Can the pole/a pole on Holm House be 'seen' from West Downs?
       Can the pole/a pole be seen from a suitable building for receiving signal inKing Alfred's main campus?

King Alfreds' College 2.4TV System

Assumption
We transmit TV signal (video/audio and teletext) using 2.4Ghz from Holm Lodge and it is received and retransmitted between key points in Winchester.

TRANSMITTER
HOLM LODGE 2.4Ghz transmitter (channel A)
The server/studio/video play-out and (if required) teletext inserter is based at Holm Lodge – and located as short a distance as conveniently possible from the transmitter. A secure antenna is installed on the roof/chimney stack at Holm Lodge with 2.4 transmitter (on channel A) mounted to offer line of sight to convenient location at West Downs, roof at Police HQ (and possibly for reception on other King Alfred's buildings on campus - though may not be required if Holm Lodge connected via broadband to campus buildings.)

SCENARIO ONE

RECEIVERS & RETRANSMITTER (receiving channel A retransmitting channel B)

POLICE HQ 2.4Ghz yagi receiver (channel A) and 2.4 transmitter (channel B)
Receiver (channel A) and retransmitter (channel B) located on Police HQ.

WEST DOWNS 2.4Ghz yagi receiver (channel A)
Receiver (channel A) located at West Downs

CAMPUS 2.4Ghz yagi receiver (channel A)
Receiver (channel A) located on appropriate building in heart of campus (optional)

RECEIVERS & RETRANSMITTERS (channel B retransmitting channel A or C)

PETER SYMONDS COLLEGE 2.4Ghz yagi receiver (channel B)
Receiver (channel B) located on appropriate building at Peter Symonds with line of sight Police HQ transmitter

HAMPSHIRE COUNTY COUNCIL BUILDING   2.4Ghz yagi receiver (channel B) and 2.4 transmitter (channel A)
Receiver (channel B) located at antenna stack on HCC Building with line of sight Police HQ transmitter and retransmitting (channel A)

WINCHESTER COLLEGE OF ART TEXTILE CONSERVATION (WCoATC) 2.4Ghz parabolic receiver (channel A) and 2.4 transmitter (channel C)
Receiver (channel B) located with line of sight of Police HQ transmitter and retransmitting (channel C)

Byte Cafe may be able to receive signal retransmitted from either HCC Building (channel A) or from WCoATCC (channel C)

The above assumptions about the 2.4Ghz channels we can use assume no other users of 2.4 in the immediate area. Our options reduce if one or more channels are being used in ways which cause interference (to either party). But if the air is clear, then it may be possible to construct a return path as a second phase.

SCENARIO TWO

Assumption
The building adjacent to Byte Café is acquired and is able to 'see' HCC Building antennas – or alternative in town nearby that can within 500 metres

This Scenario proposes constructing a return path - to enable a signal (eg studio signal) originating from (eg) Byte Cafe to be transmitted and retransmitted to other key locations.

BYTE CAFÉ 2.4Ghz transmitter (channel A)
Transmitter (channel A) in line of sight with HCC Building

HAMPSHIRE COUNTY COUNCIL BUILDING 2.4 yagi receiver (channel A) and 2.4 transmitter (channel D)

Receiver (channel A) retransmitter (channel D)

POLICE HQ 2.4Ghz yagi receiver (channel D) and 2.4 transmitter (channel C)
Receiver (channel D) retranmsmitting (channel C)

RECEIVERS

HOLM LODGE 2.4 yagi receiver
Receiver (channel C) at Holm Lodge

This SCENARIO could include retransmission from HOLM LODGE on channel A (assuming this channel is not in use - therefore enabling WEST DOWNS and CAMPUS to receive on channel A and PETER SYMONDS and WCoATCC to receive on channel B).

Alternatively there is scope for using the return path to have a second service running in parallel or switched between a service originating at HOLM LODGE and one originating at BYTE CAFE.

SCENARIO TWO 'PLUS'

WEST DOWNS
Receiver (channel C) located at West Downs

PETER SYMONDS COLLEGE
Receiver (channel C) located on appropriate building at Peter Symonds with line of sight Police HQ transmitter

CAMPUS
Only able to pick up this service if cabled from (eg) Holm Lodge. Insufficient spare frequencies for HOLM LODGE to retransmit.

WCoATC
The Byte service could be received at WCoATC (channel A) and retransmitted (channel B)

ESTIMATE

Scenario One		item	No	S1	S1&2	S1&2+
2.4 transmitters	@	400	4	1600		
2.4 yagi receivers	@	530	5	2650		
2.4 parabolic receiver	@	650	1	650		
				4900	4900	4900
Scenario Two						
Scenario One and:-						
2.4 transmitters	@	400	3	1200		
2.4 yagi receivers	@	530	3	1590		
					2790	
or						
Scenario Two 'Plus'						
Scenario One and:-						

2.4 transmitters	@	400	5	2000		
2.4 yagi receivers	@	530	7	3710		
						5710
Spares						
2.4 transmitters	@	320	2	640		
2.4 basic receivers	@	380	2	760		
				1400	1400	1400

Scenario One and Spares		6300	
Scenario One and Two and Spares			9090
Scenario One and Two 'Plus' and Spares			12010

All these SCENARIOS are to put in place main transmitter and relay sites. Additional 2.4Ghz receivers (with a variety of receiving antenna depending on location) will be required for reception in town centre pubs and venues. These venues will need to be in line of sight of either HCC Building or WCoATC

GUIDE
2.4 yagi receivers (as above) 530
2.4 rubber duck receivers 450

NOTE
The above figures include all relevant items for receivers or transmitters including wiring, assembly (poles, brackets etc) and sub assembly. Any nonstandard items for installation specified or required by site owners will be charged out at cost.

These figures do not include on-site installation or any additional on-site preparatory inspection. An inclusive day rate of £185.00 is chargeable for installation.

Approximate installation time:-
SCENARIO ONE   10 days   1850
SCENARIO ONE and TWO together 15 days   2775
SCENARIO ONE and TWO 'Plus' 17 days   3145

INSTALLATION & BUILD TOTALS   8150
                                                                                        11865
                                                                                        15155

For wiring prior to build information will be required on location and distance of permanently 'on' 220/240 volt power supply - equipment runs from 9-12 volt adaptors. Detailed site inspection for wiring runs etc - £125.00 per day (two days) plus travel and accommodation.

APPENDIX
Letter to Chris Richards Police Radio Operations Manager Block A Ember House Moorside Road Winchester SO23 7RX

KA is proposing to build a small-scale educational and community TV service to provide television services to selected locations in Winchester. Following a conversation with DR of Institute of Local Television on 17th January we understand it may be possible to have access to the tower at the Police HQ on Romsey Road (NGR: SU296473) to provide a relay transmission post for our service.

The service would be transmitted on the licence exempt 2.4Ghz bands and involve either attachment to the existing mast on the roof or bracketed onto two short 1.25 inch aluminium poles each mounted with two boxes (approx 222x146x75 mm) and one yagi type antenna (TV aerial shape but approx 450mm in length).

Also, it might be appropriate to identify the Hampshire County Council officer overseeing the installations on the HCC Building and to ask the same?

DONCASTER 2.4TV LOCATION SURVEY 5/04/04

Outline Proposal Specification

2.4GHz audio video and (if required) teletext transmission and reception equipment. To be supplied by ILT ready for mounting. Also video juke-box server with swoppable hard disc, dial-up phone requests and scheduling (and updating) via phone or ethernet. Scheduling software. Canopus card for PC to enable MPEG encoding. Teletext system. Cabling to suitable power source for 12 volt adaptors and for signal to and from location of server/studio - *distance depending on cable run not being so great as to incur signal loss.*

Transmission & Reception
Comprising 2.4GHz transmitters and receivers weatherproofed and provided with appropriate cabling to include audio x 2, video and 12 volt supply x number of locations including return paths

Basic Configuration
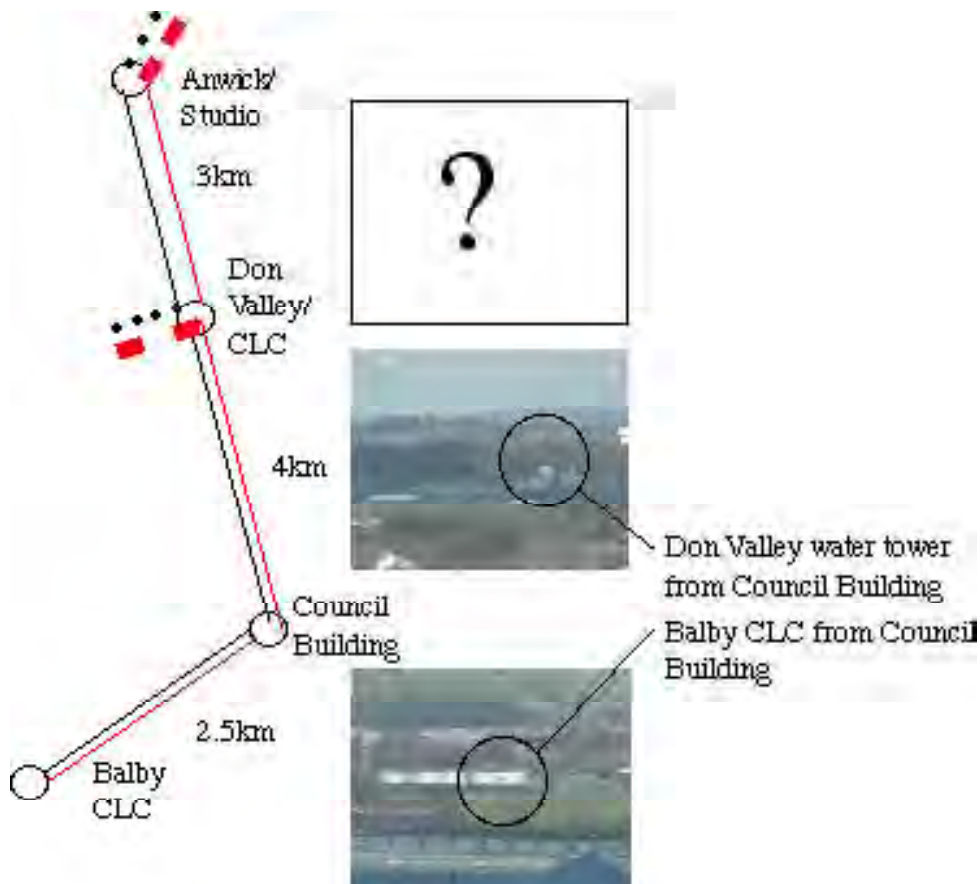
Outgoing signal - red
Returning signal - black

Switching Scenarios

1   Anwick generates signal for reception at Don Valley/CLC and Balby CLC
     Signal passes from frequency 1 to 2 for retransmission at Don Valley is received   at Council
     Building and retransmitted on frequency 3 for reception at Balby CLC. Don Valley recovers
     signal from reception on frequency 1 from Anwick.

2   Balby generates signal for reception at Don Valley/CLC and Anwick
     Signal passes from frequency 1 to 4 for re-transmission at Council Building is received at Don
     Valley/CLC and re-transmitted frequency 3 for reception at Anwick. Don Valley recovers
     signal from reception on frequency 4 from Council Building.

Scenario 1 and 2 can run simultaneously - with Don Valley/CLC receiving (but not contributing to)
signal.

Here Don Valley/CLC would 'initiate' the exchange with Anwick and Balby CLC - one of whom
would be able to participate as contributor and the other as a receiver.
The switching of incoming, outgoing and 'passing through' signals will need to be explored further
and designed to suit scenarios required by the three participants.

Notes following location survey:

- Suitable means to feed signal to transmitter and from receiver to the studio at Anwick and the studio at the CLC at Don Valley have still to be determined. The solution will be dependent upon final location of masts at these sites - but   I'd suggest above the water tower at Don Valley in view of location.

- The Council Building serves only as a transfer - so no feed is taken from here into or out of the Council Building.

- At Balby CLC mast to studio/server distance can be achieved without amplification or additional cabling due to short distance and prominence of Council Building from this location. There would be an advantage to mounting receiver and transmitter as high as possible to maximise reception and minimise disturbance to signal - so would recommend mounting on mast clear of roof-line.

Elements of a Detailed Proposal

Anwick (National Grid Reference: SE085537)
Primary distance to be covered for transmission/reception 3km.

Following factors still to be determined on site:

- Line of sight to an approved mast location in Don Valley

- Exact location of mounting points for masts/secured poles at Anwick on which to mount transmitter and receiver

- Means of conveying signal to and from TV studio area.

To be mounted by qualified aerial erector on suitable mast on school building. Height, fitting and supply of mast to be determined by client following confirmation of line-of-sight to mast location at Don Valley School/CLC. Transmitter and receiver to be mounted securely and clear of immediate buildings roof-lines.

Ideal scenario would be for a minimum cable run to and from studio/server and transmitter/receiver.
Transmitter configuration:
2.4GHz transmitter transmitting on frequency 1 (2.414Ghz)

Receiver configuration:
2.4GHz receiver with 24db gain parabolic antenna receiving on frequency 3 (2.450GHz)

Don Valley School and CLC (National Grid Reference: SE059549)
Primary distance to be covered for transmission/reception 3km to Anwick and 4kmto Council Building.

Following factors still to be determined on site:

• Line of sight to an approved mast location at Anwick

• Exact location of mounting points for masts/secured poles at Don Valley on which to mount transmitter and receiver

• Means of conveying signal to and from CLC TV studio area.

To be mounted by qualified aerial erector on suitable mast on school building. Height, fitting and supply of mast to be determined by client following confirmation of line-of-sight to mast location at Anwick. Transmitter and receiver to be mounted securely and clear of immediate building roof-lines.

Ideal scenario would be for a minimum cable run to and from studio/server and transmitter/receiver.

Don Valley Transmitter configuration:
2.4GHz transmitter transmitting on frequency 2 (2.432GHz)
2.4GHz transmitter transmitting on frequency 3 (2.450GHz)

Don Valley Receiver configuration:
2.4GHz receiver with 24db gain parabolic antenna receiving on frequency 1 (2.414GHz) from Anwick
2.4GHz receiver with 24/26db gain parabolic antenna receiving on frequency 4 (2.468GHz) from Council Building

Council Building (National Grid Reference: SE029575)
Primary distances to be covered for transmission/reception 4km to and from Don Valley and 2.5km to and from Balby CLC.
Following factors still to be determined on site:

• Line of sight from Council Building suggests mast location at Anwick be above   water tower - please confirm no 2.4 signal usage on mast between Don Valley and Council Building

• Transmitter and receiver for Don Valley on north facing edge of building with transmitter and receiver for Balby CLC on western corner of north facing edge of building

• Source of mains power identified within twenty feet of locations for transmitter and receiver pairs

• Please secure any Council permissions ASAP

To be mounted by qualified aerial erector on suitable masts on council building.

Height comparable with other equipment at site fitting and supply of short mast to be determined by

client. Transmitters and receivers to be mounted securely andclear of immediate building roof-lines .

Council Building Transmitter configuration:
2.4GHz transmitter transmitting on frequency 4 (2.468GHz) to Don Valley/CLC
2.4GHz transmitter transmitting on frequency 3 (2.450GHz) to Balby CLC

Council Building Receiver configuration:
2.4GHz receiver with 24/26db gain parabolic antenna receiving on frequency 2 (2.432GHz) from Don Valley/CLC
2.4GHz receiver with 24db gain parabolic antenna receiving on frequency 1 (2.414GHz) from Balby CLC

Balby CLC (National Grid Reference: SE006575)
Primary distances to be covered for transmission/reception 2.5km to and from Council Building.

Following factors still to be determined on site:

•   Location above roof-line near to server/studio to minimise cable and 12 volt
         power runs.

To be mounted by qualified aerial erector on suitable masts on/beside Balby CLC. Fitting and supply of mast to be determined by client. Transmitters and receivers to be mounted securely and clear of immediate building roof-lines .

Balby CLC Transmitter configuration:
2.4GHz transmitter transmitting on frequency 1 (2.414GHz) to Council Building

Balby CLC Receiver configuration:
2.4GHz receiver with 24db gain parabolic antenna receiving on frequency 3 (2.432GHz) from Council Building

Notes:

Signal ranges will vary from site to site. Experience from Aberfeldy suggests that transmitters and receivers above roof-lines offer better reception. Slight variations in movement of receiving antenna due to wind can affect signal. In view of the distances between sites the masts/poles will need to be secured against wind movement.

Antenna Dimensions   600x900mm
Antenna Wind Resistance   60 m/s
Estimate

Broadcast:-
Pair of video transmitters and receivers with parabolic antenna at 24db
Number required one pair each at Anwick and Balby CLC
                    two pairs each at Don Valley/CLC and Council Building

Total 6 pairs (550 x 6) 3300.00

Possible supplementary cost should +26db parabolic be required (DR enquiring on availability)

Server etc:-
Video juke box server with dial up   (approx) and scheduling software   1800.00
Canopus card (approx)   500.00
Teletext compiler and inserter (approx)   3500.00

Kit to include cabling of suitable length to reach studio/server - with proviso that siting of transmitters and receivers may not be ideal/suitable for cabling at Anwick and Don Valley/CLC. An alternative solution can be considered when line of sight assessment has been made between these two locations.

Installation
Aerial erection company to be employed by clients. Masts to be in place and secured prior to site visit - any additional cable work put in place to agreed spec. Kit supplied with technical supervision from ILT.

ILT Day One - Site visit from ILT with kit timed to meet aerial erectors availability. Kit set up and tested - Balby, Council Building, Don Valley installed.

ILT Day Two - Anwick set up to be accompanied by trainees and aerial company - kit for Anwick assembled on site as training exercise. Don Valley/CLC connection made - cable or other solution (like Anwick) depending on distance between mast and studio/server

Further days on site. If due to site delays additional days charged out at £350.00 per day plus accommodation.

Training on scheduling and MPEG encoding can be supplied by ourselves or directly by video juke box suppliers.

Articles on TV and Development Issues

SOUTH AFRICA
South African Television: Prime Time South Africa
Authors: Arnold Shepperson and Keyan Tomaselli Date: 1997 Place: Durban, South Africa
Source: http://www.und.ac.za/und/ccms/articles/acttoaff.htm Copyright: Arnold Shepperson, Durban, South Africa

Television programming in South Africa changed in several respects following the investiture of the Government of National Unity (GNU) in 1994. These changes have not been forced in the sense of having been imposed by the state. Instead, the public service broadcaster, the South African Broadcasting Corporation (SABC) was in the unique position of being able to draw on a wide range of previously excluded professional producers. Many of the programs reviewed in this catalogue, and in the Prime Time South Africa compilation issued by California Newsreel, then, reflect these producers' responses to the SABC's call for material relevant in a society consciously undergoing transition.

Another production resource was the cadre of black activists who trained in film and video techniques as a form of resistance. Indeed, many of the previously excluded professionals had made it part of their business to extend camera and production skills across apartheid's racial divide. With these producers were other professionals, especially journalists, who actively co-operated with activists in democratically organized media production. The productions represented in the California Newsreel collection therefore show a range of outputs highly representative of both past and present practices, even though few of them would have been shown prior to 1994.

Broadcast television practice prior to the GNU was both directed and regulated by the Board of Directors of the SABC. Ostensibly this arrangement reflected the formal independence of the broadcaster from the state. However, by the early 1960s the apartheid government's political arms had ensured near-complete dominance of board representation: boards were composed almost entirely of white Afrikaans-speaking males. Indeed, many, if not most, SABC board members also belonged to the 'Super Afrikaner' organization known as the Afrikaner Broederbond (roughly: the Afrikaner Brotherhood). As Ruth Tomaselli (1989) and her collaborators show in **Broadcasting in South Africa** radio and television policy was geared to popularizing apartheid and National Party hegemony.

With the installation of the new democratic Parliament in 1994, new broadcast legislation emerged. Under this dispensation, all broadcast activity was placed under the jurisdiction of an Independent Broadcasting Authority (IBA) modelled after British, Canadian and Australian regulatory practice. The IBA's brief includes the injunction to ensure a plurality of players in the field, as well as ensuring the independence of the national public service broadcaster. The SABC assumed the latter function, and it is in the light of this responsibility that the Corporation undertook to air the kind of material extracted in Prime Time South Africa**.**

New Faces, Established Skills
Prior to its restructuring, the SABC had relied heavily on in-house producers in conjunction with a small cadre of outside contractors. However, the latter group only included companies which turned out ideologically approved work, dramas and documentaries which, for example, reinforced certain preferred perceptions of white South Africa as the last bastion of democracy in a world increasingly succumbing to communism. Many of the production houses represented in the California Newsreel catalogue were ignored by the SABC under apartheid, and still others avoided the Corporation on principle.
This does not mean that nothing happened which was not sanctioned by the Corporation. On the contrary, many producers were engaged in developing audio-visual media directed at non-governmental structures like trade unions, civic organizations and overseas television and film.

Activists joined non-governmental organizations (NGOs) dedicated to media training, and some of the institutions set up in this way have become major players since 1994. Mail and Guardian Television, the Newtown Film and Television School, Dynamic Images and others, all sprang from initiatives designed to spread journalism, film and video skills across the full spectrum of South Africa's population.

By 1994, therefore, the restructured SABC Board and management were in a position to expand their range of outside production resources. Even before 1994, though, the Corporation had begun to take on the kind of projects which it had previously avoided. The first series of Mail and Guardian Television's **Ordinary People** cinéma vérité documentary series appeared in 1993 to almost universal acclaim. Already in 1990, the **Matchbox City** miniseries was conceived as project for a group of independent film producers based in the black townships. In the end, the important point is that the country did not need to wait on the development of alternative production facilities and approaches: the germ of the new television resource was already in place, and fully prepared to provide programs that mainstream South Africa had never imagined (eg. **Going Up**; **Beckett'sTrek**).

Global Influences
A lot of communications theory examines the influence, or lack thereof, brought about by mainstream network products like soap operas, miniseries based on popular novels, network news, and so on. To a large extent, though, this body of thought tends to treat audiences as if they are all more or less identical to American audiences. It is quite decisive that European and North American audiences have been viewing television since the 1950s, but that most other global television audiences have existed for a much shorter period.In South Africa people first saw television in 1976, and then only on a limited scale directed mainly at white viewers. Channels for blacks appeared in 1982; however the issue revolves not around actual distribution of programs but the fact that South Africa's second generation of television viewers is still growing up. Audiences in the US and England, for example, are already into the fourth generation, and this difference matters when we look at the South African situation.

For the most part, TV in South Africa was an urban phenomenon, something requiring a high level of capital investment in order to reach the widest possible audience. When, like in the US, audiences grow up in a world where television sets are everywhere, the actual structures making this possible tend to get taken for granted. Elsewhere things are usually quite different. When countries like Namibia, Zimbabwe and South Africa shifted into a democratic mode of politics, national constitutions expanded once-limited communications rights to much larger populations than the ones previously benefiting from the existing structures. In general, even those privileged in the past had not enjoyed access for more than one or two decades.

Consequently, the first generation of television viewers in South Africa encountered the medium in its latest (or very nearly latest) forms. Even now, some two decades down the line, the broadcast system shows foreign programs developed for systems which have in fact developed over some fifty years. The result is that two essentially incompatible but still parallel understandings of television programming grew up together in South Africa's production community. First, there is a strong 'mainstream' tradition which approaches programs as if what's good for, say, CBS and NBC is good

enough for South Africa. In many respects, this was the approach of the 'old' SABC. Second, there was the broad activist approach which was introduced earlier.

Both the old and the activist influences were found in post-apartheid TV programming. The main commercial network in South Africa, M-Net, follows the first approach. Indeed, M-Net's programming consists predominantly of Hollywood cinema, British and South African sport and some local productions. The SABC soon rose to the challenge of providing representative public service broadcast programming, and the influence of the activist local television tradition filtered through. Previously marginalized producers were able to incorporate style, script and editing values based on the South American small-format local media practice, and to mesh this with South African experience in quite unexpectedly dynamic ways.

Ethical Cleansing: the present as homage to the past
Most of the material presented in **Prime Time South Africa** works in some way to reconstruct perceptions of the past. Topics, narratives and subjects all present perspectives which the past marginalized, sometimes to the point of near-genocide. To call this kind of production 'ethical cleansing' conjures up visions of some very unpleasant eastern European events. However, we quite deliberately reconstruct this term to draw sharp attention to the transformed political environment within which television after 1994 operates.

Grand Apartheid, the creation of ethnically 'pure homeland nations', was doubly both ethnic *leansing* and ethnic *concentration*. It was based on a concept that political theorist Hannah Arendt (1958) located in the collapse of the European nation-state, influenced directly by Imperialist experiences of indirect rule. By deliberately creating an *ethics* based on the division of races, apartheid's architects then tried to brutally impose an *ethnic* constellation of states in which civil and political rights were based on perceived 'authentically own' cultural characters defined by racial origins. The events leading up to 1994 were largely based on the different ways people affected by the cleansing and concentration organized against it (eg. **Biko: Breaking the Silence, The Ribbon**).

The films, documentaries, drama series, sitcoms and actuality programs - even the game shows - in **Prime Time South Africa** all emerged within an environment where public service broadcasting has specific tasks aimed at the broader democratic project. The present government is not actually a new political actor, and in fact represents ideals which were first formulated more than eighty years ago. These ideals of non-racial democracy formed the basis for the struggle which dominated Western television news for only decade, but in fact had become part of many people's cultural background. The task which the television programs address, then, includes bringing into the mainstream those views previously excluded from the public realm.

In this way, people's actual desires get into the public realm. What many may have believed was a struggle for retribution turns out to be a struggle for recognition, a demand to become involved in relevant ways with the common world which everybody inhabits (**Castrol TV Advert**; **Heart and Stone**). The California Newsreel compilation shows how it was not a revolutionary ethics ofdispossession, expulsion and racial revenge drove the call for change. By putting this into the words of producers who were part of the struggle actually serves to clear the air, to show just how marginal the ethics of apartheid really was. In this way, we can speak of ethical cleansing not as eradication of an established system of norms and rules, but the material demonstration that they actually had only marginal purchase in the wider community.

The Future as a Task: television and the way forward
Aside from working to bring ethical as well as political and social realities of the past into view, that these new television programs give a good view of the present as the *beginning of many futures*. They either show or are produced by people with real aspirations and sometimes unexpected talent who are willing to build on their world, rather than just use whatever can be given to them. They also show how this attitude already existed in the middle of the sometimes brutal liberation conflict (see, eg. **Cry Reason**). Either way, the most important topic that unifies the diversity of styles and genres represented here is People.

Whether programs show the personal drama of struggle against oppression, or poke fun at habitual stereotypes inherited from the past, the central theme remains something fundamental about what it means to be South African. This is the general desire to get on with the task of making a world in which new generations will be proud to live. And yet not one program actually states what such a world ought to be: instead, people themselves spell out what they ought to do to make a better world. This message may be explicit, like in **Beckett's Trek**, or dramatized as in **Homeland** or **Matchbox City**, or even tracked out in the **Ghetto Diaries** / **White City, Black Lives** self-made documentary-cum-actuality clips. In any event, viewers for whom non-racialism and non-sexism are foreign concepts will find the material challenging, presenting identities which seem to arise from an almost instinctual defence of a person's right to be human before anything else.

If there is some actual 'ideology' behind the bulk of the material gathered for **Prime Time South Africa** it is that humanity is an end in itself. People are concerned for their futures not as ethnically or culturally defined subjects, but as agents in a wider task of equity for all who share the worlds that are possible under South Africa's new dispensation. As media for democratic action, these programs do not prescribe what must be done, but present options which can be supported or promoted on democratic grounds. They genuinely reflect the plurality of possible realities: from the **Felicia Mabuza-Suttle Show** and its aggressive neo-middle-class guilt, through the dramatic presentations of different kinds of oppression in **Homeland** and **Matchbox City**, to the whispered desperation of a young woman who dares to hope in the midst of **Ghetto Diaries**' poverty. Each context points to new ones. Programs like these and others like **Ordinary People** not only represent something new in South African television, they also present a potential which is new in the world at large. They do so in ways which take what became familiar in the news of the 1980s and up to 1994, and turn it from the site of activism into a site for a rainbow plurality of affirmation. Audiences never saw this before, because what happened in 1994 is something quite unique: the television represented here simply *had* to come.

Further Reading
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http://www.biz-community.com/Article/196/70/4796.html

South Africa's leading daily advertising, marketing and media news resource for the industry!
Out Of Home community of South Africa

<u>News</u> *CTN has broken new ground by taking outdoor advertising to the next, logical step: "living billboards" which create jobs, flight the hugely popular CTN Stokvel TV and allow brands to make contact with communities in the heart of townships.*

eStokini is a name worth remembering. It means "gathering place" in many African languages - and that's just what this living, breathing township billboard offers - and more. Indeed, it is a pre-manufactured venue where communities are quite plainly, able to live the brand.

To explain: an eStokini stands proudly along the main thoroughfares of dusty South African townships. Four metres tall, these stylish structures not only display a brand message, but create a minimum of 4 jobs per unit for the community that they serve as well. Some of the services available include:

•   A newsstand carrying daily and weekly newspapers, as well as monthly magazines. Products will include Daily Sun, City Press, Sunday Sun, Bona etc.
•   A kiosk where the owner provides fresh bread, milk and food on the run: tea, coffee, 'walk & talk,' 'smiley' or 'pap en vleis!'
•   A community phone, a retail point, as well as promotional and research points.
•   And to top it: Free viewing of the popular CTN Stokvel TV channel which is customised to this market.

The flexibility of the project is vast. The innovative design allows all these services and more to be offered in a modern and compact unit which is available to clients on a yearly basis for branding, as well as customised for retail sell-thru and promotions.

"For ten years Stokvel TV has been educating and entertaining Stokvel groups, burial societies, church groups and more." Says its CEO and *eStokini* creator, Vanessa du Plessis: "It was time to take our channel even further - to 'destination' points where viewers are relaxed, at ease and are enjoying their surroundings. *eStokini*, I believe, offers an intimate viewing point that delivers high absorption levels of the message, and of course group viewing, which is in line with the traditional Stokvel TV approach."

While that sinks in, let's add that the living billboard costs advertisers substantially less than the traditional one!

Indeed, it is now possible to create positive associations in a market where many brands have been battling to establish a presence for eons. Now clients can use the full media circle: outdoor branding, print, TV and direct selling - all in one unit. Adding automatic job creation to the list is just magic.

Perhaps not surprisingly, the first *eStokini*'s are rolling out with the participation of the Edcon group, who's Jet Club brand's marketing innovation recently knocked Edgars (from the same stable) off its long held perch, taking pride of place as the top retail brand in the country.

The innovation of the concept was a definite match and the first 5 Jet Club *eStokini* units will be rolled out in the Soweto area as early as December this year...

Says Jet Club Marketing Manager, Cameron Burt, "*eStokini* is a great communication vehicle speaking directly to the Jet Club target market."

In association with the South African Council of Churches (SACC), the project will initially roll out from street edge church properties, and churches will benefit greatly from the revenue and jobs created. CTN Stokvel TV is already the designated communicator for the SACC, who for some time have distributed the tape-based channel which also features SACC projects and news. *eStokini* units can hence be placed on suitable church properties, of any denomination, anywhere in South Africa. And therein lies more of the magic - the revenue will also help the needy.

Says the SACC's General Secretary for the Gauteng region, Rev. Gift Morane: "We live in a situation where there are no jobs, and the Church is in a position to create partnerships with business sectors to create that much-needed employment. We see the *eStokini* project as an opportunity to develop skills and encourage entrepreneurial talent in the townships. As Raymond Ackerman recently said, BEE should not only benefit a few, but should also reach out to the poorer communities, where we can assist and educate those who need it the most. We see the *eStokini* project as an opportunity to experience and develop their latent ability to do things on their own. We wish the project much luck."

Adds du Plessis: "We have been operational in this market for 10 years, regularly sending camera crews to visit community groups. We have seen the needs developing on both sides of the spectrum: services required by our viewership, as well as the kind of marketing opportunities that are needed for advertisers. *eStokini*'s are a natural outflow of this experience. We decided to design a product that could meet those needs on almost every level -

For example, a number of FMCG companies are placing branded containers in townships to attempt to reach this market through direct contact. Yet, this practice - useful as it may be - holds inherent brand dangers by association with, in some cases, a 'tatty' environment. We realised a need for quality control, direct access to the community and perhaps even more importantly: support from the community. *eStokini*'s delightful design does just that."

"Another vital need are user friendly seating areas where the people can access basic services and have a seat at the same time. The horrors of having to stand whilst waiting for a taxi can only be appreciated by those who regularly have to do so. Irritable commuters are not very receptive to advertising messages! As a result, the *eStokini* units provide seating while they wait for a taxi...and watch your message on TV. What they see on screen they have not seen before, and cannot see at home. Stokvel TV offers fresh programming produced in the marketplace for the market."

The new medium is so flexible that clients can decide where they want their *eStokini*'s to be, how they want to dress their units, and how many units they would like to have working for their brand. In association with a local research group, CTN can accurately identify where the highest density of any desired LSM resides - and target them via the churches in those very areas. It is well known that the churches provide the central core of communal activity.

eStokini will bring brands to the very doorsteps of their chosen target markets - and that's the kind of marketing approach this country needs.

[06 Oct 2004 13:34] Editorial contact Yizo Yizo: Citizenship, Commodification and Popular Culture in South Africa

Barnett C.[1] [1] The Open University, UK, Email: c.barnett@open.ac.uk

Abstract:
This article critically examines the development of an innovative approach to educational broadcasting in post-apartheid South Africa. Examining the policy background and the public debate sparked by the controversial drama series, *Yizo Yizo*, it is argued that the spatial restructuring of media markets re-articulates the sites and scales at which media practices and citizenship are connected. *Yizo Yizo* makes creative use of globalized media genres to address pressing social issues in ways that connect to national public policy debates. It does so by mainstreaming educational broadcasting, and by recognizing children's complex media literacies and competencies. It is argued that the series is an example of a new rationality of media citizenship developed in the distinctive context of post-apartheid transition that has broader significance for understandings of the implications of media globalization for citizenship, culture and participation. Yizo Yizo is a practical example of mediated deliberation aimed at empowering citizens. It is indicative of subtle but important shifts in the dimensions of public culture in a highly divided society.

INDIA
THE HINDU Online edition of India's National Newspaper
Thursday, Jan 24, 2002

A serial effect
A study conducted by the Asian Media Information and Communication Centre reveals that most children are not only hooked to television but also to the serials dished out on various channels. SUSAN SRIDHAR writes...

COME PRIME time on TV and serial mania grips Chennai. Surprisingly, it does not spare even children.

In most homes, the entire family congregates before the television to watch serials. Though the PC has carved out a niche for itself in many homes, it's the television that remains the prime entertainer. As R. Raghavan of T.Nagar admits, "Though I have a computer, when it's time for his favourite programmes, my son is in front of the TV set".

Even in the slum areas, a faint glow of the flickering TV screen is always visible. And if every house cannot afford it, one can see the old concept of community viewing resurging in these places. As 12-year old Raghav, studying in the Perambur Corporation School, said, "I paid Re.1 to my friend's father every time I viewed "Chithi" because they have a nice TV". This is the impact of the small screen and it is the medium that continues to be the most spoken and written about.

The irony is that in spite of the proliferation of channels, there is hardly any specific programming done for children and most of what is available is done with market forces in mind.

An analysis done by the Asian Media Information and Communication Centre (AMIC), "Growing up with TV" stresses on the fact that in India, the total number of children's programmes in all channels is not even 5 per cent. If what one hears and reads about an exclusive channel for Indian children, becomes a reality; it would be nothing short of a miracle. For now, the channel "Splash" is making waves, but it is only for those who can understand English and relate to a particular lifestyle. If there are only limited programmes for children and they are still spending a lot of time in front of the television, what are they viewing? How does it affect their behaviour?

Are these young viewers able to put things in the right perspective? Do viewing habits vary across the socio-economic strata?

Though these concerns are many and varied, a study was conducted among young adolescents in Chennai and an attempt was made to find an answer to at least some of these questions.

For the sake of greater validity, the age group was restricted to the 12 to 14 year group. The main objectives of the study were:

To find out the favourite medium of young adolescents in Chennai.

To find out whether socio-economic status determined their channel and programme preferences, and

To find out whether TV viewing had any sort of impact on their other activities.

Before embarking on the actual study with a sample size of 1137 children, a random study was conducted among parents to find out their children's favourite medium and television topped with 56.5. Even in homes where the PC is available, 40 per cent of the parents said, TV was their children's favourite medium.

The sample of 1137 adolescents was divided into low income (below Rs. 5,000 a month), middle income (Rs. 5,000 to 10,000 per month) and high-income (above Rs. 10,000) groups. When the researchers tried to find out the frequency of TV viewing among this sample, it was interesting to

note that only 89 children were low frequency viewers (roughly half to one-and-a half to three hours per day) and a whopping 692 were high frequency viewers (over 3 hours per day).

The ten most preferred channels were Sun TV (35.8%), Star Plus (16.6%), Star Sports & ESPN (10%), Cartoon Network (8.5%), DD-1 (5%), Star World (4.7%), Vijay TV (3.8%), Sony (2%), DD-2 (1.9%) and AXN (1.3%).

What is important to note is that in the above two tables there is a significant difference (Pearson's Correlation shows .00000) in channel and programme preferences between the three income groups. As expected, language and the lifestyles play a major role in channel preferences, but it is amazing that serials stood out as the most popular content in all the channels.

As Dr. Karthikeyan, an eminent psychologist from Chennai puts it, "The narrative style will always be the most entertaining as story telling has always been an integral part of our culture. And today in nuclear families, the TV serials have in a way substituted for the stories grandparents used to tell their grandchildren".

When the children were interviewed in groups, they agreed that viewing television was an entertainment for the entire family.
But it was found that children belonging to the high-income group mostly watched Cartoon Network or programmes on foreign channels (see table). This is because they can understand English or there is more than one television set in these houses, or the parents had alternative means of entertainment leaving the children by themselves.

For the majority, however, socialising with the family/peer groups also seemed to revolve around the television content. Whether it was the popular "Chithi" (now, "Indira") on Sun TV or "Friends" or "Dharma & Ally McBeal Greg" on Star World, the children hardly missed serials.

A part of the study also revealed the activities the children indulged in other than TV viewing — reading books, school work, pursuing hobbies, listening to music, computer games, net surfing, sports, spending time with family and friends and going to theatres to watch movies.

Most parents seem to be echoing what Mrs. Bhaskar said, "I am really not worried about the TV because we all watch it together, but what I am really scared of is the Internet. I do not know what my child is watching and I have no control over it".

http://www.citymayors.com/report/slums.html

Anna K. Tibaijuka, UN-HABITAT Executive Director
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More than one billion people call urban slums their home By Tann vom Hove, Editor

At least one billion people live in slums, with the highest percentage of them found in Asia, Africa and Latin America, according to a new report by the United Nations Human Settlements Programme (UN-HABITAT). The UN report The Challenge of Slums: Global Report on Human Settlements 2003 was published on World Habitat Day, 6 October 2003. At a press briefing, Anna K. Tibaijuka, UN-HABITAT executive director, told CityMayors that at least 40 per cent of settlements in the world were classified as slums.

The report, which runs to over 300 pages, is packed with new statistics and studies of a situation that has made governments the world over increasingly concerned – to the point where they have adopted a specific clause – Target 11 of Millennium Development Goal 7 – to 'significantly improve' the lives of at least 100 million slum dwellers by the year 2020. (Highlights)

The UN General Secretary Kofi Annan said that slums represented the worst of urban poverty and inequality. Yet the world had the resources, know-how and power to reach the target established in the Millennium Declaration. He appealed to the world: "It is my hope that this report, and the best practises it identifies, will enable all actors involved to overcome the apathy and lack of political will that have been a barrier to progress, and move ahead with greater determination and knowledge in our common effort to help the world's slum dwellers to attain lives of dignity, prosperity and peace."

The UN Millennium Development Goals, Ms Tibaijuka said, had recognised the problem of slums and had sought to improve the living environment in cities and towns. "Some 71 per cent of city-dwellers in sub-Saharan Africa live in slums, and the figure is 40 per cent for Asia and six per cent for developed nations," she explained. Ms Tibaijuka continued that slums were not inevitable even though they existed. The UN-HABITAT report, the first global assessment of slums, had attributed the formation of slums to, among other things, the rapid pace of rural-to-urban migration and the urbanisation of Africa, Asia and Latin America.

According to the report increased political will, investment in infrastructure, proactive urban planning and the empowerment of the urban poor were all ways of tackling the problem. The deterioration of the living environment was not limited to the poorest countries, and the report's recommendations were aimed at the entire world.

Jeffrey D. Sachs, Special Adviser to UN Secretary-General Kofi Annan on the Millennium Development Goals and Director of the Earth Institute identified urbanisation as one of the most powerful trends in the world today. Evidence pointed to the fact that cities were the core of economic growth in the long term, which was promising from the aspect of determining how developing countries could grow and get integrated into the world economy. He stressed that while

that was promising, the problem lay in the fact that people were either not finding productive employment for income generation or having the necessary infrastructure - or both.

Key findings in the report show that Asia has about 550 million people living in slums, followed by Africa with 187 million, and Latin America and the Caribbean with 128 million. While slums have largely disappeared in developed countries, the report still found that there were approximately 54 million urban dwellers in high-income countries living in slum-like conditions.

The UN findings also revealed that sub-Saharan Africa had the highest rate of slum-dwellers with 72 per cent of the urban population living in slums, followed by South Central Asia with 59 per cent, east Asia with 36 per cent, western Asia with 33 per cent, and Latin America and the Caribbean with 32 per cent. Although the concentration of slum dwellers is highest in African cities, in numbers alone, Asia accounts for some 60 per cent of the world's urban slum residents. The report stresses the urgent need to do much more to improve the lives of slum-dwellers.

Some highlights from the UN report

- Some 923,986,000 people, or 31.6 per cent of the world's total urban population, live in slums; some 43 per cent of the urban population of all developing regions combined live in slums; some 78.2 per cent of the urban population in the least developed countries live in slums; some six per cent of the urban population in developed regions live in slum-like conditions.

- The total number of slum-dwellers in the world increased by about 36 per cent during the 1990s and in the next 30 years, the global number of slum-dwellers will increase to about two billion if no concerted action to address the challenge of slums is taken.

- More than 41 per cent of Kolkata's (Calcutta) slum households have lived in slums for more than 30 years.

- In most African cities between 40 per cent and 70 per cent of the population lives in slums or squatter settlements. Many African cities will be doubling their population within two decades. In a city like Nairobi, 60 per cent of the population lives in slums which occupy about five per cent of the land.

- While most slum-dwellers depend on the informal sector for their livelihoods, slum populations in many parts of the world (for example in Pune, India and Ibadan, Nigeria) quite often include university lecturers, university students, government civil servants and formal private sector employees.

- About one out of every four countries in the developing world has laws that contain clauses that impede women owning land and taking mortgages in their own names.

- All slum households in Bangkok have a colour television.

- Slums are also places in which the vibrant mixing of different cultures has frequently resulted in new forms of artistic expression, including some of the major musical and dance movements

of the 20th Century, such as jazz, blues, rock and roll, reggae, funk, hiphop, soukuss, breakdance, fado and flamenco.

http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=9090893&dopt=Abstract

Perception about AIDS among residents of a Calcutta slum.

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A study was carried out in a slum area of South Calcutta to assess the impact of the current mass education programme against AIDS. Two hundred and six residents, mainly of lower middle class, aged 18-60 years of both sexes were selected at random. They were interviewed to know their perception and sources of information about AIDS. Two-third of them had their own TV and radio, which they watched/heard for about three and half hours each day. Another 28% watched TV outside for about one and half hours a day. About 46% were daily readers and 20% occasional readers of newspapers. Fifty nine percent knew about persons vulnerable to get AIDS, but most of them associated it to promiscuity only. Avoiding it was the main means known to them for preventing AIDS. The role of condom in it was known to only 2.5% residents. The source of their knowledge was mainly TV, either alone or with other mass media (67%). Such knowledge was related to higher education. To make perception about AIDS more effective, it is suggested that local health and voluntary agencies should involve the community in the AIDS education programme along with the back-up of mass media. An apex agency solely responsible for AIDS education should be set up for each big city to co-ordinate the activities of local agencies.
PIP: 206 mainly poor and lower middle-class residents of the Chetla slum of South Calcutta were interviewed with regard to their perceptions and sources of information about AIDS. The goal was to assess the impact of the current mass education program against AIDS. One member was randomly selected from each of 206 families to participate in the study. Respondents were aged 16-80 years, of mean age 35-42 years, 43.7% male, 80% married, 19% illiterate, and 94% Hindu. 66% had their own television and radio which they watched/heard for approximately 3.5 hours daily. Another 28% watched television outside for approximately 1.5 hours each day. Approximately 46% and 20% were daily and occasional newspaper readers, respectively. 59% knew about people vulnerable to contracting AIDS, but most associated HIV risk only with promiscuity and prostitution. Avoiding such behavior was deemed to be the best way to avoid contracting HIV. Only 2.5% knew that condom use can protect against HIV infection. The source of that knowledge was mainly television, either alone or with other mass media. Such knowledge was related to higher education. The authors suggest that local health and voluntary agencies involve the community in the AIDS education program, backed up by the mass media. An agency solely responsible for AIDS education should be established in each major city to coordinate local agency activities.
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http://web.idrc.ca/en/ev-5064-201-1-DO_TOPIC.html

INDIA

Improving Health and Living Conditions in the Gilbert Hill Slum

1998-07-10*Jennifer Goldstone*
Changing attitudes are helping residents of a Mumbai (formerly Bombay) slum transform their health and living conditions. Yet, in 1992, when a local university first approached the people of Gilbert Hill to help develop their community, they had very different priorities.
"The women wanted income-generation schemes and saw their health and education as the least of their priorities," says Mariamina Varghese, Vice-Chancellor of SNDT Women's University. The residents did not understand that health problems such as diarrhea were related to open gutters, garbage strewn outside their homes, and the overflow of human waste in public toilets. They did not feel a sense of ownership for their environment, she explains, but viewed environmental quality as the responsibility of the municipal corporation serving their area.

Participatory approach
In this Muslim slum of about 150,000 people, families are large while literacy levels, the status of women, and family income are very low. When the project began, Gilbert Hill was isolated from other development projects, which residents had refused to participate in. But attitudes started to change when the SNDT Women's University not only agreed to share the results of research on the health and nutrition status of local women and children, but also to involve the people in gathering data, planning, and implementing the study.

This participatory research project, which was funded by the International Development Research Centre (IDRC), arose from an IDRC/UNICEF-funded national seminar on urban nutrition that Dr Varghese organized in 1989. Although the initial goals were modest, the research team's methods for identifying and addressing women's health issues have proven useful to other agencies such as UNICEF.

Community discussions
The work began with discussions involving university staff and residents. Since most women were housebound and had little decision-making authority, Dr Varghese and her colleagues included men and other family members, who became supportive when they realized the possibility of increasing family income. One man, who operates a cable television station, agreed to broadcast videos on the status of girls and the need for education. (In Gilbert Hill, groups of women generally watch television together in the afternoons.) Dr Varghese says these videos helped to motivate women to participate in the project.
Based on their outspokenness — or in rare cases, their political activism — eight women were selected to help organize communities within the slum. The university gave them each a small salary of 300 rupees a month to visit peoples' homes and recruit information gatherers for the health and nutrition study. The baseline study revealed a need to increase immunization rates, as well as a high prevalence of dehydration and malnutrition. The findings surprised Gilbert Hill residents, who did not regard nutrition as a priority, says Shobha Udipi, Head of SNDT's Department of Food Science and Nutrition.

Broad agenda
After further discussions, Gilbert Hill residents and university staff agreed on a broad agenda of activities involving health, education, income generation, and the environment. For example,

university students gave presentations on nutrition. A doctor visited each part of the slum to discuss diarrhea and prevention. Over a seven month period, 800 women had their blood tested and 90% were anemic. University staff explained anemia and its treatment, and distributed a nutritional supplement containing iron, salt, and vitamin C. The university also began to purchase higher quality grains and rice for distribution throughout the slum, charging the same price or slightly less than what the women were paying in local markets.

During the project, teenage girls with some education were paid to hold literacy classes. For residents who agreed to attend them, the university helped launch income-generating projects, such as production of artificial flowers. It also set up sewing classes, acquired three sewing machines, and secured contracts for slum women to sew lab coats for college students. Some girls also began teaching each other henna painting so they could earn money from this skill.

Optimistic
"Before, I had no confidence that I could do anything," says 18-year old Shenaz Sheith. "Now I have finished high school, plan to [attend] SNDT Women's University, and am teaching henna painting and pre-school." Like Sheith, many girls and women throughout the Gilbert Hill slum seem optimistic about their future.

Since 1993, the university has been working through local development committees set up under the Indian government's Urban Basic Services Plan, which calls for one women representative per 10-40 families. But the project has not yet caught on in all parts of Gilbert Hill, admits project officer, Meenaxi Kamath. "It takes a long time to convince everyone of the benefits. The women leaders continue to visit homes and discuss possibilities."

Marked differences
One incentive to join are the marked differences in the cleanliness of alleys and streets, as well as the appearance of homes, between the 80% of living areas reached by the project and the remaining 20%. (A few community centres and schools have also been built in project areas.) The focus is now on further improving sanitation and quality of life. So far, the university has helped people write letters to the municipal corporation and has facilitated negotiations so slum residents can appoint their own people to maintain toilets and collect garbage. These workers received some financial incentives from project funds until May 1998, but it's now up to the community to help pay the cleaners and collectors.

"In the first phase, people saw their work as part of our university's project," concludes Dr Varghese. "Now they see it as their own development."
Jennifer Goldstone is the communications coordinator for the international division of the Association of Universities and Colleges of Canada. She visited this project while in India in April 1998. (Photo: J. Goldstone)

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http://www.awid.org/go.php?stid=778

Association for womens' Rights in Development Association for Women's Rights in Development
How can media use its power 'responsibly' when creating images of sexuality for young people? By awid. By Manish Verma

An examination of the work of Swaasthya, an NGO working on Reproductive and Sexual Health in an urban slum of New Delhi. Swaasthya recognized the power of the media in young people's lives and decided to "tap this energy and make it a more responsible source of information and entertainment for adolescents".

Prior to his time spent volunteering for AWID (his current undertaking), Manish Verma studied journalism and has been writing on health and development issues in India.

Power of the Screen:
Grassroots experiences in developing a 'responsible' media
Images flicker on the screens. Eyes glued—watching love and hate unfold, blood and tears fall, retribution and vindication unspool in a world that has the power to seduce with glamour, arouse the senses and offer salvation from reality. Most importantly, it has the power to skew the truth, bend the rules—the power to deceive.

Cinema [and television], as someone said, is the opium for the masses. And the adolescents in India are addicted to it.

With over 800 films being made in India annually plus the advent of cable television, adolescents are being bombarded with glamourous images and messages of new social mores that are contradictory to the conservative and traditional beliefs of their parents.

And they are more exciting too.
Swaasthya ('Health' in Hindi), an NGO working on Reproductive and Sexual Health in an urban slum of New Delhi, conducted a qualitative research aimed at exploring the sexuality of adolescents in the slum along with finding patterns of sexual behaviour, if any.

Adolescents from the community were trained as researchers to conduct key informant interviews, focus group discussions and in-depth interviews along with providing inputs in the analysis of the results.

Results of the research pointed out that cinema and television were the major sources of (mis)information and inspiration to the adolescents (as opposed to the studied silence of the elders on any issue regarding sex as it was a taboo topic) in the study to explore their sexuality without the requisite knowledge about the consequences and the aftermath of such encounters.

Cinema and television not only provided the role models in the form of adolescents aping their favourite movie stars but also gave the adolescents 'scripts' of action to meet and interact with each other.

Despite being the largest producer of films in the world, Indian film industry largely regurgitates the tried-and-tested formula of boy meeting girl, boy losing girl due to parental objections and both reuniting and living happily ever after at the end. With permutations and combinations of the same plot and numerous song and dance sequences thrown in between, majority of the films advocate 'true' love and the concept of 'soulmates'.

However, given the strict censorship laws, films cannot show any form of sexual intimacy and largely resort to connotations and innuendo to depict them. As the girls generally had access to only these films, their notion of encounters was largely restricted to that of 'true' love and loving-happily-after.

In essence their 'script' of action ended with meeting the boy. They ran out of the 'language' to either steer the relationship or realize the implications of an 'evolving' relationship. Boys, on the other hand, had access to pornographic films and knew exactly what they wanted and, given the gender bias along with girls' predicament of being in a relationship without societal approval, took it, forcefully, at times.

As a result, these adolescents, especially girls, were vulnerable to Reproductive Health morbidities including reproductive tract infections (RTIs), pregnancies and, disturbingly, innumerable instances of sexual coercion.

In order to reduce the vulnerability of the girls, based on the results of the qualitative research, Swaasthya developed an intervention to address not only the adolescent girls but also the members of their immediate family. The intervention also took into account the factors that played important role in adolescents' lives. Cinema/television was one of them.

Power of images on the screen could not be discounted along with the entertainment value, so Swaasthya decided, in consultation with the community, to tap this energy and make it a more responsible source of information and entertainment for adolescents.

The idea was to add to the mix information and faces from the community (to ensure people would tune in) in a series of 15-20 minute videos in a newsmagazine format, which would be telecast over the local television network.

And who better to do the task but the adolescents from the community.

Swaasthya had a video camera and editing suites that could be used in the making of the programmes. But the first hurdle was to choose the team that would be involved in the production and training them.

Adolescents who were trained as researchers, and who had grown into confident professionals, formed the core group. A filmmaker was hired to train them in the aspects of filmmaking, which included scriptwriting, shooting, sound, lighting and editing.

After 6 months of intensive training, the new filmmakers were on the streets of the community shooting the first episode of *Tigri Dhadkan* (Heartbeat of Tigri). Episode included an information dissemination topic, an issue of social concern, local news and entertainment—a format that was followed in all the subsequent videos. Local cable operators agreed to telecast the episodes during primetime and on Sundays.

The show generated considerable interest in the community and quickly became part of the weekly viewing schedule. Shows were using puppets and dialogues with elders, doctors, etc. to talk about taboo topics without hurting sensitivities and at the same time by use of the 'gatekeepers' endorsing the views of Swaasthya.

Power of the medium was highlighted when some sanitation problems that had not been attended to were fixed as soon as the municipal officials saw the camera—vision of creating a community television was moving towards realization.

The team, under supervision, was making quality programmes on the issues of concern in the community and was beginning to seek advertising fees from the community. While the idea was not as yet sustainable, the start was promising. But then…

The intervention ended and Swaasthya did not have the resources to continue the project. While the film team has gone back to their regular assignments, some of them still harbour the notion ofcarrying on from where they left off.

One bright spot is that Swaasthya will be replicating its intervention in partnership with another organization and the video component may be revived in the new community, which will have a chance to watch and be part of the new style of television—one that informs while entertaining and one that is responsible rather than being sensationalistic. It has the power but the power to change for good.

Note: In all, 7 episodes of the programme were made. For more details about the programme and products, contact Dr. Geeta Sodhi, Director at swaasthya@satyam.net.in or gsodhi@vsnl.net

Feminist Movements and Organizations Gender Equality and New Technologies
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