ABSTRACT
        These three papers discuss communication systems that
are designed for individual use. The first paper describes the
problems and issues of citizens-band radio broadcasting in the United
States. The second paper relates increased telephone use to
advancements in telecommunication technology, emphasizing that these
advancements allow individuals more choices for personal improvement
and enrichment. The third paper proposes a synthesis of appropriate
technology, local or community broadcasting, and nontraditional
education within the communications policies of developing nations.
(RL)

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Group Session II

COMMUNICATIONS FOR THE INDIVIDUAL

AND EXTENSION OF CHOICE

Paper prepared by

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A REVOLUTION IN PERSONAL COMMUNICATIONS:

SOME THOUGHTS ABOUT CITIZENS BAND RADIO

In planning these comments for presentation here, several approaches to the problems and issues raised by Citizens Band radio presented themselves. The popular press has written much about the phenomena, much designed to either shock or titillate. There have been dictionaries of CB slang, much of which borders on what used to be called the unprintable. There is even a tabloid publication called "CB Bible." And, there are slick magazines; they tend to feature ladies in deep decolletage draped over the newest gadget. All this could have been described in detail, replete with, as is generally the case at communications conferences, a set of overhead transparencies and slides that can't possibly be read beyond the second row of the room.

What has been chosen instead is to talk about the phenomena as I perceive it and to flatly state what I feel needs to be known about it in order that some valid judgements of CB as a communications medium can be made. Please expect no answers in any classical research sense; the answers have yet to be studied. Perhaps some will emerge in our discussion; perhaps the audience present will be able to contribute further questions for future consideration.

Let me start from an overall perspective of what may be happening in American life (and let me emphasize that I would not be so presumptuous as to intend this to apply to other cultures I do not know as well where the CB phenomena is beginning to surface, such as Canada and Australia and Mexico) and then see how and where CB might fit into current lifestyle - or lack of it.

The literature of sociology, psychology and behavior, and political science, both academic and popular, is increasingly pointing to the sense of alienation Americans feel from their institutions and their media and their frustrations in attempts to create change. On just one institutional level, it is predicted that fewer Americans will vote in each succeeding election than in the last one. On the communications level, surrounded as we are with the richest communications ambience in the world - in terms of quantity - people see their mass media as possessing less and less credibility, as providing less satisfaction and less reliability.

Yet, people need to communicate in order to fulfill certain hungers of the mind and soul, in order to re-create a sense of community, to re-establish contact with an increasingly impersonal existence, to re-acquire satisfactions from media that are not being met. The old institutions are not meeting needs, especially in the electronic media. People, though, seem to be doing something about this. They have found a medium for themselves; they are turning to it in ever increasing numbers; they are devising their own protocols for its use; they are developing a formidable political lobby to ensure its development; they are, in short, mounting and managing the first telecommunications system ever created from the bottom up, rather than from the top down. That system: Citizens Band radio, a medium which

is now licensed to some 20,000,000 Americans in their homes and trucks and cars - and even in "walkie-talkie" form. (It is believed, on good authority, there may be 25-50 percent again as many unlicensed transmitters and receivers in current use.) It is a medium which permits one to communicate to one - or to many. It is in stark contrast to the existing structure of mass communications. While it is sometimes used frivously, more often than not, especially in heartland America, it is not. No complicated technical knowledge is needed to enter into this culture; licensing is simple and inexpensive; the price of entry can be quite moderate and the equipment is easy to operate. The medium further provides (and this may be one of the incentives for involvement) the capability for anonymity; one chooses a "handle," (a "nom d'airwaves," as it were) to identify oneself. (It can be suspected one also chooses a "personality" to project to others in that same process.)

Much has been written about the statistics of CB; very little has been seriously written about why people are entering upon this kind of communications at an exponential rate. And, even less has been written about the perception that this represents a popular communications system, managed by the users, the people themselves. Finally, there has been a dearth of serious speculation about what it all means, where the phenomena is going to go from here and, perhaps, take us all in the process.

CB has, of course, had forerunners; it did not bloom in isolation. First, the Pony Express sped personal communications across the country. (It, too, had predecessors; at the time of Darius the Great, Emperor of Persia, a system of runners carried mail from one end of the nation to another in seven days.) The telegraph accelerated both the process and the volume. The telephone grew explosively. These media were all two-way. Radio, followed by television, was one-way as was TV. (There was one exception in radio; "ham" radio, which maintained the two-way aspects of earlier media, but was only for the use of a limited elite with technical knowledge and skills and the ability to buy and operate costly and complicated equipment.) Perhaps the first sign of the growing frustration with one-way communications in the mass media was the development, the growth, and the popularity of the "call-in" shows on radio which allowed the frustrated citizen some entry into what had become a major communications system.

But "talk radio" was a system which placed buffers between the communicator and the citizen; one had to use a telephone to gain entry (and pay for it); one had to go through a producer (or other screening mechanism or gatekeeper); one had to give a name and address (or at least a verifiable telephone number); one had to put up with a seven second delay loop in the system (to screen out both obscenity and other elements not wanted by the producer); and, perhaps most importantly, the show's host was in complete control and could (and sometimes abusively) cut the caller off at whim.

During the development of the previously named systems, other attempts to improve personal communications were ongoing. While CB radio tends to be his-

torically associated with the use of it by truck drivers to inform each other of road conditions, police traps and the like during the energy crisis, (and the resultant decrease of the speed limit to 55 miles per hour which, it is claimed, decreases a truck's cost-effectiveness) truck drivers had long before developed a "language" and (surprisingly sophisticated in terms of message content capability) communications system of their own. An elaborate protocol of signaling by lights (headlamps, flashers, side and rear lamps) was in use for many years and it was specifically used for transmission of the same kind of information now being transmitted via CB radio. Also, during this developmental period, there was a proliferation of mobile telephones in automobiles and boats (primarily for reasons of commerce and safety; the first is exemplified by taxicab radios); of paging devices (for doctors originally, now widely used by such technicians as typewriter repairmen); and of computer communications, either through a human interface or computer-to-computer.

The growth of CB was likely stimulated because earlier person-to-person communications (mail, telephony, telegraph) were becoming increasingly expensive and often less reliable. At the same time, the transistor and the new "chip" technology made electronic communications less costly, smaller, more rugged, and thus better able to compete. This, of course, is only one set of reasons; CB offers the highest degree of mobility of any of the existing personal systems, coupled with the aforementioned anonymity, the ease of access and its factors of ownership and control. There are undoubtedly other reasons; it would seem important to find them and to find out why the growth pattern has been so explosive. (It is, by the way, a continuing growth cycle; informed observers and industry projections indicate no signs of it reaching a near future plateau.)

My basic hypothesis is that ownership and control, and the opportunity for people to build their own system, to design the protocols for managing it themselves, is a major factor in CB's growth. (A most interesting phenomenon is that people are assigning each other to be "channel-masters" for a specific period of time in order to relay signals from weak stations to weak station through a strong base station which the "channel-master" agrees to operate.) Whether ownership and control is a perceived or an unconscious motivation is yet to be determined. That the growth pattern has vast implications for the future of telecommunications in the United States seems evident; the use of CB in "drive-time" is already reputed to be cutting into the revenue of commercial radio stations in some areas; CBers are furnishing each other with more timely and accurate information about road conditions than the radio stations to which people used to listen can furnish. A new symbiosis between CB and such stations may evolve; one is already in formation with a proposal to the Federal Communications Commission by broadcasters that they be allowed to carry CB-generated information, about traffic conditions and other events, over their own airwaves.

A key question, in terms of the "why" of this phenomenon, is whether or not all of this is healthy for the body politic. It may radically alter telecom-

munications and mass media as we now know them; some answers are needed as to whether this represents a mass fad, rooted in fantasy (and there is much fantasy, a great deal of it on a <u>macho</u> level, to be heard, especially in big cities, on the CB bands), before we get to the point that legislative and regulatory policy decisions will have to be made about the future of the medium, about rules of access to it, about protocols for its use, about its inter-relationship with other media. (Expansion may already be a moot point; an additional 17 channels - bringing the total to 40 - was recently allocated. The implications of this issue alone for commercial broad-casters and users of other remote equipment, and on spectrum space, that decreasing national and natural resource, are vast.)

(The comment above, about much of the big city communications being on a "macho" level, requires some explanation as to the kind of traffic that is actually heard. There is, at least in New York, a great deal of outright profanity and obscenity, much of it, judging from the voices, transmitted by young children who have access to the medium, either on their own, or through use of a parent's CB radio. A Spanish language slang, used almost exclusively for CB transmissions, has developed; I am told by those who understand it, that a great deal of the traffic - and this is not only true for Spanish speakers - relates to drugs and prostitution. I have myself, in monitoring the medium, detected some obvious drug traffic communications: "Bluebird" - of happiness, presumably - a drug traffic code word - "Base to mobile - what are your coordinates? "On Rego and cruising "x" to "y." "Base to mobile, cruise North to "z". Whether other "foreign language" codes have developed in different areas of the country is seen as worth investigation, as well as whether other codes, different from the normal CB "ten" code - "10-34" means an emergency, "10-36" is a request for the correct time, and so on, are to be found. It would also be of value to determine whether marine and amateur radio operators, forerunners of CB, have begun to adopt the rather free and easy style of CB operators, the slang words, the slightly Southern dialect [used in all parts of the country, not just in the South], as part of their operating style and procedure.)

Called for is an examination of whether CB is a .ast outpouring of an ex-pression and need for human contact, or whether the CB user, hiding behind the power to range across space cloaked in anonymity, is an electronic "Lone Ranger," riding the airways rather than the prairies of old. It may be that all of this is an extension of the talk Americans once exchanged over back fences, but using a technology suitable to the automobile era. It may be that people are adopting electronic and mechanistic communications procedures because they no longer want to travel to communicate or, for that matter, to communicate face-to-face. It may also be that, while the advertise-ments for CB are largely addressed to "safety" on the road and at home, purchases may be made on this pretext but the actuality is far closer to the aforementioned fantasy possibilities. Or, it may be that the actuality is a desire to overcome alienation and to have the opportunity to manage one's own communications system, coordinate one's own resources to survive in what many may perceive as an increasingly hostile, bureaucratic and de-personalized, costly, inefficient and high-risk environment. (Those are strong words, but we are here dealing with a virtually unprecedented popular phenomenon, built around "safety" and instancy of communication - and the timing of its arrival

on the scene in a major way [post-Vietnam, post-Watergate, cities in crisis] may well justify their strength.) The contention is that the answers to these and other questions have considerable importance not only for the future of telecommunications, but for the way society is evolving, as well.

There are a few other elements which might bear watching. The entrance into the CB market of some of the commercial giants (RCA, Westinghouse, Motorola, General Electric) is to be observed to determine whether people switch, in any significant numbers, to these "brand-names" from the ones they've been buying, mostly unheard of electronic companies up until now.

Thievery is on the upswing; both individuals and manufacturers have developed some ingenious ways to deal with it; these should be monitored for a comprehensive picture of the phenomenon.

And, finally, the CB magazines themselves deserve some scrutiny; the level is highly technical on one hand, very "folksy" on the other. One publication recently printed a major article on why linear amplifiers (which boost power and range) are illegal. It ran an extensive interview with FCC officials about how illegal operators are caught and what is done with them. Yet, in the same issue, there was also a copiously illustrated major article that managed to give the specifications, price and place of manufacture of virtually every (illegal) linear amplifier on the market.

The above illustrates a duality of thought, a "code" within the CB culture. It has been previously noted that other codes exist and more may be evolving. The size of the phenomenon and its explosive growth alone should merit serious attention; it may merit even more if it develops that there is a sizeable sub-culture, within this country, communicating without care as to whether the kind and quality of the communications are legal or illegal. The implications of that could be monstrous, not only as a function of the size of the community. The question that then needs to be asked is: Is CB a harmless phenomenon - or are we here dealing with social pathology on an unprecedented scale?

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COMMUNICATIONS FOR THE INDIVIDUAL AND
EXTENSIONS OF CHOICE

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INTRODUCTION

The telephone is the principal means of individual telecommunications in the United States. Certainly there are other media: first class mail, cables, telegrams, mailgrams, and closed circuit television are examples. Each of these is as personal as the telephone: messages are addressed to a specific individual; message content is unique; and message acceptance is frequently the time of the receiver's choice.

In individual communications there is also an implicit assumption of privacy. Ethical and legal questions surrounding invasion of privacy are age-old, but I do not intend to touch upon them today. Nor do I intend to comment on technical aspects of assuring privacy and security.

Mass media communications, in contrast, are not expected to be private. Indeed, for commercial media, lack of privacy is a figure of merit. Thus, newspapers and magazines work to increase circulation, and the statistics of commercial television viewing are critical to programming decisions.

As we think about extensions of choice, however, we ought to recognize that there is a certain amount of individualization even in the mass media. First off, there is a choice amongst newspapers, radio and television in most American communities. There may not be much choice, though, in each medium.

Only a few U.S. cities have more than one daily newspaper. Less than one-fifth of the population has access to ten or more TV stations, and one-third must choose from five or fewer. In spite of the number of radio stations - and there are nearly 8000 in the U.S. - it's often hard to get classical music on your car radio as you drive across courtry.

There is a far wider choice in other print media. Thirty thousand new books are published each year in the U.S. The 1977 edition of the <u>Standard Periodical Directory</u> provides data on over 62,000 periodicals published in the United States and Canada. There are at least a half dozen, for example, today that are devoted to the esoteric subject of home computers. There are over forty covering skiing, and others are devoted to such skiing alternatives as surf-boarding and skateboarding. Thus, even the mass media offer a wide choice to individuals.

Variety in the media can be individualized through communications. To point out how that can happen, I will first review some facts about individual communications in

the United States, touch on convergence of some telecommunications and print media, and finally describe some emerging technologies potentially relevant to personalized television.

SOME PERSONAL COMMUNICATIONS STATISTICS

The telephone network completely spans the U.S. It reaches 95% of the nation's households and virtually every business and government office.

And we do talk over the network. In the U.S. there are over 200 billion telephone conversations per year. That amounts to nearly a thousand conversations per person per year.

People in other nations use the telephone, too. The statistics for Canada and Sweden rival those of the U.S. Two to four hundred calls per person per year are recorded for Japan, Den ark, Switzerland, Greece, the United Kingdom, and the Netherlands. I mention these data to remind you that what is happening in the U.S. can easily happen elsewhere.

We might compare U.S. telephone statistics with those of the post office. In 1976 the U.S. mail volume was just under 90 billic.. pieces, of which about 50 billion were first class. This amounts to about three pieces of mail per week per household.

In terms of the market share within the communications industry, when we combine first class mail with telephone conversations in the U.S., we find that currently mail service has about 20% of the market.

. This division between physically-handled postal service transactions and electronic telecommunications transactions is shifting. Whereas 20% of the messages are handled by the postal service today, the figure in 1945 was closer to 35%. And the trend toward more electrical means for individual communications continues. The Postal Commission reported that 15% of all Treasury payments are deposited automatically into bank accounts, and the rate of acceptance is growing monthly. The result is, and will continue to be, losses in first class postal volume. Reductions in the number of federal payroll and transfer payment checks are estimated to be 75% by 1985.

EXTENSIONS OF TELECOMMUNICATIONS TECHNOLOGY

Electrical communication is beginning to replace physical handling in the mass media, too. The driving force is the rapid evolution of solid state electronics. Transistor costs have dropped from $1 each in 1973 to under one-tenth of one cent in today's integrated circuit. And we now integrate thousands of transistors and other components into complete functions on a thin slice of silicon a fraction of an inch square. With this technique, we can build a whole digital computer on a chip. They are commonplace; and if we buy them in lots of 10,000, they cost less than $4 each.

The same technology has helped reduce the cost of storing modest amounts of information in electronically accessible files. By "modest amounts," I mean the capacity

needed for data bases of text references and abstracts.
Let me illustrate the power of these citation indexes.

Through the 'ibrary at Bell Laboratories today
I have access to 75 computerized data bases ranging from
the American Statistical In'ev through Electrical and
Electronic Abstracts a..u t.e New York Times Information
Bank to World Aluminum Abstracts. We do not subscribe
to everything available today; the ones I mention are
only the ones to which we have arranged remote terminal
access. (Need I say that our mode of communication is
the switched telephone network?)

For a connect time charge ranging from $15 to
$120 per hour and a citation read-out charge from 8 cents
to half-a-dollar, depending on the data base, I can search
through literature and references to valuable subsets of
those 100,000 publications per year - and those of past
years. The codification and abstracts offered by the data
base give me access to a far greater range of pertinent
literature than I could afford to buy as an individual or
that I have time to scan in the library.

In most instances, I must go to a library of
books, periodicals, microfilm or microfiche for the text
of a reference, but that is changing. There are now data
bases that store the text of a reference as well as a
reference to the text. For example, from the New York Times
Information Bank I can now call up the daily news summary

on a remote terminal - that is an electronic newspaper.
Another full text data base is available for lawyers. The
LEXIS system offers a widening range of legal materials
that are accessed by words or phrases chosen by the
searchers. A listing of court decisions containing these
words or portions of the full text containing these words
may be displayed. That is an electronic library, and it
is a successful commercial operation.

Thus, individual telecommunications have been
extended to give personalized access to the print media.
The techniques are out of the laboratory and the demon-
stration phase, and are being used ever more broadly.

Individual access to pictorial media - illus-
trations, films and video tapes - is not as thoroughly
developed, but there are some beginnings.

Bell Canada, for example, is exploring the con-
cept of sending a few minutes of a video program over a
selected cable TV channel on individual request. The
transmission is not private, and anyone on the party line
can look in. In Japan, wire pairs serving a subscriber's
telephone have been modified to carry video signals by
adding solid state electronics; they are used to carry
individual television programs - entertainment, news, or
educational programs - in response to a dialed-up request.
In both cases, the home TV set is the display, and requests
are made with the telephone.

In both of these examples, program storage is
on a physical device: video tapes or disks, microfiche

or a graph or character generator. A play-back unit must be dedicated to each user. This storage and read-out scheme is far less flexible than the computerized data base storage in the text access systems I described - but that might change as research and development of electronic storage technology progresses.

Video transmission technology, too, is being pressed to give low-cost personalized connections. A coaxial cable channel might be dedicated during the subscriber's usage time, perhaps scrambled for privacy. The augmented wire pairs used in Japan are private, but relatively expensive. But there is another emerging technology that might serve personalized video signal needs far better - lightwave communications.

In this technology the light from a tiny solid state laser is modulated with a video signal and guided to the subscriber's set along a hair-thin strand of glass - an optical fiber. Guided lightwave technology is advancing rapidly, and in the next few years there will be demonstrations of optical fiber distribution systems giving personalized video services.

Telecommunications technology is indeed developing broadly, and is extending the options of individuals. We have had the personal telephone for a hundred years. The combination of communications and data processing is now giving us a new mode of access to printed media, and we are exploring techniques for wider video access.

And, too, PICTUREPHONE costs will come down eventually. But that is another story.

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1. Introduction

In this paper we bring together three ideas - 'appropriate' (or 'intermediate') technology, community broadcasting and distance learning systems - which are not in themselves new, in the sense that they have been discussed and applied for some years, but which before have perhaps not been thought of having elements in common which overlap, and which, we now argue, should form the basis of a systematic approach to Third World communications policy. There are implications also for developed countries, and for the international community as a whole. Our argument is offered for discussion in the light of members' own knowledge and experience.

2. Purpose of the paper

Our paper, then, has the following purposes:

2.1   to question the appropriateness for satisfying local needs of conventional, nationally-based, professionally-staffed broadcasting systems- and to suggest that the relationship with a community possible in the small station of the kind we shall describe serves important social purposes that conventional broadcasting can never satisfy.

2.2   to invite reflection on the distinguishing characteristics of the local radio and television sector in matters of: - finance; staffing; control structures; technical standards, degree of public participation in production, in decision-making, in research, etc; relationship with the national system; likely future growth of the sector.

2.3   to point out the important role of local stations in the realisation of national policies for education and development, particularly in Third World countries.

2.4   to consider the implications of 2.2 and 2.3 for the communications policies of Third World countries.

2.5   to consider the implications of this scale and style of broadcasting for frequency allocation.

2.6   to recommend the paper to the IIC's Research Committee for action under its policy category 5: 'Education, Communication and Cultural Change'.

3.   Definitions

Let us define in a little more detail the three ideas we are dealing with.

3.1   The concept of <u>appropriate technology</u> derives from the book
"Small is Beautiful" by E.F. Schumacher, who coined the term
'intermediate technology' and founded the Intermediate Technology
Development Group (London) of which he is Chairman. A quotation
from the Group's publicity describes its purpose as follows:-

> "It involves the application of twentieth century skills
> and expert knowledge to develop processes, and techniques,
> methods and materials that are appropriate to the needs
> and resources of people, especially those living in rural
> and small-town areas: technologies that are relatively
> small-scale, simple to operate and maintain, and with
> the emphasis on capital-saving rather than labour-saving.
> The aim is to improve the way of life of people in rural
> areas, to expand their interests and to help them solve
> their own problems."

Clearly the concept involves much more than technology. For one
thing, it must include a whole infrastructure of training and
development to give communities the confidence and will to change
and exert more control over their own lives.

Recent energy shortages and economic recession has taught all
countries the same lesson. Technological over kill, unnecessary
consumption, waste and pollution are conspicuous features of our
environment, and, as the proponents of intermediate technology
have always recognised, the concept is equally useful in enabling
developed countries to question the appropriateness of their own
systems and technologies.

We want to ask - 'Does the concept of appropriate technology
(in the broad sense we have indicated) have application in a
broadcasting context? Can we speak of appropriate engineering
standards, appropriate bureaucracy and appropriate professionalism -
the implication being that in conventional broadcasting systems these
features have got out of hand?'

3.2   <u>Community broadcasting</u>

3.2.1 There is considerable ambiguity about the application of this
term. At this stage we do not want to be too rigid about applying
or witholding the description 'community'. We take it to indicate
a considerable degree of involvement by a local community in local
radio or television.

3.2.2 In many countries with established national broadcasting
systems, there has been in the last decade an increased emphasis
on local broadcasting, whether (a) to <u>complement and extend</u>

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national systems, as in Britain, the Netherlands and Sweden, for example: or (b) as an alternative to the national system. And this trend has developed either with the <u>official encouragement</u> of the regulatory authority, as in Canada and Australia; or it has been <u>tolerated</u>, as in the USA; or at first <u>resisted</u>, as in Italy, where now however 'free' radio is constitutionally recognised.

3.2.3 Terminology varies: in Britain, the Netherlands and Sweden <u>local</u> <u>radio</u> stations are part of the national system. In these and other European countries the phrase '<u>community radio and television</u>' has been taken over from North American usage to indicate the independent, autonomous, non-profit station (cable or broadcast), as well as applying to use of non-transmitted video. In Australia, '<u>public broadcasting</u>' refers to stations distinct from commercial or ABC stations, "operated by non-profit organisations and licenced to serve a defined or special interest section of the population."

(Green Report)

The Italian local stations are called '<u>free</u>' radio or '<u>independent</u>' television. The majority of these are commercial in operation and motivation; many of the remainder are answerable to communities of interest, e.g. political or ideological groups.

3.2.4 The technology needed for small-scale radio has been to hand since the invention and spread of the cheap transistor and of light-weight, mobile recording equipment. But the low priority given to radio, owing to the attraction of television, resulted in the comparatively late development of local radio. There are exceptions: as long ago as 1967 the Report of the Chandler Commission in India advocated local radio as a key feature of national development, and in many Latin American countries radio schools, often organised by churches, have been a relatively unrecorded part of the broadcasting scene.

3.2.5 Small-scale television became possible in technological terms with the development of VTR portapak units and time-base correctors which enable low-gauge video to be used for making programmes away from a studio, for editing and transmission at minimal cost.

3.2.6 In passing, if we compare these developments with the situation in broadcasting at national level, we find a paradox: while technology has brought broadcasting within the range of the budgets and skills available to small communities, the professional assumptions underpinning broadcast technical standards and adopted nationally and internationally create a dynamic which tends towards ever higher technical and production standards. These call for high-cost, sophisticated equipment, which implies a minimum capital cost per station, entailing a considerable reliance on network programming and a service area large enough to justify the station's existence or make a profit. But the resulting service area may be

too large to allow a station adequately to reflect the needs of small communities within it. An element of this vicious circle, at least in Britain, is the professionals' fear of unemployment which commits their unions to support the status quo and resist change.

3.2.7 Returning to the small community station, perhaps the most important feature, apart from the low-cost technology used, is the nature of the staffing, the reliance on volunteers and the consequent relationship with the community.

The staff are small in number, flexible in role, and have as their main purpose to facilitate the use of communication resources by the community. They have qualifications and motivations different from those normally associated with most broadcast professionals. They do not think, in the words of an Italian radio worker, "that communication is finished in the radio station: there are a lot of connections with other things". In this, they are clearly similar to educational broadcasters.

Both educational and community broadcasters would be unwilling to consider a programme as the end-product or their raison d'etre. It is, rather one element in a co-operative effort resulting in successful communication. For community broadcasters the content of that communication is determined by the rhythms and perceptions of the local community, not by network broadcast schedules, sales considerations or national syllabuses.

3.2.8 We must note that this style of relationship with the community has involved in broadcasting new groups - young people, women, ethnic minorities, those with little or no formal educational qualifications - enabling them to communicate within their community, whether rural or urban, and resulting in marked increases in personal and communal confidence. Such confidence encourages the articulation of needs by the communities themselves and spills over into many other areas of activity.

3.2.9 Many community stations are controlled by self-management structures which involve station staff, volunteers and viewers/ listeners in decision-making about policy and programming - another feature which enhances self-confidence.

3.3   Distance learning

Distance learning is the other major development of recent years. It depends on several factors:- close association of research with programme-making; integration through teamwork of media used; and the harmonising of the product with the activity of individual group learning, supported by such tutorial and mutual assistance as can be built into the system. Distance learning needs perhaps less explanation at the present conference than the other ideas. The Open University is well-known, and the varied examples of applications of its approach

have been well documented. We would point in addition to the
Children's Television Workshop, to the Adult Literacy Project in
Britain and to the Indian SITE experiment as examples of the kind
of integration of programming, research and utilisation which are
the hallmarks of what one might call 'purposive broadcasting'.

4.   A synthesis of the three concepts

To summarise these ideas and bring out the significance of what we have
called their 'overlap':

Appropriate technology leads us to question the suitability of
traditional, large-scale systems and technology and puts a
premium on low-cost solutions which maximise the potential of
local resources, human and physical.

Community broadcasting, by a different route - disenchantment with
professional overkill, the neglect of local needs by national
systems - arrives also at low-cost technology as an alternative,
and adds a significant reliance on the lay community; in extreme
cases, it is, in effect, 'self-help broadcasting'.

The distance learning experience allows us to introduce a
disciplining note: it offers a framework into which can be
fitted (a) the exploration and articulation of local needs
(b) a system of local control and accountability which ensures
that broadcast programming is constantly attuned to local
response, and (c) the integration of various ongoing community
initiatives whose reach can be improved by broadcasting, and
whose fieldwork in turn makes the broadcast message more effective.

5.   Implications for Third World countries

5.1   If we look at the broadcasting models usually offered to Third
World countries, we find they are characterised by

* high technology, normally associated with large-scale
  national systems

* high professional standards and assumptions that look
  down on and discourage community participation in
  policy, programme-making and the formulation of
  research issues

* infrastructures of staffing, skills and maintenance
  which make heavy (if not impossible) demands on the
  human and technical resources available

* working practices derived from the 'parent' systems
  that are in conflict with developmental objectives;
  for instance, when based on commercial advertising,
  encouraging the consumption of foreign goods and

imitation of foreign lifestyles which leads
eventually to import imbalance. Or when
following public service models, expecting a
degree of freedom of action from government that
is not always acceptable to the central authority.

* costs so high that universal coverage is unrealisable.
The choice then is either not to have the system at all,
or to provide it in a part of the country only, which
invariably discriminates in favour of urban and against
rural populations.

5.2 By contrast, the experience which derives from our 'synthesis'
suggests certain propositions of relevance to Third World countries:-

* the engineering and technology required for broadcasting
need not be as costly as would appear from the present
standards in many developed countries.

* simplified and less costly equipment can be manufactured
within Third World countries.

* as all national development plans include a broadcasting
component, low-cost local broadcasting stations should
be seen as an essential complement to national systems.
For they allow centrally planned messages to be modified
or added to as the local community feels appropriate,
and provide the opportunity for local expression, the
satisfaction of local needs, locally defined, the
celebration of local life and values and the stimulation
of voluntary co-operative activity in support of development.

* if broadcasting is no longer viewed as the exclusive
preserve of broadcasting professionals, a much wider range
of people can become involved. Provided that there is a
(mobile) core of qualified staff, the skills needed for
operating stations and producing programmes can be found
among the lay population. In the present prospect of
semi-permanent unemployment, particularly among young
people, this has important job creation implications.

* when costs are lower, many more stations can be set up.
Consequently, more frequencies will have to be allocated,
and regulation made about transmitter power.

5.3 A question remains about the place in a national development plan
of the kind of local, relatively autonomous station we have described:
is such community self-help compatible with the centralised planning
which broadcasting has always been thought to require?

Our answer is two-fold:

(1) It is time to find out. (2) models and parallels exist which
justify the <u>attempt</u> to find out, at least on a pilot basis.
Self-help is seen as desirable in many other spheres of development;

why not also in broadcasting? Certainly frequencies have to be nationally (and internationally)allocated, and the national distribution of centrally planned messages makes political and economic sense. But there is no reason why there should not also be room for a considerable proportion of local origination. And only a measure of local input is likel/ to make the central messages effective and stimulate the voluntary, co-operative activity on which they depend.

6.   Implications for Frequency allocation

If the needs of small communities are recognised in the way we suggest they should be, there are important implications for frequency allocation.

Either governments may decide to extend the national systems to bring local broadcasting to most of the population (the likely future of Britain), or the decision may be taken to discriminate positively in favour of certain urban minorities or localities, or of rural populations; or governments may decide to permit self-help on a local basis.

Any of these strategies would involve an increased demand for frequencies. The VHF bands are the most convenient source, but another solution would be to encourage more flexible arrangements permitting use on a non-interference basis of medium-wave frequencies assigned to other countries.

Finally, WARC 1979. Only national delegations are entitled to attend this Conference, so, if the points of view of the non-institutional, small claimants for frequency space are to be adequately presented, and the developments described in this paper reflected, it is essential that national delegations should now take pains to invite and study the views and needs of these claimants so that they may be incorporated in the submissions made to WARC 1979.

7.   Suggested action for IIC

7.1   It is hoped that IIC will study and support the proposition that low-cost local broadcasting, involving the non-professional lay community and associated with formative and feedback research and with other agencies of education and community development, has a valuable role to play (in developed and developing countries alike) in responding appropriately to local needs.

7.2   IIC should plan to be active in this area and seek finance for the purpose. For example, it should participate in the exploration of small-scale broadcasting and the pooling of experience, and in the preparation of manuals and guides for those wishing to embark on this kind of broadcasting.

It has already made an initial contribution by issue of the pamphlet 'Different Keepers'.

But other problems of particular concern to IIC, such as a
study of the implications for WARC 1979 if there were a sharp
increase in local radio, may well present themselves.

7.3 IIC could assist in identifying promising areas and institutions
for further experimentation and exploration of small-scale
broadcasting.

8. If IIC were to act upon these suggestions, it would be taking an initiative
in parallel, but not in competition with other national and international
bodies, among which three may be mentioned:

- the Materials, Methods and Techniques Division of UNESCO,
which is devoting the major part of its biennial budget
for 1977/78 to the exploration of appropriate technology
in educational systems.

- the Council of Europe (Committee for Out-of-School Education
and Cultural Development), whose colloquy on Cable Television,
Local Radio and Video at Strasburg (May 1977) passed a
resolution urging member countries to take into account, when
considering frequency allocations, the claims of "non-traditional
broadcast groups" to access to the spectrum as a means of
disseminating cultural information

the British Ministry of Overseas Development, which has
recently set aside an annual sum of not less than £500,000
for exploring further applications of appropriate technology

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