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# *Communication as Technology in African Rural Development*

by Frank Okwu Ugboajah*

***Abstract***

The article defines technology as a communication process, reviews the problems of communication technology, transfer in the African continent, and makes a case for definition of development communication. It insists that in media technology transfer, the emphasis should be on their cultural implications and relationships to traditional modes of communications. Mass media should be seen as technology context, a situation that allows for greater participation of the ruralites in various African villages, which makes for quicker and better acceptance of change. The article critically examines different technology transfer models and recommends a horizontal, humanistic or holistic model of communication for rural development.

***Résumé***

Cet article définit la technologie comme un processus de communication passe en revue les problème relatif au transfert des technologie de la communication sur le continent africain et apporte une contribution pour une redéfinition de la communication pour le développement. L'auteur souligne l'importance des implications culturelles en rapport avec les médias traditionnels dans le transfert de technologie dans le domaine de la communication. Selon l'auteur, les mass média devraient être considérés comme une technologie dans un context culturel, une situation qui permet une plus forte participation des ruraux des divers villages Africains accélérant aussi le processus du changement. l'article examine de manière très critique les différents modèles de transfert de technologie tout en recommandant un modèle horizontal, humaniste ou holistique pour la communication pour le développement rural.

*Frank Okwu Ugboajah is a Professor of Mass Communication at the University of Lagos, Nigeria and Editor-in-Chief of the *Africa Media Review*.

*The Concept of Technology Transfer*

The term technology refers to different things for different schools of thought. To the economist it simply refers to a technical matter, an investment seen in terms of a rate of return or cost-benefit. To the natural scientist technology is looked upon as an adaptation. But broadly speaking, to the social scientist technology includes organisational structures, administrative hierarchies, equipment and process, all of which determine fundamental communication patterns (Schiller, 1976). In essence, technology is definable in terms of the pattern of communication it produces. This communication essence has led to describing technology as a process, and implies that technology is incomplete until it has been transferred.

Transfer of technology, in itself, depends on a number of factors which includes the extent to which the technology is acquired, adjusted and absorbed. In general, successful technology transfer depends on the size and pattern of demand for securing the technology. It depends on the technological capacities and abilities available, also the ability to select and assess appropriate kinds of technology. It depends on the aptitude to adapt it to national or local needs and the degree of available manpower capabilities.

The lack of these factors, or their non-applicability were evident in the failure of an aerostat balloon project planned in 1970 to solve Nigeria's acute telecommunications problems. By 1983 the project was still in its implementation stage but had cost the country 140 million naira (about US$ 224 million) to an American Company. It had to be abandoned without a single infrastructure installed, but with Nigeria's massive telecommunications problems remaining unsolved. This "white elephant" is currently and shamelessly chronicled as the "Balloon Bust" in Nigeria (*New Nigerian*, 26th May, 1983).

About ninety per cent of all technological transfers originate from developed countries. It is thus correct to admit that international transfer of technology describes a fundamental characteristic of the contemporary world; while contributing basic pre-requisites for development and progress in every country, developed or developing. In addition, this international transfer of technology is conceptualised as providing developing countries with their main channels of science and technical know-how. To put it simply, developing countries import the results of research completed in developed countries. It is then an accepted notion that technology creates cultural homogeneity and information synchronism ( Osgood, 1974, Hamelink, 1982).

The transfer concept itself creates rich (developed) countries, being copied or monkeyed by poor (developing) ones. The former provides the technology and the model of development (Nelson, 1974). An arrangement such as this has come to precipitate hopelessness and widespread protests of dependency and has led to a form of polarisation between North and South. Concepts such as "new international economic order" and "new international communication order" now form the hottest debates in international fora. It is becoming increasingly obvious that the introduction of such an order implies that each nation should have an ever clearer sense of its identity and vocation (UNESCO, 1977).

### *Purpose*

The purpose of this paper is to discuss technological transfer as a process of communication, and in doing so, communication would be seen as all-embracing,designed to fit what would be conceptualised as humanistic concentric cultural diameters. Different transfer models would be critically discussed with emphasis on rural transformation. Why do technological transfers fail in Africa? Albeit, some successful ad hoc experiments would be discussed. How does the knowledge gap hypothesis relate to the transfer of technology? Attempts would be made at giving answers to the question. And we shall conclude by recommending a horizontal or humanistic or holistic model for rural development based on the thesis of a deliberate political or leadership effort in which cultural orientation must be lived by policy makers.

### *Transfer Models*

Margolin (1977) defines technology transfer as a communication process which implies its consideration as part of a total system of need assessment, programme development, evaluation and feedback. This notion futher implies an integrated planning of media and message and an examination of the media in the context of the entire system over time and changing circumstances. In other words, communication in development must be strategic and planned.

To fulfil these planning requirements which technology entails, questions regarding the nature of the media processes and hardware, the bounds of the existing media conditions in a country, must be researched and answered in the context of media use. As observed by Martelanc (1977), to rely entirely on unquestioned import of foreign know-how may prove to be

detrimental to the progress of a developing cou and in the long ru impede development. He suggests that alongside the imports of alien technology, there should be indigenous endeavours in scientific and technological research. In actual fact, a realistic development-oriented method over the long-run seems to be a mix of imported and domestic technology, and of the modern and the existing or indigenous.

Domman (1975) and Postage & Lewis (1977) hold that "low cost indigenous technology" can place critical services within a villager's reach. A concept of appropriate technology which puts premium on low cost solutions and maximizes the potential of local resources, human and physical, becomes pertinent. There exists "professional overkill" in relation to wholly Western technology and accompanying disenchantment in a situation where local needs and resources are neglected.

Woods (1977) reviews three types of technological transfer strategies often used for implementing national development plans. The first, the "trickle down" strategy, assumes that if the new technology meets the content criteria within the scientific discipline, then the intended clientele will certainly accept it unquestionably. The strategy is deemed simplistic because it does not consider the many influences outside of correct technical knowledge content.

The second strategy is the "planned research and dissemination approach" which recognises the need for adaptation of discipline-oriented basic research in order for the intended clientele to be able to utilize the technology. Its other elements are persuasion and the presence of mass dissemination designed to persuade the intended clientele to accept and make use of the new technology. This approach is recognised to be more successful than the "trickle down" strategy in mobilising people to accept a new idea. Acceptance, by this method, is deemed poor, however. Research has found that many times where a high level of initial acceptance is present in the diffusion process, this is followed by a long term discontinuance of or even rejection of the new technology. The disadvantage of this approach is that it overlooks the needs, wants and abilities of the clientele. In other words, it is non-democratic.

The third transfer method is the "popular participation strategy". This approach describes a situation in which the intended client is actively involved in the decision-making process, in planning and implementing development programmes. This strategy is difficult to implement where a large scale action is called for. Such extensive communication network might be impossible to operate between the people developing the new technology and the clientele. Adopters in rural areas of most developing

nations might lack the sophistication, confidence or desire for action in planning and implementing development programmes.

Woods also proposed a "push or pull" development approach for technological transfers. He suggests that, where appropriate, new technology may be developed before the time that potential clientele could realize that they have a need for it. It is important to develop some type of "push" strategy to stimulate potential clientele awareness of the need for the technology and provide information to decision-makers on the selection and adaptation of the new technology, as well as guidance for its dissemination. A "pull" system is important for the purpose of detecting clientele needs and activating the technological process.

It has been observed that, particularly in developing countries, both the "push" and the "pull" systems are weak, both technology and its transfer must be planned as integral parts of the overall development programme otherwise it will contribute little to the clientele or national development programme goals. It has to be emphasized that the "technical knowledge" group (policy-makers and planners) which is responsible for the "content" development of new technology is only one component in the overall system. Planned development and transfer of technology require the control of both management and content.

### *Ruralites and Technological Transfer*

A question always arises when we devote time to talk about this nebulous concept of the transfer of technology. What is the purpose and what is the end result of technological transfer in the rural area? Moore (1963) sees this exercise as erroneous because of its attitude of transforming traditional or pre-modern peoples towards modernization or simply to Westernize them (Lerner, 1963). Do they really want to be Westernized or do we want them to develop along the ways that would benefit them without alienating them in their own ways?

Traditional, perhaps more correctly, transitional people, are constituted of a large proportion of rural peasants who form the majority of mankind and are in dire need of communication-oriented technology for their socio-economic advancement and other forms of organizational advancement. Peasantry, as put forward by Krishna (1977), is the backbone of Africa's rural economy. He elaborates: "In the predominantly agrarian societies of Africa, small holder farming plays a major role in producing food for both rural and urban populations and in providing incomes, employment and export earnings ... Few technical packages

exist, extension services are scanty, and marketing and credit services are deficient. These are formidable problems the resolution of which will take much time, effort and resources". Hill (1972) attributes the poverty of Batagarawa (a Hausa village in Nigeria) to the following underlining factors which are purely communication problems in technology transfer:

a) inability to fully utilize their labour resources;
b) shortage of working capital;
c) dearth of cash-earning activities other than farming;
d) inability through lack of money to make full use of cash-earning;
e) increased dependence on high-cost imports;
f) social and technical costs of marketing products.

Scott (1976) has described such "moral economy" of ruralites as that of subsistence, which stems from peasant preoccupation with satisfying minimum survival needs and providing protection against crisis periods. Subsistence is regarded as a right and much of rural peasant society is concerned with the security of that right. Minimal subsistence for the peasant involves more than food. It involves performance of social obligations as these are defined in each society. Much of the moral value system of each group and their perception of what is right and just flow from this ethic. From it flows also the nature of economic decisions and acceptable alternatives, as well as unrest, resistance, and even rebellion. These are attitudinal and behavioral challenges.

For the rural person, belief systems provide the "blue print" for informal political organisation. Because our colonizers have referred to it as "primitive" and "backward" or uncivilized" many urban people see themselves beyond the sphere of traditional culture. Cohen (1969) has identified belief systems as bringing out many of the most powerful emotions associated with the basic problems of ordinary human existence. Religion or a belief system gives legitimacy and stability to economic, social, and political arrangements. It presents these arrangements as vital parts of the system of the universe and thus makes it possible to mobilise the powers of symbols and ritual relationships to sanctify such arrangements. It is pertinent to note how strategic aspects of a religious ideology have been exploited in Nigeria by the Hausas of Sabo in Ibadan to their political and economic advantages (Cohen, 1969). Belief systems must be seen as very critical variables in communication for development.

Rural or peasant African societies have also been observed as having a high level of structural and functional integration based on relative cultural homogeneity and limited institutional differentiation (Ofuatey-Kodjoe, 1976). Such high level of integration has led to adaptation by indigenous societies through continued restructuring as well as the realignment of cultural values and various aspects of organisations in the face of alien technologies and institutions or a trend towards cultural synchronization. Traditional values and sanctions have largely been undermined in the process. With the arrival of independence, basic structures of African societies were still relatively unaltered.

The peasant African has often been depicted as lazy, ignorant and resistant to change. Rogers (1969) notes that the peasant appears an enigma to those who have not lived his life. As a result he is often characterized in a negative light. He stresses: "Just as the peasant is charged with lack of empathy for modern life, so might his more 'civilized' observer be charged with lack of empathy for the man with the hoe". And Goodenough (1963) notes that, of the many things that affect the course of community development perhaps none is more important than the attitude of the "peasant observer" or the development agent himself.

To change a situation whereby 70 per cent of the labour force are on the farm and yet unable to feed themselves and the rest of the population adequately, to one in which 10 to 20 per cent of the labour force are capable of producing enough to feed everyone in the population and also produce surplus to export requires technological and behavioural innovations which are unprecedented in today's peasant societies. Behind such innovations and the resulting socio-economic change must be a mobilization of resources, particularly the human resources. Information, otherwise strategic communication becomes a chief activity (Schramm, 1964), and includes literacy training, mechanical skill training, and the training of various kinds of personnel to bring about improvement in the peasant situation. All must be a part of the development plan.

These necessary kinds of innovations must be looked at in terms of the group instead of the individual. Jamias (1975) points out that such innovations are of social value when they are perceived to benefit the greatest number of people. In this case, the reference is more to social (as expressed in social justice norms) than purely technological or economic innovations. The social justice policy of the purely Land Use Decree of the Federal Nigerian Government, for example, represents an attempt to promote land reforms by converting private ownership of land to public

ownership which can then be reallocated by government on a tenancy basis to any citizen who might want the use of land for agricultural or any other forms of socio-economic development. The decree aims at bringing about an egalitarian society and bridging the gap between the masses and the few land owners, especially in the urban areas. But at the same time one may opine that splintering landed estates could be technically less or even unprofitable and could therefore create a situation whereby fundamental human rights of private ownership are being deprived. It, then, could be economically undesirable. However, the economic value ranks less in importance than the societal value towards which this innovation is aimed.

Within the ambit of transfer of technology several crucial questions should be asked. For example, what innovations are necessary to lower the percentage of the work force involved in the agricultural sector, yet be able to feed the nation well and adequately? What revolutions do we need to reduce the high birth rates and bring about a desirable quality of life? How can we increase substantially the capital output of labour? What can we do to raise our low literacy rate and our low levels of educational attainment? How do we improve our health care delivery in order to increase the overall health status of the entire population? What revolutions do we need to increase the number of scientists and engineers in the work force and increase the capacity and effectiveness of our technological assessment and scientific research and development? How do we even know that we are achieving any measure of success in these areas? These questions are open-ended as guides for rational thinking among policy-makers and planners, so we do not intend to delve into them inside this expose.

One of the most significant changes in the theory and practice of development may be described as the demise of the GNP concept (Woods, 1977, Case and Niehoff, 1976). That previously dominant assumption holds that if the gross national product is increased, the benefits of such increase somehow automatically "trickle down" to large numbers of people. Recently, it has been seen that most of the "green campaigns" (Operation Feed Yourself of Ghana, Operation Feed The Nation of Nigeria Green Revolution of Nigeria, Miracle Rice of south-east Asia) have had little impact in narrowing the gap between the low income masses and the elites in many developing countries. In fact one might argue that such mass campaigns even contribute to widening the gap between the haves and have-nots as it is the ***haves*** and ***not*** the ***have-nots*** who have the advantage and access to technological and financial resources needed to translate them into reality.

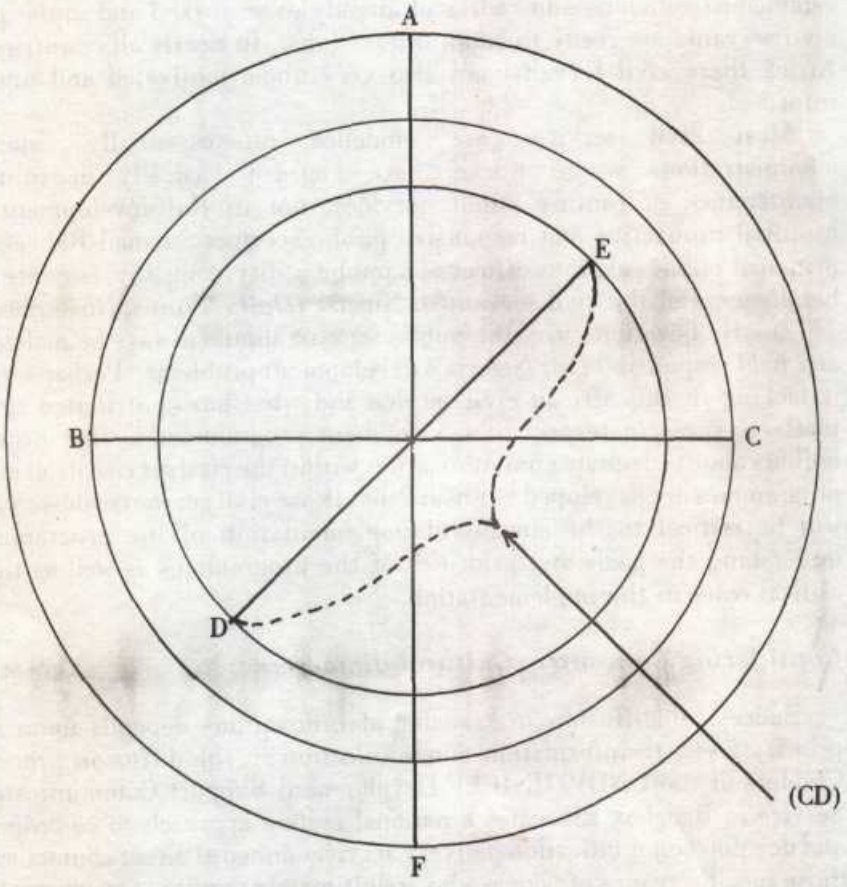
It is arguable that had the "green campaign" been planned and implemented as commercial ventures, the companies planning them would have gone bankrupt. The private sector has developed to a high degree of sophistication with comprehensive marketing strategies which provide major inputs for designing new products as well as guiding their sales and distribution activities. To a very large extent, the public sector involved with fields related to national development does not have the "marketing approach" to assist in the creation of the new technology and its transfer to intended clientele, especially among the rural populations. For instance, in the area of manpower, Childers (Jamias, 1975) points out that the administration of many development programmes requires specific kinds of logistic and interpersonal communication inputs before established echelons and cadres of already over-worked and under-paid civil servants are ready to adopt innovations. In nearly all countries of Africa these civil servants are also very under-motivated and under-informed.

Most civil services are modelled on essentially "static" administrations where workers are engaged basically in routine maintenance of routine public services, not in the development of essential innovative and responsive public services. Ismail Raheem, a principal public relations officer of a public utility company, laments the helplessness of the civil servant in Nigeria (*Daily Times*, November 4, 1978). He questions why the public servant should always be maligned and held responsibile for Nigeria's development problems. Perhaps what is lacking in the African civil service and what has contributed to its ineffectiveness in respect of development programmes is that no one bothers about adequate communication within the civil service itself after programmes are developed to ensure that those civil servants whose work will be critical to the successful implementation of the programmes understand the goals and priorities of the programmes as well as their critical roles in the implementation.

### *Considering Concentric Cultural diameters*

Successful diffusion or transfer of innovations depends upon the priority given to information communication in the diffusion process. Childers of the UNDP/UNICEF Development Support Communication Service in Bangkok advocates a national system approach to co-ordinate and develop communication delivery services aimed at direct contact with those specific groups of people who are ultimately required to participate in the implementation of the development plan, rather than relying upon

mass media publicity to gain support for development plan priorities. In fact such groups of people should be located along what this author describes as "concentric cultural diameters" (refer below to figure) so as to facilitate horizontal development. In this figure, AF represents the cultural diameter (CD) of the nation, BC represents the CD of the state or province, while DE represents the CD of the village. In the African situation DE cultural diameter is made up of about 70 per cent of the human, physical and psychological geography, the targets for whom communication for development is directed.




CONCENTRIC CULTURAL DIAMETERS

The cultural diameters would roughly demarcate different communication strategies for development. Projects of a national character should be supported by communication requiring inputs from the cultural diameter that cuts across the entire nation, the AF cultural diameter. In Africa such projects are often those aimed at bringing about national unity in a multi-ethnic situation. Here the communication strategy could be to use the electronic mass media such as radio, news papers and television as channels of information. For matters of rural development the DE cultural diameter must be reached with appropriate communication strategies. Efforts should be made to locate and use the most accessible and proximous channels, such as Oramedia (Ugboajah 1983) to reach and mobilize the people.

Oramedia are great legitimizers because they are highly distinctive and credible. The electronic media are elitist and mighty, erroneously overused for public enlightenment programmes in rural areas ( Ugboajah, 1977). They have been organised and developed in the context of already-atomized societies. There is a need for community-based communication which will enhance the reality - testing abilities of communities and the "development" person. For example, if bells are used for summoning a religious gathering or announcing the presence of an itinerant tailor or petty trader in a rural neighbourhood, if the village gongman uses his wooden gong for summoning an elders' meeting in the village square, why should these channels be discarded in summoning the villager to a health demonstration, to a co-operative farming lecture, to a child welfare workshop, to an adult education class or to an agricultural extensions exhibition? If palm fronds are displayed in front of village compounds to communicate that some items are for sale therein, why cannot this approach be adopted to communicate the availability of new cocoa seedlings awaiting distribution in the compound of a local agricultural representative? Why is it not possible to use special drums understood by the rural people to differentiate specific audience groups within the community for special development programmes. Who says that there is no audience selection or segmentation in Oramedia?

Oramedia are appropriate for the oral culture of Africa. The DE's oral, interpersonal, or "man medium", form of communication is very important. It is an essential feature of indigenous communications delivery systems. Inherent in it is a power which often overcomes selective perception of messages. It has a higher degree of credibility than the mass media system and often includes important feedback

mechanisms. Within its structures are found the influence of leadership and legitimization of innovations. These structures then can strongly influence acceptance and trial of ideas which could lead to social and economic changes.

It is quite important that, with the development of the mass media in Africa, indigenous sytems of communications would be fully identified and integrated in the communication delivery and technology transfer systems used for the DE sectors. As rightly pointed out by Rao (Gunaratne 1976) man's image of his environment is shaped by his experience. Africans should make a break with their urban-oriented colonial heritage in their development format. Gailey (1970) points out vividly that the colonial administrators were rulers, not men prepared to search out patiently the mainsprings of a complex society they were charged to rule. He elaborates:

> "Most could not speak even the languages of the coast and could converse with the (natives) only through interpreters who more often than not told them what they believed the white man wanted to hear. They had never been trained in anything esoteric as the newly emergent discipline of anthropology. Although not despising the native, they were convinced of his inferiority. Much of their self-confidence came from an almost single-minded belief that British virtues were the best and that the major purpose was to share, if only in small degree, these blessings with the poor Afrcan".

It is this author's contention that such colonial mentality still pervades administrative thought and leadership styles in all our development programmes. Perhaps that is why we have failed consistently in our development efforts. This thoughtfully reminds me of a little poem.

> "How I wish there was some wonderful place called the Land of Beginning Again. Where all our mistakes and all our heartaches and all our poor selfish grief, could be dropped like a shabby old coat at the door and never put on again."

There is one country in Africa, Tanzania, which is appearing to have found that "Land of Beginning Again" (Bordenave, 1977). But it would take time and sacrifice. With its policy of self-reliance, Tanzania has recognised that its own indigenous delivery systems can be more effective than imported types in serving its peoples needs. Although radio has been found the most effective medium in the transfer of technology in that country, this medium's mass and transient nature has been modified to be more effective by the formation of "oramediated" listening groups in the

rural villages to act as motivational interpersonal relays for radio information. The radio audience of Tanzania is estimated at 8 million in a population of 13 million. This means that about 61 per cent of Tanzanians participate in communication-oriented innovation transfers supported by posters and group-leader's manuals tied closely to the lingual, social, economic and political characteristics and policies of the country.

Contrast the Tanzanian situation with that in Southern Nigeria which has more than twice the population of Tanzania. Sports, general entertainment and educational programmes were, as recently as 1975, broadcast wholly in English, a non-African, non-Nigerian language (Conolly, 1975). Even today communication in English dominates strategic Nigerian national broadcast scenes.

Motivational aspects and acceptance of development programmes as in Tanzania, can be enhanced through specific channels, such as through applying the message to the day-to-day experiences of the target population, the active and visible participation in the programme of representatives of the target individual's reference group and peers, direct and indirect support of gatekeepers at all levels, the incorporation of the relevant CD variables (languages and folkways) into the programme, and continuing reinforcement from other channels of the media system.

### *Some Successful Communication Experiments In Rural Development*

"Don Manuma" (For Farmers), is an encouraging innovative agricultural programme on the air of Radio Kaduna in Nigeria (Ugboajah, 1977). A farming village, "Alabarikawa" has been created using air time drama. It has succeeded to be an effective way of teaching rural peasants the procedure and rules of mechanized farming, nutrition and how to cater for new crops. Agricultural research findings have been successfully simplified into Hausa songs and effectively communicated to farmers. The programme attracts satisfactory responses and participation from villagers.

Another experiment in radio farm forums for rural development was tried out in Ghana by UNESCO between December 1964 and April 1965 (UNESCO, 1968). The experiment showed that radio broadcasting when skillfully used can be an effective medium of communication for rural development and change. It also underlined the need for creativity in focusing on local conditions. Using this approach, "the radio audience can become, through group listening and discussion, an adviser to the

radio producer to whom listeners' reactions and suggestions must be constantly reported". During this experiment about 43 per cent of 438 respondents were able to identify or differentiate farm radio forums from other types. At least 81 per cent of them listened to this development support communication experiment during its period. The only flaw is that such successful experimental projects die out as soon as the donor's money dries out and is hardly sustained by the host government.

### *Development Communication Campaigns*

Planners for development campaigns should think always about systems of communication rather than about the use of specific media alone. As long as the communication is extended, the action required is energised, the psychological mood is set and the audience is educated, it is unnecessary to worry about any one or two given media. Civil servants in most African countries suffer from the propensity of chosing the mass media alone for almost all development campaigns. This might be because of their relatively low cost,their convenience, and belief in their special glamour or an inaccurate belief in their effectiveness, not realising that communication for development should be a multi-strategy approach devised to reach the target audiences whereever they are found-on buses, in trains, in the market places, in villages, in entertainment centres, in fishing creeks, in schools, in factories, or even in places of worship. This approach underscores the ritualistic ideology behind communication strategies as a CD orientation.

Every technology campaign should have a theme or platform (Byrnes, 1975, 79). An example, in the case of Nigeria, is "Operation Keep Lagos Clean". Although some themes usually become rallying cries, it would appear these themes can be dysfunctional for many of the people they are intended to inspire. A well-selected theme can be of help to focus efforts and build common enthusiasm but in itself the theme alone cannot be successful in a personal sense for each of the persons whose performance must be influenced to meet the goal. Much as the "Operation Keep Lagos Clean" was a good theme for a health campaign, the "Operation" failed because its planners appeared not to have done proper problem analysis as to why Lagos is perpetually unclean (Ugboajah, 1977). Apart from the fact that the campaign was restricted to non-problem geographical areas of Lagos, the multi-ethnic nature of the social demography of the city and its satellites received very little consideration. As a result messages via the mass media and in posters were only in English and Yoruba (which is not a

homogenous ethnic language inside the target). Moreover the demonstration of a model house designed to teach the low-income inhabitants the advantages of sanitary living cost the City Council ₦7,700 (about US$ 12,000) to build.

This obviously would be too expensive for the low income target (the main target) of the campaign to afford. This alone betrayed the fact that the objective of the campaign was not well understood or designed by the planners. The campaign became a failure.

### *Knowledge Power Versus Knowledge Gap*

Development planners and those who man the communication aspects of development must realise that cooperatively they constitute the gatekeepers of knowledge. Knowledge is basic to social power and the potential for developing power over other human lives rests with those who man the gates in the communication flow (Donohue, Tichenor and Olien, 1972:). The threat or promise of knowledge depends on the social, economic and political capability of a nation and is represented by the available knowledge infrastructure such as the mass and the group media.

We are currently witnessing a proliferation of the mass media institutions in one African country, Nigeria, resulting from an increase in the social, economic and political fortunes of the country. The Federal Radio Corporation of Nigeria has established state stations in each of the 19 states of the federation, in addition to the already existing stations owned by the state governments of the country. A national television authority, the Nigerian Television Authority (NTA), has been established and this has since acquired all the television stations formerly owned by state governments.

Although compared with Ivory Coast or Ghana in terms of persons exposed to the mass media, Nigerians may still lag behind, but they seem to be gaining more access to knowledge via the mass media as a result of the country's bold investment in mass communications delivery services. To gain still more access to decision-making information Nigerian or Ghananian or Ivorian mass media institutions could, like DEPTH news of the Press Foundation of Asia, start the dissemination of development economics and population news. Through DEPTH news service, a package of stories on development topics and newspaper clippings on economic are sent via airmail weekly to some 200 newspaper editors in Asia (James, 1975).

The problem of how to bridge the knowledge gap and invariably the economic gap between the have-nots will continue to plague development planners. The paradox of the "knowledge hypothesis" (Tichenor, Denohue and Olien, 1970: 159) holds that as the infusion of mass media information into a social system increases, the segments of the population with higher socio-economic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease. This knowledge gap notion suggests an explanation for the failure of unplanned mass mediated publicity for important development projects. Childers and Vajrathon (1975) point out that further reasons for communication gap in development projects include the following:

- emphasis on physical, material or narrowly economic input and neglect of social factors.
- development projects are often formulated by technical specialists in terms of the technology alone being available, not considering its social vectors.
- tendency of innovation-diffusers to ignore their cultural, linguistic and other handicaps to effective communication with people outside of their own frame of reference and technological environment.
- a wrong assumption that existing echelons of civil servants are automatically capable of transmitting and diffusing the innovations required for each new development programme.
- a wrong assumption that the ministries of information and broadcasting corporations (plus information units) will look after the information side of projects without the further provision of required necessary resources.
- the permeation of most information structures by the Western ethos and practice of communication which is very largely non-purposive and has often carried with it philosophical structures against the use of public, state-owned media for deliberate attitudinal change.

***Conclusion:***

Some development and communication planners (Wood, 1975) have suggested a management information flow process in the transfer of technology. This process must consider the needs of the intended clientele as well as political policies, national development goals, resource availability and other factors which must influence decision-making. This process is also known as the holistic model. What the information flow does is to look at the creation and the adaptation of the

technology so that it can be used by the clientele. It should, however, be devoid of professional overskill. A support communication is of criterion importance. This aims at building into all development programmes a strong communication component, which is thoroughly researched, planned, resourced (personnel, equipment, materials, budget), and evaluated as all other more traditionally provided components. The goal should be to adopt a horizontal approach to planning which takes due cognition of cultural diameters as exposed in this presentation.

Personal contact with peasants is still important in all socio-economic change. Mass media alone cannot replace this. Oramedia must be involved. For as Solomonov (1978) points out, at the present time and in the future, no novelty in the field of education or information is or will be able to replace the teacher or the agent or man-media as the central figure in the educational processes. Although such new forms may promote his activity, he himself will never become superfluous. Let us think of the African nation as a baby, born with a large head on a frail body.

But that child will walk on its own one day, when it has developed to be a master and user of its environment. Communication , its adaptable and cultural definitions, is essential to conjure this development pertinently and realistically. A deliberate political effort to channel behaviour towards maximixing national objectives in rural development and integration demands a notion of culture and communication as interventionist agents. To be effective, cultural orientation to rural development must be lived by the people who are the cultural builders.

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