



Science Communication through Mass Media

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Abstract

Communication is one of the lifelines of humankind. And communicating meaningful information in science is a much more challenging job than anything else. And the world over definitely a good amount of progress has been achieved throughout the years in this direction. But without an effective and convenient dissemination of such information to the persons concerned these developments are not going to yield any positive results. Nowadays mass communication has managed to rightfully acquire the prime position of the fourth basic need of human beings after food, shelter and clothes. Can we imagine any walk of life in which mass media does not play an important role in getting across necessary information to the masses concerned? Being from the field of mass communication I personally believe that the effort for the purpose has not been enough till date. In this paper I shall try to explore how to figure out the target audience / people for dissemination of these information specially in areas with difficult terrains like the North-East India, types of media available in this regard etc. This is because any human being – whether literate or illiterate, rich or poor needs to be informed, educated and persuaded about adopting and switching over to practices of using energy only from renewable sources. But media has the power and capacity to carry out this function over a given period of time. For this there is an urgent need for creating an interface between the personnel and institutions involved in this business including the scientific community, research laboratories among others. It is quite a natural that we can't expect this community of personnel to be very media savvy. And there comes the expertise of media handy in bridging the gap between these two sides of interested parties – the scientific community and the masses. We would like to explore the scope of media intervention in disseminating these information in an effective and productive manner.

Key words: Acoustics, Modulation, Internal waves.

Introduction

“Communication is not only a system of information, but also an integral part of education and development” - McBride Commission Report (1978). Without the slightest of any doubt mass media is the most effective and influential tool for making information available to people at a cheaper and convenient method. Of course, is a highly ‘impersonal’ tool that lacks the personal touch which is a very welcome and interesting aspect of attracting the attention of people and influencing them? But it can reach innumerable people at an instant which can't be achieved by a medium which may be personally close to the readers or target audience. Mass media enjoys the unique distinction of reaching with ease even the remotest areas anywhere on the earth and deliver the messages. As a carrier of messages it has no ‘parallel’ in the world. Only thing is to prepare messages in the most effective way so that they can actually influence the target audience in the desired manner. It is also one of the most powerful forces for shaping public opinion. With its enormous power, mass communication has been proving its worth time and again since the early days of its development. This Fourth Pillar of a democracy can claim numerous achievements to its credit in creating popular public opinion

as well as correcting the same whenever needed. It has been playing the role of an opinion leader, pathfinder, and provider of solutions at times of crisis to the society constantly like a sentinel on an eternal vigil. Its powers can even move to mountains if the need arises at any point of time. With the development of civilizations across the globe, complicacies in various walks of life are growing at an unprecedented rate. So obviously, the world over considerable public movements and awareness drives are being taken up with a well-coordinated effort of a majority of the parties concerned with these issues.

Role of Mass Media: Right at this point, let us cite the findings of a study done by a communication expert from the USA about exploitation of mass media tools by big time terrorist / secessionist outfits throughout the world. It concluded that those organizations were quite actively exploiting mass media as tools for reaching out to the masses. This is a novel means of a ‘psychological warfare’ indulged in by interested parties for getting their messages across to the masses. A similar ‘psychological fight’ can also be waged to create popular awareness leading to wider public opinion and activism. This activism can be either at group or community level or at an individual level. If mass media can

rise up to the extent of transforming even half the target population and if every member of this population lives up to the expectations and does his or her bit effectively then almost half the battle is won. This will have to take the shape of a development communication mode of activity, which is deliberate, goal-oriented, calculated and aimed at achieving a certain purpose.

Responsibilities of Media: Like any other meaningful profession in this world, media also has to shoulder some definite amounts of responsibilities towards the society. Mass media is an open university and an able platform where virtually any issue under the sun can find a place for debates, discussions and deliberations so that both positive and negative aspects of them can be arrived at. And the people can pick up their choice, whether the positive or negative whichever suits them in the end. Academically and also practically, we say that it performs quite a few important functions for the society while discharging its normal duties. In addition to disseminating relevant information to the target audience concerned, other functions include persuade, influence, educate and transform people by the sheer convincing power that it possesses in abundance. Then again one of media's most important roles is not only to disseminate information to the people but also to make or convert them into thinking 'human beings'. This is because we all know that 'information is power'. But mere possession of information will not yield anything much worthwhile and one has to process this information and apply them to relevant aspects so that something can be achieved out of them. It is a well known fact that the general awareness of the people of our society about any public issue of concern is not so good even today. Every day, every hour hundreds and thousands of our basic rights are violated everywhere but we just prefer to remain silent for a few factors. Such as – a general lack of awareness about our rights, too passive to take the pains to fight it out with the people who violate them somewhere sometime. Yet, there always is a time when one has to sit up and take cognizance and then act decisively to prevent any wrongdoings about them. And, in this direction mass media is the most ideal tool for creating awareness about it to the people anywhere in the world.

Advantages of Media: Now let us look at the prime advantages of mass media first of all it is a magic multiplier. It means that the original source that has something to inform to the people only needs to pass it on to media. And the moment this message is airborne unlimited people can access it provided they have the right tool to do so. Not only access it, but also get influenced by this message. Thus this is called magic multiplier. And you can imagine the influence it can exert over the people. In other words we can also term this as a 'force multiplier'. Secondly, the original source need not even be a very communicative one. Once he or she has something to say to the people one just needs to contact media and the 'professional communicators' take over

everything from this point. This breed of professional communicators is the editorial people in a news organization / media or anchorpersons in an entertainment or infotainment mass media organization. These people are professionally trained and experienced in the art of communicating and passing on relevant information to the people in the right perspective. The success of a certain message or information depends to a very high extent on the experience, talent and tactfulness of this species of communicators. This is because their expertise in this field will matter highly towards making the people easily understand what is being broadcast or aired or printed by the media. Mass media also has to perform the 'Agenda-Setting function. This means putting up certain issues of importance in front of the public in such a manner that they become the concerns of the masses. And they in turn are moved to think and deliberate on them seriously and finally act on them. Whatever media promotes almost instantly becomes a hit – whether it is something popular or otherwise. This advantage can be put to a positive usage with a coordinated effort of both sides of the stakeholders involved – the public / masses / readers / target audiences and media on the other. In addition to other activities and functions, media also performs the role of setting agenda in the society. That is – to decide for the people which issues and aspects - out of so many of them competing for attention - would be focused more than others. Media plays the pivotal role of a 'whip' and leader at times of crisis. In today's world, the environmental problem is also nothing short of a crisis for the humankind. We must exploit this trait or function for deciding the agenda of environmental awareness for the people so that an exhaustive coverage can make them converts to the cause. And if possible, also make them activists. Mass media is a very important component of our society. Being the 'fourth pillar of a democratic society', it has to perform the role of a 'watchdog' of anything that is evil in the society. Hence, armed with this moral commitment media has to take up the additional responsibility of promoting awareness of human rights violation amongst us and influence the people to protest against any such violation. The role of media can be explained in the following few ways ---First of all there is the role of creating awareness about the various aspects of the public causes and how one can and should play a proactive role in standing up for enjoyment of the rights to the optimum possible extent. In other words – 'to lead a normal human life' free from any fear or complicity. Next is the equally important role and responsibility of exposing violations / negligence and even attempts to do so by any quarter – whether the state / government, an individual or anyone else. As we have already said – every profession in this society has a special social responsibility to live up to. In the case of media, it will not be sufficient only to report violations of peoples' rights but it must also go beyond the happenings and educate, influence, persuade the readers or the people of the society not to take such violations lying down.

Messages Designed to Empower People: Further, the messages or the programmes and software which are to be aired or published or prepared for creating because awareness must be of such standard and nature which can actually make one – the recipient of the messages – a thinking person. That is because mere receiving the messages will hardly address our need. But it must be able to rekindle our thought process and decide what should be adopted and what not in the passage of life. The messages must also be able to make us think rationally so that we can identify and differentiate what is good for us and what not. Then only the process of ‘empowerment’ will be completed in actual terms, as it will produce at least some changes in the recipients’ lifestyle. Our purpose is to bring in a change of behavior among the people so that they become conscious of their responsibilities and act accordingly to contribute to the greater interests of the world community in general.

Relationship between Media and Audience: In an ideal condition the relationship between the media and its readers / audiences should be very much mutually beneficial, cordial and an enriching one. Here the mass media agencies should try their best to inculcate a progressive and cultural sense among the readers. On the other hand the readers must also see to it that they register strong protests and try to correct the course the media is taking at present which might not be felt commensurate with the society’s interests.

How do we Proceed: The question is - how do we proceed while trying to achieve these goals?

First of all the media must dedicate more space for the public service issues – both small and big. Entertainment is quite an important aspect of media nowadays and will always remain so in the future. But it is not the end of everything. Entertainment must be intertwined with information to arrive at the concept of infotainment which must be put to service of humanity. Here we must rely upon the professional communicators who would pass on the information to the people. So there are two mediators actually involved in the process – the physical media and the human mediators or the media. Having a pool of talented professional communicators is highly important to have the desired effect upon the readers or the target audience. In the not so earlier days, say even by about 10 / 15 years back, media was considered mostly an impersonal medium with no scope for instant interaction with the readers or target audience. But nowadays, mass media is becoming more and more interactive with ever newer styles of presentation and communicating between these two stakeholders. The messages must be really good as in media it is said that ‘the switch is in our hands’. If we don’t feel like watching a specific programme, we just switch it off. Even otherwise, it is a normal human tendency that whenever we are watching the TV programmes we keep surfing channels. This is important because quite often most of times cases of rights

violations go unreported due to ignorance about the legal provisions, a passiveness and a general lack of faith on the government mechanism etc. Of course, now and then we do hear about cases of violation reported to the authorities concerned. But it is rest assured that for every case reported there would be hundreds of cases which go unreported anywhere in the world. For example - this is also important for the fact that the autonomous organizations charged with taking care of such violations like the National Human Rights Commission (NHRC) and state-level commissions are empowered to take cognizance of such cases reported in the media and take necessary action in this regard. A news item in The Hindu a few days back informs that the human rights commission of Bihar has taken cognizance of the case of ten suspected dacoits killed by a mob whose bodies were dumped nearby a river. I still remember a similar case of the NHRC registering a complaint suo moto during the Godhra-related communal riots in 2002. The same is the case for other issues and concerns also. Media has at its disposal an enormous publicity tool by which it can appeal to the intellectual capacity of any human being with convenience. If this can be put to a positive usage, it will go a long way in making people enlightened about the important issues confronting them in our everyday life.

Formal And Non-Formal Modes Of Educational Operation: There are two aspects of the matter – formal and informal education. By ‘former’ we mean the ‘education’ imparted through textbooks and may be other related means with specific and fixed curricula in schools, colleges or universities, or in other words ‘formal educational institutions’. On the other hand media is an informal university. It can play a great role in educating the masses in all kinds of issues. This is more true for a country like India with unique conditions such as a low literacy rate and just about 8 to 10 % of the eligible adult population actually being able to attend formal educational institutions to pursue higher education. The so called high literacy rate of ‘75 %’ (according to India census 2011) is a misnomer, nothing else. That is - by government definition somebody is declared literate if he or she can just sign the name, not beyond that. Thus, the percentage of people actually literate in our country would be just about half of this number claimed by the government. Under such circumstances the duties of the responsible organizations including that of media become manifold. This takes place in a variety of ways not confined to the classroom or formal textbooks where media steps in. We can very well say that it can be converted into a very interesting ‘multimedia’ campaign. This is because here we have the scope for utilizing TV, Radio, films and documentaries, traditional culture in the form of community songs and dramas, internet, mobile telephony – the list if endless and full of potential. Our mantra in this regard should be ‘catch them young’. The minds of children are always plain and receptive to new ideas and this is the age to bend their minds towards something good and better for

themselves as well as the society. So it will be a good idea to start right from primary schooling and continuing it up to postgraduate level, touching secondary and higher levels in between on a continuous basis.

Mass Media Options: An Insight: In view of above, what can be our alternatives to carry forward the messages of environmental awareness to the target audience in this vast country of continental proportions?

Let us consider the options one by one. In case of the print media, more than 65,000 journals and newspapers of varied kinds are in circulation in the country today with a combined circulation figure of 18 crores copies at present (mid 2007). And the very encouraging fact is that this figure is growing annually at an impressive 18 %. This apart, over the years, there has been a steady and remarkable growth of the vernacular newspapers across the nation. This phenomenon is led by Hindi newspapers with almost 50 per cent of the total circulation figures followed by those in several prominent Indian languages, which means that an ever more number of people of the country living in the remotest parts are being able to read the newspapers in their own language or dialect. From a mass communicator's point of view this is highly important point as every person feels much quite at home in one's own language. A journalist in today's age has to necessarily function as a social judge day in and day out and decide what issue to be taken up and supported in an all out effort and which to be dropped. He or she also has to decide about the kind of treatment to be meted out to the different issues keeping in view the prevailing necessity. On the other hand, Radio stations' listenership is supposed to be around 60 million on any given day – that too in 24 languages and 146 dialects cutting across the length and breadth of the nation. By another estimate right from the AIR Audience Research Unit statistics, this figure is put at a mind-boggling 32 crores on any given day. Further, there are 37 private and 139 AIR FM Radio channels, which boast of a listenership base of 96 million taken together. One very highly important fact regarding radio coverage of the country is that AIR broadcasting network covers almost 100 per cent of the nation's geographical areas. If utilized properly, this is a landmark and dream-development for any mass media organization and anyone who may desire to send across their messages to the larger masses.

Suitable Media: In this direction, even though all the mass media are effective, yet the new concept of Community FM is one of the most suitable ones in this crusade. This is because the print media or the newspapers, magazines or journals are not much of effect with the majority of the population of the country as they can't read or write. Also, as this media has to be physically delivered to the people at their doorsteps, it becomes quite time-consuming, especially in difficult terrains like that of ours. TV has its own natural advantage of being an audio-visual medium with a good

influence on the people. But this is a costly medium even today with not so an ideal access amongst the population in the far-flung areas. Under these circumstances the Radio seems to be most ideal medium to carry on this crusade. And especially the Community FM radio station. This is a small-calibre FM radio station with a limited range of about 10 to 30 kilometre radius. It is managed by the community in which it is situated with funding sourced from donations, grants etc. so that they don't need to depend upon any corporate organization for managing the station and thereby be dictated by their whims.

The most important advantage with these stations is that only public-service oriented programmes are conceived, prepared and aired covering only socially-relevant topics.

“Radio is a combination of the schoolhouse, the church, the public rostrum, the newspaper, the theatre, the concert hall – in fact, all media devoted to the education, enlightenment, and education of the people. Also, it claims a more intimate relationship with the public than any other media or tool of information at any given time.” - Anning S Paul, the first Chief Commissioner of the Federal Communications Commission of the USA in 1936. A Community Radio is a Radio center managed and maintained by the local community in which the center is located through its representatives. The community representatives take care of everything – right from identifying what sort of programmes to be aired, selected, prepared, edited, how to manage funds etc. from A to Z. The best advantage in them is that immediate local problems and issues can be tackled in a minimum loss of time whenever the need is felt. (Pavarala, Kumar, 2005) This can be done by creating an effective and adequately coordinated network of such CRs across the nation so that the good programmes can be shared in a circuit to allow people from all over the country to enjoy the benefits of it. In fact, if we look at the history and growth of Community Radio all over the world, we will find that in most of the cases it started out as a means for keeping the community informed as well as making them empowered. Thus why can't we also utilize this wonderful medium for our advantage? In the process this wonderful medium has accorded a new meaning to the world of 'empowerment of the people at grassroots level'. Imagine a situation - if every block level area of the entire country can have a properly functioning CR, people in those areas would be benefited immensely. The community can identify their own problems, discuss what to air and what not etc., which is a very right candidate for our specific goals. If all these CRs become connected through the net or any other means, this will be a never-before development and benefit the people tremendously in the long run. If it can be made interactive with a phone-in programme or so, that will add a much better flavour to the entire activity. At this point it may be of interest to everyone to know that the Ministry of Information & Broadcasting (MIB) of the Government of India is actually

actively encouraging this medium for peoples' development at the grassroots level covering all aspects of our lives. So, obviously environmental awareness can be very well integrated into this scheme of things. One other advantage with CR system is that the cost of launching one has been steadily coming down with a short range CR station needing just about Rs 8 lakhs for the whole activity. For a community this is not a very unaffordable amount. Another fact also needs mention here that in the last part of 2006 the MIB has taken up a landmark decision in case of CR licensing. That is – the Ministry has adopted a decision that any NGO with a good track record of at least three years or more would be allowed to apply for and get a license for launching as well as running a CR station on a priority basis. (The Hindu). Besides, it is important to note that the Ministry of Information & Broadcasting (MIB) of the Union Government is considering.

Public Service Broadcasting (Psb) For Hr Awareness: "Broadcasting is power". Mahatma Gandhi said in 1948, as this great personality well understood the immense potential of radio as a mass medium even more than six long decades ago. It is ironical that we have actually failed to utilize this medium to our optimum advantage in the intervening period till date. In the informal sector, radio can take up the responsibility quite easily. AIR being a good example of a Public Service Broadcasting (PSB) needs to gear up its 'public education' component for this purpose. We are pushing the cause of radio more than the others because being an audio-medium; it offers far more scope for utilizing itself for the purpose. Also, it is a cheap and portable medium, which can deliver anywhere anytime. (A Ministry of Information & Broadcasting, Government of India communiqué). We have already said that this is a discipline that involves each and every walk of our lives and thereby things are quite complex compared to other disciplines. It is interesting that here we are speaking of utilizing the different avenues of mass communication and media for getting the messages of HR activism and awareness among more than 105 crores of population in the nation. This apart, media is also a discipline of study that encompasses each and every discipline and subject of study of our lives. So we strongly believe that the combination will be highly mutually beneficial one, which will go the extra mile to get us the results, we desire. Of course, we need to move in a systematic concerted way so that nothing is left to chance.

But What Do We See In Practice: We all know that there is a considerable difference between what is ideal and what actually happens in practice. Can we say that we find an adequate and satisfactory coverage of the issues mentioned above in our media? Not exactly. This is because today's media has been transformed into highly profitable business ventures where we hardly find any issue of public interest being focused. In the run up to derive maximum mileage out of the prevailing business opportunities media basically

ignores real issues of the people and go only for those which are of popular interest to people. So Debojit Saha, Aishwaryya-Abhishek marriage and the accompanying hype and so many other non issues get highlighted at the cost of important issues. I believe all of you do remember how the Kangla Fort incident in Manipur a few years back managed to hog the limelight of the nation. But that was only because the way of protests by the women was quite different compared to anything else. However, do you find coverage of incidents / issues which actually contribute to such final outbursts of people when pushed to the wall and don't have anything further to lose in the bargain. From my personal experience till date, I do say that there definitely is a bias in coverage of important issues like these in the metropolitan media. But even in our local media how much of these commitments do you actually experience at any given time. On the other hand, on the part of the government also there has been steady decline of interests towards maintaining institutions promoting public service. This is evident from the fact that the government has been insisting for quite some time now that these organizations should make all out efforts for generating their own resources rather than depending fully on the government finances for everything. Now, if they have to generate own resources definitely they will need to go for popular programmes at the cost of those promoting peoples' causes which are so many. Well, in a private TV or radio channel or a newspaper how much public-interest advertisements and issues do you actually find in practice? Is this adequate and satisfactory at all? Then again, here there is an interesting dilemma that confronts the mediapersons as well as readers. That is – while dealing with stories of secessionist / terrorist organizations' activities how much restraint should we exercise. There are a few important aspects to this issue. First of all – is the way or manner that their disruptive activities are presented by media can be termed right? Of course, every person's opinions will differ in this regard. Yet, the tendency to highlight their activities in a splashy manner is only going to multiply their efforts in getting publicity. That is why a prominent scholar said that publicity is oxygen for such organization with an evil or misguided motive. Further, the way the killings of members of these outfits are presented – more so in the vernacular newspapers - they become heroes in the minds of the public. This same thing also possesses the dangerous potential of developing the 'Stockholm syndrome' in which terrorists / secessionists manage to develop such a relationship with their kidnap victims that the latter actually begin sympathizing with the former. So the presentation style may in fact contribute to the growth of power of those organizations in the long run which they really do want to achieve. In contrast, do you recall seeing any gory and violent photograph in the aftermath of the 9/11 New York twin tower blasts case. It was a wise decision not to show the destruction in a gory manner as it would have indirectly fueled the terror psyche of the organization responsible for the incident which they actually wanted. Secondly, among

other things there is also the tricky question of HR violations by secessionist groups and antisocial elements. It has been a normal tendency among the people fueled by the media itself and some organizations with deliberate interests create a major hue and cry whenever members of secessionist organizations are killed or injured in encounters.

But the same organizations – whether media or otherwise - hardly utter a word of grief or sorrow if anyone else is killed. There seems to be an impression that being representatives of the government / state, the security forces' personnel killings need not be mourned or something like that. Can it be so?

Some years back, there was an interesting instance in Assam in this regard. A group of CRPF personnel were fired upon by the ultras while the former went to a river in a dense forest for bringing water. One or two of the jawans were killed while several others were injured. Following this, a senior official of the force lodged a complaint with the State human rights commission against the insurgent outfit. How to settle this type of cases? Further, have you seen any conscious effort by the media to create public opinion against the killing of innocents in crossfire in encounters between terrorist / secessionist organizations and government security forces on the others?

Conclusion

From our discussions we have seen that despite possessing such an enormous potential, mass media is hardly being utilized by the parties concerned for promoting awareness as well as activism about important social causes in our society. This is a pitiable condition as instances of rights violations at all levels of our society by various organizations / agencies have been showing an ever-increasing growth. More so with the draconian acts like the Armed Forces Special Power Act (AFSPA) – applicable only in the North-East - and some other similar acts and provisions still in practice in different parts of the country. Thus, it will be definitely a worthwhile exercise if mass media takes up all possible public causes actively and create an awareness among all concerned so that remedial measures can be adopted while dealing with practical situations. Padmashree Patricia Mukhim, a prominent freelance journalist and social justice in a commemorative lecture recently at Guwahati said that 'ignorance of laws or legal provisions' is no excuse and we should make ourselves familiar with the provisions. And other than media what can be the best medium for informing ourselves and promoting activism in this direction.

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