

## MASS MEDIA AND ICT IN DEVELOPMENT COMMUNICATION: COMPARISON & CONVERGENCE

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***Abstract:** The decades of 60s and 70s saw dynamic world-wide growth of electronic media which produced so-called “information explosion”. The idea of using mass media grew out of the notion that media had exceptional power to change human behaviour. Communication experts began to advocate the use of media for accelerating the transfer of technology. While some communication experts called media as “Magic Multiplier”, others advocated that it is a great “lubricator” of the development process. It is here that the role of mass media in economic development and modernization variables comes into play.*

*The paper seeks to analyze that media, telecommunications and computing/information systems, commonly referred to as information and communication technology (ICT), have long been associated with economic development and social/cultural change. Historically analyses of ICT and social change have relied on measures of the ownership, availability, access and use of various technological systems to evaluate their significance and social impact. Technology assessment of today’s new media and ICT requires measures that more closely reflect their fundamentally social, interactive, performative and participatory character. The scope of a given ICT resource is the variety of users and sources made available via the technology. A defining attribute of internet-based information resources,*

*especially compared to mass media, is the enormous diversity of documentary and interpersonal resources that they make available via hyperlink structures, which allow users to follow any number of possible paths to locate and retrieve information according to their interests and inclinations at the moment.*

*If the interactive quality of the contemporary media landscape makes it a far richer and more engaging arena for social action and development, it also presents analysts with a variety of new policy challenges. Perhaps the most complex consequence of the transition from mass to new media has arisen as media industries sought to preserve and extend the market models and regulatory frameworks of the past.*

**Keywords:** *Development Communication, ICT, Digitization, Information Explosion, Interactive Media, Convergence, Decentralization, Proprietization.*

### **Introduction: Development Defined**

Development is essentially maximizing the production of goods and services available in a country. Lack of it is defined as underdevelopment. Going by the international encyclopedia development may be described as “purposive changes undertaken in a society to achieve what may be regarded generally as a different (improved) state of social and economic affairs.” The notion of development is basic to development communication.

Development communication scholars of the 60’s, like Rogers and Shoemaker defined development as : “----- a type of social change in which new ideas are introduced into a social system in order to produce higher per capita income and levels of living through more modern production methods and improved social organization. Development is modernization at the social systems level.”

Dissanayake defines development as the process of social change which has as its goal the improvement in the quality of life of all or the majority of the people without doing violence

to the natural and cultural environment in which they exist and which seeks to involve the generality of the people as closely as possible in this enterprise, making them the masters of their own destiny.

Deborah Eade defines it as “Development is about women and men becoming empowered to bring about positive changes in their lives; about personal growth together with public action; about both the process and the outcome of challenging poverty, oppression, and discrimination; and about the realization of human potential through social and economic justice. Above all, it is about the process of transforming lives, and transforming societies.”

In fact “Development is neither a simple, nor straightforward linear process. It is a multi-dimensional exercise that seeks to transform society by addressing the entire complex of interwoven strands, living impulses, which are part of an organic whole” (Haqqani 2003: xi).

### **Development Communication: Definition, Scope, Objectives**

Sociologists, psychologists, economists and communication experts are of the opinion that the proper use of communication can foster the pace and process of development. In general terms, communication means interaction between two individuals or within a group or a community or a nation. The foundation of communication is based upon four principal elements ----- communication source, a message, a channel or medium and a receiver or audience. But in development communication it becomes the process of affecting or influencing behavior of individuals or groups towards certain desired goals and objectives, necessarily for the benefit of the entire society. Thus, the receiver is expected to show the behaviour desired by the source of communication.

Development communications are organized efforts to use communications processes and media to bring social and economic improvements of an individual, society or nation (generally in developing countries). It identifies what mass media can do directly or indirectly to improve the quality of life to both urban and rural masses. This describes an approach to communication which provides communities with information they can use in

bettering their lives, which aims at making public programmes and policies real, meaningful and sustainable. Such information must be applied in some way as part of community development but it must also address information needs which communities themselves identified. The outcome of this approach, in short, is to make a difference in the quality of life of communities.

Nora C. Quebral, a leading academic in this field defines Development Communication as the “art and science of human communication applied to the speedy transformation of a country and the mass of its people from poverty to a dynamic state of economic growth that makes possible greater social equality and the larger fulfillment of the human potential.”

F.Rosario Braid is of the opinion that development communication is “an element of the management process in the overall planning and implementation of development programs.”

Development Communication is, in a broad sense is thus, “The identification and utilization of appropriate expertise in the development process that will assist in the increasing participation of intended beneficiaries at the grassroots level.”

Development Communication can also be defined as the integration of strategic communication in development projects. Strategic communication is a powerful tool that can improve the chances of success of development projects. It strives for behaviour change and not just information dissemination, education or awareness-raising.

All development requires some kind of behaviour change on the part of stakeholders. Research shows that changing knowledge and attitudes does not necessarily translate into behaviour change. In order to effect behaviour change, it is necessary to understand why people do what they do and understand the barriers to change or adopting new practices. It is not enough to raise awareness of the “benefits”, it is critical to understand peoples’ barriers or the “costs” they perceive such a change would entail.

Meaningful communication is about getting information out to particular audiences, listening to their feedback and responding appropriately. Whether discussing a development project or broader economic reforms ---- from health, education or rural development to private sector development, financial reform or judicial reform ---- the idea is to build consensus through raising public understanding and generating well-informed dialogue among stakeholders.

Well-conceived, professionally implemented communication programs that are tied directly to reform efforts or development project objectives that bring understanding of local, political, social and cultural realities to bear in the design of development programs can make the difference between a project's success and failure.

### **Role of ICT in Development Communication**

New media technologies promise profound changes in how global citizens obtain news and feature programming as well as how we communicate among ourselves and contribute to the emerging de-centralized, many-to-many media system. By becoming aware of how mass media is controlled and biased by a few corporations, by choosing alternative media sources and by taking action to publish news and original content with digital production tools, the internet and independent media-vehicles – the public can create a true revolution in the control and presentation of media.

Continued dramatic improvements in computer memory and processing speed per unit of cost led to steady increase in affordability and ubiquity of computers. Combined with breakthroughs in storage technology, this made it increasingly possible and desirable to capture and store information, entertainment and other forms of valuable information and content in digital form. This digitization, in turn, made it easier to reuse, repurpose, manipulate and combine this content, anywhere at any time, for the specific purposes of the user, through a variety of electronic means, often in combination.

At the same time, steady and substantial increases in telecommunications bandwidth, fuelled by the widespread deployment of fiber optic cables, satellites and wireless technologies, made it easier and cheaper to share information globally and to communicate instantaneously at long distances. These new technologies and the optimism they engendered about their economic and social potential, led to an extraordinarily dynamic period of innovation, investment and growth in the mid-to-late 1990's.

'Convergence' is the label most often used for the integration of communication mediums that the digital revolution has made possible. This may prove to create as radical a change in the relationship between people and the institutions of society as did the invention of movable type – the Gutenberg Revolution. With the digital revolution, we no longer can say "freedom of the press belongs to those who can afford one." No longer is it just the major institutions of society that are able to disseminate information now, virtually anyone with a computer can. But, as with the Gutenberg Revolution, far greater responsibilities descend upon the public.

Several optimistic projections emerged about the potential of these new technologies and global networks to create economic opportunity in developing countries and in poor neighbourhood in rich countries, give voice and power to the poor, make their governments more responsive and transparent and make the world's best knowledge on any subject available anytime, anywhere to those who needed it to improve their lives. Of course, the conviction that information and communication technologies could be powerful tools to combat poverty did not originate with the Internet and World Wide Web.

The history of international development over the past several decades is full of efforts to harness a wide range of technologies (computers, telephone, radio and television, as well as sector-specific technologies in areas as diverse as health, agriculture and environmental management) to combat poverty and disease, build human capacity and improve the functioning and efficiency of government ministries, markets and other economic and social institutions in developing countries.

At the same time, just-in-time access to global sources of information and knowledge would provide unprecedented opportunities to tackle the intractable problems that compounded and perpetuated poverty, such as disease, famine and environmental stress. Hospitals in Africa that rarely ever received a medical or scientific journal could now, many hoped, have access to the full range of global scientific and medical research. Agricultural extension agents could now be armed with the best of what the world knew about plant, seeds, pests, fertilizers and soil management. Policy-makers would be better able to manage natural resources and respond to environmental problems, both because they could monitor them better and because they would have at their disposal the world's knowledge about these challenges.

The rise of more sophisticated communication and information technologies, such as satellites or the Internet, has opened new horizons and opportunities. The potential of the new technologies has not only increased the penetration of mass media, for instance, through satellites, but it has also created new opportunities to enhance communication at the local level utilizing technologies such as the Internet or mobile telephones. The establishment of "telecenters" in rural areas is spreading in many countries as a way to support local development in the social and economic dimension.

Communication technologies are still looked upon by some with suspicion, probably because of past experiences when media were often used to "spin" arguments and impose change on people. The effectiveness and value of ICTs and other new communication technologies are determined by the way they are selected and utilized. Even if technologies are not the panacea for every communication problem, they are valuable tools to address specific needs, especially when used in a way compatible with and relevant to specific local needs.

Even if the internet, satellite, mobile phones and wireless computers appear to constitute the new frontiers in communication, there are some critical factors to consider before adopting them. These factors can be divided in three basic categories: economic, technological and cultural. From an economic point of view, there are high costs associated with the software and the hardware components of ICTs for individuals in developing countries, placing these commodities outside the reach of most people. In the case of the internet, there are also

access and connectivity costs to consider. Other costs related to ICTs include the establishment and maintenance of reliable infrastructure for telecommunications. It should also be noted that the wave of liberation and privatization taking place in this sector in many developing countries can be a limiting factor for marginalized sectors of society.

From a technological point of view, it is difficult to ensure the proper operation of such technologies in places where there are no phone or electric lines. Even where those services are guaranteed, regular maintenance and updates and issues of compatibility among different standards, become major issues. Technical support is a necessity for individuals in richer countries and would be even more necessary in countries where people are less technology-literate. In many countries, users need basic training in computer use and prior to that, literacy skills to communicate effectively on the Internet.

From a cultural point of view, there are also a number of constraints. The language in which most of the information is available on the Internet can pose a barrier. Additionally, given the high illiteracy rate of many areas of developing countries, many potential users are excluded from the start. Even when language barriers are overcome, often cultural issues remain crucial in gaining fundamental knowledge and the needed frame of mind in order to take full advantage of the power of these technologies.

Despite such shortcomings, ICT can do and play a major role in development communication. In addition to the widely used information dissemination functions, technologies such as the Internet also have the potential to support the horizontal processes of communication.

With their quantifiable and fast exchange transmission flows of information and their capacity for overcoming time and space, there is no doubt that ICTs can have a stronger appeal than participatory processes, which appear more complex to manage and require longer and closer interactions. In fact communication technologies are more effective when used within proper cultural frameworks and in processes that engage stakeholders in the selection of the objectives, key issues and appropriate channels. ICTs and media can



certainly play a key role in development communication, but they are not a panacea capable of solving all problems and of filling all gaps related to knowledge and perceptions.

### **Mass Media on Social Change**

India's process of development since 1947 has been accompanied by significant social changes and an increasing awareness about issues affecting the poor, the women and the children in India. This period has also seen the burgeoning of the voluntary movement in India and the establishment of several non-governmental organizations to protect and promote the interests of women and children.

The Government has made constant attempts to promote values like democracy, freedom from discrimination, self-reliance and independence of thought. It has also tried to improve the lot of the poor and weaker sections of society. Women and children have figured prominently in the government's agenda of social reforms and initiatives. Today, India is working towards a society where the poor, marginalized and underprivileged have equal opportunities in all spheres of life. Mass media in this regard has played a very important role by acting as a mediator between the government and the people along with the collective action by the voluntary agencies, government and other like-minded institutions and individuals.

The mass media are the vehicles that carry messages to large audiences .They are so pervasive in modern life that many people do not even notice their influence. In Liberal democracy, the role of the media can be surmised to include informing , entertaining and educating the people . It is widely accepted in Liberal democracy that when the media help to put information at the disposition of the people , they will be able to formally or informally control the state .

The mass media are essential for democracy. By keeping people on top of current issues, the media enable people to participate intelligently in public policy discussion and decision-making. In a democracy the principal role of the media is to act as a check on the state and fearlessly expose abuses of official authorities. This watchdog role is said to override in importance all other functions of the media and dictate the form in which the media system should be organized. The media also are the vehicles by which people debate the issues and try to persuade each other of different points of view. Even when they provide us with entertainment, the mass media are capable of portraying and shaping values that enrich our dialogue on social issues and public policy.

The mass media create rituals around which people structure their lives. This is one of many ways that the media contribute to social stability. The media foster socialization through adulthood, contributing to social cohesion by affirming beliefs and values and helping reconcile inconsistent values and discrepancies between private behaviour and public morality.

The mass media also transmit values among contemporary communities and societies, sometimes causing changes that otherwise would not occur. Anthropologists have documented that mass communication can change society. Thus, the phenomenon diffusion of innovations occurs when ideas move through the mass media into the society bringing social change.

The mass media have caused fundamental changes in human communication. When Gutenberg introduced movable type in the 15<sup>th</sup> century, people began shifting from largely intuitive interpersonal communication to reading, which, says communication theorist Marshall McLuhan, required a different kind of concentration. The result, according to McLuhan, was less spontaneous communication, an alienation among individuals and a fragmented society. With electronic, visual media like television, which engage numerous senses and require less cerebral participation than reading, McLuhan saw a return to communication more consistent with human nature. He called it retribalization. Not everyone

accepts McLuhan's vision, but there is agreement that the mass media profoundly affect society.

The mass media do not operate in a vacuum. The people who decide media content are products of the society, and the necessity to turn a profit requires that the media be in touch with the society's values or lose audience. In one sense, this reality of capitalism works against the media venturing too far from mainstream values. Critics say the media pander too much to popular tastes and ignore culturally significant works that could enrich society. An alternate view, more charitable to the media, is that great works trickle down to mass audiences through media popularization.

The media contribute both to social stability and to change. A lot of media content gives comfort to audiences by reinforcing existing social values. At the same time, media attention to non-mainstream ideas, in both news and fiction forms, requires people to reassess their values and, over time, contributes to social change.

Media education supports the creation of an informed media public, a public that is able to critically judge between good and bad media content. Simultaneously however, for a true democracy, we also have to ensure that there is a strong stream of media free of any government control, with free speech and free press.

## **ICTs on Social Change**

The point of departure for any strategy to combat poverty and promote sustainable development is to foster positive change and particularly pro-poor change. The observation however simplistic it may posit, provides an important frame of reference for any ICT-for-development strategy. The Millennium Development Goals (MDG) offer a useful illustration of this perspective, since the MDG's are, in their own way, proxies for deeper changes.

The MDG's point to a set of desired first-order changes in the situation of developing countries: fewer people in absolute poverty, fewer women dying in childbirth, more girls in

school, etc. Yet they presume and fundamentally depend upon, a deeper set of changes, such as higher and broader economic growth in developing countries, more capable and responsive government institutions, better policies, stronger voice for the poor etc. These deeper changes depend in part on actions that are not directly associated with any one MDG but are fundamentally enabling of all the goals.

The same can be said about ICTs. It is clear that ICTs, properly adapted to local circumstances, can be a powerful tool to combat poverty and foster sustainable development. Yet the key to deploying ICTs as an agent of positive change in a given country is to begin not from measures of what ICTs that country lacks but from a clear picture of that country's key development challenges and a rigorous analysis of where and how, ICTs could make an impact on those challenges in a sustainable fashion, of sufficient magnitude to justify investment in ICT by donors or developing countries or both.

In other words, one begins not with the question of what ICTs a given country lacks and what we can do about it but what specific types of change are required to make this country more sustainably prosperous, in ways that include even the poorest. ICTs are then brought into the analysis as possible instruments among others, including both resources and policies of these desired changes, not as a thing to be desired in themselves. For this reason, ICT related indicative goals are at the best misleading and at the worst bad policy.

It has been barely ten years since the commercial release of the first client web browsers transformed the Internet and the World Wide Web that is its most famous offspring, from a relatively obscure tool for scientific and academic cooperation in a few rich countries to one of the most talked-about economic and social phenomena of our lifetimes. In language that echoed the earlier hopes attendant to the creation of the telegraph, predictions multiplied about how these new tools of instantaneous global communication and information-sharing would transform economy and society, bring people together, increase global understanding and serve as tools of hope and opportunity for the poor. These hopes were driven not just by the Internet itself, but by a remarkable confluence of technical developments of which the Internet was a powerful symbol. These new technologies, and the optimism they engendered

about their economic and social potential, led to an extraordinarily dynamic period of innovation, investment and growth in the mid-to-late 1990s.

The new technologies and the new forms of economic and social activity they make possible would transform the way we live. The combination of these new technologies and other global trends such as trade liberalization and the end of the geopolitical tensions of the Cold War led to a broader process of globalization, characterized not only by steady increases in global trade flows of goods and services but also by dramatically increased information flows. Creating, accessing and adapting information and knowledge increasingly came to be seen as a key element of global competitiveness and of individual opportunity. The notion of a global information society where new ICTs enabled instantaneous global flows of information that increasingly served as the “oxygen” of economic, social and political life gained popularity.

### **Mass Media and ICT: Comparison and Convergence**

The closing decade of twentieth century was the opening of historic information and communication technology interventions for development. This period has witnessed enormous and unprecedented changes in every aspect of communications technologies, policies, infrastructure development and services. Political leaders of India have begun abandoning archaic, government control over communication that has lately moved from government to national and international private players. Finally, airwaves and electronic signals have achieved their freedom from centuries old colonial bondage to reach out and connect people through a privately owned and operated communication network and infrastructure.

Both international and national private players have taken a dominant role in redefining, reshaping and providing telecommunication, broadcasting and information services for national development. It has initiated an era of partnership of public and private

entrepreneurial skills and abilities to bring about unlimited connectivity. There has been a gradual transformation from industrial society to information society.

New communication technologies such as satellites, cable television, wireless telephony, the Internet and computers are bringing about noticeable changes in the society. Communication technology includes the hardware equipment, organizational structures and social values by which individuals collect process and exchange information. The new media have certain characteristics that are similar in some respects to those of both interpersonal and mass media communication, but that are different in many other respects. Interpersonal communication consists of a face-to-face exchange between two or more individuals. The message flow is from one to a few individuals, feedback is immediate and usually plentiful and the messages are often relatively high in socio-emotional content. In contrast, mass media communication includes all those means of transmitting messages such as radio, television, newspapers and film, which enable a source of one or a few individuals to reach a large audience. Some type of hardware equipment is always involved in mass communication feedback is limited and delayed and the messages are often relatively low in socio-emotional content.

The new media integrate the characteristics of both interpersonal and mass communication. Communication that occurs through these media often links two individuals or a small number of people. In this sense, the new media are like interpersonal communication, in that the messages are targeted to specific individuals which is often called de-massification . But interactive communication via the new media, like email on the internet, is somewhat like mass media communication in that hardware equipment –computers, satellites and telephone lines in this case is necessarily involved. Information exchange via the new media is interactive, meaning that the participants in a communication process have control over and can change roles in their mutual discourse. Such interactivity is also particularly characteristic of face –to-face interpersonal communication.

The term “Information Society” came into use along with new information and communication technologies (ICTs) –internet, e-mail , mobile telephones .These interactive , performative and participatory technologies of communication are at the heart of the

communication revolution that is occurring in India. The ICTs are driving the social changes in India. These technologies, once distinctive, are converging today to deliver data, voice and video in ways not possible before. Technological determinism is an approach that considers technology as the main cause of social change. However, certain changes in society occur because of non- technological forces, such as government policies, international politics and public opinion. These are social forces and their use in explaining social change is called social determinism. The social forces like government policies combined with technological innovations fostered the communication revolution in India.

In the early 1990s , browsers and the World Wide Web made the Internet broadly accessible beyond the workplace and the academy for the first time , and two main visions , the pipeline and frontier (or commons) perspectives, came to dominate public debate about how new media and information technologies should be understood and regulated . The pipeline view of ICTs is based in the traditional understanding of mass media as highly centralized, powerful, culturally homogeneous factories for the manufacture and distribution of cultural products that are consumed on a mass scale. The economic logic of the pipeline vision, in keeping with its industrial – era roots, is based in mass production and economies of scale. Revenue is generated by the mass sales of media products as well as advertising whose value is also largely determined by the size of potential audience. Profitability depends on capturing the greatest market share in particular product categories, maximizing income and slashing production and personnel costs; market domination is often achieved by so called synergies associated with mergers, increased concentration of ownership and reduced competition. This trajectory of increasing industry concentration has dominated the entertainment and media industries for decades, and is seen by some as a major factor in the ongoing decline of mainstream corporate news organization (print & broadcast).

In the face of challenges by upstart online services in the 1990s,traditional media industries rebranded themselves as “content industries” and pushed for a vastly expanded, rigid new policy regime for protecting their intellectual property rights, including the U.S. Digital Millennium Copyright Act (1998 ) and attempts to make other nations’ intellectual property laws conform to the provision of the DMCA. Even today, the basic business model of mass

production and consumption of tightly – controlled, proprietary products remains the archetype in the traditional media and entertainment industries. They have sought to reproduce the mass media model in their online enterprises, viewing the Internet as essentially a global – scale delivery service for industry products. Any features or uses of new ICTs that threaten this model (e.g. low marginal costs and ease of copying; users’ abilities to anonymize their communications, evade copy protection schemes , block advertising or prevent the collection of personal data) have been lobbied against, co – opted and even criminalized by industries intent on maintaining their market power and profitability.

The frontier / commons model of new communication technologies, on the other hand, arose among technology advocates in the 1980s who insisted that the Internet would ultimately deliver on the information utility and ‘ wired cities ‘ visions promoted by progressive policy researchers in the 1960s and 70s , including those involved in technology assessment for ICT ( e.g. Dutton , Blumler & Kraemer , 1987; Greenberger , 1964 , 1985 ; Moss , 1986 , Light , 2003). Social values, policies and religion may help shape the nature of technologies. This social construction of technology is the process through which people give meaning to a new technology by discussing it among themselves. The architecture of the Internet and subsequently the World Wide Web is essentially decentralized and networked it becomes extremely difficult for governments or other agencies to censor it today. As such advocates saw it as inherently democratic, with the potential to provide a forum for the interests and concerns of communities and groups that had been marginalized in mainstream, mass media culture. The frontier vision was popular among technologists who had embraced the libertarian values of 1960s counter – cultural movements (Turner 2006) , as well as the ‘hacker culture of pranking’, DIY technology and technological mastery that flourished in elite engineering schools from the 1960s onward (Himanen 2001; Nissenbaum 2004; Thomas, 2002) . prominent figures from these movements led the way in creating advocacy organizations and community services as well as articulating philosophical and political manifestoes about communication rights , information as a resource and free and equitable access to ICTs (Stallman 2002; Turner 2006 ).



Thus, from the frontier or commons viewpoint, the main value of the Internet and related ICT is not as a delivery conduit for products. Rather, it is a new type of public sphere with possibilities for grass – roots community building and interaction, political participation and activism, the expression and performance of identity, collaborative work and peer production, increased self – sufficiency and social capital and creativity and play – as well as consumption . The economic logic of the frontier view is better described by network externalities and ‘long tail’ or power distributions (a pattern that economists and policy – makers have long recognized as hallmarks of telecommunications networks). In this model, legions of diverse, local and specialized interests, resources, relationships and events, linked in extensive social and technical networks, vastly outnumber and have greater cumulative influence than a few so – called blockbuster products or hits.

It may be pointed out here that both mass media and social media are global in scale. However, where mass media systems are suited to linear, one-way communication processes between a few major sources and heterogeneous mass audiences, new media / ICT support and enhance relationships and interaction among individuals and cultivate the formation of social groups with diverse, specialized interests. Thus mass media system and institutions have been organized mainly as hierarchies that facilitate top–down, few-to–many transmission of information and which concentrate power at the top or center of the organizational structure. With new / social media, in contrast, power tends to be more diffused and systems tend to be structured as broad, decentred or multi – centered, self – organizing networks that allow interaction between any point in the network and any other.

Access to mass media is equated with the availability, distribution and consumption of devices, products or services that are relatively scarce, expensive to produce and limited in supply. With new / social , media on the other hand , the system itself is considered to be more or less ubiquitous and pervasively distributed so access depends on the system’s technical affordances for use and users’ opportunities and capabilities for adapting the technology according to their needs and interests .

The economic model of new / social media, in contrast to mass media, exploits positive network externalities ( i.e. they become more valuable as they link greater numbers of more diversified people , resources and organizations) This process can be conceived as highly skewed, long tail distributions or so called power laws , which have been observed in all kinds of social processes, from citation patterns within highly specialized scientific literatures, to the relative contributions of participants in collective projects like Wikipedia , to global patterns of e-mail and telephone traffic (Huberman 2001; Shirky 2008; Watts 2003).

New / Social media pose new social challenges and require new approaches to technology assessment. Given its focus on the production and consumption of media products , the pipeline model that has dominated thinking about the social consequences of mass media entails different sorts of evaluative frameworks and metrics than the frontier / commons model of social /new media , with its focus on relationships, participation and voice. e.g. where the prevalence and influence of mass media can be estimated using industrial – style measures of inputs and outputs. sales, ratings, exposures, viewership and so on, the new media assessment framework suggests that measures of the scale , quality and dynamics of interpersonal and technological networks are needed to assess the value and potential benefits of new / social media systems and services .

In an Information Society, communication has to reach the masses. The ultimate objectives of an Information Society are the benefits information is expected to bring, such as economic growth, individual opportunities, better health, participation and good governance. Community needs and aspirations, culture and values, indigenous wisdom and experience have to filter up to policy makers and other stakeholders in order for communication to truly improve people’s quality of life. The most cost –effective way of achieving such widespread communication is through the mass media. The specific and unique functions of press, radio and television are journalism and public debate. Mass media expresses the public life of a society, where as much of the use and value of new ICTs is in communication between individuals or among restricted groups. Mass media mediates the relations of people with their governments and the societies in which they live. It debates the big public questions of

citizenship, democracy and political processes, identity, society and culture. It helps shape meaning, forms public opinion, demands transparency and holds governments accountable. It is an irreplaceable part of public education and can help build social cohesion. Mass media is the guardian of the wider environment in which “micro-ICTs” like telephones and the internet can fulfill their functions. An Information Society without media would be like agriculture without farmers. Hence, the concept of the Information Society should be wider than the role of Information and Communication Technologies and should incorporate issues related to the mass media such as freedom of expression , access to information and the role of journalism.

Amid all the excitement created by new technologies, it is easy to take mass media for granted. However, this would be a mistake. It is true that many developments in the past two decades have been very positive for media –there is now far more media freedom and a larger number of newspapers, radio and TV stations. At the same time however, certain trends and pressures are working against the media, especially those media that are relevant to and accessible by the poor.

Positive developments include greater political freedom in most countries, boosted partly by ICTs, which overcame rulers’ efforts to control the flow of ideas and information and economic liberalization, also boosted by ICTs and pressure on countries to participate more fully in the global economy. In many countries these brought to an end of government monopolies that had characterized media, especially electronic media, until the 1990s. Independent newspapers, radio stations and television, including community radio stations, sprung up. With competition, formally complacent government – owned media has become very lively and innovative. Overall, more media can mean more journalism, more voices, more debate. At the same time the accelerated process of economic globalization has closely linked the transfer of capital to the trans-boundary flow of information.

Since the end of the cold war and in tandem with other processes, there has been a rapid widespread liberalization of media in general and of broadcast media in particular. However, these liberating forces have a downside, too. Liberalization and globalization tend to concentrate ownership of media in fewer hands. Commercialism affects the quality and

variety of media content and tends to limit its reach. The new independent media needs to compete commercially, keep costs down and appeal to wealthier sections of the population in order to win advertising revenue. They are, therefore, likely to be located in urban areas and to fill their pages or schedules with lifestyle and entertainment content. The new media have not as yet made their way to a large enough area beyond major towns and cities to have significant mass impact. The concentration of information and communication technologies (ICTs) in urban enclaves has led to the digital divide which neatly slices the world into its haves and have – nots. Here, traditional mass media can make a difference. Radio, TV and newspaper journalists can make a bigger effort to educate those on the other side of the digital divide about ICTs and how they can be used to improved standards and quality of living in hitherto neglected areas. There is as yet very little reporting on ICTs and their long – term potential and consequences. in the traditional media . Superficial news on the launch of an updated version of some hot technology will make the pages of newspapers, but in depth, analytical and thought – provoking pieces on the impact of ICTs on development do not often appear. Moreover, the decentralized nature of the Internet today makes it extremely difficult for government or other agencies to censor pornographic or other objectionable material, as there is no centralized point through which all electronic messages pass. Gate-keeping is impossible on the internet. However, this decentralized nature of the Internet also makes it a potentially powerful tool for connecting citizens with local, regional and national government departments and officials. For instance, several Indian states are establishing Internet community centres, where citizens can access government forms, file grievances and monitor land records on the internet. It can be stated here that for several decades, computer networks were perceived as a useful tool for exchanging personal messages like sending letters to colleagues or family members or business contacts. During the 1990s, the Internet also began to be perceived as a means of buying products (with a credit card), which were then delivered by an overnight delivery service to the consumer. The social meaning of the internet changed, creating a host of business opportunities in different countries. As a purveyor of information and change, the mass media has a duty to shine the spotlight on this potent tool (ICT) agent for global change.

ICTs on their own are not enough to catapult growth and progress of a nation. ICTs depend, for the time being anyway, on the mass media to create greater awareness of the potential benefits that can be derived from it. There are admittedly certain challenges that the mass media has to overcome if it is to fulfill its grass – roots duty. Over the last decade and a half, media around the world has grown in number and acquired greater freedom with regard to content. This has been due to a gradual liberalization of the various forms of media, as well as erosion of traditional government monopolies. At the same time , financial independence has meant greater reliance on advertising which has tended to concentrate media houses in urban areas where there is an obligation to cater to urbanites’ demands .

Mass media needs to break from the commercial groove and focus more intensely on rural folk as well as other marginalized groups. The ultimate aim is to create what has been termed ‘media pluralism’, namely media that reflects the needs of all members of society and especially those whose voices have till now been ignored. The mass media should try to create an environment in which use of new information and communication technologies (ICTs) can flourish.

Access to information enables people particularly the poor and other marginalized peoples’ to make sense of their lives, livelihoods and the choices they have to make in the increasingly complex and globalised society. During the 1990s, access to information was transformed by the proliferation of information and communication technologies or ICTs and the liberalization of media and telecommunications markets around the world. These two closely – linked process vastly increased the flow and amount of information while reducing the cost of access, storage and retrieval. The global economy was transformed and information itself became a core economic activity, as well as enriching cultural, social and political lives in the developed world. But the majority of the world’ s population who live in developing countries and especially the poor in those countries have not been full participants or beneficiaries of this information revolution . Even simple telephone connections are still rare and expensive for most rural people. Radio is by far the most common source of information and the radio sector is much more varied and flourishing now than it was a decade or so ago, when most governments had a monopoly control of broadcasting. But rural people and many of the poor are left out of the new radio scene, just as they are left out of telecommunication:

broadcasting has become a market – based activity and clusters where profits are to be made – mostly in cities, attracting advertisers and audiences with a mixture of music and light entertainment. For poor and rural people, there is less information, fewer programmes on their concerns, less chance to make their voices heard. Without the capacity to seek information , to debate issues and to make their voices heard , poor and rural people risk becoming more and more marginalized from their nation’s and the world economies. Developing countries have found that they cannot engage the globalised market without allowing wider access to global information flows by their citizens. Poorer countries have also faced pressure from aid donors and international lenders to liberalize the media and information markets. Such liberalization, particularly in the broadcast media, has often been partial, haphazard and evolutionary rather than revolutionary.

Meanwhile, the state run broadcasting systems – unaccustomed to competition for so long– have found their audiences migrating to newer channels and their government subsidies reduced or withdrawn. In struggling to survive, these broadcasters have largely abandoned their earlier remit for public interest broadcasting, instead reinventing themselves as commercial channels competing for a share of the advertisings revenue and audience ratings. In many countries the state broad casters have cut back on both content and infrastructure and tended to emulate the content of privately – owned channels. This has led to a reduction of transmitting capacity in rural areas and a decrease in local language programming as well as in programmes covering health, education, environment or agricultural topics.

While the interactive quality of the contemporary media landscape makes it a far richer and more engaging arena for social action and development, it presents analysts with a variety of new policy challenges. Perhaps the most complex consequence of the transition from mass to new media has arisen as media industries sought to preserve and extend the market models and regulatory frameworks of the past, e.g. traditional concepts of intellectual property ownership and rights originating in the era of print which were subsequently adapted to cinema, sound recording and broadcasting. The ‘property’ metaphor has come to dominate media policy discussions and to overshadow concerns about speech and press freedoms that were once the centerpiece of media law, particularly in the U.S. Indeed, the property

metaphor itself has been extended to cover new kinds of property rights, activities and expressions where property was once considered an inappropriate model (e.g. identity claims, ideas, everyday ‘common knowledge’, methods of performing everyday tasks ).

In many ways this ‘proprietyization’ recapitulates and extends the policy debates surrounding the commodification of information that were associated with the rise of ‘information society’ forecasts between the 1960s and 1980s , However , as early as 1986 , Tessa Morris –Suzuki predicted not just the expansion of existing commercial markets for and com-modification of familiar products like documents, publications , entertainment programs and technical information –a trend that had already been well – documented by numerous analysts of information society , and economy, from Fritz Machlup and Marc Porat to Daniel Bell Charles Jonscher and Kenneth Arrow. She also foresaw the ‘private appropriation of accumulated social knowledge’ both in the form of informal social knowledge, such as cultural practices, traditions, folkways and language or formal social knowledge that historically has been collected, organized and shared through public and cultural institutions with strong knowledge – sharing values, such as schools and universities, research institutes, libraries, museums, public media and so on.

It could be argued that this very process of the private appropriation of social knowledge is the most important contemporary policy challenge of social media. Facebook, Twitter, You Tube, Google and other privately – owned firms not only provide online places for sociality, discourse and the cultivation of relationship (as well as the circulation of media products); such sites also harvest users’ expressions and relationships and compile them into databases of information to be sold to advertisers, surrendered to law enforcement authorities on demand, or used to attract investors and further the sites’ own commercial viability. Today, it is no exaggeration to say that friendships, romantic attachments, identity, artistic and cultural interests and activities, play and so on have been effectively redefined as property subject to commodification and market dynamics just as musical and dramatic performances, fiction writing or paintings have been in the past.

Other policy issues that have long been associated with digital technology but are becoming more acute in the context of social media, include the authenticity and provenance of cultural expressions , works and resources , given the mutability of digital formats; (possibly eroding) possibilities for privacy, autonomy and intellectual freedom in pervasively mediated social contexts in which self – disclosure about one’s interests , background and relationships is both expected and normative and increasing expectations of the total capture and collection of all types of information about individuals and everyday life that override the important benefits of forgetting , exclusion and selection. Social media also raise the issue of technology itself as discourse, that is, what is being collectively produced is not just content to be transmitted through a system, as with traditional pipeline media, but that the very system itself is being reconfigured and rebuilt in the process of being used. As Kelty (2008) puts it, increasingly people do not argue about technology; they argue with and through it, in an ongoing cycle of re-appropriation and reinvention.

## **Conclusion**

### *Future of ICTs in Development*

The ICT revolution has opened up new possibilities of economic and social transformations from which developed and developing countries can potentially benefit. Unlike previous technological innovations, developing countries today have almost immediate access to new technologies and the benefits they can bestow. This raises the tantalizing possibility that ICTs may soon herald a new era of economic prosperity to the global economy, greater than anything that has been achieved by previous technological innovation. In particular, ICTs can bring about a more seamless integration of the global labour markets than was considered possible before. This integration is likely to be facilitated by the confluence of a number of factors; the dwindling trade barriers from multilateral trade negotiations and rapid dissemination of market information, as well as the efficient delivery of services due to the



new ICTs. All this should help to bring about a more efficient allocation of labour including unskilled workers --- across the global economy.

ICTs can be used selectively and innovatively to directly enhance the welfare of the poor. However, to reap the full benefits of the ICT revolution and reduce poverty, countries need to address the main impediments to economic development. Improving infrastructure, opening up markets, breaking telecommunication monopolies and improving education for all; these are fundamental to economic development as well as success in exploiting the economic opportunities that ICTs offer. Indeed, without addressing these issues, attempts at securing Internet access would not lead to the same economic dividends --- at times they can become a recipe for financial disaster. Whereas IT investment appear to boost growth in developed economics, the same is not necessarily true in developing countries, which need to institute other complementary policies to reap economic benefits from such IT investments.

In the presence of favourable policies and institutions, the internet can assist development and the process can be further helped by globalization, which tends to magnify the benefits of ICTs. Yet ICTs are by no means a panacea for lack of growth or pervasive poverty. These new technologies may have created a window of economic opportunity for the developing world to foster growth and escape the scourge of poverty. Nevertheless to seize this opportunity, they would require sufficiently well developed social and physical infrastructure as well as conducive policy and institutional frameworks. While ICTs have generated a new wave of enthusiasm among developing countries to embrace new technologies and benefit from them, unfortunately many of them do not seem to have the necessary prerequisites to take full advantage of this window of opportunity.

Developing countries that have already attained universal primary education for their citizens should place more emphasis on secondary and tertiary education if they want to take advantage of ICT opportunities. Nevertheless, one does not need to rely exclusively on government for promoting secondary and tertiary education. Many individuals who would like to take advantage of IT opportunities are economically well off and may not need government financial assistance. For others, improved functioning of the financial market and the availability of student loans can be a major help in financing educational expenses.

ICTs have significant potential to improve the lives and livelihoods of the poor and reduce the vulnerabilities that keep them in, or return them to poverty. Yet ensuring access for all to ICTs is an ongoing challenge for virtually every developing country. The majority of the world's poorest live in rural and remote areas and the costs of building out ICT infrastructure to rural areas is often prohibitively expensive, or at least not commercially viable. Even those poor who live in urban and semi-urban areas often live in slums or neighborhoods that are poorly serviced by all public infrastructures--- not only telecommunications but power, water, sanitation, roads etc. Second, the poor in most cases cannot afford their own telecommunications services even if they were available and public access points for shared services have until recently been underprovided in poor areas.

For a country to succeed in the ICT arena, one critical element is physical infrastructure such as telecommunications links. Government has an important role in creating such infrastructure, especially in poorer countries. This role stems from a number of important considerations. First, in very poor countries, because of the lack of effective demand, market forces may be shy. Therefore, government may have to make investments to build the necessary physical infrastructure for ICTs. Second, even in countries where the private sector is not shy, government has to play the role of catalyst and regulator. From our cases, it appears that there are potentially many opportunities for fostering partnerships in the creation of infrastructure. To attract the private sector, government may have to play the role of a catalyst by instituting various innovative incentive mechanisms such as build-own-operate, build-own-transfer, etc. Even when the private sector is already active, government has an important function as a regulator. It may be noted that the telecommunications industry, which constitutes the basic infrastructure for ICTs, is a natural monopoly. Third, despite the strong case for a free market in ICTs, many countries still maintain strong barriers against entry. This entry barrier, along with heavy government involvement in such ICT-related sectors as telephones, has spawned pervasive corruption in many developing countries. Privatization would be the most efficient response to such a conundrum.

Technical innovations such as internet connectivity by satellite , the expansion and increased flexibility of wireless networks and the improvements in Voice –Over – Internet – Protocol (VOIP) , provide opportunities for rapidly expanding access by the poor to information and communication services. Yet, in many developing countries, government regulations restrict or prohibit the roll out of these innovations. Extending access to all, therefore, requires a careful combination of policy and regulatory reform, technical innovation and the proper balance of public and private investment.

If ICTs are to serve as a tool of social inclusion and empowerment and economic opportunity for women, particular efforts need to be made to provide access opportunities, tools and content particularly suited to the priority needs of women. More broadly, developing country governments and their partners in civil society and in the international community , need to ensure that traditionally excluded and disadvantaged groups within society (the handicapped, ethnic and religious minorities etc.) have access to ICTs in way that are relevant to their specific needs and circumstances and that create new economic and social opportunities for them. In the absence of such efforts, these groups are likely to be further marginalized as they miss out on the economic, educational, health and livelihood benefits of ICTs.

For countries that seek to play an important role in the development and export of ICT items such as software, they need to foster an institutional environment conducive to such development. An important element that would foster investment and harness creativity relates to adequate protection of property rights, enforcement of contracts, rule of law and personal autonomy etc. without which the economic incentives of firms to invest or innovate would be largely eroded. These institutional aspects, which are an important prerequisite for successful adoption of the new ICTs but are often weak in poorer countries, need to be improved. But at the same time, new ICT ideas are often interconnected and draw on each other's concepts, which makes the task of defining the ownership of the intellectual product, as well as appropriating the benefits, all the more difficult.

The task of defining intellectual property and the appropriate mechanism for protection has been the subject of a good deal of discussion. When such “property” can be defined, one well

–known method is the granting of patents rights, which offers the right incentives to the creators but may produce a large distortion because of the monopolistic nature of production. Of many other proposals in this regard, a recent by Kremer (1998) suggests a system of prizes be introduced based on what the private firms would pay for the monopoly to produce the item in question. But this would involve substantial public expenditure on rewards for countries otherwise financially constrained. In any case, micromanagement would be the wrong approach for government in managing innovation.

If certain ICTs are considered socially desirable merit goods, a case can be made for wide diffusion among the populace. However, diffusion of useful ICT technologies is likely to involve substantial externality. In these circumstances, a case may be made for subsidization of ICT use. Similarly, research suggests that ICTs have been most productively used in firms with a flat and less hierarchical organization structure. This type of organization is more common in the U.S than elsewhere. One way to promote such organization is by keeping markets open and competitive. Government policy should, therefore, avoid a closed and monopolistic structure in the name of “nurturing the infant industry”.

In addition to national efforts, international organizations can perhaps play a role in promoting ICTs in poorer countries. This role may include the creation of uniform standards through technical assistance and policy advice. However premature standardization can become impediments to technological innovations. Second, in many developing countries, the telecommunications sector is a government monopoly. International organizations can play a role in deregulating this sector as well as ensuring free entry of the private sector, including foreign firms. In poorer countries, where the government is fiscally constrained, international organizations can provide financial assistance to create the basic necessary infrastructure as the private sector, both domestic and foreign, may not be forthcoming for obvious economic reasons.

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