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**Catching the Next Wave: The Use of the Internet by
Justice and Development Voluntary Organisations and
People Organisations.**

A thesis presented in partial fulfilment of the
requirements for the degree of
Master of Philosophy in Development Studies at
Massey University.

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Abstract

This thesis examines the extent to which third world organisations have participated in the shaping, control and benefits of development theory and practice. It concludes that development theory has been a creation of the first world acting upon the third world which is often perceived as powerless to help itself. Modernisation theory, development theory, alternative theories and neo-liberalism are all theories that developed out of the first world experience of development. Development theory has not been shaped by the third world rather it has been manipulated and controlled from within the first world. The very poor of the poorest countries have not benefited from development theory.

Participation, also perceived as empowerment, has been lauded by development practitioners as the new panacea for development ills. Even though such participation is not so evident in reality, third world organisations are becoming more participatory, especially where first world organisations have changed their role from funder and provider to solidarity partners and advocates (within their own country).

This thesis examined the potential of the Internet to increase the participation of third world organisations in voicing their justice and development issues to the first world. The Internet is only a participatory tool when used in a participatory environment. Its use will not necessarily ensure greater participation, of the third world, in development issues. As yet the Internet's potential is largely unrealised.

This thesis conducted descriptive research into the extent that third world organisations use the Internet to further their justice and development objectives. The research found that third world use of the Internet was low compared to first world use of the Internet. This thesis recommends that the use of email subscription lists and World Wide Web sites by grassroots organisations from within third world countries is a unique opportunity to promote the third world perception of development issues to the first world.

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Abbreviations

AP	Associated Press
ARPA	Advanced Research Projects Agency
AU	Australia
CEPAL	Comision Economica para America Latina
CERN	European Laboratory for Particle Physics
CODEV	Communication for Development
DevNet	Development Information Network
email	Electronic mail
ECLA	Economic Commission for Latin America
GATT	General Agreement on Tariffs and Trade
GONGOs	Governmental Non Governmental Organisations
HTTP	Hypertext Transfer Protocol
ILO	International Labor Organisation
IMF	International Monetary Fund
INT	International
IP	Internet Protocol
IPS	Inter Press Service
JDPOs	Justice and Development People Organisations
JDVOs	Justice and Development Voluntary Organisations
NGO	Non Government Organisation
NIC	Newly Industrialised Country
NSCA	National Center for Supercomputing Applications
POs	People Organisations
PSCs	Public Service Contractors
TCP	Transmission Control Protocol
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations International Development Organization
WWW	World Wide Web

Chapter One

Introduction

After three thousand years of explosion, by means of fragmentary and mechanical technologies, the western world is imploding. During the mechanical ages we had extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned ... As electrically contracted, the globe is no more than a village.

(Marshall McLuhan cited in Curran and Gurevitch, 1996:177).

Never doubt that a small group of concerned citizens can change the world; indeed, it is the only thing that ever has.

(Margaret Mead cited in Rowe, 1997:42).

This is the information age. Our ability to send huge quantities of information across vast distances to unlimited audiences has never been greater or more efficient. Through the electronic medium of television we may view and learn about almost anything considered to be of interest to us. Through radio waves we can listen and speak to people over great distances. Through telephone lines we can speak to people who live on other continents with the same verbal clarity as if they were in the same room as us. Through computer technology, combined with communication technology, we are able to access (and leave) written and visual messages, messages which are also available to countless others. As McLuhan first suggested, in terms of our ability to communicate through technology, our world has become 'no more than a global village'.

What is the consequence of living in a 'global community' for a world which is also considered to be divided into the 'haves' and the 'have-nots'? How can global forms of communication be used by the 'have-nots' to improve their situation? This thesis examines the extent to which Justice and Development Voluntary Organisations (JDVOs) and Justice and Development People Organisations (JDPOs)ⁱ are using one form of global communication technology, the Internet, to further their justice and developmental objectives.

Choice of thesis topic.

The reason for researching this topic came from having an interest in development issues and innovative uses of the Internet. The impetus for combining these two topics, however, was the result of receiving an electronic mail (email) message that had been sent originally by students at the University of Belgrade, in Bosnia.ⁱⁱ The message detailed the students' point of view regarding recent political events in Bosnia. The students requested that the recipient forward the email message on to other interested people creating a form of politically motivated, electronic chain letter. This was seen as a novel use of an Internet service by a grassroots organisation and initiated the question to what extent were other JDVOs and JDPOs using the Internet to develop networks with, and communicate their important issues to the rest of the global community.

The Internet.

The Internet is an extremely large, and continuously growing, network of computers linked together by the use of a common communication protocol called TCP/IP. These protocols allow computers to 'talk' to each other. Internet Protocol (IP) creates links that allow data to be transferred between computers. Transmission Control Protocol controls the movement of data from its source to its destination (Perry, 1995:23). Within the Internet are different functions or services available to anyone connected to the Internet, providing they have the software to access these services. The most common of these services are electronic mail (email) and the World Wide Web (WWW). Other services include file transfer, news information, remote computer login, and access to databases (Perry, 1995:7).

Email allows users to send text, graphics, and photographs from one computer to many specified computers. Unlike the WWW, messages sent through email are private. Only the intended recipients (if no mistakes are made when sending the email) will have access to the message. Messages sent through email are usually received by the destination computer almost instantaneously but are stored until the user collects his or her email (Perry, 1995:167-171).

Each user of email has his or her own address. An email address has a user name and a domain name separated by an '@' sign. The user name usually relates to the name of the user while the domain name relates to the server the email is connected to (Perry, 1995:173-174). It is possible to subscribe to email mailing lists. The email list is usually administered by an automatic programme (archive server) which handles requests for connection's and disconnection's to the mailing list. Once connected to a mailing list, a user receives common information that is posted to all recipients on the list (Kehoe, 1994:9&16).

The World Wide Web (WWW) allows users to access Internet services by operating within the Internet, using a communication protocol called HyperText Transfer Protocol (HTTP). HTTP allows pages of information (web pages) to be connected to other web pages through links called hypertext. By clicking on a hypertext link (which can be text or a graphic) the user moves from one web page to another web page and often from one web server (or Web site) to another. Because the WWW is accessed through non-linear and non-hierarchical links, moving through the WWW is like tracing a spider's web - hence the name World Wide Web (Perry, 1995:10).

WWW pages also have their own address expressed as a uniform resource locator (URL). A standard URL is made up of three parts: the transfer format, the host name (of the computer the WWW page is on) and the path to the WWW page. A standard URL looks like this:

`format://host.name.com./path/filename.html`

For example the address of the home page for Community Aid Aboard (Australia) is:

`http://www.caa.org.au/caa.htm`

When searching on the Internet a user can go directly to the address of a desired web page or use search engines to hunt for pages or interesting topics (Perry, 1995:25).

The Internet has its origins with the United States military and was created as a solution to the problem of ensuring a workable communication system in the event of an enemy attack. Researchers, at the Advanced Research Projects Agency (ARPA), tested the feasibility of networking computers over large distances. To ensure the network could always reliably send messages between computers, researchers needed to make sure no single connection was so important that the network could not operate without it. The solution was to organise the transfer of information so that many available routes, between computers, could be used to transport information from its source computer to its destination computer. If one route failed because of a broken connection, the information would simply re-route through another pathway. The ARPA called this network the ARPAnet (Perry, 1995:32-33).

The ARPAnet was very successful and many universities and research organisations eventually connected to the network. A second network, MILnet, was then set up for military use. In the 1980s another network was established by the National Science Foundation, called the NSFnet. In 1991, these three networks and the NASA Science Internet were combined to form the basis of what we now know as the Internet (Perry, 1995:33-34).

However, the Internet (in the form it was then) was not widely accessible to anyone outside the computer scientific community (Perry, 1995:34). In 1989, the European Laboratory for Particle Physics, known as CERN, developed HTTP. Once this specification was developed, it opened the way for people to write software that could browse the Internet in an increasingly easy and popular manner. One early web browser, Mosaic, was developed by students at the National Center for Supercomputing Applications (NSCA). From these beginnings the WWW and the other Internet services became readily accessible to the non-scientific population (Perry, 1995:20-22).

In 1991, the WWW had 400 home pages. In 1995 330 home pages were being added to the WWW each month (Perry, 1995:20-22) and 40 million people had access to the Internet. Since 1988, the Internet has doubled in size every year, making the Internet the fastest growing communication medium ever (Panos, 1995).

Information Technology.

While the Internet is expanding and becoming available to more people, this does not mean it is becoming more accessible to all the people of the world. Approximately 90% of the market for information technology is concentrated in the developed world, in particular the United States, Western Europe and Japan (UNCTD, 1995:v). In 1995 five million 'host' computers were connected to the Internet but approximately 70% of these were located in the United States. While most first world countriesⁱⁱⁱ are connected to the Internet, only some third world countries have access to the Internet. Latin American, Asian, and a few African countries have limited access to the Internet. Most African countries have no connection to the Internet at all (Panos, 1995).

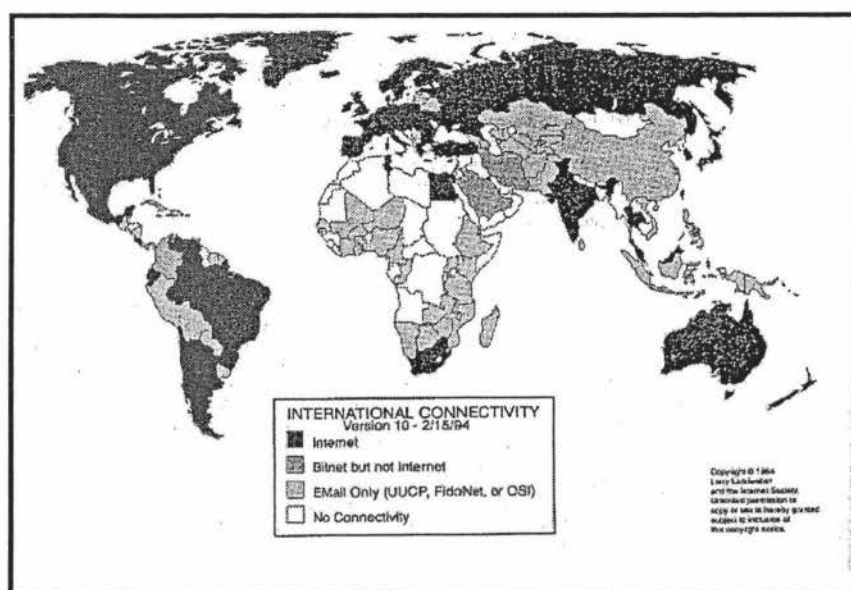
The United Nations Conference on Trade and Development recognises three types of countries, distinguished by their relationship to information technology. Table 1 summarises this UNCTD classification.

Type of Country	Ability	Example
Leaders in Information Technology	<ul style="list-style-type: none"> • Production • Generation • Application • Diffusion of Information Technology 	<ul style="list-style-type: none"> • United States • Western Europe • Japan
Some capacity in Information Technology	<ul style="list-style-type: none"> • Production • Application • Rely on imports 	<ul style="list-style-type: none"> • Several countries in Asia • Several countries in Latin America • Economies in transition
Embryonic	<ul style="list-style-type: none"> • Depend solely on imports 	<ul style="list-style-type: none"> • Several African countries

Table 1. United Nations Conference on Trade and Development classification of countries distinguished by their relationship to information technology (UNCTD, 1995:v).

Another way to measure the use of information technology is to classify the connectivity of each country. Figure 1 shows the network connections throughout the world. Note the low rate of connectivity in Africa, Asia and parts of South America.

Figure 1. International network connections (Gilster, 1994:22)^{iv}.



The UNCTD also recognised that access to information technology differed not just between countries but also between sectors and social groups within each country. In rural areas of underdeveloped countries the impact of information technology has been minimal. Only 10-15% of populations in underdeveloped countries has had contact with a product or service that has come from a computerised process. Less than 1% of these populations have ever seen or touched a computer (Bhatnager and Bjorn-Anderson, 1990:3).

This is an inequality that is becoming increasingly wider. It has been estimated that third world countries will need to invest \$50 billion each year for the next 30 years to reach the current information technology standard of the United States. In the meantime the United States continues to invest in and improve its information technology (Giffard, 1989:36-37). 'The information rich are becoming richer and the information poor are becoming relatively poorer' (Sackman, 1981:48).

Information is power, in the sense that it facilitates economic, political and social ability (Sackman, 1981:48). Without the luxury of information technology, third world countries are at a disadvantage compared to first world and newly developing countries.

Since the information gap is getting larger, what is acting as a barrier to the adoption of information technology in third world countries?

Bhatnager and Bjorn-Anderson (1990:5-6) identified three barriers that explain why third world countries are not expanding into the information technology sector.^v These barriers are the perceived low need for computers in third world countries, the practical problems associated with computer use and the social problems associated with computer use.

The perceived need for computers is low in third world countries in part due to low levels of computer literacy amongst managers and technocrats in third world countries. This is compounded by a lack of competitiveness, in some sectors of third world countries, which discourages the adoption of innovative technology to improve systems and processes within the industry. Operations are also usually small and do not require much automation (Bhatnager and Bjorn-Anderson, 1990:5).

Even where the introduction of computers is justified, practical problems prevent their adoption. Poor communication infrastructure within third world countries is a major barrier to introducing computers. The Internet currently requires a sophisticated and reliable telecommunication system to operate through. A number of third world countries simply do not have this infrastructure (UNCTD, 1995:vi). Forty-nine countries (35 from the African region) have less than one telephone per hundred people (Panos, 1995). Likewise the unreliability, poor quality and high cost of electricity in third world countries make using computers difficult. Power surges are particularly damaging to computers and often result in the loss of information (Bhatnager and Bjorn-Anderson, 1990:5-6). The cost of computers is prohibitive. For example, to afford a computer in the United Kingdom an unemployed person would need to save his or her total wage for six months. In Indonesia, an underemployed person would be saving his or her total income for several years (Panos, 1995). In addition to these problems, third world countries are ill equipped to provide maintenance and repairs for their computers (Bhatnager and Bjorn-Anderson, 1990:5-6).

Social factors also influence the decision to use computers or not. In third world countries low levels of computer literacy and keyboard skills exist. This creates training problems and resistance from workers, who are unwilling or afraid to learn new skills. Computers are perceived as labour saving machines and so can create a fear amongst workers that a computer will replace their jobs. Workers may also discourage the introduction of computers because computerisation can lead to more formal procedures being implemented and therefore less opportunity for profitable corruption. Countries such as China and India face the additional problem of language. Multiple dialects make administration on a computer almost impossible unless a common language is used. This is a problem also when considering software and training (Bhatnager and Bjorn-Anderson, 1990:6).

The dominance of English on the Internet not only means that speakers of other languages are disadvantaged it also means that the cultural expression of many people are excluded even though they are able to communicate in English. Culture is often so ingrained in the language that it is impossible to translate the values and subtle distinctions into an English translation, hence much of the cultural richness is lost. This can make using computers disconcerting and discouraging for speakers of other languages (Panos, 1995).

Information technology has become concentrated in first world countries but can we lay the blame for this inequality solely at the feet of third world countries? Hardware and software are exported from the first world to 'new markets' in the third world, but not much information sharing and training is given to diffuse computer knowledge to third world countries. Third world countries remain dependent on the first world for future technology, after sales service and maintenance of existing technology. Third world countries find it increasingly difficult to develop their own information technology industry (Finnegan, Salaman and Thompson, 1987:165). African third world countries are particularly affected by this problem as they are seen as a convenient dumping ground for obsolete technology. This practice discourages the development of local computer industries and the adoption of the most advanced information technology available (Panos, 1995). Without full participation in the information industry third world countries will remain dependent on the first world for this technology.

Many third world countries are reliant on foreign aid; for example African Business (1985) estimated that almost half of the African computer market was the result of foreign aid. Businesses and multinational organisations (UNIDO, World Bank) are only now starting to see the value of information technology in third world countries. In many very poor countries, however, basic needs provision takes priority over computer and communication infrastructure (Bhatnager and Bjorn-Anderson, 1990:182-183).

Thesis outline.

Third world countries are not just excluded from the benefits of information technology and the Internet; they have also been excluded from participating in their own development. The flow of information (like the flow of power) has predominantly been from the first world to the third world (Panos, 1995). Development theory and practice has largely flowed from the first world to the third world, and because of this, the third world has largely been a passive recipient of first world theories and policies. What has been missing from the development theory and practice is a voice from the people of the third world. It is their experience and knowledge that has been overlooked in the analysis of and attempts to solve development problems.

The Internet has the potential to give third world people organisations a voice in which to participate in the development debate, to network with and gain support from other third world and first world organisations. The Internet, also, has the potential to increase the participation of the third world in its own development, but to do so the third world must find a way to increase its participation on the Internet.

This chapter described how the Internet works and the origins of the Internet. It then examined the use of information technology^{vi}, in developing countries and concluded that while information technology and the use of the Internet is growing; this growth is largely restricted to the first world and especially the United States.

Chapter two will examine how much the third world has shaped, controlled and benefited from development theory. Modernisation theory, neo-Marxist theories,

alternative theories and neo-liberalism are all discussed in this context. This chapter concludes that the third world has been largely been the passive recipient of such ideas and policies.

Chapter three continues this discussion by examining how much the third world has shaped, controlled and benefited from development practice. It concludes that the way participation is understood and practiced in first world JDVOs must change focus to allow third world JDVOs and JDPOs greater self-determination.

Chapter four discusses the issues involved in using communication technology and, in particular, the essential conditions that must be present to ensure the Internet increases the participation of the third world rather than reducing it. Chapter four will then examine the potential of communication technology for promoting justice issues and development, within third world countries. Using the example of pro-democracy demonstrations in China and the case of UNESCO, as examples, it concludes that the use of the Internet has huge potential for promoting human rights and development and giving a voice to the third world.

These four chapters serve to outline the current level of participation of third world countries and NGOs in development theory and practice, as well as to emphasise the importance of third world participation in justice and development issues. They also examine the Internet as a tool that can increase the participation of third world countries and NGOs in justice and development issues. From this discussion (and the subsequent research) the central question of this thesis must be answered. To what extent are JDVOs and JDPOs using the Internet to further their justice and development issues?

Chapter five explains the methodology used in the research. It then discusses the research undertaken and explains how the research progressed, in particular, the successes and problems that were encountered. Chapter six describes and analyses the results from the research under the topics of email and the World Wide Web.

Finally, from the perspective of participation and communication as theories of development, chapter seven develops conclusions from the data obtained in the

research. Chapter seven then makes recommendations for further research on the use of the Internet by JDVOs and JDPOs, and suggests how these organisations can make greater use of the Internet to advance their justice and developmental objectives.

ⁱ Justice and Development Voluntary Organisations and People Organisations are organisations that have either a democratic/ human rights objective or developmental objective. Voluntary Organisations and People Organisations are two types of Non Government Organisation (NGO). A fuller description is discussed in chapter three

ⁱⁱ Unfortunately this email was subsequently lost and can not be referenced or quoted in this thesis.

ⁱⁱⁱ The 'third world' refers to a collection of countries (while being very diverse) have the following attributes. (1) Acute material deprivation, (2) highly unequal income distribution, (3) substantial unemployment, or underemployment; or intense internal conflict (Bessant, 1992:164).

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^v These reasons are similar to modernisation theory which also concentrates on attitudes and problems within the underdeveloped country to explain why the country is underdeveloped.

^{vi} Governments, businesses, and education (to name just a few sectors of society) can use information technology. This thesis will concentrate only on the communication aspect rather than as a data collection and handling tool.