

Ethics and the Internet in West Africa

TOWARD AN ETHICAL MODEL OF INTEGRATION



Patrick J. Brunet
Dumarou Tiemtoré
Marie-Claude Vettraino-Soulard

IDRC  CRDI



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*Patrick J. Brunet,
Oumarou Tiemtoré, and
Marie-Claude Vettraino-Soulard*

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"Man is Man's remedy"

– African proverb

*Will the Internet Project result in
"everybody thinking and talking like North Americans?"*

*– Nelson Thall, quoted by Salah Guemriche,
"Globalization shock," The UNESCO Courier, June 1997*

*"No one shall be subjected to arbitrary interference
with his privacy, family, home or correspondence."*

– Universal Declaration of Human Rights (1948)

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Preface

This work is the result of a research project initiated by the West and Central Africa Regional Office of the International Development Research Centre (IDRC), a Canadian organization. The research was conducted in collaboration with the Department of Communication, University of Ottawa. It follows on a colloquium that I organized as part of the 67th Congress of the Association canadienne-française pour l'avancement des sciences (French-Canadian Association for the Advancement of Science), held in May 1999, on the University of Ottawa campus. This colloquium dealt with ethical issues in information and communications technologies (ICTS) (Brunet 2001).

The study was carried out by a team of three researchers working on three separate continents: Africa, Europe, and North America. The scientific rigour of the study, enriched by the cultural perspectives of its three authors, makes this document an original work. Although it is true that certain publications touch on issues in ICTS in Africa (Chéneau-Logay 2000), none to date has focused specifically on ethical issues in the development of the Internet in Africa. This study fills the gap, if only partially, because it contains a status report based on investigations carried out in five West African countries. Naturally, such a study allows for some general remarks. However, these must be presented with certain careful qualifications, out of due regard for scientific rigour.

I wish to thank IDRC for the financial support that made the project possible and helped bring it to completion. I also thank my two colleagues and coauthors, Marie-Claude Vettraino-Soulard and Oumarou Tiemtoré, for their rigour and team spirit. Thanks as well to all those who agreed to meet with us and to answer our questions, to Joël M. Katambwe for his valuable contributions to the research effort (and in particular for the section "Synthesis of Results," in Chapter 7), and to Merouan Mekouar for his help in compiling the data.

Patrick J. Brunet,
Project Leader

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CHAPTER I

Identifying the Issues: Ethics and the Internet in Africa



Broadly speaking, our approach in this project has been to study the manner in which the spread of the Internet in Africa raises ethical issues, ones that should be identified to ensure the compatibility of this technology with development in Africa's countries.

This is a time of crisis, when national and international organizations seek solutions to problems linked to various political, cultural, or religious choices; to the economic and financial situations of countries; or to the sharing of wealth. Ethical inquiry has taken off, once again, with fresh intensity in many spheres of social life. This inquiry has a unique character, given its focus on the development of information and communications networks on a global scale. The end of the 20th century has witnessed a dramatic expansion in information and communications technologies (ICTs) and new ICTs (NICTs), among which the Internet is *the* worldwide network.

The technology linking computer science and telecommunications appeared in the United States in the late 1960s and early 1970s. American Vice President Al Gore officially launched the Internet, the network of

communications networks, or the information highway, in the United States on 11 January 1993. The Internet developed in North America and Europe, then grew to reach all industrialized countries. It was only later that it slowly took root in Southern, or developing, countries. Regarding the Internet, we can say that we have witnessed from the outset its unequal development between North and South. However, beyond this fundamental inequity, we feel that the Internet raises ethical questions, not only in the North, but also in the South. This so-called information and communications network creates – if not imposes – on its users a relationship with the world, the other, and the self that differs radically from that of any other means of communication to date.

The ongoing globalization of trade gives rise to ethical questions both nationally and internationally, for individuals and for collectives. These questions must be perceived as the sirens of an alarm, and though they can be heard in all countries, they are particularly strident in developing countries.

In view of this situation, we would do well – having, we feel, a moral obligation – to question ourselves about the ethical issues in Internet integration in Southern countries, more specifically, in this context, the West African countries where we did our research.

The Internet in Africa: Divergent Viewpoints

From the American Pentagon's first efforts, based on Cold War trial and error, to the 400 million Internet users of today, the mother of all networks appears to crystalize Marshall McLuhan's notion of the global village. Although the Internet is an area of major issues from economic, technological, and cultural points of view, it appears to be a source of unlimited opportunities. The entire world is aware of the strategic and political possibilities of the digital World Wide Web. However, and yet again, Africa stands out because it is a developing continent and has, above all, its own priorities. As conventional media are still struggling to make a place for themselves, the establishment of the Internet would appear to be more than compromised in Africa, given that the majority of Africans live in the countryside in a near-perfect media vacuum. Africa's priorities are also clearly quite different from those of the North, and the demand for the Web, despite its promise, will have to take its place among the multitude of needs expressed there.

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Africa's fairly minimal contribution in the area of communications stands in stark contrast to its potential, however. Thus, despite the restriction of Internet use to major urban centres, the African continent has posted a 92% growth in the rate of connections made to the Internet since the late 1980s and early 1990s. An astonishing increase in investment has also occurred in telecommunications infrastructure and computer equipment. This growth rests on three supports: the government, various associations, and the cyber cafés (Internet centres), with their growing popularity.

The Web may allow Africa to leap ahead in growth and development, thanks to these new technological tools. But optimism must be tempered by a recognition of the fact that Africa, more than any other continent, is vulnerable to a cultural tidal wave coming out of the North. This observation has its origins in the fact that a single technological system may result in vastly different principles of social organization. The development of the Internet in Africa could therefore have consequences quite different from those seen in the rest of the world (Wolton 1999).

The new communications methods will, it seems, benefit the North far more than Africa (Gitlin 1999). The flood of investment that poor countries, notably Africa, would probably receive to develop such technologies would merely conceal the existing inequity. Africa's technological development must be far more balanced than it currently is, and it must above all take account of Africa's unique imperatives.

The Development of the Internet and the Role of the State¹

Undeniably, the Internet offers significant benefit to Southern countries, both for the associated development potential and for the economic, technological, and cultural dividends. Despite major barriers faced by these countries as a result of low literacy rates and lack of appropriate infrastructure, the World Wide Web remains a source of unlimited opportunities. Although the industrialized world is aware that these new technologies can allow Africa more world involvement, it has stipulated, as a condition of financial aid, that African governments remove themselves from the Internet-development equation. Any state intervention in Southern countries is deemed harmful; all real and long-term development aid is predicated on the complete disengagement of the official authorities, in favour of private operators. This precondition is particularly open to

criticism if one considers the massive state intervention that was needed to develop this new technology in the North, where this type of intervention provided the needed impetus. In fact, the Internet came into being thanks only to substantial governmental subsidies tied to strict security measures. This raises the following question: How great could the benefit of Northern aid be if the governments of Southern countries are being forcibly dissociated from the domain of telecommunications?

The requirement that the governments of Southern countries remove themselves from the equation is all the more disadvantageous, given that investment mechanisms for telecommunications are rather specific and ultimately designed to serve the exclusive interests of the North. The Iridium Project has the goal of eliminating communications infrastructure on the ground – a brand-new network of 66 satellites will substantially reduce operating expenses in Third World countries while simultaneously eliminating problems of *force majeure* events, such as natural and social catastrophes (Arizona Republic 1995 [quoting Bary Bertiger, Director General of the Motorola Satellite Communication Division]). Although quite advantageous at first glance, this kind of investment could result in far less beneficial long-term consequences for Southern countries. These countries risk being transformed from areas of potential investment into nothing more than potential clients, with all the possible consequences: an end to spending on infrastructure (then considered unnecessary, despite being vital to these countries) and a dissipation of client countries' technological potential.

The Northern countries' current approach to investment in the South once again favours the interests of the North, to the detriment of those of the South. Sustainable development will only happen within a real partnership, one that takes into account the true imperatives of developing countries.

Assets and Risks²

The Internet offers a unique opportunity for African countries. For example, it can offset a local resource deficit, giving researchers access to a wealth of global information resources and even the chance to contribute to those resources by publishing their research on the Web. In the same vein, the Internet appears to be a valuable tool to make technical training more universal and democratic.

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Africa has its own unique characteristics, both cultural and economic, that can make it difficult for it to adopt Northern techniques poorly suited to its local realities. What might be said, for example, regarding the dissemination of medical information and the value of the globalization of medical knowledge? Certain technologies, better suited to the African continent, might more readily be developed on African soil. The cellular phone is a case in point; its use was adopted at an astounding rate in every Southern country. A pertinent technological contribution from the South in this area could open the way to cooperation among Southern countries, which could concomitantly reduce their dependence on the North. The subordination of Southern countries to Northern ones might then be moderated by Africa's achieving a greater social, cultural, and even technological independence in its dealings with the North. Currently, however, cultural and technological inundation threatens Southern countries. They are further threatened by a social gap between the rich elite, who are connected to the Internet and are educated in and affiliated with the North, and the rest, who are excluded from the march of progress. To eliminate these threats, African countries could adopt measures taken from real-life experience in Europe and North America. For example, African governments could democratize telecommunications and ensure access for the most disadvantaged people, without restriction. One must, however, keep in mind that although the Internet offers a major opportunity for freedom of expression and democracy, it is no panacea. Dictatorships can use it for their own purposes, just as well as they can use traditional media.

New Information Technologies in Africa: Embrace, Adapt, or Integrate?³

Within a globally integrated service economy, Africa's role seems more precarious than ever. With the new information technologies, the African continent is being offered an opportunity to have its say in the global village. This observation must be qualified, however, as Africa is so far behind and its characteristics are unique. The case of NICTs is quite revealing in this regard. They carry immense potential, but they must assimilate truly local features to be effective. That assimilation will have to occur in schools and at the level of local economic players, that is, small to medium-sized enterprises (SMEs). These may be regional businesses of major importance to African development, or they may be other play-

ers, such as medium-sized cities and international trade, as mentioned by the United Nations Trade Efficiency Initiative (UNCTAD 1992). Each of these key sectors provides a means of stimulating African economies. At the economic level, they increase the competitiveness and visibility of African players. On the political and social levels, they promote higher efficiency in local government, increased interaction between the private and public sectors, and training for human capital without the risk of systemic brain drain.

Yet, interesting as they may be, NICTS come at a high cost, both in training and content and in infrastructure and equipment. To cover these costs, African countries will have recourse to four sources of financing: local resources, international aid, foreign investment, and self-financing through the development of feasible economic activity. These four sources of financing could give the African continent the impetus it needs, as long as it receives the solid support of SMEs, which will provide the foundation for ramping up African economic growth.

In the same vein, the role of the United Nations remains of the utmost importance. Focusing on the correction of past errors and the development of policy aimed at convergence of the twin goals of effectiveness and equality, the United Nations continues its laborious development work. In this regard, the United Nations' Global Trade Point Network program is particularly instructive (UNCTAD 1992). It cannot be implemented in a given country unless local players agree to invest in it. This new approach encourages the coordination of local activities with international realities, for the benefit of all.

The Question of Regulation

Use of the Internet raises the question of regulation. This subject has been at the heart of many debates, colloquiums, and forums, such as the United Nations Educational, Scientific and Cultural Organization's (UNESCO's) Third International Congress, INFOethics2000, held in Paris from 13 to 15 November 2000 (UNESCO 2000). This conference dealt with the ethical, legal, and societal challenges of cyberspace. Its general theme was the right to universal access to information in the 21st century, and its goal was to stimulate reflection and debate on the ethical, legal, and societal challenges of the information society. Among the issues presented were the following: the role of public authorities in access to information, the

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“fair-use” concept in the information society, and protection of human dignity in the digital age. The goal of the proposals made at the conference was to consolidate UNESCO’s Information for All program, which has the general objective of facilitating universal access to information, with the cooperation of public, private, and civil-society partners. UNESCO intends to develop an action plan with the following objectives:

- To facilitate broader and fairer access to information and communications networks and services and provide information;
- To facilitate, through the use of international conventions, the application of legal exceptions to copyright for developing countries;
- To promote freedom of expression while protecting privacy on global networks; and
- To consolidate monitoring and information activities focusing on progress in the development of the information society within member states (UNESCO 2000).

To what extent could the digital revolution contribute to the development of the Universal Ethics Project?⁴ To what extent does the Internet revolution affect the foundations on which society is built? Several authors are currently examining these questions. For example, Quéau (1998) has been examining four themes. First, the cultural theme: the author states that the digital revolution is, at its origin, an abstraction of thought. This abstraction constitutes a grave danger for humanity, which is henceforth threatened with the loss of its very essence – its fundamental identity. The cultural theme also touches on the theme of collective intelligence, a concept developed primarily by Lévy (1994). Collective intelligence is created and sustained by the contribution of each person, each actual or potential Internet user. What are the consequences of this type of collective intelligence? What are its characteristics? Is it the “huge beast” that Simon Weil (1955) said is conjured as a reflection of humanity? Or is it rather Teilhard de Chardin’s noosphere serving the emergence of a global consciousness (Teilhard de Chardin 1965)? The other two themes Quéau has been examining are economic and social. Revolutions in these areas are playing a major role in the “dematerialization” of the economy, which is to become “virtual.” This process of abstraction only increases the conflict between capital and human mobility. The former, made free, will have the ideal environment in which to prosper, whereas the latter will continue

to languish, dreaming of a utopia elsewhere. Finally, a political revolution makes the Internet completely free of any national legislative control. It is a faithless, lawless “Wild West,” in which neither national identities nor any means at their service hold sway.

The digital revolution gives rise to several conflicts:

- Conflict between the real and virtual worlds, and the associated danger that we may neglect or ghettoize the real world;
- Conflict between law and a legal vacuum, considering both the sacrosanct “freedom” of the Web and concepts such as copyright and intellectual property rights, as well as the fact that the Web is almost impossible to regulate at the national level and that international laws may be mutually contradictory; and
- Conflict between public and private interests, as demonstrated by the appropriation of human heritage (the patenting of the human genome) by private interests at the expense of humanity in general.

Quéau (2000) and others ask whether we ought not to think of some sort of global regulation based on the notion of universal ethics (Küng 1991). One might legitimately ask what the consequences of such a move would be: the possibility of cultural assimilation and extinction or, on the contrary, the possibility of a true representation of the world in all its complexity and diversity. The Web would then be transformed from an anarchic region, one that welcomes undifferentiated content, into a vast forum allowing anyone to get involved in laying the foundations of a truly universal system of ethics.

The Internet clearly raises all kinds of issues, ethical issues in particular.

Internet problems and ethical issues

Why Ethics Matters

Broadly speaking, we submit that communications and ethics are two faces of the same coin. This raises the following general questions: How do our individual, collective, and institutional communications practices raise ethical questions? What are these questions? What answers have been, or could be, suggested?

Our communications media or multimedia practices raise various

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ethical issues, both inside the practices themselves (from the project brief to its delivery, including each of the tasks completed, results presented, and all of the players or participants) and outside the practices, that is, in their deployment and range, whether local, national, or international (right from the mode of broadcast or transmission to the access available to receivers, observers, and consumers, including all of the various relays and transmission agencies). For example, what criteria guide broadcasters' programing choices (public interest or sensationalism) or aesthetic choices in advertisements? Where do individual and collective responsibilities lie for the use of NICTS? What can be said regarding the journalistic practice of perpetually dredging up the next political scandal? What can be said about the disparities between North and South in the development of electronic information networks? What economic and trade interests underlie the establishment of information networks and new media or, more precisely, of the Internet in Africa? And, finally, what can be said about the quality of interpersonal relations when the use of communications technologies becomes part of the equation?

To whatever extent the development of NICTS raises issues in Northern countries, it raises just as many in countries of the South, such as those in Africa. In our opinion, such development calls for a renewed questioning and redefinition of the epistemological foundations of ethics in the sphere of communications, and specifically, within African communities. The 1999 colloquium held at the University of Ottawa – *Les enjeux éthiques des pratiques communicationnelles : urgence et nécessité?* (Ethical issues in communications practices: Emergency and necessity?) presented a broad spectrum of thought on ethical questions for various current communications practices (Brunet 2001). These reflections brought to light a variety of ethical issues about the Internet, both in the North and in the South.

Given the current state of affairs, if we can assert anything it is that NICTS are creating new ways to perceive what is real and are raising ethical issues. How are space-time relationships being redefined? What are the new methods of accessing and acquiring knowledge? What underlies the ties that bind us together socially? These questions concern us, not only individually but also collectively.

An heuristic appreciation of these questions stands in deliberate contrast to short-term functionalist perspectives that aim, among other things, to analyze these technologies into impacts or effects. An heuristic

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approach focuses instead on the choice or attitude of each citizen with regard to the use that he or she is able or obliged or wishes to make of it. The choice or attitude taken is itself an action and thus, implicitly, an ethical issue. These considerations underlie the research, which was carried out with the specific intention of shedding light on how the ethical dimension is inextricably linked with technological development in the field of information and communications, at least in West African societies.

For the North American, European, and Japanese telecommunications giants, Africa represents 400 million consumers. Various cooperative projects are currently under way. The United Nations has allocated about 18 million USD (United States dollars) for the improvement of African telecommunications networks. The American Leland Initiative, which has the goal of helping 20 African countries gain a foothold in the Internet, has a budget of 15 million USD. Certain programs are working to promote the growth of NICTS in Africa. According to some, the ultimate purpose of these initiatives is not always well defined. "Behind the humanitarian and philanthropic motives of research centres and institutions lurks a danger: aid based on the satisfaction of needs determined by the outside world forms habits and transforms consumption into a need" (Daouda 1999, p. 7). The danger of a slide into consumerism is real. However, we can name some truly cooperative programs and initiatives, such as the World Bank's Infodev; the European Commission's program; and even the Canadian program, Communities and the Information Society in Africa, financed by IDRC. This program is one of Canada's responses to the African Information Society Initiative (AISI) developed by the United Nations Economic Commission for Africa (UNECA). The program promotes the adoption of new communications tools by Africans, by encouraging African content, among other things. The absence of any regulation leaves the Internet open to any type of content and use. The user's freedom must, of course, be protected and respected. That very freedom also lays at the feet of each user the responsibility for using the Internet as he or she sees fit. As far as using ICTS is concerned, leaving responsibility in the hands of the individual is, we feel, appropriate. But what of collective responsibility?

African governments must introduce enlightened initiatives for the development of NICTS in their countries. The development of the Internet

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in Northern countries was brought about by political will and government subsidies. It would seem that in most African countries that are developing the Internet, private enterprise is at the forefront. Is this detrimental? Should local governments intervene, and if so, how?

Specific Questions

Going beyond the general issues, which are primarily the ethical issues confronting African countries when integrating NICTS – and, more specifically, the Internet – research has given rise to a number of specific questions, such as the following:

- To what extent are the ethical issues that underlie the introduction of electronic information and communications networks connected to economic and cultural issues?
- To what extent do NICTS affect freedom of information and access to information?
- What are the responsibilities of governments in regard to illicit or offensive content? (Regulation? Censorship? Awareness-training for Internet users?)
- Broadly speaking, should the Internet be regulated? Can it even be regulated? (Should local, national, or international regulation be sought or blocked? Should the Internet be self-regulating or not?)
- In Internet use, where does individual responsibility end and collective responsibility begin?
- How can we ensure respect for the right to privacy?
- How can we ensure respect for individual freedom and human rights?
- To what extent does Internet development exacerbate the unidirectional flow of information from North to South?
- To what extent does the Internet constitute an opportunity to promote a South–South dialogue?
- Is the African concept of space and time threatened by information technologies and cross-border communications in real time?
- To what extent does the Internet encourage cultural homogenization?

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- To what extent might the Internet allow African businesses to participate in the phenomenon of globalization, and might it constitute an opportunity for participation in global trade, by offering contact with international businesses and markets?
- Are African identity and social networks (in the real world) threatened by the cultural or ideological content produced predominantly by the North, or by illicit or offensive content?

The Internet in Africa: Considerations and General Trends

This project is specifically concerned with the ethical issues and challenges raised by NICTS in five West African countries. The research took place in three Francophone countries (Burkina Faso, Côte d'Ivoire, and Senegal) and two Anglophone countries (The Gambia and Ghana). The surveys carried out among the people of these five countries highlighted certain tendencies regarding people's perception of the Internet and of what we call the *degree of ethical awareness* of the Internet and its use. An analysis of the collected data sheds light on various ethical issues raised by the development of the Internet in Africa. This analysis allowed us to formulate some answers and propose what we have called an *ethical model of Internet integration* in Africa (see "An ethical model of Internet integration," in Chapter 7).

ETHICAL CONCERNS ATTENUATED (DULLED) BY FASCINATION WITH TECHNOLOGY

The fascination technology holds, coupled with current levels of NICTS and with the phenomenon of globalization, has led a large part of the survey population to brush aside any ethical questions related to the technology. In fact, the concerns of the majority of actual or potential Internet users focus mainly on the lack of technological and financial resources in African countries. They also relate to the fear that the economic disadvantages of these countries will be exacerbated by inadequate access to the World Wide Web. The number of Internet users in Africa is estimated to be 1% of the African population.

The ethical dimension surfaces only as a secondary consideration and only in a limited part of the population. It is deemed less important than other realities in the development of these countries.

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TWO MAJOR TRENDS

In the wake of Ellul's (1977, 1980) work on the influence of the technological on the social, we postulate that the technological holds a certain fascination and is tied to a mythology of omnipotence. Technology transfer also has consequences that should be considered.

Two major trends in response emerged in the five countries studied. Some viewed the Internet as an indispensable tool that absolutely must be acquired so that Africa may participate in globalization and international trade; the Internet is an essential tool for development. The others viewed the Internet in a more moderate and nuanced fashion; according to them, the Internet is merely a tool to be used with a certain amount of caution, given the unexpected results that may arise from its use. The research shows that the establishment of the Internet in Africa should be part of a general or global development policy, and its adoption should be accompanied by a suite of measures for training, awareness-raising, and so on.

These two general trends raise the questions of whether the Internet will be embraced by the African population and what conditions will promote the optimal integration of the technology vis-à-vis ethical considerations. The research we carried out was based on an axiological approach, and an analysis of the results led to the proposal of an ethical model of Internet integration in Africa.

An Axiological Approach to Internet Integration

According to an anthropological approach to the study of culture, individuals within a community confronted with complex issues will always develop solutions tied to various areas of their culture. These solutions will rest on cultural assumptions about (1) the nature of the human relationship to the environment; (2) the nature of reality and truth; (3) human nature; (4) the nature of human activity (a corollary of the nature of the human relationship with the environment); and (5) the nature of human relations.⁵

According to the axiological approach, we were able, on the basis of the data collected, to complete an analysis of the cultural and ethical orientation of the solutions brought to bear on Internet issues within various categories of actual or potential Internet users.

Categorization of Internet-user Behaviours

Ethics is tied to any behaviour that has consequences for others. Using the Internet is communications behaviour. To put this behaviour into perspective, it must be understood how Internet users themselves view the situation, that is, the problems affecting them as Internet users.

To summarize, scientific progress raises the following question or line of reasoning: to resolve the problems raised by the establishment of the Internet in Africa, solutions may be proposed by some players that conflict with solutions proposed by others, and that is the moment when issues arise. To speak of ethical issues is, above all, to consider the gap between an actual or experienced situation and an ideal situation. On the basis of that theoretical clarification and to better define and delimit the goal of research, we formulated a single, general and practical question: "*What are my experiences as an Internet user?*"

Several types of Internet users can be distinguished and placed in categories by country, organization, profession, or group. Within the five countries studied, the categories of Internet users were designated under the following headings:

- Governmental institutions or agencies (information ministries, regulatory bodies);
- University institutions (communications and computer science departments, schools of journalism and multimedia studies, research centres);
- Nongovernmental organizations (NGOs) and associations (women's groups, etc.);
- The media (print media, radio, television);
- Private, local, or international companies (agricultural, industrial, trade, information technology sectors); and
- Individuals (students, the person on the street).

The users in each of these categories lived in particular situations or contexts that the analysis of the data brought into focus. Specifically, these users could be distinguished by the degrees to which they recognized that the establishment, acceptance, use, or integration of the Internet causes problems; these problems were identified and delineated by means of the interview questionnaire.

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These same users were also distinguished by the degrees to which they attempted to act (formally or informally, through the policies of their organizations or institutions, or through individual initiatives) to resolve the problems caused by the cycle of establishment, acceptance, use, and integration of the Internet. Based on these considerations, we were able to draw up a typology to describe the behaviour of Internet users in response to certain ethical issues.

Among other things, the goal of the research was to characterize these users by their ethical attitudes toward issues raised by the Internet.

Behaviours and User Types

Behavioural studies reveal which users will be concerned by this or that issue or problem. Through such research, we can better identify which users experience the Internet passively, which actively, and which are or are not sensitive to or aware of the issues related to Internet use. We drew up a typology of home, institutional, private-enterprise, governmental, and professional users (active, aware, latent, passive). Let us examine the two major categories of users: active and passive.

ACTIVE USERS

The so-called active users are those who adopt ethically responsible behaviour. They take the time to reflect on the consequences of and the problems related to Internet use. They behave as if carrying out research: they maintain a critical distance from the data that they retrieve from the Internet, they seek information (by participating in seminars and conferences and by reading specialized American, French, or other books and magazines about the Internet), and they seek training on the issues surrounding the Internet. Active users are conscious of the problems and issues related to Internet use, especially the ethical ones, and are prepared to seek solutions and take part in their implementation.

PASSIVE USERS

Passive users do not often stop to think about the consequences of and problems related to Internet use. Their principal characteristic lies in the fact that their completely random approach – not based on anything resembling critical research – to obtaining and dealing with the information before them. This type of behaviour is further reinforced by the forms of

language used on the Internet, based on arborescence and convergence. Even when they demonstrate a certain level of sensitivity, weak though it may be, to the problems and issues of Internet use, these users are not really concerned by them. They adopt a passive attitude toward them and in particular toward ethical issues.

Between these two types of behaviours we may distinguish two others: "aware" and "latent" users, characterized by average or limited ethical awareness. The various characteristics of these four types of ethical behaviour are examined in detail in "Summary: Ethical-behaviour profiles of Internet users," in Chapter 7.

Research Hypotheses

Taking into account the general issues regarding the development of the Internet in Africa and the question of its use, acceptance, or integration, we developed several research hypotheses:

- Passive users will most often resist any messages geared to consciousness-raising regarding the Internet because, according to communications theory, information received by passive users has less effect than that sought by active users.
- Those who recognize that problems are related to Internet use will have a greater tendency to seek information about these issues, process it, and apply it in changing the ways they act.
- A high level of constraint (for example, political or technological) reduces the likelihood that users will seek or process information on the consequences of Internet use. This is because they know that the information will hold no value or meaning for them.
- The level of involvement is an indicator of a user's passive or active nature, as far as the search for information on the Internet's impacts is concerned.

Methodology

The research was carried out on the basis of an analysis of data collected from a sample population of those with some involvement (directly or indirectly) in the development and use of the Internet in West Africa. A standard interview protocol was developed and administered to a total sample population of 105 people in Abidjan (Côte d'Ivoire), Dakar (Senegal), and Ouagadougou (Burkina Faso), for Francophone representa-

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tion; and in Accra (Ghana) and Banjul (The Gambia), for Anglophone representation.

The methodology we followed was to place several problems and issues before actual or potential Internet users by means of a questionnaire that contained some propositions regarding the introduction of the Internet to each of the study countries. The exercise ended with a series of questions. Six types of ethical issues related to the development of the Internet were raised. These issues related to

- Exclusion and inequity;
- Culture (Internet content);
- Internet costs and financing;
- Sociotechnical aspects of Internet integration (resistance, uses);
- Political power; and
- Economic organization.

The propositions presented reflected the fact that the Internet raises various problems: exclusion; inequity; foreign or offensive content; financial investment; technological infrastructure; education, training, and learning; and its use as a political or economic tool. The survey's purpose was also to question the participants for solutions that they, as Internet users, would suggest for dealing with these problems. A content analysis later revealed the answers to the following questions:

- What cultural values do the proposed solutions carry?
- What ethical values underlie the proposed solutions?

Analysis revealed the cultural orientations and the ethical foundations of these solutions, which we have called the users' *degree of ethical awareness*. To be more precise, an analysis of proposed solutions to the problems of Internet use was carried out based on the community's ethical presuppositions.

Having analyzed the information on the establishment, use, acceptance, and integration of ICTs in general and the Internet in particular, we were led to propose an ethical model of Internet integration, which is presented in this work.

Toward the Development of an Ethical Model of Internet Integration

The research led us to develop an ethical model of integration to serve as a reference, both for national policy in African countries and for individual Internet users (see “An ethical model of Internet integration,” in Chapter 7). The model could also be used beyond the borders of Africa and could be applied on a broader, international scale. The need for such a model exists, in our opinion, because of certain paradoxes we observed at various levels and contexts within each of the countries in the study. These paradoxes lie at the very heart of the ethical inquiry and are found in all social spheres. They can be described as follows:

- The Internet is a tool for accessing information, yet it simultaneously enforces inequity and exclusion.
- Culturally, the Internet offers a window on the world but is rife with ideology and illicit or offensive material.
- Most people consider the Internet an indispensable information and communications tool, yet its costs – for materials, infrastructure, and telecommunications – make it compete with other priorities and give rise to an economic dependence on the North.
- The Internet should be universally accessible, yet the technology can exacerbate what one might call technological illiteracy.
- According to some, the government should play a role in the development of the Internet, yet according to others its development should be free of government interference.
- The Internet contributes to the general economic development of countries, yet it can reinforce monopolies held by the state or by multinational corporations (to the detriment of local SMEs).

Analysis of the data collected led us to make certain recommendations on meeting the information (consciousness-raising) and training needs of the citizenry, developing policies for computerizing the nation, and formulating regulatory and jurisdictional law.

Endnotes

1. See the article by Renaud (2000).
2. On this matter, see Tréfeu's (1997) interview with Pascal Renaud.
3. See the article by Lanvin (1997), Director of the United Nations Conference on Trade and Development, based in Geneva).
4. The Universal Ethics Project is an initiative of UNESCO's Division of Philosophy and Ethics. It came into being in the spring of 1997, and its main objective is to explore the possibility of a universal ethics for the world's many national cultural traditions.
5. According to Edgar H. Schein, *Organizational Culture and Leadership* (Jossey-Bass, San Francisco, 1992). Schein defines those five assumptions as follows: (1) the nature of people's relationship to the environment: adaptation is valued (we adapt to it); control is valued (an aggressive attitude, we impose our will on it); taking a fatalistic attitude is valued (fatalism); (2) the nature of reality and of truth: three possible attitudes (we believe that ...): objectivity: reality has a separate existence and we will discover it (scientific attitude); authority is valued: truth is whatever the leader says; intersubjectivity is valued: truth is the outcome of consensus building (we discuss the situation together and come up with a solution); (3) the nature of human nature: individuals are considered selfish; individuals are considered altruistic; people are neither inherently good nor evil (Rousseauism); (4) the nature of human activity (a corollary of man's relation to the environment): work is valued as a means of subjugating nature (Western societies); work is valued as a means of adapting to the environmental situation; work is a means of ensuring subsistence; (5) the nature of human relations: the individual is valued: the most important person is the person who is most competent (individualism), which might be interpreted to mean the person with the greatest means (intellectual, financial ...); the person who holds power is valued: the most important person is the sole authority, holds power; every individual's opinion is valued: everyone is important.

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Exclusion and Inequity

- The Internet creates a gap between individuals, organizations, and countries in the sense that those who already possess knowledge and financial resources benefit more than those who do not.
- It is clear that the computer illiterate, groups of nonconsumers, and territories that are poorly equipped with the means of communication are excluded from the Internet.

Was the Internet Designed for the Privileged?

Almost all of the people we interviewed thought that the Internet would create a gap between the various layers of society. In Ouagadougou, more than anywhere else, our informants mentioned that it is not enough to be able to read to “get going” with computers: “*one can be ‘literate’ and still not be computer literate,*” they told us. Some figures agree: the illiteracy rate in Burkina Faso is roughly 90%, and only about 3000 people have the use of a computer. Of these, doubtless fewer than half are connected to the Internet. “*From this one can deduce that Burkina Faso’s rates of illiteracy and computer illiteracy are practically identical.*” As for the correla-

tion between wealth and computer literacy, people's statements agreed with what we have heard elsewhere. Being wealthy does not necessarily mean being cultured or using a computer. In particular, many economic players who make their fortunes in the building and agribusiness sectors are completely illiterate and hold in contempt both diplomas and those who have earned them. *"They don't have access to the Internet, and they couldn't care less."*

Computers seem somewhat irrelevant to wealthy Burkinabés, or those in businesses run by the wealthy, as employees are there to do *"everything that needs to be done."* But figures agree that only the wealthy make individual use of computer equipment. *"A computer effectively costs about CFA 1 000 000"* (in 2003, 581,522 CFA francs [XOF] – 1 United States dollar [USD]). Other users include those who have access to a computer in their workplace, in a business, or in a public service (administration, offices, schools, and so on). They were "drawn" to computer science, or they had had some higher education, usually abroad, but increasingly in Ouagadougou itself. In essence, these people constitute the middle class. And the Internet is spreading, above all in those areas where the economy is already being developed through some specific action.

Our informants often thought about the fact that the Internet can or does create inequities in society. They often reflected on this when they experienced the joy of finding information others could not have obtained without the Internet. They also thought about it every time they were unable to access information that would probably have been on the Internet, whether this was due to a lack of financial resources or a lack of equipment. These internal states ranged from a sense of privilege to feelings of frustration. *"Everybody should already have access to the Internet."*

Closing the Gap: Means of Action

As in other countries, the leeway individuals in Burkina Faso had to reduce the inequities created by the Web varied widely, depending on their social position. Those representing (employed in or owning) businesses such as Internet service providers (ISPs) and public or quasi-public telecommunications agencies, as well as most employees in the technology sector, thought in terms of *numbers*. It is true that the more sites there are and the more people connect to them, the more Internet use will rise. The thinking of those in other professions – including teachers,

trainers, and those in charge of associations – tended to focus more on qualitative aspects: they were more concerned with *how* the Web should be used. However, these two points of view are complementary, because if the Web did not exist, the question of how to use it would never arise. Technical and descriptive discourse on what the Internet is and how it works remains purely theoretical as long as people do not have access to computer equipment to give them practical experience. Schools, particularly technical institutes, unequipped with computers are facing this situation. Among students, a loss of interest and a sense of frustration usually follow in short order. That is why specific action for young people in and outside of the school system could only be welcomed, despite the risk of creating the kind of inequities discussed above. Any gap thus opened would be only one aspect of the generation gap. However, nothing prevents these young people from “training” their less fortunate peers (especially through games) and perhaps their fathers, brothers, and sisters as well. The training of mothers, however, is most of the time more problematic, as a result of cultural background.

Proposed Solutions

To the question of what specific action is most likely to reduce or close the gap between Internet users and nonusers, the almost unanimous answer was to introduce communal facilities. This suggestion was also made to us in the other study countries, principally in the Anglophone countries (The Gambia and Ghana). The proposal was to create public places – cyber centres and cyber cafés – typically managed by private enterprise. The government is pushing for the development of multiuse community telecentres. Reportedly, 50 of them already operate in the countryside. Another step – considered a great success where it has been taken – is to introduce pilot telecentres. These are set up in pilot zones in areas where, for example, intensive cultivation of green beans or the cottage-industry manufacturing of shea butter in cooperatives is under way. The ideal would be to develop the Web in the most remote villages to reverse negative economic and demographic trends. The hope is that access to the Internet will attract other activities. Our informants also argued that if the government took charge of creating more state-owned telecentres, costs would be lower than in the private sector, even though the latter is regulated by the state.

As mentioned above, depending on their profession, informants emphasized either the quantitative or qualitative aspects of the issue. A qualitative solution to the development of the Internet could be to establish or to accelerate training. Local training certainly is on the increase in schools and specialized institutions, but Burkinabés lament the declining number of students able to go abroad to study. For various reasons, young people receive fewer educational bursaries now than in the recent past. Several people noted the absence of any agency to fill this gap after the government had withdrawn its support.

Potential Repercussions of the User Gap on Other Stakeholders

Almost all our informants believed that major repercussions in how individuals use the Internet, personally and professionally, would result if it were allowed to create a gap in the population.

"The Internet is a self-enriching system." The more you use it, the more likely you are to make your own contribution to it. For example, if all African universities and researchers published their work on the Internet, it would contain more information about Africa created by Africans. This would also resolve the endemic problem of the many manuscripts lying unread in universities because of the difficulty of publishing in Africa. Foreign editors are interested in certain works, but local publishing should increase. Using the Internet would circumvent the obstacles of traditional publishing and address the lack of publishing in most African countries. And, according to the above-mentioned principle, these new publications, being available to all, would elicit comments, suggestions, and articles in rebuttal, making the Web richer still.

Culture (Internet Content)

- The Internet promotes the intrusion of content created in developed countries into developing countries.
- For example, the Internet is an open door to pornography.

The North's Cultural and Media Hegemony

The vast majority of our informants recognized that most content comes from the North, but they also asked, *"what choice do we have?"* All phenomena have both positive and negative aspects. We must return to the objectives of the New International Information and Communication

Order (NIICO), an information distribution program set up by UNESCO in 1980 with the goal of dismantling apartheid conditions in the communications sector. As far as the Internet and its content are concerned, it would be better to receive programs from Northern countries than nothing at all, because Africans haven't produced much yet. According to most of our informants, Africans themselves are largely responsible for this state of affairs. *"Even though the period of colonization ended long ago, we still have a dependency mentality."* This is unfortunate, as experimentation breeds experience. By using a software program, you learn what works and you avoid repeating the same errors. *"Nothing can replace experimentation; you must advance by trial and error."* However, Africans are well aware that when Northern countries help Southern countries, it is because they have one or more vested interests (economic, geopolitical, strategic, etc.) in doing so.

Our informants were aware that in receiving "foreign" programs, "there is a huge risk of acculturation, but this risk must be borne." This risk is all the greater, given that "mystification runs rampant, because people enjoy programs from the North far more than our own, just because they were created somewhere else." Furthermore, even if local users enjoy native content less, at least they would have a choice. Certain subjects near to the hearts of the people have clearly led to the creation of certain Web sites. That is why about 20 Burkina Faso sites, published or under construction, deal with tourism, arts and handicrafts, history, and NGOs. The other sites belong to companies that operate locally but are not necessarily Burkinabe.

This mystification can actually be harmful, *"because people often take information from the North at face value, even though they know the sources are not reliable."* There is no control over or verification of information published on the Internet. Most people do not have the resources needed to check the accuracy of information. More and more errors are perpetuated because *"people blindly copy from secondary sources."* This has ethical implications, because sources are no longer cited. (It should be pointed out that these practices are common everywhere, not just in African countries.) In small communities that use few resources and equipment, such as the research community, *"it is still possible to track down who stole what and from where, but once the Web has grown past a certain size, identification will become much more difficult."*

The Internet, a Development Tool

Our informants often or very often felt that the content available in Burkina Faso mainly came from Northern countries. Some were quite happy about it, in fact, because “*it is an open door to knowledge.*” Also, because the content is often attractively presented, “*it is like mixing work and play.*” Some informants who were also involved in research thought that their own work would be more valued and that they would themselves become better known or better appreciated if they published their work on the Web. “*We play a minor role as it is, and this relegates us to an even smaller one; that is what keeps us in the wings on the international stage.*”

The Internet can speed research where, for example, investigations or surveys are to be carried out. Because the highway system in Burkina Faso is rather underdeveloped and traveling conditions somewhat difficult, the Internet could be of great assistance by facilitating the online delivery of questionnaires. The computer can catch “*out-and-out plagiarism,*” said a sociologist informant, who also complained “*of having only one computer connected to the Internet in the entire institute; naturally it is under siege all the time.*” Time lost to travel under terrible conditions and doing calculations by traditional methods could instead be applied to more efficient and detailed research and analysis. “*When you have the tools to complete repetitive and menial tasks, resulting in increased performance, you are greatly encouraged to carry on.*”

Informants holding positions in the upper echelons of public service believed that they were doing everything in their power to promote the creation of domestic content. “*We cannot go on blaming our failings on others,*” they said. The Internet would not only be a source of pride for the country, but also “*allow Burkina Faso to shine before other African countries, as well as before our partners in the North.*”

Immediate results: Burkina Faso connected to the Internet, but how?

Africans will find the Internet all the more interesting if the content takes their real needs into account. These needs fall, more or less, into categories of the nine sectors to which the Burkina Faso government has given priority and made part of the next 5-year plan. They are as follows:

- Formal education (that is, kindergarten, and primary, secondary,

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and postsecondary schools) and informal training (continuing education);

- Health;
- Water management;
- Agriculture, animal husbandry, and fishing;
- Handicrafts;
- Trade;
- Employment and entrepreneurship (for example, growing green beans, setting up shea-butter cooperatives);
- Culture and recreation; and
- Gender issues (such as the status of women).

“The problem is that all of these areas are a ‘priority,’” which means that much of the information on these issues and projects would be of interest to both Burkinabés and other Africans grappling with the same issues. Businesses in other countries, including those in the North, might also see the potential in these sectors.

Teaching English on a large scale would also contribute to Internet development. For many, French is a foreign language. Most of the population uses local dialects only – at least in conversation – and the first foreign language they learn is French. But to be used effectively on the Internet, a language must first be mastered. Teaching English and French would also be useful in other areas: trade, primary industry, and tourism, for example. Tourism would be one of the most profitable areas for development if local businesses participated in design and management. It is also an important area for job creation. Furthermore, it affects every social class, from manager to janitor. However, everyone of our respondents recognized that teaching the languages of the Internet is only a beginning. *“Once that is done, you still have to train people how to use the Net and point out the good things and warn them about the bad that you find on it.”*

Setting up infrastructure connecting African countries could be another solution to the problem of meager Southern content on the Web. Right now, communicating with another African country is like going through Ottawa to get from Montréal to Quebec City. *“That is what hap-*

pens now, when we want to trade information with a neighbouring country such as Benin, for example."The connections are very expensive because the service providers are Northern owned, which is quite unnecessary. The real problem is figuring out who is going to pay at the regional level, because each country is busy trying to develop its own infrastructure. Involved Northern countries have no vested interest in creating connections across regions, because it would not be profitable for them.

The international community could also do more without incurring exorbitant costs. It could send computers to the South, as it sends other machines that are no longer considered useful. When we see graveyards of obsolete computers in the North, we feel that it is a real waste. Re-conditioned computers might not suit all purposes, but they could be installed in technical schools for demonstrations. Some schools are still without so much as one computer per classroom – not to mention the ideal of one computer per student. In Ouagadougou, people wondered, *"Does anybody have any idea how much equipment was pulled out of service because of Y2K? Does anybody realize how many African children could have had a chance to see a computer, if the industrialized world had offered some of that material to Africa?"*

If the solutions proposed by our informants were implemented, they would have an immediate effect on Internet development. Some of the informants believed that *"it would take Burkina Faso another 5 or 6 years to become heavily connected to the Internet."* But no one could say exactly what *heavily* meant in this context. Development could occur despite of a certain apathy of the state, which cannot reconcile itself to lowering customs duties, as this would lead to a considerable loss of revenue. It was also deemed important not to become isolated, *"because we still have a lot to learn"* – especially about technology. People know how much trouble it was to set up the Internet in Europe: it required decisions at the national level. ISPs typically run into even more technical problems in Southern countries.

The Impact of Heavy Intrusion by Northern Media

On the whole, the Burkinabé respondents were not very critical of the intrusion of Northern content. They believed that it is a matter of individual choice. If you enjoy certain content, then you are lucky to be able to receive it. If content is harmful or illegal, then it is also a private matter,

because nobody is forced to look at it. Individuals have nobody to blame but themselves if they stumble on illicit sites: they must have been looking for them, since they are generally harder to find than people imagine. Protection is needed only for those who cannot be expected to have a completely free will, particularly children. In these cases, it is more difficult to bar access, but this is still the individual responsibility of parents and teachers. This question has been carefully considered in studies of earlier means of communication. We have no grounds for blaming the technology, the Web, or the North. In short, Burkina Faso gave top priority to individual responsibility: it is entirely up to the individual what to do on the computer, in the office, or at home.

The philosophical viewpoint underpinning these positions differs from that ceaselessly advocated by champions of the communal use of the Web and the collective responsibility for it. In fact, these two suggestions are complementary and correspond to two separate stages in the user's adoption of computers and the Web. To advance use by the general public and use by culturally or financially disadvantaged people, nothing works better than a communal arrangement. For people who have the hardware and are able to work independently, individual use is perfectly feasible. However, the danger of becoming "hooked" lies in wait for the hardcore Internet user who can connect at any time. Such a user may become cut off from reality, reveling in the virtual worlds offered by the Net. This is true no matter where you are in the world, but the difficulty of African life may tempt an Internet user into a virtual world that eases life's trials and tribulations. This phenomenon constitutes an example of acculturation in a society whose economic basis is the extended family and whose way of life is fundamentally communal.

Internet Costs and Financing

- The Internet is a complex tool requiring huge financial investments. Although the importance of communications infrastructure is now recognized, it faces fierce competition from other investment priorities, such as hospitals and roads.
- It could be argued that the sole purpose of Internet integration is to increase the debts of developing countries: Internet-related costs are high, and most of the equipment is purchased in foreign currency (American dollars or French francs).

The Internet Gives Way to Other Priorities

Overall, 46.1% of our informants recognized that the Internet is a complex tool requiring huge financial investments and that it competes with other investment priorities, such as hospitals or roads, even though the importance of communications infrastructure is now recognized. Despite the initial investment the Internet requires, these same people believed that policymakers should assign it a fairly high priority now, because it can be used to promote growth in other sectors, such as health or education. This cost is really a perennial issue in the telecommunications field, given that any technology quickly becomes obsolete. Some people also said that the Internet is designed for rich and developed countries. The state must take action to prove that the Internet will work for Southern countries such as Burkina Faso – that it provides an opportunity to improve sectoral policies, such as those in the health sector. Among this 46.1% of respondents were researchers who maintained that the Internet has become a research priority, but who felt that the budget for it is still too limited.

Another 53.8% of the informants did not agree that the high cost of the Internet makes it compete with other investment priorities. Burkina Faso, they argued, is a country where everything is a priority. The budget for information technology in general represents less than 1% of the government's entire budget. It is not that policymakers do not understand the issues but that so much else needs to be done (for example, in the areas of schools, health, and roads).

A Few Figures

Among the informants who responded, 23.0% often thought about how the Internet competes with other investment priorities. However, 76.9% did not comment. It should be noted that Burkinabés see the Internet as being tied to sectoral policies and therefore do not look on it as an institutional luxury. It is a highly productive tool that allows a country to take its place in the world. It is also a powerful teaching tool. Furthermore, 7.6% of informants said that they were in a position to improve the image that policymakers have of the Internet. However, 30.7% stated that their hands were tied, and that their professional status left them with no leeway whatsoever; 61.5% did not respond.

Finally, 36.4% of our informants thought that the question of how

state budgets are apportioned would be highly relevant to their institutions. These institutions were financially dependent on the state, the largest consumer of information technology. Operations, therefore, depended directly on the availability of state resources and equipment. If budgets shrink, there will be less activity.

Recommendations for Internet Development

In the many solutions proposed to promote the Internet, high-benefit projects would be developed to defend information technology, which would have to be introduced into secondary schools. Cooperation with Northern countries would have to be strengthened to ensure support in areas such as the Internet. Solutions to the difficulties of acquiring computer equipment should also be found. The informants offered no suggestions as to how this issue could be resolved or what their own impact might be.

Sociotechnological Aspects of Internet Integration (Resistance, Uses)

- It is not a simple task to establish the Internet in a country, because many of the conditions required (for example, education or correct needs identification) may not be present.
- When discussing this topic, people often said that the North transfers its technologies to the South purely for monetary gain and not because there is any real need for it.

Of our subjects, 61.5% agreed that setting up the Internet in a country is no easy task, because the required conditions, such as education or correct identification of needs, may not be met. Our informants recognized that the Internet has become an international tool; and when their students go abroad to study, they must overcome a significant obstacle, because they do not know how to use NICTS. Students from Burkina Faso suffer a gap with those from Europe and North America, and one gets the impression that nothing is being done to reduce or remove this disparity. The level of education in Burkina Faso is low. It is not easy to explain the Internet's usefulness in lay terms. As for Internet access, the most essential conditions are present, but the technical infrastructure is still very inadequate. The telephone network remains poorly developed in Burkina Faso. Some of the natural obstacles to Internet development include the following:

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- Low level of education;
- Limited NICT training programs;
- Inadequate telecommunications infrastructure;
- High computer equipment costs; and
- High costs for Internet and telephone-line connections.

Twenty-three percent of respondents disagreed with the proposition that the conditions required for Internet development had not all been met. They believed that the conditions for successfully setting up the Internet had less to do with training than with having the necessary resources (infrastructure, equipment, financial support). Furthermore, 61.5% of the informants often thought about the problem of setting up the Internet; 38.4% did not respond to this question.

Everyone agreed on the immediate need to plan for the creation and development of content adapted to the situation of Africans in general and Burkinabés in particular; however, the technology base is sadly inadequate and the population's income is too low to allow for the purchase of the equipment.

Depending on the positions they held, 61.5% of respondents stated that they could bolster and accelerate the establishment of the Internet in Burkina Faso, versus 7.6% who believed they could do nothing; 30.7% did not respond to this question.

Role and Relevance of State Intervention

All our informants believed that the state should deal with the constraints connected to the lack of infrastructure in Burkina Faso. However, steps should also be taken to reduce customs duties or value-added tax, as in Ghana and Senegal. Coordinated multisectoral state intervention is required to support the growth and development of the Internet. Training is fundamental, because people have to be able to create local content that would promote national expertise, and the state should undertake direct measures in support of this goal. Development of the Internet could be organized by sectoral activity; the resulting process would be more rapid and better monitored. In the sectors of education and research, for example, Burkina Faso's Délégation générale à l'informatique (general delegation on computer science) provided impetus to the government's decision to take preliminary steps such as the following:

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- Creating an Internet access node in Ouagadougou;
- Covering the costs of its establishment and operation for 1 year; and
- Inviting local economic players to organize an association to take over afterward.

Of the informants who responded, 53.8% felt that the effect of proposed solutions on the establishment of the Internet in Burkina Faso could be significant; 46.1% did not respond to this question. However, 23.0% of the informants maintained that the establishment of the Internet would have strong repercussions on their institutions, insofar as they depend on the state, versus 15.3% who foresaw only moderate repercussions. Note that 53.8% of our informants did not respond to the question.

Political Power

- In certain countries, the Internet is an indispensable tool for exercising political power.
- For example, computers and networks were installed in the administration, customs, taxation, and security sectors before they became common elsewhere.

The Internet in the Service of Political Power

As in answers to preceding questions, the Burkinabés displayed optimism in answering the question of whether the Internet would be an indispensable tool for exercising political power in their country. Most saw no direct link between power and use of the Internet. At the very most, some said it could be used to create more communication between those in power, the administration, and citizens. The government is cut off from the governed in the same way that the intelligentsia is cut off from the masses. That is because both those who govern and the intelligentsia are pure products of Northern schools, where blacks speak French and hold French diplomas, but remain African. *"You could say that within African society there is a segregation of the computer-literate from the rest, just as there is between whites and blacks in the North."* In both cases and despite a declared independence, one "guides" the other, but that other is still dependent on the guide.

Politically speaking, rather than sociologically, *"what we have here as a result is a two-tier society,"* or an *official society* and a *real society*. Official society is minuscule in terms of numbers and represents the power

structure of the state: government, associations of intellectuals, and so on. Real society comprises 99% of the population. It develops its own reference points: it has its own support structure and leaders of opinion. It does in fact influence official society, or else the latter would be a dictatorship.

Instead of being a unifying force in a context such as this, the Internet becomes a tool for keeping people at a distance. This leads us back to the responses to the first issue in this chapter, concerning privileged access. However, according to most informants, the media are considered "*relatively free*" in Burkina Faso. Several newspapers are independent, and a certain number of radio stations broadcast without excessive censorship problems. Some people even find that "*there are too many of them; it's a cacophony*." The only counterexample given – as the exception that proves the rule – was the case of a journalist found burned to death in his car. Everyone agrees that it is very difficult for any power to control the Web, and "*in this sense, the Internet provides other media with more freedom. From that point of view, the government has demonstrated goodwill and seems to have no intention of spying on citizens using the Web*." The more clear-sighted or cynical among our respondents indicated that for the time being, at any rate, the state simply lacks the means to do so, whether it would like to or not.

However, aside from the issue of customs duties – an area in which legislation does not seem to be changing as quickly as most would like – the state has shown initiative in charging the Office national des télécommunications (national telecommunications office) with taking all technological measures needed to set up and maintain the basic telecommunications infrastructure. A different organization will take charge of light telephony issues. A third body, the Centre national de télécommunications et du réseau Internet (national centre for telecommunications and the Internet), will have sole responsibility for the Internet. Information and awareness-raising workshops have been held, and 2000 marked the start of construction for the "national backbone," connecting five cities in Burkina Faso.

Some people saw no harm in the fact that the state is responsible for this infrastructure, even if it does constitute a monopoly. Some of our informants declared that little privatization has taken place in that area in Burkina Faso. Any attempts in that direction did not yield good results and now seem to be in disfavour with the state. However, the public or-

ganizations that operate in sectors in which the Internet has a presence *“are doing well financially and are technically competent.”*

The Importance of Preserving Users' Ethical Conscience

The possibility that the government might use the Internet for spying never entered the minds of the survey population: “At any rate, there must be a minimum level of regulation, and if we decide to go this route, then what criteria will apply and who will apply them? Sometimes the cure is worse than the disease.” A better solution would be to create ethics committees, made up of hand-picked public figures, who are always fairly difficult to find. “The best situation of all would be to avoid regulation altogether.” As a court of final appeal, ethics committees could operate in each state. On the global level, a monitoring agency could defend values that are, in effect, universal. “Instead, globalization is having the effect of shaping national differences into a planetary identity devoid of body and soul.” Ethics is part and parcel of these concerns. The number of places where ethics is discussed must be increased, regular colloquiums must be organized, and commissions must convene in every country and between countries. The results of their work should be widely broadcast to keep alive the ethical conscience of the “computer literate” (and all of the rest).

The Internet in the Service of Government and Citizens

Among the solutions proposed to further improve the good relations that citizens of Burkina Faso seem to have with their government, some people recommended taking advantage of the Internet to modernize the government. This would probably soon bring about a social activism that would contribute to good government. *“Whatever the plans are for development, before they can be put into action effectively, the masses must buy into the concept.”* The best approach would be to ensure that any plan be an expression of the people's own will. Interest in the new and foreign, combined with the use of communications technologies, particularly the Internet, would help to *get people involved* in various projects and programs. For example, the Net could be used to make electoral rolls completely transparent. Only at that point could everyone be sure that no irregularities have occurred. *“To succeed, the government must continue to present the establishment of the Internet throughout the country as a process of decentralization and as a tool for mobilization.”*

Economic Organization

- The Internet promotes the development of the very largest national and multinational corporations.
- For example, the first to computerize, after the government, were national businesses dependent on the state.

Of our informants on this topic, 65.1% responded that big business was first to adopt the Internet as a tool, but they noted that this is an issue of financial resources. Many SMEs are not yet connected to the Internet because they lack the means. For the 23.0% of those who disagreed with this proposition, it was much more a question of private operators' being pragmatic and readily adopting new technologies when they appear profitable; 15.4% did not respond to this question.

Only 15.4% of our informants frequently considered the problem of getting SMEs connected to the Internet; 84.5% did not respond to this question. This situation arises because financial and human resources are more readily available to large national and international corporations than to smaller businesses. Broadly speaking, few businesses in Burkina Faso have a Web site.

Furthermore, 30.7% of the informants believed that they were powerless to act and had no leeway to promote the Internet for small businesses; 69.2% did not respond.

Owners of SMEs should be made more aware of the fact that the computer would help them to better manage their businesses. Training should also be offered at a reasonable price to smaller businesses; they should be shown agribusiness Web sites; and they should be encouraged to get an Internet connection. Of our informants, 15.4% felt that the results of their proposed solutions would be significant; 84.6% did not respond to this question.

Finally, 7.7% foresaw moderate repercussions for their institutions regarding the problem of Internet access for SMEs; 92.3% did not respond to this question. There was a perceptible lack of interest among informants regarding this proposition.

Conclusion

As with most of the African countries we visited, the development and adoption of the Internet did not become an important social issue in

Burkina Faso

Burkina Faso until the period of 1997–1998. As in most Northern countries and in Europe in particular, people were still coping with the effects of the computerization of society that, in Africa, started in the early 1990s (Minc and Nora 1978).

On the whole, the Burkinabés we met were very much in favour of developing the Internet in their country, and, in more general terms, on the entire continent. They felt that Africa's current situation is what it is because the continent missed out on industrialization, whereas the North had profited from it to the greatest possible extent. Even if the world has now entered the postindustrial era, the North is still well positioned because it so thoroughly exploited the previous era. *"If Africa also misses out on the digital revolution, it will never get back on track,"* we were told. This reasoning shows that people were aware of the issue to a certain extent, which is interesting given that almost everyone has more prosaic concerns, such as seeking and preparing food and maintaining a minimum level of health. In some fashion, for a majority of Burkinabés, *"computerization is a huge luxury, and the Internet is from another planet."* The Internet can be both a cause and a result of development within a sector or a region: in fact, it is an amazingly complementary tool when employed alongside others in pursuit of global development. This is why access to the Web must be broadened, not blocked.

As for content, it was in Burkina Faso above all that our informants were most insistent on a fundamental point about technology in general and communications systems in particular: content must be properly matched to needs. As other authors have put it, it is not technology that generates its use, but the presence of content of interest to the users (Vettraino-Soulard 2000 [1998]). An overly technological approach to Internet development would therefore have as little chance of working in Africa as anywhere else.

Burkinabés were the most optimistic of any of the citizens of the Francophone countries we visited (Côte d'Ivoire and Senegal). Their position was actually much closer to that of the Anglophone countries (The Gambia and Ghana). Some Burkinabés thought that *"90% of the population will have an Internet connection in the next 10 years and that having 4000 computers connected to the Net represents a good start for a country like ours, especially when compared to the performance of comparable nations."*

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CHAPTER 3

Côte d'Ivoire



Exclusion and Inequity

- The Internet creates a gap between individuals, organizations, and countries, in the sense that those who already possess knowledge and financial resources benefit more than those who do not.
- It is clear that the computer illiterate, groups of nonconsumers, and territories that are poorly equipped with the means of communication are excluded from the Internet.

Was the Internet Designed for the Privileged?

As in the other Francophone (Burkina Faso and Senegal) and Anglophone (The Gambia and Ghana) countries visited, most of the people interviewed in Côte d'Ivoire thought that the Internet had already begun to create a gap, one that would continue to grow between the various strata of Ivorian society. Regardless of intelligence or level of education, a person's use of the Internet requires significant adaptability; many people will not even try. A gap is developing between the younger and older generations. The younger generation becomes "hooked" on computers more quickly than the older one. Many young people see computers as game terminals above

all else, and it is true that a great deal of computing time is spent on games. The same model applies to Internet use, although parents may believe that their progeny are looking for a chemical formula or the solution to a mathematical problem. *"However, given our current position, any pretext for getting practical experience on the Internet is good."* Even if they agreed that the Internet has indiscriminate content and imposes its standards, whether voluntarily (when a program is created) or involuntarily (when lifestyles are imitated), many people said, *"So what?"* Other communication and information devices did the same in earlier times.

But the Internet can also reestablish equity within African populations. In modern Africa, the nature of information transmitted varies according to the recipient. This goes far beyond Northern notions of style of address. For example, a student would never address a teacher in the same manner as a schoolmate but would use a far more formal style, because the teacher may use the interaction to assess the student. In African societies, it is the content of communication, as well as the tone, that is important. The information reported to a father, uncle, or big brother is not the same as that reported to a wife or daughter. On the Internet, these conventions are lost in the network's nonhierarchical, open structure. In addition, dialogues and discussions may go on constantly, day and night, in discussion forums.

Positive Aspects of the Internet

Even those who claimed that the Internet creates inequity within groups admitted that this issue did not preoccupy them overmuch. Most new technologies exhibit a certain latency period, and this seems true for the Internet in Africa: *"we just have to wait until this part is over."* A certain detrimental social effect is to be expected: the situation is *"logical," "natural," "unavoidable."* The informants used various words to express similar notions. Ultimately, everyone agreed that the phenomenon of Internet adoption is irreversible and any attempts to oppose it would be fruitless. *"Given the worst possible scenario, there is no point in crying over spilled milk."*

In general, informants focused on the positive aspects. As in the other survey countries, everyone surveyed in Côte d'Ivoire had a relative living in the city or abroad; the cellular telephone and the Internet had completely changed their lives by enabling them to continue a specific

cultural tradition – the maintenance of family ties. This is particularly true of cases in which family members had moved elsewhere to find work. Informants provided many examples of absent family members who had remained in “*close and frequent contact*,” which no means of communication other than Internet had permitted at such a low cost.

Internet: Cause for Celebration or for Frustration?

The specific reasons given to support informants' responses fell into several categories. Each user had their own reasons to celebrate or to bemoan the development of the Internet. The service provider, who may just have begun to offer services, was typically pleased because of the likelihood of long-term demand for the Internet. The teacher may have been among the first to recognize both costs and benefits of the Internet for students. The pedophile had every reason to welcome the Internet for the unequalled opportunity it provided to view content of interest from a worldwide “menu.”

So it appears, from a sociotechnical point of view, that the Internet is similar to all the modes of communication that predate it: “*some rejoice over its advent, others loathe it.*” The survey results reflect both the enthusiasm and the fear of novelty to be found in the early stages of any phenomenon. Once the Internet is more widely distributed and commonplace, no doubt responses to it will change.

Potential Pro-Internet Intervention

People who worked in the public sector, including the higher administrative levels, claimed that they had little leeway to support Internet development. Conversely, all of our private-sector informants declared that they were doing their utmost to support it. This opinion was shared by teachers, trainers, and those who worked in associations.

Closing the Gap: Means of Action

When assessing potential solutions, we find there are multiple considerations. The primary issue here is the establishment of infrastructure such as electricity and telephone networks. The transmission of electricity affects activities in numerous areas, including health, artisan businesses, and day-to-day life. In each case, electricity is indispensable for computer operation and for providing the right operating conditions (air-conditioning,

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dependable power supply, and so on). The telephone has inherent utility, but it is also an essential pillar of the Internet, because cable transmission is even more uncommon and esoteric in Africa.

Another priority is the elimination of illiteracy. This is a fundamental issue in development, mentioned by most of the people interviewed in each country visited. In both developed and developing countries, we must never allow ourselves to be distracted from the ongoing battle against illiteracy.¹

Since its inception UNESCO has promoted initiatives such as the NIICO and the International Program for the Development of Communication. At the cusp of the new century, UNESCO has started many new programs, particularly in the communications sector. Although there is no direct link between the Internet and 2000, the Internet had the effect of heightening the frenzy that marked the end of the century, a period that produced many powerful symbols to be absorbed. Within the Francophonie and certainly in the time since the Hanoi Summit, many proposed projects in Internet development have had the goal of enabling the French-speaking world to become more active on the information highway. At the political and administrative levels, state agencies, such as the Conseil national des autoroutes de l'information (national council on the information highway), have already been set up to cover many aspects of this endeavour.

NGOs play a significant role and are very aware of evolving concerns in the electronic communications media sector. They also monitor the progress of technology closely. Apparently, five times more NGOs have come into being since 1988 than in the entire period of 1916–1988, and many of these NGOs have been drawn to the issues of Internet access. And many more projects appeared to be in the works during 1988–1992 than in the previous decade.

Emphasis will have to be on the preservation of local culture during Internet development. This technology is bound to create a shake-up of local culture. A primary issue will be that the Internet promulgates a written culture, whereas African societies are traditionally oral cultures. One of the solutions may be to design specific voice-activated programs for rural populations.

Another Internet characteristic incompatible with existing African structures of thought is its representation of time and space. Invented by

the North, the Internet is easier for Northerners to understand, as their frames of reference are not seriously disturbed by the encounter.

However, the changing structure of African society may indirectly promote the development of the Internet. If a family member moves to the capital or a town, other family members may visit. This is a good opportunity for someone destined for a life at work in the fields to take a completely different path. They can start to use the Internet either at a family member's home or at their neighbour's place in town. These facts lead one to consider that the rural exodus has merely begun and that many long-term costs are as yet unknown.

Pragmatically speaking, solutions depend on the priorities chosen for Internet development. In the view of the respondents, the state should end its telecommunications monopoly, encourage private operators to professionalize their structures, prevent illegal telecentres, and devote more funds to the acquisition of NICTs. Providing access to students at all levels of education should be the first priority. In schools, Internet development occurs under the auspices of the Programme d'appui au secteur éducation et formation (education and training support program), created for this purpose. The government intended to set a good example, and for once, on this aspect of Internet development, the majority of African countries share the same point of view. For this reason, the most recent meeting of the African Civil Services Observatory, held in Cotonou, achieved consensus regarding the steps to be taken in this area. This was undeniably facilitated by the absence of linguistic barriers – a real benefit within the Francophone zone of Africa.

In the street, it was agreed that anything that might support Internet growth must be developed at the lowest possible cost. The number of cyber cafés, telecentres, and community information and communication centres must be greatly increased, and illegal cyber cafés must be suppressed. As Internet development progresses in Côte d'Ivoire, the issue of replacing the present hourly rate system with a flat-rate pay structure becomes more pressing. The government should require that each Côte d'Ivoire commune (smallest administrative district) have at least one Internet centre and that all computers in each Centre de lecture et d'animation culturelle (reading and cultural facilitation centre) be connected to the Internet. It would also be a good idea to increase advertisements in the local media – the press, radio, and television – and to organize “infofairs” and exhibitions.

Across the country, campaigns must be organized to inform the public and heighten awareness of the issues. At the same time, care must be taken to ensure that perceptions of the computer and the Internet are not overly tarnished, because wide publication of our concerns may well dissuade some people from trying the Internet. The Internet itself can also be used to popularize information. Although many may have held back from purchasing a computer, once they understand what they can accomplish on a network, they often change their minds: "*we must definitely head in this direction.*" Even if it remains true that people "get it" more quickly and thoroughly if they understand the logic of the system, it is important for people to know that it is unnecessary to be a computer scientist to use the World Wide Web. We need to demystify computers and the Internet, rather than allowing the focus to remain on the challenges of their use which can discourage potential users.

Proposed Solutions and their Impact

All the solutions proposed above should have a certain impact on Internet development. The greatest challenges will probably be in making the Internet accessible to farmers; a significant proportion of the population remains rural. Informants on the subject of Internet development hesitated when asked to give their opinion of priorities by "class" (or socioprofessional category) and to recommend where development efforts should be concentrated. The two most frequently mentioned categories were schoolchildren and postsecondary students and the rural population. Obviously, the two are not readily comparable: one is concentrated in schools, institutes, and universities, whereas the other is scattered widely across the country. The challenges should be fewer with the former group. The needs are also entirely different between the two groups. "*It would be ideal to tackle both at once.*"

Concerns About Freedom of Expression on the Web

Many informants expressed concern about Internet development, particularly those in the political milieu, as the network inherently contains the seeds of complete freedom, including political freedom. The slow pace of Internet development is usually explained away on economic grounds, but the real basis for concern may well be the fear of potential destabilization. We have heard "*traditionally, ideas have legs, but the Internet*

gives them wings." For the same reasons, globalization worries many: not primarily because of financial concerns, but because it facilitates the entry and influence of liberal ideas. The media have always contributed to the dissemination of new ideas, which is why they have always been viewed with apprehension.

Culture (Internet Content)

- The Internet promotes the intrusion of content created in developed countries into developing countries.
- For example, the Internet is an open door to pornography.

The North's Cultural and Media Hegemony

As noted by informants from other countries, the majority of Ivorians we met accepted some responsibility for the fact that most content found on the Internet comes from the North. Some of them stated, "*technically, we are behind the times; culturally, we are completely capable.*" For others, the fact that the South finds itself a consumer rather than a producer does not justify the fact that the North has not called on the South to create programs of its own. "*The time for action is now, because the amount of content produced by the South is growing steadily.*"

Natural Development of the Internet and its Consequences

Our informants often thought about these problems, although not obsessively: as we were told, fatalistically, "*it will all turn out as it should.*" The best example comes from television programming. If we compare 1960's commentary about television with what is said today about the Internet, we find identical concerns. All plans to modify the trajectory of television came to nothing. The programs spread globally with an overriding American bias, and "*consumption patterns were modified over time*" as television and its programming developed. Countries regulated each stage according to their sensibilities: sexual content is now censored and ratings are provided concerning violence, all in the interest of protecting children. "*We know full well that to propose self-regulation is to fool oneself, as man is man, and it seldom works to try an a priori solution; it is more realistic to agree to correct the fault once it occurs, a posteriori, whenever a particular value is threatened.*" Furthermore, positions chosen for a priori protection may be untenable, as the world seldom evolves as predicted, and if it did, the global implica-

tions might be wholly unpredictable. The challenge is to find a moderate approach, *“the middle way that provokes neither censorship nor accusations of laxity.”* This is why it would be unrealistic to propose that the Internet can develop differently in Africa than elsewhere. *“Even if the situation and basic cultural conditions in the North are different from those of the South, it is clear that Internet development is progressing here just as in the North, with the current focus remaining content consumption.”*

Means of Adjustment

“What we lack most is a sense of organization.” This is how some informants explained the slow pace of decision-making in most African countries about forming alliances to benefit from economies of means and scale in building infrastructure: *“three-quarters or nine-tenths of our distress is due to a lack of dynamism.”* In contrast with what is said about the African soul, little pan-continental solidarity can be observed on this subject. *“Yet we are certainly condemned to unite in the end”* and will be lucky to be able to side-step linguistic issues, such as those found in Europe. This example demonstrates that if there is a will, even a road that is paved with potholes can be followed to its end.

In Africa, efforts at the national level have culminated in the creation of the African Information and Communications Technologies Training Centre, which aims to unite all African countries. Within each country, a more economical strategy may be to consider the Internet’s role as a potential link between various sectors. If developed, the Internet could be used for distance education, training, and telemedicine, not only within a given country, but in cooperation with other countries, when needed. If commercial uses are added to the account, it is foreseeable that the network will achieve financial equilibrium. Good governance may open it up to a wide range of applications. It should also be opened to all content, without censorship. It has been noted that whenever a country dons the yoke of censorship, be it religious or secular, the leaders tend to abandon science, knowledge, and the arts as well – in short, the essence of humanity. This phenomenon has been very costly for humankind, as the only globalization of real value is cultural. Marshall McLuhan was right when he spoke of the global village as a world in which individuals from anywhere on the planet have access to all previously formalized knowledge. Globalization is positive if it can be used to share the human heritage.

Africa tends to remain a consumer of this global database, the Internet: only an estimated 10% of all Internet sites were created in Africa. *"It is precisely this lack of formal involvement that explains the rarity of Nobel prizes awarded to Africans – a few Literature prizes (Maryse Condé, Léopold Sédar Senghor, Nadine Gardiner) and Peace prizes (Nelson Mandela and Desmond Tutu)."* Because Africa still lacks technical know-how, it is obliged to partner with the North to obtain "raw materials" (information and knowledge – the actual content) and to reformulate it for consumption, using the techniques of the North. *"After a certain period of training and experimentation, consumers too can become full-fledged producers."*

Yet again, cyber cafés and other solutions that lend support to collective use of the network resource would be positive, as they add an element of community to the relationship between people and machines. In the café or cyber centre, the interaction between people and terminals is often interrupted by others who may chat or ask for information. It is considered highly beneficial to be able to learn, inform others, and, at the same time, remain connected to the real world. *"The Internet is somewhat of a threat to these values."*

Internet Costs and Financing

- The Internet is a complex tool requiring huge financial investments. Although the importance of communications infrastructure is now recognized, it faces fierce competition from other investment priorities, such as hospitals and roads.
- It could be argued that the sole purpose of Internet integration is to increase the debts of developing countries: Internet-related costs are high, and most of the equipment is purchased in foreign currency (American dollars or French francs).

Only one informant considered these propositions justifiable. His reasoning was that investments in information technology are not Côte d'Ivoire's first priority. The Ivorian government prefers to invest in health, education, and women's cooperatives. It is better to invest in rural regions, to limit the influx of "street kids" to the city. As far as this person was concerned, Internet access will cost Côte d'Ivoire dearly, as equipment is expensive. For example, a computer that might cost the equivalent of about 1 million xof in a Northern country could be twice as expensive in Côte d'Ivoire (because of added charges).

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In contrast, 86.6% of informants found that the Internet does not compete with other national investment priorities, because it complements all other sectors (health, education, and so on). However, although 20.0% of the people interviewed claimed to consider this issue frequently, 6.6% did so rarely, 40.0% never, and 26.6% provided no answer.

To Invest or Not to Invest

In support of Internet investment, some people argued it would improve the visibility of Ivorian students and other African researchers by positioning them more favourably. The Internet is a great spur to development, enabling onsite research, access to bursaries, and so forth. It also provides access to knowledge; and, of course, efficient knowledge management allows significant cost controls. Less cash would flow out of the country, because fewer international experts would be needed. The Internet may certainly require a large investment and may incur many upfront costs, but in time, it is thought, the value-added benefits would more than repay the initial investment. Consider the benefits to SME development. In other words, it is believed that Internet development would have no unrecoverable costs. It is a tool that supports other sectors. All informants believed that access to this technology should be facilitated through policies aimed at reducing the cost of computer equipment, telephone communication, and Internet access.

Recommendations for Internet Development

To promote the Internet, some suggested the establishment of public exhibitions. The state should make Internet access free and reduce the cost of the hardware associated with this technology (computer, printer, telephone, and so forth). The current cost of a permanent connection is between 30 000 and 40 000 XOF a month, not including telephone charges. Informants suggested that the state should also solicit international aid for infrastructure expansion (including electricity, telephone lines, and computers) and make these resources available to its citizens. In addition, the state should create an Internet development fund to finance, among other things, training of local engineers to manufacture computers and create Web sites with national content. This proposal would meet a few of the conditions for a successful implementation of Internet technology, particularly in the following categories:

Côte d'Ivoire

- Cost of equipment;
- Cost of connection (service providers);
- Internet concentration in few locales (Abidjan, Bouaké, Yamoussoukro); and
- Liaison with remote regions.

In general, the Internet is unevenly distributed in Côte d'Ivoire.

A Few Figures

In Côte d'Ivoire, 20.0% of the informants felt they were in a position to support Internet promotion. Another 20.0% said that their position did not allow them to act, and 53.3% did not respond to the question. We found that 26.6% of people thought that the solutions they proposed could have a significant impact on the process of Internet promotion, and of these, 6.6% estimated the impact would be very significant, 6.6% that it would have little impact; and again, 53.3% did not respond to the question. In a related matter, 20% of informants felt that budgetary allocations had a significant effect on their institutions, 13.1% considered the repercussions moderate, 6.6% considered them low, and 6.6% believed they would have no effect. Finally, 46.6% did not respond to the question.

Faced with these figures, one gets the impression that the Internet is the tool of the intelligentsia. A Francophonie project at the University of Abidjan resulted in a generous supply of computer equipment for that school. This focused initiative had little in common with the more generalized craze for computers we encountered in other places, such as Dakar. We were unable to obtain reliable statistics about the Internet in Côte d'Ivoire, as we did not gain access to the right resource people.

Sociotechnological Aspects of Internet Integration (Resistance, Uses)

- It is not a simple task to establish the Internet in a country, because many of the conditions required (for example, education or correct needs identification) may not be present.
- When discussing this topic, people often said that the North transfers its technologies to the South purely for monetary gain and not because there is any real need for it.

What Priority Should the Internet be Accorded?

The second statement above was considered valid by 46.6% of informants. To illustrate their position, some described the introduction of audiovisual distance education at the primary level in Côte d'Ivoire. Many televisions were imported to equip the schools; later, it was determined that this operation served more to camouflage a certain commercial interest than to respond to the need for technology transfer. A stalemate ensued, and ultimately the project was abandoned. Others argued that the Southern population is not yet ready for these NICTs. The Internet remains a tool of the elite and is thus used primarily by state and university institutions and by the largest private companies. Despite this, 53.3% did not agree with the argument, insisting that the Internet is required in the South. They felt that it is important not to wait until particular conditions are fulfilled before the Internet is embraced but to act immediately, as the tool is vital for the country's future development.

Among the reasons put forward by some to either support or reject the argument were aspects of the Internet generally deemed positive: budget optimization or the improvement of telephone communications. However, others claimed that African countries are ill prepared to use the Internet and pointed out the drawbacks of subcontracting the marketing of Internet-related products. In this area, the developing countries are essentially consumers.

A full 33.3% of those interviewed did not respond to this question, and another third had never considered this aspect of Internet integration; 6.6% considered this question occasionally; and 26.0% considered it often. Obviously, the issues raised are indeed of some concern.

When the discussion turned to their ability to act to help meet the conditions for Internet integration, 40.0% of informants had no response, and 6.7% answered that they did not feel in a position to act, and 53.3% reacted positively, stating that they felt they were in a position to help.

Proposed Solutions and Implementation

The Internet is very useful. Accordingly, people insisted that the state disseminate information to raise the level of public awareness, highlighting the benefits and profits that the Internet could produce. Businesses also have an important civic role to play in this matter as disseminators of state

information. In brief, more training must be made available at all levels. However, this must be done in stages. For example, it would be utopian to believe that the entire Ivorian population could be connected to the Internet (an Internet connection in every village). The first step should be to concentrate on white-collar workers, university students, and the most affluent town populations. The general population could be given access later, although local governance, youth associations, and women's groups should receive first priority. Other voices proposed that the state establish programs to ensure that schoolchildren have access to computers and are introduced to Internet use.

Repercussions

Of our informants, 53.3% felt that their proposed solutions could have a fairly significant impact on the process of Internet development in Côte d'Ivoire. Only 6.6% felt that this impact could be highly significant, 13.3% considered that it would be moderate, and 6.6% felt that their input would have no effect whatsoever. Many informants did not respond to the question.

Political Power

- In certain countries, the Internet is an indispensable tool for exercising political power.
- For example, computers and networks were installed in the administration, customs, taxation, and security sectors before they became common elsewhere.

The Internet: Another Monitoring Device

Although we did not hear this response in other countries, Ivorians were quite aware of the Internet's monitoring and surveillance potential. Significantly, the Internet reflects African society in one regard: both are founded on a network structure. "*We are certain that the Network could 'stick its nose into' the other networks*" was reported with an exasperated grin. This comment served to remind us of the inevitable societal imbalance between the powerful few and the fairly powerless masses. However, this same Network is always able to "cover its tracks," because the Internet, truly the champion of decentralization, has no more than ephemeral ties to location: this is how illegal sites can constantly be born, die, and be

reborn under another guise. The state would thus encounter many difficulties if it tried to use the Internet to monitor its people. Experiences with other means of communication are indicative of the difficulty of censoring: “national radio and television stations are really only followed by those who have no other options.”² Those who are able to get the BBC or RFI prefer to do so; otherwise, they receive filtered news, and self-censorship prevents overt or covert censorship by the government. It has been confirmed that “private radio stations are unfettered, but the national stations continue to operate as before.” The Internet could therefore benefit from the freedom of expression of other means of communication already in place, as it serves no purpose to censor information that can easily be found elsewhere. However, before the arrival of the Internet, people never had such rapid and voluminous access to so many different points of view. All sorts of opinions circulate on the Internet because everyone can express themselves, wherever they are.

Of course, Internet content includes a good dose of propaganda in all areas: terrorism, nihilism, revisionism, and so on. “At the political level, the Internet can promote complete transparency and good governance.” It would become more difficult to keep the citizenry dependent and uninformed. The same experience also teaches us that the Internet promotes democracy, as the first newspapers disseminated over the network by Ivorians were issued by the opposition press. “For the moment, the state is well behind in its use of the Internet, so we find ourselves in an extremely liberal environment.” In any case, in the view of our respondents, those in power might be advised to adopt this strategy – whether they choose to privatize or to accept the privatization of all troublesome media – and maintain national shows only for “politically correct” content. “This way, they would win on all fronts: they would be able to disseminate their own propaganda and simultaneously give the impression within the country and to the world that they are actually liberal.”

The State and the Internet: In the Service of What?

Informants who paid particular attention to the use that the government could make of the Internet considered this issue fairly frequently – every time a political event occurred. They were aware that “information is power.” This led to reflection about the code of ethics within the media and politics. Some people thought that the state does not use the Internet in the best interests of the people as much as it could. For example, the Internet

could be used to broadcast important legal debates, budget discussions, or administrative decisions. The Internet could be a marvelous tool to decentralize information and localize administrative decision-making. In fact, a first attempt is being made to use the Internet in this way: the *Système d'informations administratives en ligne* (online administrative information system). Decisions would reach the provinces more quickly, and the Internet would be part of an ongoing effort to educate the public on the challenges involved in governing a country. *"They will come to realize that simplistic notions of government are not productive, and that decision-making is always complex."*

The Importance of Regulation and its Consequences

Among the recommendations put forward to ensure that the Internet is not used as a surveillance device by the government is regulation. From the previous responses, we infer that the majority of Ivorians oppose any form of control. However, they favour legislation to protect individual freedom and freedom of communication, even if these are already guaranteed by the constitution. The latter has been reinterpreted at times to allow such abuses as telephone wiretapping. According to our informants, such legislation would have nothing to do with censorship, but *"too much freedom kills freedom; we must define rules to ensure that every person can fully enjoy the personal freedoms guaranteed under the constitution."* A concerned prodemocracy observer might want to consider all these problems, including means-of-communication issues, and note in particular how they are handled by the current powers that be.

Economic Organization

- The Internet promotes the development of the very largest national and multinational corporations.
- For example, the first to computerize, after the government, were national businesses dependent on the state.

In response to these statements, 40.0% of people interviewed found it not true that companies subsidiary to the state were the first to computerize. However, no justification was given to support this negative response. In contrast, 53.3% supported this proposition. The latter claimed that it was the government and multinationals that first adopted Internet technology, as their productivity was more sensitive to potential gains. On how

Internet development has so far eluded SMEs, 6.6% did not respond to the question; 40.0% of people interviewed thought that large multinationals and nationals derive greater benefit from the Internet than would SMEs; 13.3% indicated that they considered this issue on occasion; 6.6% thought about it only rarely; and 40.0% did not answer.

We noted that a full spectrum of SMEs are ready to invest in this resource. At the level of market share, the Internet favours the multinationals. But an SME connected to the Internet can increase its efficiency and profitability.

In addition, 6.6% of people interviewed felt that they were in a position to support Internet development within SMEs, and 20.0% did not feel their actions could have any effect. A significant proportion, 73.3%, did not answer this question. This reflects either a lack of interest or difficulty in providing an answer.

Many people felt that it would be a good idea to launch an advertising campaign directed at SMEs, to educate them about the benefits of the Internet. The campaign would include a warning about this technology's significant upfront investment but point out the increases that could later accrue at the bottom line. Tax-reduction policies were also recommended. Another idea was to have groups of SMEs collectively invest in Internet equipment; this would reduce acquisition and implementation costs. It was also suggested that Internet access be facilitated by government, so that Ivorians could use it to promote their agricultural products.

Conclusion

Of the other Francophone (Burkina Faso and Senegal) and the Anglophone (The Gambia and Ghana) African countries visited, Côte d'Ivoire appeared to have the most extensive Internet development. Perhaps for that reason, our Ivorian informants were least enthusiastic and most critical of the Internet. They emphasized the fact that it could create other gaps in addition to those of rich and poor, literate and illiterate. They also saw the potential for a generation gap. Some very intelligent and cultivated people "*just cannot master the skills because they are too old for such things,*" whereas the young ones "*eat it up.*" Just as in Northern countries, electronic games are the magnet that draws young people to computers, and thence to the Internet. This is the bait that has helped spread, first computers, then the Internet. No intervention in this process was felt tolerable, even within

families; it was tacitly agreed that anything that propagated the Internet was good. What astonished our informants was how little was being done by the state to promote Internet growth in Côte d'Ivoire. Indeed, the informants themselves, those with a private-sector background, proved to be much more dynamic than public workers. In the opinion of our informants, this wait-and-see attitude of the government is somewhat characteristic of African countries, whereas an extra effort is really needed to achieve results: "*we need double mouthfuls to thrive.*" This reluctance of the state to develop the Internet may be explained, said some, by the fact that the Internet is a maelstrom of libertarian ideas, which intimidate the current political class. Finally, it was our Côte d'Ivoire informants who expressed the greatest concern that the government would someday use the Internet for monitoring and surveillance of its citizens and its opponents, once the means and skills were in place.

Any form of ICT has its costs and benefits, and all media contribute to Africa's development. The negative must be accepted, if people are to enjoy the positive. According to our informants, the same phenomenon observed in the case of other ICTs will be true of the Internet: after a certain latency period during which use will expand, the Internet will find its place among the other media. We did, however, note real worries regarding the potential for harmful effects on the African cultural identity.

Endnotes

1. In a recent article, "Le bilan controversé de vingt ans d'illettrisme" (*Le Monde*, 2000, supplement *Le Monde Economie*, 29 August), a report is cited (Antoine Lion and Veronique Esperandieu, 1984, "Des illettrés en France," la Documentation française, Paris) estimating the number of illiterate people in France at 5 million. In another report (Marie-Therese Geffroy, 1999, "Lutter contre illettrisme," La Documentation française, Paris), an additional 2.3 million adults and an inestimable number of children were identified as illiterate. This was probably the reason for Jacques Chirac's acknowledgment, during a 14 July 2000 televised interview, that "during the last fifty years, illiteracy has not decreased in France."
2. Note that our research was completed by November 1999, before the *coup d'état* in December.



Exclusion and Inequity

- The Internet creates a gap between individuals, organizations, and countries, in the sense that those who already possess knowledge and financial resources benefit more than those who do not.
- It is clear that the computer illiterate, groups of nonconsumers, and territories that are poorly equipped with the means of communication are excluded from the Internet.

Was the Internet Designed for the Privileged?

The Internet causes gaps between various categories of people in both the North and the South. This phenomenon is by no means specific to Africa. Nonetheless, to avoid being held responsible for those gaps, the South should take special precautions against these inequities. It would be all the more perverse for the South to fall into these traps, as it has had ample opportunity to see the consequences elsewhere. When establishing the Internet, African countries must take all measures to reduce these risks. Some informants went so far as to suggest that the Internet should be used to reduce inequities because "*it is a tool well suited to that purpose,*"

keeping in mind that the North's view of the South is often a distorted one: "*in the Southern countries, the poor are very poor, extremely poor.*" The greatest illiteracy is found among the poorest. "*While nearly everyone is very poor, about 80% of The Gambia's population is illiterate.*" A mere handful of families are rich, perhaps no more than 2% of the population. But though the correlation between wealth and culture is anything but strong, the one between poverty and illiteracy is blatant.

Information is also causally related to culture. Unfortunately, according to the head of an independent newspaper, 10% of the population is entirely illiterate, and this includes their native tongue; 70% more or less understand the locally spoken English; and it would be generous to say that 30% of the population would be able to read English newspapers. In the North, there exists an entire middle class that, although perhaps not rich, is capable of using the new technologies. This is true of a good number of adolescent and student users, for example. The poor of South and North have little in common, and the rich of the South are likely to travel frequently and lead lives of leisure, rather than work with a computer. In general, the rich have staff to take care of everything related to computers, communications, and telecommunications. Comments included the following: "*They are not particularly interested in either the development of the Internet, or of their country, except perhaps as it relates to their businesses*" and "*unfortunately, permanent Gambian expats are not terribly concerned with improving the quality of life here.*" In the North, a student may be very poor but still have access to a computer at a friend's home, at an organization of some kind, or at school. In The Gambia, only primary education is mandatory, and the most optimistic figures suggest that only 65-70% of children attend school at all. Of these, 65-70% are boys. A great number of students leave school well before the age of 17 years. Attendance at kindergarten is climbing, especially in towns and cities. But few classes of any sort boast computer equipment. Furthermore, just as in the Francophone countries studied, "*there is a huge difference between urban and rural life, and for many the gap is more likely to increase than decrease.*"

The main problem is that some of the population is unaware of the Internet's existence and what it represents. Among those who are aware of it, "*the Internet is not considered a necessity. It is considered a tool available to civil servants, and to some of the most affluent by virtue of personal wealth.*" But we have noted that, for example, local newspaper businesses are fully

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computerized and maintain up-to-date Web sites. Nonetheless, Internet use is still uncommon in The Gambia, including in its capital, Banjul.

Consequences

All of our informants stated that they often or very often considered the fact that the Internet might exacerbate societal gaps and inequities. This occurred mainly in the workplace when they could not use traditional means to locate information they knew they could find on the Internet. People have few local sources of information, and archives tend to be poorly maintained, if at all. Few conditions required for adequate conservation of records are met. Much information has disappeared without a trace. This situation is regrettable, because the more information one has, the better the potential for handling conflicting points of view: "*in a certain sense, information only increases the thirst for information, promoting cultural development.*" The Internet is a wellspring of information; therefore, those who lack access to a computer and a network connection are penalized.

Journalists and teachers, as well as leaders and members of development or women's organizations, considered this issue each time they wanted to disseminate information. Rarely could they provide sources other than those they were personally aware of and had to direct clients to obsolete, sparse reference materials with already well-known contents.

Researchers were particularly affected by this problem, especially when writing articles or submitting dossiers.

Closing the Gap: Means of Action

As elsewhere, some professions in The Gambia offer more opportunity than others for Internet promotion. Also, as elsewhere to various degrees, The Gambia's press is particularly well positioned to exert influence at both the decision-making level (pressing for appropriate political measures, for example) and that of users (readers). This is the extent to which The Gambia Press Union feels able to influence the government and media regarding Internet use. As well, the national commission responsible for media has adopted a general information and communications policy emphasizing Internet promotion.

Other private businesses may also have a significant impact on Internet expansion: cyber cafés are a case in point. According to the manager of a café that opened its doors a few months before the survey was conducted

in November 1999, three other cyber cafés had already opened in Banjul and Sera Kunda, with an additional 10 anticipated shortly in other parts of the country. "*This tool must be as decentralized as possible,*" we were told. Even if the very poorest people are not likely to be clients, at least the average Gambian could use the Internet, provided that prices are kept quite low. Currently, 30 minutes of Internet access costs the equivalent of 1 USD, and unlimited access is billed at 16 USD a month. It is possible to imagine what this means to people whose mean monthly income is 27 USD. These costs may seem fairly low, given that in comparable countries the same service costs 50 USD. Clients have to pay only for the Internet connection; e-mail addresses are free. "*This is the point at which government should intervene: by absorbing the costs of Internet access and limiting subscription fees.*"

Proposed Solutions

Most of our informants made suggestions in support of Internet access. They proposed that the first steps must be made at the national level, by reducing customs tariffs; and internationally, by negotiating the best prices with equipment producers. An incentive for equipment producers could be the fact that Africa, starting from scratch, may well become a highly lucrative market.

International organizations might also be called on for additional assistance. A senior civil servant indicated that joint projects are already under way with the United Nations Development Program to establish Internet access in educational institutions. These projects are to have the assistance of the national telecommunications enterprise, acting on behalf of the government. In 2000, the latter planned to promote rural access to the Internet by installing network terminals, because "*Internet issues are financial, not technical.*" (Our survey was completed in November 1999.) The Gambia should shortly have one network terminal per village. If the general population has access and adequate technical support, people would quickly acquire sufficient Internet know-how. Many of our respondents favoured raising the Internet's visibility by providing training and free access to equipment in community centres. Some government departments may propose these steps, without waiting for the creation of private fee-for-service telecentres. In any case, *becoming aware* of Web-related issues is a positive first step. Of course, much work remains to be done to meet other needs, especially those of people living in the interior and in the countryside.

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According to our informants, most Gambian government departments have access to the Internet. This should be extended to cover primary and secondary schools, universities, libraries, and information and documentation centres across the region. It is critical to identify the most important Internet products, because the Internet has the potential for becoming “*the right and the best*” way of reducing inequities within The Gambia, among Southern countries, and, ultimately, between the North and the South.

Optimism for the Future

All informants were convinced that if their wishes were somehow granted and their proposals led to decisions and concrete action, the measures applied would have a significant effect on both Internet development and the reduction of inequities. For many Gambians, “*Web development would be ultrafast: 5 to 6 years to achieve adequate coverage. At the moment, there are about 1200 people connected.*” A country’s level of development is not a function of its size. This is also true in the countries of the North: Luxembourg, Monaco, and Switzerland are all much smaller and far richer per capita than many much larger countries. “*In Africa, we have the example of Botswana. Diamonds are undoubtedly the source of that country’s prosperity and, in particular, of its democracy. Gambians admire that country a great deal because it has managed to become self-sufficient in everything. Progress can be seen in all areas; for example, one can count an elephant for every four human beings. Nature is protected, and many people have access to the Internet.*”

Potential Repercussions of the User Gap on Other Stakeholders

All of our informants felt that if inequities were reduced, thanks to the Internet, the impact would be felt throughout The Gambia, as “*our future society will depend upon communication, and the power of individuals will depend upon their ability to control information and telecommunication systems.*” For this reason, if a choice must be made, it is most vital to focus on training young people in computer sciences. Attempts to reduce these gaps may unfortunately contribute to the formation of others, such as between the young and the old and between those who have and those who have not received computer training. But of two evils, one must choose the lesser.

The general impact of the Internet on business could only be positive, particularly for certain professions. Even publishing businesses do

not consider the Internet as competition but as an information and communications medium complementary to their own in function and operation. The Internet supports other media in two ways. First, as an information service, it allows the user to obtain data unavailable in The Gambia or anywhere else in Africa. Moreover, the Internet is an information dissemination service, complementing those already in existence. The Web is a partner that allows us to “*make full use of our output and provides us with unequalled recognition, independence, and breadth of dissemination, even if for now that potential remains latent,*” explained a private publications manager.

Culture (Internet Content)

- The Internet promotes the intrusion of content created in developed countries into developing countries.
- For example, the Internet is an open door to pornography.

The North's Cultural and Media Hegemony

There is a kind of tacit agreement between the North and the South regarding program dissemination, both by traditional means (newspaper, radio, television) and by the Internet. If the North and South are unequal, the South has only itself to blame, we were told, as it is quite capable of producing the content it requires. The Gambia itself knows best about its life conditions and its specific realities. Although it is a small country, it has every ability to design content that draws the interest of the entire world. Radio and television provide good examples: programs exported to the United Kingdom and the United States are on par with imports, according to a publishing executive. “*And development-oriented programs that come from the North (mostly Great Britain and the United States) are 'fair.'*” This seems to be the majority opinion among our informants.

In the worst case, “we have decided that it is better to accept programming from the North than to have none at all, and after all, the world is a global village.” This is a very positive aspect, even at the local level, as the South can thus remain informed about what goes on in the North. Thanks to the Internet, the sole information and communications medium of its type, the South has access to everything produced in the North. If the South does not produce enough of its own programming, that is its own responsibility; it could play a more active role. However, the North

should take greater responsibility for the choices made in technology transfer. Other informants were more radical: "The value of content is a question neither of technology nor of North versus South, but rather of the content-provider's responsibility and the reader's freedom." Internet users are becoming more aware of these issues. They already see the cultural pitfalls. This is why the idea of integrating the Internet into school curricula, including coverage of Internet-related ethical issues, is becoming increasingly popular. Students will grow up using this tool, while taking care not to misuse it. The Gambia has no reason to become dependent on products from the North, as nobody is forced to consume them.

All issues should be considered globally, because the nature of the Internet is such that all its problems are worldwide, not merely national. In any case, Northern culture has already overwhelmed the rest of the planet: this is a fact, a part of reality. The North must now recognize the cultural biases inherent in systems design and implementation.

Consequences and Means of Action

Our informants said they thought about the issue of Northern dominance every time they were online. When searching for information, they tended to "fall upon" content produced in the United States (70%) and in English (85%), according to certain statistics. In this regard, our Anglophone informants were unquestionably at an advantage over French speakers. Clearly, the Gambians we surveyed much appreciated the fact that they had access to a great deal of content without linguistic barriers. Some said that they were pleased with the quality of the content; they considered that the North is "*making a good job.*"

Almost all of our informants also stated they frequently considered the issue of inadequate Southern programming, but they were confident that the situation will improve. In 5 or 6 years, The Gambia will produce the content it needs to complement what is already available on the Web. In any case, the material currently available satisfies their needs, in terms of both content and language. Consequently, they expressed no strong desire to promote content-filtering in The Gambia. The heads of publishing enterprises and Gambian radio-television programming seem to be able to find what they need to fulfill their mandates: "*we have a large enough selection of material.*" Only at the state-managed Gambia Telecommunications (GAMTEL) was it suggested that perhaps content should be filtered

when access is granted to schools. But our informants also took pains to point out that GAMTEL is "*open to new ideas.*"

How to Control the Internet Invasion?

Because Gambians are on the whole quite interested in foreign programming, we asked them how they could promote the Internet without doing harm to their cultural identity. "*The best way to deal with that is to raise people's awareness.*" Awareness-raising programs must focus as much on students (through their teachers, professors, and parents) as on decision-makers. Some felt that the South, including The Gambia, should organize to create its own spheres of influence as they exist at the political and business levels in West Africa. For our informants, the proximity of Anglophone and Francophone countries was not problematic but enriching. "*Collaborative work is challenged not by language but by lack of will.*" Sadly, Africa has no actual community, and divisive elements are plentiful. "*One huge step would be for each country to offer all national radio and television programs and government press releases on the Web at no charge. Other media have begun doing this, so the government should follow suit.*" Managers of independent publishing companies all shared this opinion. Their sites could be accessed free of charge from The Gambia or anywhere else in the world. Furthermore, providing this free access did not lead to a drop in revenues, because this service did not have many users and it is often difficult to establish a fee-for-service payment system. This solution seemed satisfactory to all players: local users and expatriate Gambians. Before the arrival of the Internet, Gambians often bought newspapers and sent them off by mail to friends or family abroad. Under the best possible circumstances, these newspapers would arrive one or two weeks later; in the worst case scenario, they would never arrive.

Journalists and publishing executives also expressed satisfaction concerning the invasion of foreign content on the Internet, "*because complete freedom is always in conflict with censorship, whether extreme or moderate.*" Filtering information with an eye to preserving cultural identity could give the government ideas, as "*everything is a matter of perception, and dictatorial solutions can quickly arise.*" As we mentioned above, all Gambians are completely opposed to content-filtering; instead, they insist on the value of training children and educating students about the issues. In related

cases, parents have been known to make complaints and launch legal action on taking exception to content in other media.

Control of the Internet is a complex issue, because it is also necessary to respect freedom of information, and in particular, of expression. The decision to filter information can only come from higher authorities created specifically for that purpose; this role is not appropriate for the state. Parents who are particularly sensitive to this issue may purchase easy-to-use software allowing them to sort the Web sites visited and automatically filter undesired content.

Immediate Results

Most of our informants appeared to feel that any link between the content provided by the North and their use of the Web in professional and private life was only positive. This was particularly true of certain professional categories such as owners of computer businesses, political decision-makers, radio and television programming executives, teachers, trainers, and association executives. In short, few of our informants failed to point out the great benefits of Northern content for The Gambia. Many went so far as to regard this phenomenon as a unifying force: *"we know what the others can know, what the others see."* Some compared the Internet to sport: *"a significant comparison, because in both cases 'development' occurs, and around here we don't joke about development."* Whatever the political leaning, sport unites individuals and suffuses them with many important life values: dynamism, courage, sharing, team spirit, and so on. Our informants considered the Internet as being based on a good number of these values. *"This transcends all ideological trends. Like sport, the development of the Internet in The Gambia constitutes an essential element of global mobilization that surpasses ideological divisions. What's more, the same is true of the North: we saw that clearly with the recent World Cup in Paris."* For others, the comparison with sport did not end there, because both sport and the Internet are the domain of youth, and the future belongs to the young. *"We hope that sport and the Web remain strong elements of globalization."*

Internet Costs and Financing

- The Internet is a complex tool requiring huge financial investments. Although the importance of communications infrastructure is

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now recognized, it faces fierce competition from other investment priorities, such as hospitals and roads.

- It could be argued that the sole purpose of Internet integration is to increase the debts of developing countries: Internet-related costs are high, and most of the equipment is purchased in foreign currency (American dollars or French francs).

The Internet: Another Priority for The Gambia

In reference to the propositions above, 71% of our informants thought that the Internet did not compete with other investment priorities, just as it didn't increase the nation's debt. Instead, they felt, the Internet is a tool that complements other investment priorities. It is a training and teaching tool that should have a high priority, as it represents an investment in resources. For example, most teaching establishments used to order manuals from London, England; now, they can use the Internet to find the resources they need. This is also true of telemedicine, which can be facilitated over the Web. The Internet is an essential tool, itself an institution of learning and a global library at the service of the whole world.

A minority believed that Internet technology is not highly advanced in The Gambia and that it is not considered a high priority by the government, because "*the Internet is just beginning to appear across Africa, a continent not yet aware of its full potential.*" In developing countries, insignificant funds are allocated to the information technology sector, as it is not considered a priority. The current priorities of the government are health, education, and food safety.

A Few Figures

The question of the Internet's competing with other priorities in The Gambia failed to elicit completely frank responses. Only one person stated that they often thought about the competition for investment resources between the Internet and other priorities and the potential for increased debt load represented by Internet investment. Two people claimed to think about this occasionally. The others did not provide answers to this question.

On this matter, again, 71% felt they were in a position to take action, each in their own capacity, to affect budget allocation and the management of debt. Some thought that by requesting assistance from international

institutions, such as the United Nations, government expense could be practically eliminated.

Some informants considered making a few recommendations to the government to increase the visibility of the Internet in their programs. Significantly, the individuals who took this position were state media managers. The same people expressed the sentiment that these proposals could have a significant impact on the resolution of budget allocation problems. The private publishing executives insisted that the government would never take any of their proposals or recommendations into consideration.

With the exception of these private companies, all other informants thought their businesses or services were connected to the government's budget allocation.

Sociotechnological Aspects of Internet Integration (Resistance, Uses)

- It is not a simple task to establish the Internet in a country, because many of the conditions required (for example, education or correct needs identification) may not be present.
- When discussing this topic, people often said that the North transfers its technologies to the South purely for monetary gain and not because there is any real need for it.

When asked to respond to these propositions, 51% of informants agreed that many of the requirements, such as education and the identification of user needs, were not met at the time the Internet was introduced in their country. In The Gambia, with a population of 1 million, of which roughly 15% are educated, these conditions are far from being met. Only 2-3% of that small subgroup had the means to buy a computer. The small size of the market, the limited purchasing power of the general public, and its low literacy rate constitute objective constraints on development in this area. A fair number of our informants spent considerable time reflecting on this problem, as they were aware that the level of computer knowledge regionally is quite low.

Here, too, people believed that they could make a difference, whether by writing articles to increase the visibility of the Internet or by providing training in their professional areas (newspapers, companies, or services). For the purposes of proper Internet integration, emphasis should be put on training users to use the Internet effectively; on facilitating access to, if not

acquisition of, computers; and on providing access at community centres, as in Senegal. Some of our informants proposed advertising campaigns to run on television and in newspapers and introductory courses on the Internet for the public to convince people of the need for this teaching tool. Service providers and equipment retailers were equally ready to reduce their profit margins to convince as many people as possible to get connected to the Internet.

All informants believed that the above proposals would have a significant effect on the process of Internet integration in The Gambia. Furthermore, most informants saw a connection between the unmet conditions for Internet integration and the operation and management of their businesses or institutions.

Political Power

- In certain countries, the Internet is an indispensable tool for exercising political power.
- For example, computers and networks were installed in the administration, customs, taxation, and security sectors before they became common elsewhere.

The Role and Relevance of the Internet to the State

In contrast to their Ghanaian counterparts, the majority of our Gambian informants did answer the question of whether they considered the Web an essential tool in the political life of the nation. Again, optimism was the order of the day. The informants' majority position can be summarized as follows. The first Internet connections were developed by the state at an erratic pace. The private sector, arriving later on the scene, was faster to develop both domestic and international networks. The government uses the Internet with the sole intent of computerizing its various departments and improving communications between them. This fact was viewed positively by both resident and nonresident Gambians, who also identified certain benefits. A significant number of Gambians live as expatriates in Germany, the United Kingdom, and the United States, where they are working at unskilled jobs without clear hope of ever returning to The Gambia. Thanks to government and private Web sites, they are able to maintain some connection with their native land.

The vast majority of informants believed that another potential

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application of the Internet – namely, the surveillance of individuals (government critics, among others) – is not on the government's agenda. *"Even if the government is connected, it doesn't have the same significance as connecting private companies,"* and *"we don't know who was connected first, public or private organizations, and what's more, it's not important; what is important is that we forge ahead."* Then each informant proceeded to offer more or less pertinent arguments based on this thesis.

In this tranquil and optimistic environment, only the publishing businesses have a fairly realistic view of the circumstances. They are convinced that, for the moment, *"the government doesn't really have the means to use the Internet for surveillance."* Freedom of expression and opinion may be guaranteed by the constitution, and a new law regarding communications may be in the works; however, *"the press here is generally less free than in Côte d'Ivoire and considerably less free than in Senegal."*¹ In The Gambia, any pressure is acceptable to make government journalists *"toe the line,"* regardless of the law: defamation, false accusations, threats by political and religious authorities, and so on. Moreover, *"When imprisoned, the poor journalists are subject to the same appalling conditions as other detainees (wooden-plank bench in a sordid cell, infested by mosquitoes)."* It is clear, then, how the government can use the Internet to its advantage to censor information and, over the long term, to monitor the actions of journalists and government critics, at home or abroad. Moreover, the religious would be even more drastic than the political censorship. Despite all this, it is also true that locally the Internet may have little impact, as many publishers and journalists are already experienced at practicing self-censorship: *"it existed before, and it will exist after the arrival of the Internet. And you don't need the Internet to practice surveillance. Plenty of surveillance was carried out before the arrival of the Web: all sorts of different methods have been used here and for ages."*

Private publishing is freer because it is the domain of the wealthy, who gravitate to power, and who are needed by those in power. The majority of journalists working in the private sector have studied overseas in universities or private schools: *"when this is added to the fact that they have money, it makes them much harder to manipulate."*

The Internet in the Service of Political Power

For all the reasons given above, journalists and government publishers were practically the only ones who ever considered the issue of government

surveillance and censorship, presumably because they were confronted with it every day. For people in other socioprofessional categories and individual users, "*it's not an issue,*" and "*the question hadn't even occurred to me.*" Others believed that "*even when the government gets the equipment, they won't have the know-how.*"

Obviously, no one hopes that the state will use the Internet to put pressure on its citizens, critics, and media. The majority of our informants preferred to take the risk, because "*nothing must stand in the way of Internet development*" and "*this technology offers far more benefits than costs.*" All must do whatever is in their power to achieve this goal and contribute to the Internet initiative for Africa.

Means Available for Ethical Development of the Internet

The possibility that the government would set up databases did not seem to worry anybody; on the contrary, such a move was expected to yield highly positive results. All areas could benefit, certainly the health sector, where records could hold information on all primary health problems, all infected households, all means of combating disease, and so on. Data would be available not only to the medical profession but also to the general public, for preventive and therapeutic purposes. Local agricultural production would be tracked and managed more efficiently. Gambian business would be in a better position to negotiate favourable foreign-trade deals and overcome the present situation, which is one of mostly Northern countries setting the terms and the South being left in the dark about Northern motives and unable to put forward arguments to support their own interests. Once again, community access was the preferred model. One means of achieving this would be to make an Internet terminal available to the head of each agency, group, union, and so on. On this basis, the government should be able to obtain foreign aid and inject funding right away, which would have an immediate good effect and be cost-effective in the short term. "*If we opt for community access, the costs associated with grass-roots access to the Internet will not be very high.*"

All Gambian informants were highly optimistic about the prospects for the Internet in their country. The Internet is seen as a teaching and research tool that allows economic players and researchers to find information anywhere in the world and as a means to providing the world with information about The Gambia. To promote this tool, an effort is

needed to train users to operate it effectively. Additional effort is required to reduce the costs of equipment, software, access, and communications. During interviews, we noted that the Internet held no special interest for the civil service or researchers. We also noticed that no organization had been established by the state to promote Internet development throughout the nation.

Economic Organization

- The Internet promotes the development of the very largest national and multinational corporations.
- For example, the first to computerize, after the government, were national businesses dependent on the state.

These propositions did not receive the full attention of our informants. They agreed that the state-associated corporations were most likely to be connected to the Internet. Recall that government workers have easy access to computers. The multinationals were connected as well, but many people emphasized that the government had passed legislation to regulate their activities in order to protect SMEs. In any case, private enterprise would only become interested in the Internet when it becomes profitable.

Conclusion

In The Gambia, the statements we collected revealed unbridled optimism. Although we do not share these viewpoints, we suspect the reasons for this optimism lie in the novelty of the phenomenon, lack of experience, and failure to examine the risks. Just as in Ghana and the Francophone countries we visited, informants from rural areas and those from urban areas showed a great difference of opinion. But to a greater degree than in Ghana, we were told that the gap between the rich and the poor – and thus between the educated and the illiterate – was widening. Apart from giving the green light to computerization, which by itself is positive, the government is not employing all means at its disposal to gradually computerize itself. None of the informants considered the nature of the relationship between the government and the citizens, either with or without the Internet. A vicious circle may have formed because the administration fails to put much information online, considering the costs too high in relation to the number of potential users. Meanwhile, those connected

to the Internet fail to develop the habit of consulting government and administrative Web sites. Expatriates seem particularly interested in “receiving news from home” by this means.

By contrast, the private sector appears much more dynamic in this area. Publishers, teachers, and association leaders are in a position to promote the use of the Internet by introducing the Web and explaining how it works. Political leaders can influence the government to promote measures to support Internet development. Using the political content of their columns, the press can perform a similar function. On cultural pages and with in-depth articles, it can support the development of the Internet and its use by its readers.

But the sheer scope of information issues far exceeds the ability of the press to serve as the primary, permanent educational tool on this subject. It will be necessary to call on all those potentially able to contribute to the cause, including teachers and trainers. *“Mass education specialists are required, just as we now have mass media specialists.”* All possible human resources available in the country, as well as in other countries, must be allowed to contribute. *“Actions such as this would benefit the entire population. Brothers could talk to their sisters; sons, to their relatives (especially their mothers). There would certainly be a domino effect.”*

Instead of trying to establish policies supporting economic development in general and information technology and Internet development in particular, *“the ministers involved are spending most of their time looking for money from overseas, thinking that they are important and that they are assessed according to how much money they bring in.”* Locally, many sectors could be developed to offer immediate benefits, such as jobs for people in certain segments of the population, and to support development in general. With more money in circulation in diverse sectors such as tourism – mentioned by many informants – the entire Gambian economy would prosper.

Endnote

1. These interviews took place in November 1999, before the coup d'état of General Robert Gueï, who ousted president Henri Konan Bédié.

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Exclusion and Inequity

- The Internet creates a gap between individuals, organizations, and countries in the sense that those who already possess knowledge and financial resources benefit more than those who do not.
- It is clear that the computer illiterate, groups of nonconsumers, and territories that are poorly equipped with the means of communication are excluded from the Internet.

Was the Internet Designed for the Privileged?

Most informants believed that the Internet exacerbates existing inequities between rich and poor or between literate and illiterate. The others were equally divided between those who disagreed and those whose opinion was more qualified. The latter would not answer the question with a *yes* or *no*, favouring a more balanced analysis. According to one informant, the Internet is comparable to any other technology. You need time to become accustomed to it. It benefits some and excludes others. This drawback does not justify a refusal to pursue its development. The Internet, like other technologies, “*provides tools for increasing productivity and enhancing service*

management," all of which are beneficial. The real challenge is to manage change: "What do you do for those who are currently excluded from technology or the Web? The drawbacks are the result of unresolved social problems and not of technology or the Internet per se."

Technology-based economies derive greater benefits from Internet applications. For developing economies not based on technology, the challenge is to establish to what extent they will benefit from Internet integration. It might then be possible to assess the needed improvements. In other words, if the costs of setting up the Internet can be kept down, it may be possible to obtain significant results. The adoption of the Internet requires a progressive approach, to encourage the best use of resources at all levels.

At any rate, in the view of our informants, Internet promotion based on claims that the Internet reduces general inequity should not be trusted. Even those who did not believe that the Internet would create a gap between rich and poor, between literate and illiterate, between cities and countryside, and so on, cautioned people to be aware that Internet advertising slogans are often false. In Accra, because a computer costs between 750 000 and 1 million XOF, few people can afford one. Furthermore, the sad state of infrastructure, especially telephone lines, is as much a hindrance here as in the other African countries we visited. Many informants believed that cyber cafés can contribute to the fight against inequities. According to some, many cyber cafés operate in Ghana. Accra supposedly has at least 8 or 10. Kumasi, Cape Coast, Takoradi, and Oboasi have them as well. But numbers must be interpreted cautiously, because some cyber cafés opened in luxury hotels catering to a national or international clientele far wealthier than the average Ghanaian. Cyber cafés most useful to Internet development will be located in the suburbs of major cities and in the countryside.

Those who stated that the Internet is creating inequity considered this problem as frequently as those who believed the opposite. One respondent, a professor in communications at Accra University, even wrote an article about this issue, which appeared in a recently published book. This professor suggested "a picture-based computer and Internet training language for the rural population, who may be illiterate or functionally illiterate." A webmaster, however, recommended measures that "would apply to everyone ... be they farmers, students, politicians, or businessmen." According

to him, it is better to fight on all fronts so that all of Ghanaian society will be taken into account.

As in the other survey countries, Ghanaian informants' social positions either helped or hindered their ability to promote Internet development. Those whose professions prevented them from taking action used "*whatever means they could find to exert whatever influence they might have.*" Those in a position to act "*try to convince others to use the Internet by demonstrating the three main activities it facilitates: doing business, working, and playing games.*" They fight to minimize the cost issues. Others advocated setting up community centres for people to use NICTs, including the Internet.

Closing the Gap: Means of Action

Managers of information technology companies, as well as Web site creators and hosts, emphasized that their task was particularly difficult, because they had to "*do it all, cover all markets, that is, build networks, sell and install equipment, ensure good maintenance, and correct specific programs.*" And, as often as not, they had to provide training as well: "*In the end, there is no great difference between global businesses and us (burst of laughter).*" The informant who gave this statement happened to be president of a company that manages the Internet in Ghana and West Africa. He had also created a number of private networks and intranets. The company had been in business for 11 years and had been one of the first to be founded with the intention of controlling Ghana's information technology sector.

Government measures to develop the Internet have been naturally quite different. In the Ministry of Communications, a comprehensive initiative identified requirements for a national communications program. In 1995, a telecommunications policy was developed, defining the strategies to be adopted to promote rapid improvement of infrastructure and services in the telecommunications sector. This policy paved the way for the commercialization of services. In the past, telecommunications management was a government monopoly. Today, competition occurs in service marketing. The private sector is the principal player in the areas of information technology, telecommunications, and the Internet. However, the government maintains a presence through a state corporation that retains 70% of its shares, with the remaining 30% having been sold to strategic investors. The corporation is now managed like a private

enterprise. Interestingly enough, an entirely private company has been authorized to compete with it.

Services such as mobile telephony and the Internet are marketed by private enterprise alone. The goal of current policy is to have the government withdraw entirely from the areas of infrastructure and telecommunications services so that the private sector can take over. An agency has been set up to deliver registration certificates and supervise the activities of private businesses. In mid-1999, a decision was made to go even further. Policy was to be implemented for the 5-year period, 1997–2002. Before this period, these sectors had been part of the Ministry of Transportation and Telecommunications, but in 1997, a Ministry of Communications was created. At the end of 1999, the communications policy was amended and submitted for government approval. Its goal is to improve communications infrastructure, to promote Internet service, and to develop multimedia services to make it easier for businesses to operate, both locally and abroad. Special emphasis is to be placed on export. This communications policy also targets the radio-broadcasting sector, which has been opened up to private enterprise. However, the Ghana Broadcasting Corporation remains state owned.

Possible Consequences

On the whole, Ghana's decisions regarding internal policy, business creation, or the pursuit of entrepreneurial activities – which are legally autonomous – should allow support of Internet development in Ghana. Informants who mentioned these decisions viewed them positively. Some added that both equipment and connection costs definitely need to be lowered. This view was expressed in every country visited.

Potential Repercussions of the User Gap on Other Stakeholders

All informants emphasized that everything possible must be done to foster Ghanaian Internet development. Every player should consider it a duty to contribute to the goal of reducing domestic and international inequities. The country absolutely must be able to keep abreast of “*technological innovations developed in other lands.*” Quantitatively, the circulation of knowledge, know-how, and information is insufficient; qualitatively, it is inefficient – data quickly become obsolete. Journalists,

in particular, have thought a great deal about how access to information on the Internet reduces inequities. After initial fears of shrinking newspaper sales, they finally decided to put content on the Web. Some businesses were created for this very purpose. Paralleling the Internet, radio stations were put on the air by these firms to help provide local information. Accessing information is not easy in Ghana. The Internet is an efficient information tool, even for the underprivileged classes. Plans are afoot to make the Web accessible to the “*average Ghanaian as a means of empowerment.*”

Culture (Internet Content)

- The Internet promotes the intrusion of content created in developed countries into developing countries.
- For example, the Internet is an open door to pornography.

The North's Cultural and Media Hegemony

The cultural aspect of content seemed fundamental to all informants. Content must be made available to everyone. Some of those interviewed referred specifically to Ghanaians living abroad. Web sites must be created and publicized worldwide to provide news and information about events in Ghana and to forge links with local radio. This would also be the best way to ensure that Southern information reaches around the world. Failing this, we would fall victim to the law of numbers. In North America, it is well known that one person in six has Internet access and related expertise. In Ghana, it is 1 in 6000 – quite low and quite revealing. This explains why so much content comes from the North. The challenge of technology transfer must be taken up, and native content must be developed.

For some people, the intrusion of content from the North is not solely the Internet's province. The same situation already exists in television. The Internet is novel, though, in that the user may create content and view that of others. Before the advent of the Internet, the African population received limited information, which left it at a disadvantage. By contrast, the Web facilitates transmissions of every kind. Familiarity with content from the North “*lets people know what is missing or incomplete and allows them to compensate for it, as necessary, which was a lot more difficult and took much longer in the past.*”

The Importance of Raising Awareness of Internet Use

Most informants thought about the problems of awareness-raising in relation to themselves, as well as in relation to their children. The risk is twofold: quantitative (a lack of content) and qualitative (biased content). It is tempting to simply believe that if Ghanaians came to like native content, they would not seek foreign content, which may be less relevant to local realities. That is why one of the educational measures must be to “*develop people’s critical faculties*” and why “*we must be able to count on public common sense.*” However, people should definitely be advised against certain sites, particularly those with pornographic content, which once was difficult to find. It used to take effort to find any – now it is within anyone’s reach. Parents must be advised of this, for the sake of their children. However, the same is true of television, magazines, movies, and other media. The situation is becoming more and more complex. Some respondents wished that they could prevent the broadcasting of undesirable content but felt powerless to do so. Others called for legislation, while acknowledging that “*the Internet is a free world*” and its specific characteristics make it “*a challenge to legislate, as rules would be difficult to enforce in any given country, let alone between one country and another, since the Internet by its very nature defies legislation.*” Given the Internet’s structure and the way that it has evolved, any such attempts would be a waste of time. Moreover, it would be a challenge from a technological standpoint: “*nobody in Ghana could do so.*” It would be a waste of energy: “*the time and energy would be better spent by promoting ethical behaviour and supporting churches, schools, libraries, and so on. These measures would help to establish a balance. Balance is one of the goals of the Internet, along with openness, transparency, fairness, and equality.*”

In Ghana, as elsewhere, it is very difficult to influence Internet content. This situation has its advantages (censorship is difficult), but also disadvantages (filtering out immoral content is almost impossible). However, responsibility for this lies not with technology but with questionable social developments. “*Such is the case regarding the dismantling of the family unit and the corruption of moral values, especially Northern moral values.*” Likewise, parents and teachers have less and less authority over children: do they supervise children’s consumption of so-called cultural products in any real sense? In Southern countries, family values are still alive and well, but the risk is that of external models destroying these

values. The type of degradation would obviously be the same as that seen in the North, *“but there is no reason for it to be any worse. Drugs, prostitution, pornographic tapes, and magazines already exist in Africa and in Ghana in particular, but that is not why anyone takes drugs or becomes a prostitute.”* That is why, even though people know of the risks, they say no authoritarian measures should be implemented, because *“countries that favour regulation will be tomorrow’s have-nots in terms of new technologies, just as countries that favoured strict trade regulation became the have-not states of today.”* To a certain extent, content-censoring programs (filtering software) – ineffective at the best of times – are detrimental to progress. *“For example, everyone knows that pornography led to the development of streaming technology. Had there been no pornography on the Internet, the transmission techniques used by videoconferencing might not have been developed.”*

Internet Costs and Financing

- The Internet is a complex tool requiring huge financial investments. Although the importance of communications infrastructure is now recognized, it faces fierce competition from other investment priorities, such as hospitals and roads.
- It could be argued that the sole purpose of Internet integration is to increase the debts of developing countries: Internet-related costs are high, and most of the equipment is purchased in foreign currency (American dollars or French francs).

The Internet Among Other Priorities

When we asked our sample population whether the Internet competes with other investment priorities, affirmative and negative responses were evenly balanced at 42.8%. Those who answered in the affirmative believed that the Internet is not currently a priority for the government. The budget allocated to the Internet is too small. They pointed to the sad state of telecommunications infrastructure to explain the public’s lack of interest in this tool. Nevertheless, they recognized that the Internet affects almost every sector of a country’s activity. For this reason, sectors that are a development priority cannot do without the Internet, particularly in the case of large hospitals or in that of sectoral relations with national and international organizations. Those who answered negatively felt that the Internet not only does not compete with other investment priorities

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but also supports other sectors (hospitals, roads, and so on) because one of its great advantages is its economic effectiveness. The Internet has its positive aspects, including flexibility, increased effectiveness, and reduced management costs.

A Few Figures

In Ghana, 28.5% of our informants frequently considered the issues the Internet raises, especially with regard to other sectors. However, 71.4% provided no response.

A gap has been noted in government policy on telecommunications. Telephone lines are the principal means of Internet access, and the telephone network is not very well developed. The Internet offers many opportunities in the areas of agriculture, medicine, and education, and it would be ideal to have the resources available to fully exploit these opportunities.

Of our informants, 28.5% said that they had some leeway to take action for domestic Internet promotion, by using their privileges as advisers to government policymakers; 14.2% stated that they were unable to take action, given their professional position. Finally, 57.1% did not respond.

People wanted the state to support Internet connection for most ministries and businesses. It should also allow and accept external support (financial sponsorship), because it would be difficult for Ghana to succeed if it had to rely solely on its own resources. Furthermore, people felt that if technical constraints on telecommunications infrastructure were overcome, then costs associated with Internet use would fall: 42.8% agreed with this proposition, 14.2% believed that overcoming technical constraints would have only a slight effect, and 42.8% did not respond. To be precise, our informants thought that if actors in the computer industry were to unite and speak as a group to the government, then the effect would be even greater. Unfortunately, the private sector tends to raise issues on an individual basis, resulting in a limited impact.

Everyone mentioned that a great deal of attention had been devoted to infrastructure development. The national telecommunications business was partly privatized to make it more efficient and to acquire more lines. Although not focusing directly on the Internet, developing the telephone infrastructure would assist its growth.

Sociotechnological Aspects of Internet Integration (Resistance, Uses)

- It is not a simple task to establish the Internet in a country, because many of the conditions required (for example, education or correct needs identification) may not be present.
- When discussing this topic, people often said that the North transfers its technologies to the South purely for monetary gain and not because there is any real need for it.

Unequal Internet Development

In Ghana, 85.7% of informants shared the opinion expressed in these propositions. The low level of education is one explanatory factor cited, because most of the rural population is illiterate and cannot, as a result, use the Internet. Also, the public's purchasing power is very limited, and Internet operations require basic equipment such as computers, modems, and a functioning telephone network, all of which remain out of reach for most people. Ghana's telephone network, currently limited in function, seriously handicaps Internet development. A total of 14.2% of our informants frequently considered the conditions for Internet integration, and 85.1% provided no response.

Almost all elements required for thorough Internet integration were in place, but they have not been satisfactory. With regard to expected efficiency levels, telephone lines and computers were the main concern. Telephone infrastructure is currently being developed and extended to rural areas. Afterward, it would be a good idea, our respondents felt, to consider what measures the government, the private sector, and parents could take to step up training and raise awareness to promote Internet access. Awareness-raising and education through newspapers were advocated by some.

Moreover, 57.1% of our informants stated that the solutions they proposed would have a significant, if not a very significant, effect on the conditions for Internet integration. However, 42.8% provided no response. And 57.1% felt that the process of Internet integration would have moderate repercussions on their institutions. In short, the view was that the private sector prefers to wait for the government to create the infrastructure before it acts.

Political Power

- In certain countries, the Internet is an indispensable tool for exercising political power.
- For example, computers and networks were installed in the administration, customs, taxation, and security sectors before they became common elsewhere.

The Internet in the Service of Political Power

Half of our informants chose not to respond to the question of “*whether the Internet will become an indispensable tool for exercising political power in a country like Ghana.*” Those who did respond to this question seemed, to some degree, to miss its fundamental meaning. Thus, a high-ranking civil servant stated that, “*the Internet touches every area of life. Because it is flexible and effective, this tool has turned out to be very useful to the administration, to the business world, and to individual citizens,*” as if those “in power” used the Internet in the same way as business people or individual citizens. The managing director of a privately held company likewise failed to answer the question frankly when he stated, “*the Internet is far more heavily used in the private sector than in the public sector. In most African countries, the public sector only began computerizing a little while ago.*” Those informants who raised this point were all in agreement. Many people are still using mechanical systems, which is why many documents have not been preserved or archived. Some regretted that a portion of the country’s collective memory was disappearing every day. Others remarked that Ghana’s markets are dominated by the private sector: “*the Internet is not in the hands of the government.*”

Few informants expressed concern that the government could use the Internet to spy on the population. The specter of Big Brother evidently troubles few. It seems hard to understand why not. We propose the following hypothesis: Internet development has advanced so little that one can imagine all kinds of possible implications. Private use will be fully established before the state has completed its own computerization process; the current government shows no totalitarian tendencies in its use of information technology. “*There is a government Web site but it is seldom updated,*” and “*the administration rarely uses this tool; it is taking the government a long time to embrace it.*” However, no informants provided

further details. Therefore, we cannot determine which hypothesis is correct. Only civil servants believed that they had some leeway to ensure that the Internet would not be used by the state for surveillance. As stated above, people in the private sector were not concerned about this issue, and our informants perceived no risk of this nature at all: the problem simply “does not exist” in Ghana. Moreover, no one thought that businesses might use the Internet to spy on their employees. No one imagined that businesses could record private information, so that citizens would become nothing more to them than advertising targets or consumers to be won over.

None of our informants advocated specific solutions to prevent these technologies from misuse by those in power, because, for these informants, the problem has never existed. Similarly, our informants made no connection between their own personal or professional activities and the possibility that the government might monitor individuals using the Internet.

Economic Organization

- The Internet promotes the development of the very largest national and multinational corporations.
- For example, the first to computerize, after the government, were national businesses dependent on the state.

In response to these propositions, 71.4% of informants stated that they agreed. In their opinion, only large national and international corporations had the resources to access the Internet. But this does not imply that small businesses do not need access. Local businesses realize that the Internet is an efficient means of disseminating information, facilitating cost-effective marketing. Of the total informants, 28.5% provided no response. Almost half of the informants, or 42.8%, often considered the Internet-access problems of small businesses; 57.1% did not respond. The primary goal in Ghana is for everyone to use the Internet in their daily activities. This is of great concern to Ghanaian authorities.

Furthermore, 57.1% of informants believed that they were in a position to promote the use of the Internet in small businesses, versus 14.2% who believed they had no leeway to act; 28.5% did not respond.

The Internet community and the government should provide more public education to ensure people become more conscious of the economic issue. Various small businesses could share the costs of creating a Web site

by associating under a single name. Many small businesses would then have the possibility of marketing themselves abroad at a lower cost. To do so would require that electricity and telephone costs be covered and that the issue of equipment costs be examined.

Only 14.2% of our informants expected the Internet's development occurring mostly in corporations to have a significant impact, because most of those concerned perceived it in a purely positive light. Small businesses realize that the Internet is the way of the future and that they must continue on the current path. However, 85.7% did not respond. Furthermore, 28.5% predicted that the repercussions of Internet development on their businesses would be only minor; 14.2% expected no repercussions; and 57.1% did not respond.

Conclusion

The logical development of the respondents' statements would be less surprising if they had been exclusively high-ranking government officials or senior ministry employees. However, players of every kind were questioned, and surprisingly, even within certain professions "at risk," such as the press, people showed no signs of concern. These businesses would find ways to evade attempted government censorship; that is, if this were to occur, "*we would find another Web site, here or elsewhere, to make our voices heard.*"

In fact, at this point, Internet development is not sufficiently advanced in Ghana for awareness of certain dangers to have arisen. For the moment, with the state's blessing, private enterprise is almost exclusively responsible for spurring Internet development. The public sector has only recently begun to computerize. The government is increasingly dealing with large corporations to provide equipment or services. We can clearly see a strong determination to develop the Internet within a partnership, and not on the basis of authoritarian and top-heavy state initiatives. And, as in the other survey countries, Internet development will depend on the improvement of other infrastructure, such as electrical and telephone networks. And, as elsewhere, our informants emphasized the need to consider all possible measures to reduce the Internet-access costs, whether through local policy decisions or international agreements. A program to develop community Internet use would also be welcome. This could involve setting up public telecentres or cyber cafés with government aid but without restrictions on their freedom.



Exclusion and Inequity

- The Internet creates a gap between individuals, organizations, and countries in the sense that those who already possess knowledge and financial resources benefit more than those who do not.
- It is clear that the computer-illiterate, groups of nonconsumers, and territories that are poorly equipped with the means of communication are excluded from the Internet.

Was the Internet Designed for the Privileged?

Almost all of our informants believed that the Internet is indeed creating a gap between Internet users and nonusers, including individuals, organizations, and countries. Irrespective of the nature of the gap in particular cases, the exclusion of people is considered harmful in and of itself and frequently results in turmoil at the individual and collective levels (popular uprisings fueled by frustration). As we will see below, the gap can be financial, intellectual, or social. The concern is all the greater, as technologies predating the Internet have already exacerbated inequity.

However, some informants believed that more people would be affected by the Internet than by other information, communications, or

knowledge technology, as the Internet is, to a certain extent, conducive to collective use.

This is why, if we must choose, "*we must begin by connecting institutions*" (schools, universities, training institutions) before facilitating individual Internet use. The question of who would be marginalized by a new technology seemed to our respondents to depend on the type of technology.

What Types of Inequity?

The issue of inequity was very much on the minds of our sample population. Several factors were cited as being responsible for inequity. First of all, the state had failed to fulfill its responsibilities, both to educate the public and to implement the needed infrastructure. Those who sought extenuating circumstances pointed to the concrete obstacles most African countries face. Various conditions are attached to Internet integration; unless they are met, the implementation of any computer infrastructure would be very difficult or simply impossible. Of primary importance are a power supply and premises protected from sandstorms, high temperatures, humidity, and climate fluctuations and thus able to accommodate computer equipment. Of course, none of this would be possible until even more fundamental preconditions are satisfied. The installation of electrical networks and the continuous supply of electricity would be but a few of the requirements still far from being met in Africa. Predictably, the informants argued that the state-allocated funding for these projects was insufficient and that politicians' financial choices had not necessarily been the wisest.

Another financial concern was the customs duties levied on equipment, already quite expensive "*because it comes from the North.*" This is why our respondents felt that the state should keep duties at a minimum or eliminate them altogether. Such a move would contribute to the development of information technology and enable people to gain practical Internet experience. Others argued that the state's monopoly on telecommunications harms the interests of users, as the resulting lack of competition stands in the way of lower connection fees – to give but one example. Local business conditions would therefore further punish consumers whose incomes are already inadequate to purchase expensive imported equipment. Moreover, within each country visited, the various segments of the population were felt to be on unequal footing with

regard to the Internet: urban dwellers “*enjoy greater opportunities than the rural population.*” In the urban population, some were felt to be in a better position than others. In this regard, similarities with other countries became apparent: even in the so-called developed countries, people are far from equal in adopting new technologies and being able to afford necessary equipment.

Our informants were entirely aware that the availability of equipment and other necessary resources would not solve all the problems. A more general concern was the need for trainers, which raises another question: Is it desirable to offer training that focuses on Internet use without providing more general computer-related knowledge? Is the study of foreign languages, such as English and French, at the expense of local tongues a prerequisite for Internet access? Views on the right approach differed. Some believed that the Internet provides an opportunity to eliminate illiteracy, even in regions where the technology is still in its infancy. This can be compared to a natural-sciences teacher’s using the arrival of spring to explain natural changes, photosynthesis, the theory of cycles, and so on. The adoption of a new technology requires training based on local reality. Others argued that efforts to integrate the Internet are premature if emphasis is placed on teaching people how to use the technology before illiteracy has been widely eliminated, thus creating conditions comparable to those in Northern countries. In addition to general illiteracy, we now find evidence of technological illiteracy. This is also true in the developed world, where even highly educated individuals experience serious learning curves with respect to new technologies. The issue of control over this tool, or the absence of it, therefore goes beyond financing and intellectual abilities. According to some informants, the fact that the South does not produce its own programming also undermines the South’s mastery of the Internet, because content production requires the application of certain cognitive concepts not everyone understands or has learned.

Clearly, these are important issues, which we will revisit when we examine informants’ responses calling for similar considerations. Only a small minority of informants qualified the nature or depth of the gap created by the arrival of the new technologies, but they emphasized the fact that the Internet is also a highly effective means of bringing people together.

What Measures Should be Taken?

Some of our informants considered themselves in a position, or they even felt obligated, to contribute to narrowing the gap discussed above. Attitudes varied by profession. Teachers, education officials, and trainers believed it their responsibility both to promote the Internet and to point out its potentially damaging effects. Journalists, too, expressed serious concern, assuring us that they were doing their best to educate their readers about the issue of Internet inequities. Some of the newspapers run regular columns, even an occasional article. As has generally been true in Northern countries, when businesses began to computerize and the Internet appeared in Senegal, the first to study the Internet were the "computer buffs." Thanks to their expertise, many newspapers have Web sites. Officials in charge of the larger government institutions, such as the national postal service and government departments, said that efforts were being made to ensure that all government workers had a computer and an Internet connection, provided this was justified by their position. Certain government departments, we were told, had been equipped with a local intranet network.

Politicians, too, seemed anxious not to "*miss that particular boat,*" which, in the minds of some, constitutes "*the last chance we have to catch up with development.*" Of course, the words of politicians are not always backed up by action. They knew about the range of obstacles to overcome, and they liked to point out that "*all problem areas are priorities*" – electricity, illiteracy, health, and so on. Computerization and Internet integration were considered ideal means to boost general development. Once the issues of power supply and equipment had been resolved, the road to distance education, telemedicine, agricultural education, business training (courses on the exchange of locally produced raw materials), and so on would be clear. None of these projects could be seriously considered, however, without the availability of local trainers and, more importantly, specialists in each of these areas. Unfortunately, Senegal has a serious shortage of these.

General users – that is, individuals who are not mediating between the state and Internet users – did not see themselves as being in a position to affect Internet development in their country, let alone in the rest of Africa or elsewhere in the world. They argued that they "*have very little leeway,*" especially with regard to financing.

Proposed Solutions

Some of the statements discussed above anticipated the responses to the following question: What are the specific solutions recommended to narrow or close this gap – created, in part, by the Internet – between individuals, institutions, and countries? Most of our informants believed that to reduce disparities, the government's "*first priority should be to make equipment and Internet access more affordable.*" According to another recommendation, "*community telecentres should be opened everywhere*" and "*schools and universities provided with Internet access.*" Our respondents frequently mentioned the press as being indispensable to Internet promotion. It should increase its efforts to provide people with both Internet-specific know-how and information about the Internet's potentially harmful consequences. Wherever possible, "*a culture of research should be developed.*" Some informants recommended the worldwide development of voice-recognition software for the Internet to allow people to "*use the Internet in specific cultural contexts.*" Research into voice-recognition Internet programs could greatly benefit the entire Internet community, which would, however, require increased South–South and North–South cooperation.

Most people in the sample population stated that if all their recommendations were heeded, the impact would be significant. The rest were more skeptical. To decrease these inequities, they argued, further measures would be needed, because once a given number of requirements had been met, others would appear, especially once a new technology had become widespread. In other words, "*we are constantly trailing behind.*" Still, if the recommended solutions were implemented, they would solve several problems simultaneously – construction of infrastructure, as well as Internet development.

Potential Repercussions of the User Gap on Other Stakeholders

According to some, if nothing is done, the gap discussed above will continue to widen and have serious consequences. Others saw no direct link between the user gap and those who embrace the Internet. In fact, for most informants, Internet users do not represent the population as a whole: "*they are living in their own world.*"

Traditional classes have dissolved. For example, students no longer constitute a homogenous group. On the contrary, there are "*those who*

use the Internet" and "the others." The Internet has contributed to inequity, cutting across other lines of convergence and classification. Most people interviewed believed that care must be taken to ensure the Internet does not breed a new "technointellectual elite," because "those excluded would face a threefold domination: by government officials, by the wealthy (who don't necessarily take an interest in the Internet), and by the technointellectual elite."

It is clear that although the informants attributed certain advantages to the Internet, they were fairly critical of its drawbacks. As some of them put it, "since it's us who are trailing behind, let's take advantage of the experience of those who came before us, so we don't make the same mistakes." Will this be more than good intentions?

Culture (Internet Content)

- The Internet promotes the intrusion of content created in developed countries into developing countries.
- For example, the Internet is an open door to pornography

The North's Cultural and Media Hegemony

The vast majority of informants recognized that most of the content Africans have access to comes from Northern countries. For some, access to pornography seemed too easy, "and, more importantly, it might result in sex tourism." Our general impression was that the informants paid close attention to the issue of the quality of content. They were clearly concerned about the nature of materials produced by the North, where morality and ethical standards appeared to them to be increasingly eroding. These are issues the sample population considered "frequently." They insisted that "there really are too many sites with pornographic and pedophilic content" and that every effort should be made to protect children, especially. A recent study shows that people have the same kinds of worries in France. During a conference of the Fédération des conseils de parents d'élèves (federation of councils of students' parents), held on 3-4 June 2000, 74% of the parents at the conference expressed concerns about their children's ready access to the Internet, fearing they would visit sites with pornographic, pedophilic, or neo-Nazi-revisionist content. However, our informants recognized that current circumstances make preventive action difficult, because countries either have no legislation or it can be circumvented easily and it is simply too easy to connect to these sites. So, some welcomed the

fact that not everybody has Internet access. The situation would be worse, they argued, once access was available everywhere, because the number of these sites would increase accordingly. Thus, although the control of Internet content remains highly problematic, "*there will always be people willing to set up such sites.*"

Means of Local Action

The situation, therefore, is highly paradoxical, because the fact remains that the considerable freedom of communication the Internet provides is desirable; "*everybody should have access to it.*" But the absence of mechanisms for control of the Internet is a tacit acceptance of all the abuse and perversions recognized to exist on it. Most informants believed that it would, regrettably, be difficult to solve this problem. They were all the more fearful of a "*new abdication of initiative,*" which has already occurred in the domain of television programs, "*most of which are produced abroad,*" as "*those are the most popular.*" Others insisted that people should do everything in their power to ensure high-quality content, but these informants were not sure how this could be achieved. The attitudes differed between two groups: the first group resigned themselves to the fact that the problem is irreversible and that "*the Internet will always be plagued by depravity*"; the second group, though agreeing with the first one, added that it is nevertheless possible to encourage the production of content more "*noble*" and "*dignified.*" If Africans were more determined, our informants argued, they themselves could provide more material on Africa, its living conditions, cultural treasures, particular characteristics, its culture in general, and so on.

The realists believed that the Northern countries would not make any concessions to other cultures and that the materials they provide would always be dominant. "*There will never be unbiased and reciprocal information,*" some said. Therefore, "*we had better learn to manage what's coming in.*" They knew that, according to the latest World Bank report (2000b), Africa has a mere 2% of world trade and that its contribution to the export of manufactured goods is almost nil. The need to incorporate critical analysis into Internet training emerged only in later survey responses.

How Can Africa Preserve its Identity?

Individually, each informant professed to being stumped on the issue of the invasion of content from the North. Educators, in the general sense

of the word, and journalists tended to call for the promotion of greater general awareness. Others considered the issue the responsibility of politicians and local decision-makers. However, it took none of the informants long to acknowledge, more or less explicitly, the all-pervasive nature of the Internet.

Thus, a gap is emerging between sympathizers and opponents of the current system. The opponents denied that their political leaders had any commitment to these matters. "*They don't have a clue*" or "*don't care*," as they are too busy "*living the good life*."

As our survey progressed, it became clear to us that the populations of the countries visited had become much more aware of corruption and the devastation corruption can cause than they used to be.

According to a United Nations report, corruption is very costly, especially in Africa, where \$30 billion [United States dollars] in international aid have been embezzled. The World Bank estimates that corruption can reduce a country's annual growth rate between 0.5 and 1%. The conclusion that emerged was unanimous: good governance is the "missing link" between the fight against poverty and its actual alleviation. (Stern 2000)

The country's political decision-makers therefore fall into two categories: "*those who don't have a clue*" and therefore are unable to make appropriate decisions and those who are aware of the issues but take no measures whatsoever to make Africa's voice heard. With the intention of exonerating the state, proponents of the current regime project on it their own impotence. "*Even the head of state can do nothing*," because of the Internet's global nature.

Proposed Solutions

Both partisans and opponents of the current regime advocated two solutions they considered ideal, if only they could be implemented: regulation at the international level and content-filtering at the national level. Most informants were thus in favour of global regulation. Although a different terminology was used – *global discipline*, *collective will*, *international consciousness-raising*, *worldwide regulation* – the arguments were made with almost unanimous conviction and determination.

Some argued that because the North is already enjoying domination over the Internet, it could at least, in return, install the filtering systems

the South is requesting. Clearly, the responses discussed thus far raise a number of questions:

- Would it be feasible to install filtering systems in accordance with the wishes of each African country?
- If this was not feasible, could the African countries agree on one system?

Our sample population was aware that some African countries have joined together under the West African Economic and Monetary Union or the Economic Community of West African States. Some of the respondents argued that other unifying organizations created for the establishment and management of the Internet in particular and NICTS in general could follow.

According to which criteria would the filtering system be installed? The Yahoo! France case is a good example. Three antiracism organizations took this service provider before the Paris magistrates' court and accused it of providing access to sites auctioning off Nazi objects. On 22 May 2000, the judge in chambers gave Yahoo! France two months to come up with a mechanism to block the sites in question (Broussard and Renault 2000). (The hearing took place on 24 July.) The title of an article by Acacio Pereira, published in *Le Monde* on 26 July 2000, may be conclusive. Translated, it states, "In a French court, Yahoo! maintains that it is impossible to deny access to illegal sites." A new question was raised by the judge's deliberations: "How can we obligate service providers or Web hosts to implement technology to block access to one of its sites, whose content is illegal under French law?" (Pereira 2000a, p. 7).

The headline of another article puts the issues raised in our study most succinctly: "Yahoo: International law versus the World Wide Web" (Pereira 2000b)¹ Three legal experts of American and European (one of French) origin who were expected to submit their response on 6 November 2000 ended by postponing the verdict again (Pereira 2000c).

This case, it appears, provides us with an answer: To preserve national legislation and sovereignty, we *must* get disconnected from the Internet, with all the consequences. Ultimately, the request addressed to Northern service providers to block the sites could only be made at the state level; however, who would dictate what is authorized or disallowed? In any event, it would be crucial not to leave this task to the Northern countries, as the

issue of censorship is eminently cultural. Japan was repeatedly cited as a model, because it has been at the leading edge of NICTS in production of equipment and accessories while managing to preserve its traditional values and its culture, in the general sense of the term. Depending on the type of reprehensible content, the reaction of our informants varied. As far as pornographic sites are concerned, for example, they did not recommend censorship, as "*everybody has the right to degrade themselves any way they want.*" The only users who must enjoy unqualified protection are children. By contrast, the sites of pedophiles, Nazi revisionists, "*other distorters of historical facts,*" and terrorists "*should be off-limits to everybody.*" Other sites with real content, especially those dealing with African issues, should be supported by Africans themselves. Irrespective of the form the North-South negotiations on these issues may take, Africa must take an active part, to avoid being "*lectured once again on what's good for Africans without being consulted beforehand.*"

The Northern countries, too, could benefit from these reflections, according to our informants, because, in contrast to Japan, most of them have entered the era of globalization, which has led to the homogenization of their respective cultures. Some informants bemoaned the loss of local culture in certain Northern countries where they had been students. From this perspective, modernity is far from positive, for it means "*the production and consumption of so-called cultural products according to the standards of a country, the United States, whose sense of morality has disappeared.*" Some of the informants stated that Africa should not be considered the exclusive venue of change.

If "*the North is in this state,*" it is because ethics and morality are no longer a societal priority. A very small number of informants even wondered whether "*it wouldn't be better to stay away from the Internet,*" if it comes at such a high price for Africa. Some individuals supposedly were overcome by a sense of despair on learning that morality is no longer taught to children at home or in school at a time when, more than ever, "*morality and intellectual integrity should be a teaching priority everywhere in the world.*" Moral principles should be instilled in children from a very early age. This type of enlightenment must be provided constantly and universally. Even Northern countries "*must improve general education, which has nothing to do with general culture.*" It is rather a question of the individual responsibility of adults, as parents at home, as teachers at school,

and as politicians at the national-policy level. This individual responsibility, we believe, consists of people taking an ethical stance with regard to technological change; it is, no doubt, the most fundamental value of any viable society (Brunet 2001). As for the multinationals, they should assume their share of responsibility; however, it appears that their concerns are purely financial. Therefore, “*if Africans showed some leadership, they would produce domestic Internet content to counteract the influx of unsuitable materials from the North.*” This idea of juxtaposition was shared by most of our informants. In the same vein, Abdoulaye Wade, Senegal’s new president, declared on 24 May 2000, “Africa for Africans? An outmoded concept?” (quoted in an article in *Le Monde* by Le Boucher [2000]). Most informants said that Africans should have access to other cultures and that their own culture should be known and respected as well. “*It is possible to preserve specific national characteristics while coming to understand the values of other countries.*” Better understanding generates mutual respect, but “*domination has never resulted in anything positive*” and imperialism can come in a variety of guises. In fact, if the North does not regulate itself, it dictates anarchy to the rest of the world.

Potential Consequences

As we have seen, the vast majority of Senegalese informants argued for worldwide regulation, ensuring that all content meets certain minimum quality standards.

These same individuals are convinced that a global decision of this kind would have a significant impact on the quality of Internet content, putting to rest serious concerns of parents, educators, and others. However, these steps cannot be taken without fully respecting individual liberty, the universal protection of which is absolutely crucial. The essence of the Internet, as suggested by its name, is to create a connection between all countries. Once this connection is established, the characteristics of the Internet will affect relations among individuals, in businesses, in all organizations, and even within the government.

As with any other tool, the Internet has both positive and negative characteristics. One positive trait is that it promotes open-mindedness and brings together individuals who are geographically separated and culturally diverse. Like no other means of communication, it facilitates debate, expands horizons, and allows people to have discussions with

others. For researchers or others who want to broaden their minds, the Internet provides access to immense databases that would take a lifetime to go through, especially as the data is continuously updated. The Internet is an invaluable tool for education, research, and teaching. And users are becoming more and more demanding, because they can choose from a continuously growing information menu. Aside from connection fees, a huge amount of free information is available in almost every area of interest. Search engines facilitate access (relatively speaking) to this immense documentation network, which is all the more valuable in Africa, where libraries are few and far between and poorly stocked, boasting, in many cases, of nothing but dusty and out-of-date material. In many of these libraries, indexing has not been done properly, making it impossible to locate material. Not enough libraries are equipped with computer equipment, such as digital microfiche readers or, more importantly, Internet terminals. Libraries could be ideal places for collective learning and Internet use in a country where few have individual access to the Internet. And when will access become universal? This might well be one of the major challenges for the third millennium.

Nevertheless, the Internet has “*definite*” downsides. For one thing, the new technology encourages consumption practices that are unrealistic for African countries. In many respects, and not only culturally, it serves as a vehicle for domination of a type that, by all accounts, smacks of neocolonialism. It appears that the North, especially the United States, imposes on the rest of the world its technological dominance while continuously reducing foreign aid. The industrialized world has a long way to go to meet its own objective of devoting 0.7% of its gross domestic product to assisting the world’s poorest countries. According to the latest World Bank report, “foreign aid has been eroding continuously, with the first prize going to the United States, which is spending a mere 0.1%” (World Bank 2000a).

Internet Costs and Financing

- The Internet is a complex tool requiring huge financial investments. Although the importance of communications infrastructure is now recognized, it faces fierce competition from other investment priorities, such as hospitals and roads.
- It could be argued that the sole purpose of Internet integration

Senegal

is to increase the debts of developing countries: Internet-related costs are high and most of the equipment is purchased in foreign currency (American dollars or French francs).

What Priority Should the Internet be Accorded?

Respondents were equally divided between those who believed and those who did not believe that the Internet competes with other investment priorities. Both groups gave arguments to support their views. According to the first group, basic infrastructure, such as telephone lines and electricity, should have first priority. Moreover, essential services – particularly in the areas of health, food safety, education, and accommodation – must also be provided. Once these prerequisites were met, the Internet could step up economic development and promote the country's opening up to the world. *"Africa depends on technology from the industrialized world."* Any equipment required for Internet access must be imported and is billed in foreign currency (American dollars or French francs). The equipment cannot be manufactured in Africa. Hence, Africa faces financial challenges. *"Africa must amortize its expenses,"* whereas Internet-related expenses are high and financial means are limited. However, it would be a shame to miss out on the Internet's enormous potential because of cost considerations. The respondents recommended, therefore, that the Senegalese government review its priorities, take a close look at the issues to *"see if it's not possible to do without certain government indulgences, certain practices that are of very little value to the population,"* thus enabling the state to adopt this new technology. *"Only the state itself can decide to support Internet development."* If it did, it would know where to cut expenses to free funds for Internet development. Part of the solution would be to reduce the cost of the telephone to allow more people to use it. Then there are the exorbitant costs of electricity, computers, and software. Furthermore, the costs of Internet connections need to come down. The most cautious argued that hospitals and schools should be built before any money was put into Internet development. In other words, infrastructure first, and Internet development later.

Informants who thought that the Internet did not compete with other investment priorities and that it would increase the country's national debt advanced the following arguments: *"The Internet is a tool, not a sector,"* a tool that would help the various sectors, such as telemedicine and distance

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education, to develop. The people are already aware that the Internet is important for Senegal. The informants recommended, therefore, that the state commit funds to Internet development because the long-term results would be highly positive. The Internet is simply a tool that would enable Southern (African) countries to speed up economic development.

"Our country needs the Internet now." Some considered the Internet as having strategic significance. They believed that the question was no longer whether the Internet is useful, but how best to gain access to it. This is because the Internet affects all sectors (education, health, politics, economy, etc.), facilitating improved management. It is also an ideal research and educational tool. Some informants argued that, given Africa's glaring lack of financial resources, it would be advisable to solicit the support of foreign partners for bilateral and multilateral technical cooperation.

Generally speaking, informants felt they had no power to directly influence how the government prioritized the Internet; all they could do was make recommendations. They wanted the government to pay close attention to this new technology and take all necessary steps to ensure that as many people as possible knew how to use it and benefit from it.

Some individuals believed that they had some leeway to inform political decision-makers about the need to demystify NICTS and to demonstrate that investments in them do not have to be disproportionate. They said they would be *"able to convince the politicians that NICTS are neither particularly complex nor hugely expensive and do not compete with other investments."* Rather, their nature is one of a complementary tool. Those working for the media proposed to write articles to demonstrate the Internet's utility for the country and recommend the government incorporate the Internet into its development program. The reduction or elimination of custom duties on telecommunications and electronic and computer equipment would render the Internet more accessible to people. Others believed the state should also improve the research capabilities of its institutions to enable researchers and students to discover alternatives (computer applications, etc.), facilitating Internet use by the general public.

In any case, the country's national debt would initially increase. In time, however, the efficiency and effectiveness of ICTs, the Internet in particular, would reverse this trend. The long-term use of ICTs would likely reduce the debt, because the Internet would be a stable investment,

functioning as an engine of economic growth. "*The technology is expensive, but its transfer from North to South is essential.*"

Generally speaking, the majority of informants believed that state intervention would have a significant impact on the Internet-integration process.

Sociotechnological Aspects of Internet Integration (Resistance, Uses)

- It is not a simple task to establish the Internet in a country, because many of the conditions required (for example, education or correct needs identification) may not be present.
- When discussing this topic, people often said that the North transfers its technologies to the South purely for monetary gain and not because there is any real need for it.

Most of the sample population believed that the conditions for Internet integration in Senegal are not met; however, they also believed that Internet integration does not require needs identification. Rather, opting for or against the project is a political choice. Moreover, 31.8% of the informants considered the issue of right conditions for Internet integration frequently; 13.6%, never; and 4.5%, only rarely. And 50% provided no answer.

The Internet is regarded as a technology to be used in both South and North; it has proven itself. No technology works well for the North but not for the South, or vice versa, in the view of our informants. Both North and South have their own interests to look after. Senegal's presence on the Internet is motivated by the desire not to isolate itself from the realities of the global village. The North has an interest, too, in assisting African countries in joining the Internet.

Fifty percent of the informants believed that their actions could have an impact on the conditions for establishing the Internet, 18.2% stated the opposite, and 31.8% did not respond.

Various possible solutions emerged from our interviews. According to the sample population, it is necessary to

- Take steps to reduce the costs of computer equipment, Internet access, and telephone communication;
- Ensure training for coordination of the entire process of Internet integration;

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- Promote the creation of Web pages to disseminate local content; and
- Pique the interest of researchers, artists, and museum curators.

Here, 40.9% of the informants believed that the solutions proposed would have a strong effect on Internet integration. For 45.4%, the impact would be fairly strong, and 13.6% did not respond.

Political Power

- In certain countries, the Internet is an indispensable tool for exercising political power.
- For example, computers and networks were installed in the administration, customs, taxation, and security sectors before they became common elsewhere.

The Internet in the Service of Political Power

Most informants stated that the Internet was not currently indispensable to the Senegalese government.

The few individuals who expressed a contrary opinion – mostly government officials – pointed out that most government services were connected to the Internet. The notion that the Internet could be highly useful to the government for the exercise of political power had rarely crossed the minds of our informants. However, the use of the Internet for political governance is an interesting phenomenon. First of all, the Internet can be used for the purposes of democratization. Censorship is much more difficult to exercise if “true” information can be obtained from various sources. This clearly is the main reason why most newspapers would like their own Web sites. Used politically, “*the Internet can be instrumental in breaking down resistance to change; it can become a ‘powerhouse’ in the hands of the regime’s opponents, facilitating many of their activities.*” Politicians could use the Internet to promote good governance. If communications were written in Wolof, the country’s native language, they could reach the villages. This would be an excellent opportunity for the government to make contact with the people at the time decentralization of the state gets under way. However, the state has failed to set a good example, because it has allowed the private sector to get access first. Now that the public services have Internet access, the population must pay close attention to how this tool is used by the government. “*All necessary steps must be taken*

to ensure the government's accountability." People must be particularly vigilant to ensure that "*certain areas of the government – the department of domestic affairs in particular – respect individual and collective liberties and the private spheres of citizens.*" These ethical considerations would not be negotiable.

Means of Action for Internet Development

Some informants, predominantly journalists and senior officials, believed that they had a certain amount of leeway both to promote Internet development and to ensure that the Internet is used in an ethically proper manner. Of course, whether individuals can exert influence depends on their position. Senior government officials believed they had a direct influence on these issues during meetings and discussions. They were in an ideal position to play the role of "decision-maker" and "decision implementer." They also considered themselves well positioned to monitor Internet use, observing – and correcting – any deviations (this point being more or less implicit in their responses). The journalists emphasized their natural role as reporters with a mission, they felt, to raise awareness among both civil servants and private citizens. They also intended to use the means provided by their position to denounce any affronts to individual liberty or disrespect of the private spheres of citizens. Examples that come to mind in this context are the demonstrations held periodically, first in Côte d'Ivoire in the context of the coup d'état, and then in Burkina Faso to denounce the assassination of a journalist found burnt to death in his car. It appears that these expressions of protest in defence of democracy augured well for later actions.

How to Ensure that the Internet Does Not Become a Tool of Autocracy

Although the ways proposed by our informants to prevent antidemocratic Internet use by the government may seem simple in theory, their practical application is probably more complex. "*Internet integration must be as transparent as possible.*"

One possibility would be to systematically document known cases of abuse, simultaneously organize a publicity campaign, using all means of communication available, and examine each new infraction on a case-by-case basis. According to our informants, a few such cases appear to

have occurred since Internet development began in Senegal. "Generally speaking," they argued, "Senegal's media are fairly free."

Our informants recommended a number of measures for the government to take in promoting Internet integration. First of all, it should conduct a comprehensive study of the various barriers to Internet development. The recommended steps were to:

- Eliminate (or, at least, drastically reduce) customs duties;
- Reduce communications cost;
- Encourage competition among access providers; and
- Break up monopolies.

These legal and regulatory recommendations would be actually quite similar to those made in the North, including Europe. The state should also "take steps to increase the number of telecentres and other community cybercentres readily accessible to everyone, including the rural population." In other words, it is necessary to eliminate this new form of inequity between the urban centres and the countryside. The government's scientific research and education departments must start specific initiatives in the areas of education, initial and continuing training, and internships of all sorts, "to promote the Internet and its applications and to point out its potential and dangers." Awareness campaigns should be increased, and all media should hold information sessions regularly.

In summary, for the vast majority of the sample population, development of the use of computers and Internet must become a priority. "Since we are starting practically from scratch," the introduction of these new media must go hand in hand with setting up other communications infrastructure. Moreover, other major projects, such as road construction and the establishment of electrical networks, could be rendered more cost-effective if carried out at the same time.

Potential Consequences of Active State Involvement

If the state heeded their suggestions, our informants argued, the impact would be significant, benefiting all sectors and professions. The state itself would be the first to benefit, the moment governance was decentralized and regionalization efforts were made. Furthermore, the population, increasingly attentive to their treatment at the hands of politicians, would

be pleased. Unemployment figures would go down, and many young people could learn new trades: *“New programs, developed by specialists and adapted to our values, could help solve several problems at once.”* If computerization was carried out properly – that is, if done on the basis of critical reflection – *“any steps taken against computer illiteracy would be steps against illiteracy in general.”*

Economic Organization

- The Internet promotes the development of the very largest national and multinational corporations.
- For example, the first to computerize, after the government, were national businesses dependent on the state.

According to 36.3% of the informants, private business embraced the Internet before the government did, 50% believed the contrary, and 13.6% did not respond. Of the informants, 31.8% considered the impact of the Internet on multinationals frequently; 22.7%, rarely; and 9.1%, never. The rest did not give their opinion. In fact, the first to computerize and obtain Internet access were private banks, local branches of foreign companies, development agencies, universities (researchers), and a number of private households.

The majority of informants stated that they could do nothing to prevent favouritism in the treatment of multinationals. They recommended that the state reduce the costs of computer and telephone equipment, thereby rendering it more affordable to SMEs. Moreover, the government must pass legislation to protect the interests of local SMEs. Of the informants, 54.4% thought that these measures would have a significant, if not a highly significant, impact on SME competitiveness. The effects of the Internet on SMEs were expected to be considerable, because in the era of globalization, their activities would be rather limited without the Internet.

Conclusion

With respect to computerization, Senegal seems to be far ahead of The Gambia. According to our survey data, people in Dakar are more willing than those in Banjul to take an active role in Internet integration. Senegalese informants seemed to have greater experience with, and be more aware of, the actual and potential dangers of the Internet. But, as everywhere

else, the task at hand seems immense. To begin with, the country's other needs – such as schools, hospitals, and roads – are as pressing as Internet development. “*All sectors are priorities*,” we were told. But some argued that the Internet, as an agent for sectoral integration – that is, as a tool useful to, and an integral part of, all other sectors – “*should be the top priority*.” In addition, achieving Internet integration presupposes a solution to the issue of missing infrastructure (telephone lines and electricity in particular). Furthermore, it is important to ensure that the equipment is available to future users at a reasonable cost. This requires negotiations with Northern manufacturers and a reduction of customs duties, which would deprive the local economy of some of its revenue. Also, state intervention is required to make connection and subscription fees more affordable to businesses, organizations, associations, and individuals.

In Senegal, Internet development remains rudimentary overall, despite a certain infatuation among the Senegalese with its applications. The mercenary element in this country's culture is very strong. We believe this will interfere with Internet development. The Internet is at risk of following the example of television, which only the wealthy can afford, 30 or even 40 years after its introduction in Africa. This is because no steps were taken to make it more widely affordable.

Be that as it may, the West African people intend to take their destiny into their own hands within an African “union,” in an international environment, and with a long-term perspective. The impulse to blame Africa's slow development either on past colonization or on its fairly recent emergence as an independent continent has begun to fade.

In any case, most of the informants were born after the 1960s. Their ethical concerns centred less on the issues affecting themselves (surveillance by the state, employee supervision in companies) than on the protection of children. Although they displayed great enthusiasm about Internet development, most informants expressed serious concerns about the potential threat to Africa's cultural identity and loss of culture – just as a good deal of Northern culture is on its way to extinction.

Endnote

1. Acacio Pereira, "On Friday, 11 August, the judge ordered a new report on whether it is technically possible to deny French users of the Internet access to an American auction site that sells Nazi objects." *Le Monde*, 14 August 2000.

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CHAPTER 7

Results, Recommendations, and Conclusion



Results:¹ The Development of an Ethical Model of Internet Integration

Introduction

The objective of this last chapter is to set out an explanatory model, if not a theory, of the ethical dimension of Africa's Internet experience.

Using an approach that we will explain later, our goal is to combine the data gathered in this multiple-case study to provide a consistent picture that does justice to the kind of multifaceted experience peculiar to Internet integration and, for that matter, characteristic of any context-dependent phenomenon. We started our task by identifying various categories of opinion contained in the data. We then sought information in the data to support our choice of category labels.

Let us remember that in anthropology, an *emic* approach to scientific study is one that categorizes ideas and opinions held by individuals who are members of a given society and culture. By contrast, an *etic* approach

bases its categories or conceptual classifications on theories belonging to the social sciences. "Starting from an external (etic) perspective, the ethnographer working in the area of communication then must identify the social context in which the beliefs and opinions of the community studied are situated (emic description)" (Winkin 1996, p. 75). The emic approach is relativistic, the etic approach universalistic. The model we present here was developed following an emic approach based on the points of view of informants from five African countries.

These conceptual classifications or categories can account for the manner in which Africa experiences the Internet, and their causes allow us to determine the basis of this experience and produce an initial outline of an explanatory emic model of the Internet. Ideally, we hoped to pinpoint two or three essential causal factors affecting the fate and future development of the Internet in Africa, according to the information obtained from our informants. However, these emerging categories cannot provide an exhaustive account of the African Internet experience. Rather, they serve as points of reference, in relation to which each study country's approach to Internet development can vary. For example, our informants generally agreed that the Internet is deepening the rift between the rich and the poor, a situation that, however, not everybody experienced in the same manner. For example, on this issue, the prevailing attitude of our informants in Côte d'Ivoire and Ghana seemed to be that such inequities are inevitable and must be "lived with," especially as the Internet, it is hoped, may be capable of reducing them. By contrast, the issue of inequity, recognized by all our informants as being problematic, has given rise to a different attitude in the Gambia, where people thought it necessary to fight inequity between the poor and the rich. We therefore focused on these differences in opinion as well, to interpret the individual responses and reactions from each informant to ethical issues surrounding the Internet.

The objective of this chapter is to understand how people in the five African countries we selected are dealing with, and reacting to, the ethical dimension of the Internet. We would consider our project a success if, by the end of our analysis, we have managed to identify a behavioral profile delimiting the position of the people of each country on the ethical issues. We present this profile at the end of this chapter.

Methodology

The countries and sample populations were chosen because of their potential to contribute to the theoretical aspects emerging from this empirical study. However, we had to limit the theoretical sampling to certain West African countries. (It would no doubt be beneficial if further complementary studies were carried out, covering the Maghreb and regions in Central and southern Africa.)

For the purpose of our study, we chose our samples to obtain two homogenous groups, one Francophone, the other Anglophone. By proceeding in this manner, we could arrive at findings for each group and, more importantly, compare these findings and verify whether the behaviour of fixed variables was identical in each case. Most of the data were taken from numerous interviews and preliminary analyses. The categories identified were saturated (and acknowledged by all participants), thanks to the 105 informants interviewed, as well as the in-depth nature of the interviews, which lasted about 1 hour each.

Africa's Internet Experience

In this section, we present the data grouped into six categories.

These categories, which we were able to saturate – thanks to the huge amount of data collected – thematically group all relevant actions, events, and opinions expressed by our informants. We chose these groupings in light of the information we collected from our informants. An effort was made to adhere as closely as possible to the in vivo codes used by the informants. The six categories were obtained by reducing the number of themes and subthemes appearing in the corpus. Table 1 presents these categories, along with reasons that, according to our informants, underlie these perceptions of the Internet.

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Table 1. Emerging Internet Categories

CATEGORIES	CAUSES AND RATIONALES
We have to accept Internet content produced and provided by the industrialized world	Northern domination
The state must make the Internet a financial priority	Telecommunications infrastructure requires considerable investment
In many cases, the state does not intend (and more importantly, lacks the means) to use the Internet undemocratically; the state must do everything in its power to facilitate massive Internet integration	The state has the power and authority to pass laws and regulations and to make international commitments The Internet is highly complex
The Internet breeds inequity	Every aspect of the Internet hinges on affordability
The Internet is indispensable to Africa, which therefore must embrace the new technology at all costs	We already have missed all other stages of development
The solution to problems surrounding the Internet is even greater use of the Internet	The Internet must be accessible to everybody

This first analysis of our data thus resulted in six category pairs that we further pared down to obtain a simple preliminary model for Internet integration in Africa. We will now present and elucidate these six categories.

THE INTERNET GOLIATH

As our informants pointed out, most Internet content originates in the North. This material is central to the use of the Internet, to the point that Africans simply cannot ignore it. In fact, without these materials the network simply would not exist. Given the force with which Internet content provided by the industrialized world imposes itself on all users, this material, we believe, assumes a quality of necessity. In some cases, our informants deemed this quality domineering and expressed resignation,

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particularly with respect to the unidirectional flow of information from North to South. It is important to note, however, that in most, if not all, cases, our informants considered the Internet indispensable.

Evidently, this perception of content-related issues requires qualification. We will turn to this question in the section where we discuss and compare particular positions and approaches in relation to all six categories.

THE INTERNET AS PRIORITY

All informants agreed that budgetary resources are scarce in Africa. When funds are available, they are usually allocated to projects deemed to have a higher priority than that of the Internet – such as health, education, and road construction – and then there is the problem of corruption.

How, then, in this context, can the Internet be justified as a priority? As in the preceding category, those informants who attributed to the Internet a quality of necessity tended to believe that without a massive injection of funds – to upgrade telecommunications infrastructure, if nothing else – the Internet would be nothing but another pie in the sky, with dire consequences for Africa.

Consequently, the Internet ought to be a top priority for state spending. That the Internet should be a spending priority seemed self-evident to almost everybody, with the exception of some Anglophone informants who subscribed to a neoliberal position on state intervention. In fact, for almost everybody, the Internet is of primary importance.

THE STATE: A CATALYST FOR PROGRESS

According to our informants, the state, for a number of reasons, does not intend to use the Internet undemocratically, for political surveillance. Rather, they believe, the state regards the Internet as a tool to help it better manage its affairs, especially with information-processing and communications between the various government departments and services. Although skepticism prevails about the possibility of the state using the Internet for politically perverse ends, most informants considered the state capable of working toward national Internet integration. The state possesses the political tools to create the momentum for the rest of society to participate in projects such as this. It also has the economic means to

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increase Internet accessibility and to negotiate subsidies and grants with partners from abroad.

THE INTERNET: A CATALYST FOR PROGRESS

All our informants acknowledged the inequity between the rich, who can afford to buy the equipment required for Internet access, and the poor, who are in danger of trailing behind the new economy and being trapped even more hopelessly in a maze of exclusion. In fact, whether people have Internet access depends almost entirely on their financial means. It is the responsibility of the state, therefore, to redress this imbalance by adopting relevant strategies, such as providing communal Internet access. Of course, as our comparative tables indicate, our respondents showed no agreement on what may be in store for those destined to become the “have-nots of the computer age” (see Tables 2 and 3, later in this chapter, under “Inter- and intragroup comparisons”).

THE INTERNET AS LAST CHANCE

In this category, the argument for the Internet imperative was put forward in full force. Information technology in general and the Internet in particular were said to constitute the latest major technological revolution. Africa, which has already missed the agricultural and the industrial revolutions, cannot afford to miss this postindustrial revolution. If this is true, the data on Internet use in Africa are indeed alarming and indicative of a situation requiring rectification. The imperative to embrace the Internet unconditionally, it was argued by some, outweighs or even refutes potential objections of a sociotechnical nature (absence of a needs analysis, prevalence of illiteracy, lack of funds, and so on) to massive Internet integration in Africa.

THE INTERNET: AFRICA'S GOLDEN OPPORTUNITY

Almost all informants agreed that the Internet is a golden opportunity for Africa. And everyone was certain that nothing would prevent the Internet from taking root in Africa.

The paradox this study reveals – a rather interesting one – is the remarkable fact that the very tool suspected of being the root cause of collapsed social structures may also be the means of reestablishing the very societal equilibrium it threatens. Similarly, some informants went

so far as to suggest that the issues of inequity, illiteracy, and economic development would be resolved if Africa truly committed itself to Internet integration. The solutions proposed to tackle ethical issues of the Internet centred on the creation of favourable socioeconomic conditions for a broad-based implementation of Internet technology in Africa. These proposals are closely assessed in a later section, where we draw comparisons between the various categories. By further trimming down the categories we identified – as well as their perceived causes and rationales – we get a glimpse of what we may call a *simple emic model of the Internet's social integration* in Africa.

A Simple Emic Model of Social Integration of the Internet

The development of the emic model is based on perceptual categories, that is, categories that describe opinions expressed by informants. We can clarify these categories by reducing their number, using a more rigorous process of abstraction. This model, represented by Figure 1, allows us to systematize the comments gathered for this study. The model is simple because it ignores the Internet's ethical dimension, which is not dealt with until we present information about the ethical behaviour of Internet users from the six countries.

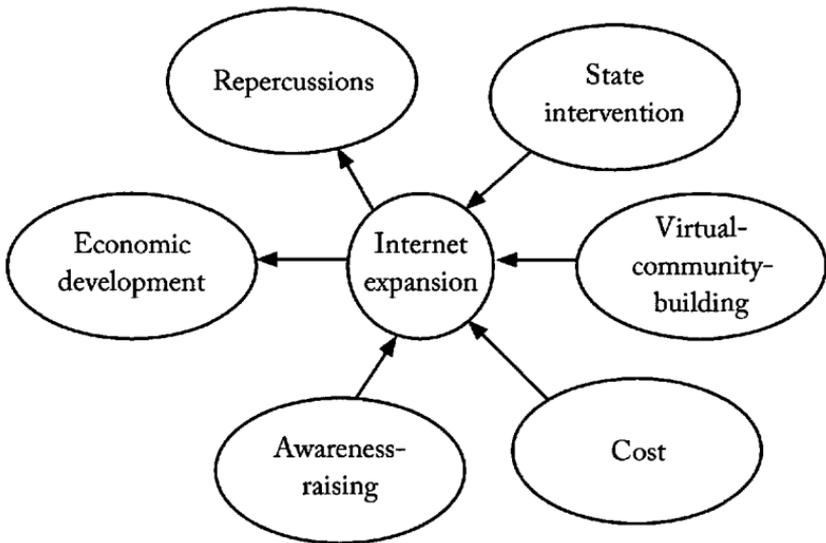


Figure 1. Simple emic model of the Internet's social integration

The simple emic model shows that, given the dominance of the industrialized world, which determines the pace and mode of development, the Internet constitutes a socioeconomic necessity, which Africans can neither afford nor do without. Each country must take resolute action locally (provision of funds and Internet promotion) and globally (requests for international aid) to ensure that all their inhabitants enjoy Internet access. The success of this initiative would depend on African countries resolving any Internet-related problems they may face, such as inequity, or the exclusion of certain segments of society. The type of sampling we chose for our project enabled us to make comparisons within individual groups and thus identify differences or peculiarities in approaches to dealing with ethical issues.

Intra- and Intergroup Comparisons

Table 2 provides evidence for certain differences among the three Francophone countries, differences that, however, are largely offset by a great number of similarities within the group. The differences are limited to cultural issues and the ethical behaviour of Internet users from each country. Senegalese respondents, for example, did not share the laissez-faire attitude toward Northern Internet content of the respondents from other countries. Senegalese Internet users were quite unreceptive to this content, whereas for Ivorians and Burkinabés it constitutes a blessing that should not be censored. With respect to offensive Internet content, in both countries emphasis was placed on the individual responsibility of parents and teachers. In Senegal, however, offensive materials were strongly condemned, and certain forms of censorship, such as filtering systems and Internet regulation, were also recommended. To counteract offensive and illicit Internet content, people in Burkina Faso and Senegal recommended the production of local content.

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Table 2. Intragroup Comparisons (Francophone)

CATEGORY OF SOLUTIONS	BURKINA FASO	CÔTE D'IVOIRE	SENEGAL
The Internet Goliath	<ul style="list-style-type: none"> • Risk of acculturation • Opportunity • Individual responsibility 	<ul style="list-style-type: none"> • Let's take the plunge • Northern Internet content must not be censored 	<ul style="list-style-type: none"> • Northern Internet content is morally deficient • Production of local Internet content should be promoted
The Internet as priority	<ul style="list-style-type: none"> • The Internet is a priority 	<ul style="list-style-type: none"> • The Internet is a priority 	<ul style="list-style-type: none"> • The Internet is a priority
The state: a catalyst for progress	<ul style="list-style-type: none"> • The state must actively promote the Internet 	<ul style="list-style-type: none"> • The state plays an essential role • The state must be prevented from using the Internet to antidemocratic ends 	<ul style="list-style-type: none"> • The state plays an important role • State activities must be monitored to prevent antidemocratic Internet use
The Internet: a catalyst for progress	<ul style="list-style-type: none"> • The Internet breeds inequity 	<ul style="list-style-type: none"> • The Internet creates inequity that, however, we must accept 	<ul style="list-style-type: none"> • The Internet breeds inequity
The Internet as last chance	<ul style="list-style-type: none"> • Insignificant Internet use • Administrative and commercial Internet users • A small number of cybercentres 	<ul style="list-style-type: none"> • Insignificant Internet use • Few cybercentres 	<ul style="list-style-type: none"> • Slightly more substantial Internet use • Many cybercentres

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Table 2. Intragroup Comparisons (Francophone)

CATEGORY OF SOLUTIONS	BURKINA FASO	CÔTE D'IVOIRE	SENEGAL
The Internet: Africa's golden opportunity	<ul style="list-style-type: none"> • E-community technology • Education and awareness-raising • Recycled computer equipment provided by the North 	<ul style="list-style-type: none"> • E-community technology • International aid • Awareness-raising • Expansion of infrastructure • Elimination of illiteracy 	<ul style="list-style-type: none"> • E-community technology • Tax reduction • Breakup of telecentre monopoly • Regulation and censorship of Internet content • Prohibition of offensive sites • International aid
Ethical behaviour	<ul style="list-style-type: none"> • Limited awareness of ethical issues • Limited awareness of constraints on remedial action • Limited ability to act 	<ul style="list-style-type: none"> • Quite limited awareness of ethical issues • Limited awareness of constraints on remedial action • Limited ability to act 	<ul style="list-style-type: none"> • Keen awareness of ethical issues • Keen awareness of constraints on remedial action • Limited ability to act

Ivorians seemed to take for granted that the Internet will deepen existing inequities. However, we noticed significant and revealing differences in a number of statements made by our informants, of which the most striking are those about current ethical behaviour observed in the survey countries. Interestingly, these statements stand in contrast to the wishes and desires presented in the solutions category (see Table 4, later in this chapter, under "Summary: Ethical-behaviour profiles of Internet users"). As it transpired, in both Burkina Faso and Côte d'Ivoire, respondents showed little awareness of many ethical issues related to the Internet. This

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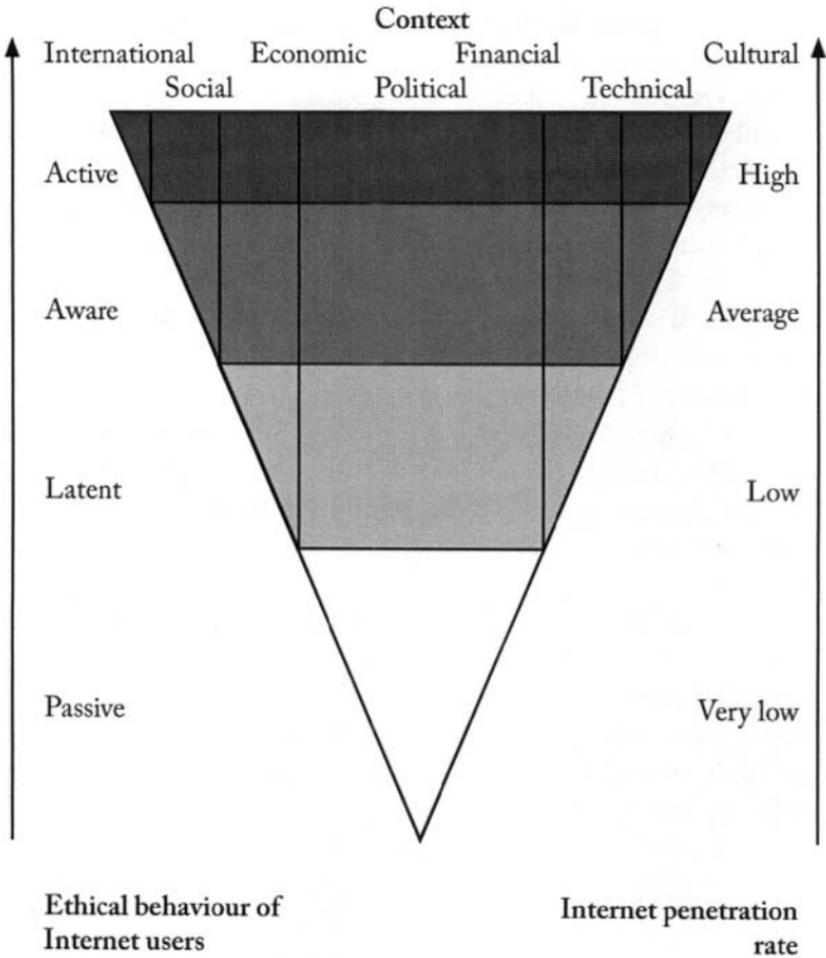
is evident from the fact that they left many questions unanswered that they could have used to elucidate their positions on these issues. Moreover, the general awareness of constraints on remedial action was moderate to limited in both countries. Other priorities, such as the elimination of illiteracy and improvement of infrastructure, were not believed to stand in the way of Internet integration in Africa. Awareness of ethical issues, such as inequity and the unidirectional flow of information from North to South, is a prerequisite for remedial action. Awareness or knowledge of these ethical issues and constraints, as shown by our model, is a positive manifestation of ethical behaviour.

Senegal did better than both Burkina Faso and Côte d'Ivoire with regard to ethical knowledge and awareness. Since all other responses were rather similar, we believe that Internet-use and -penetration rates in these countries can explain many of these differences, given a considerable disparity in numbers (see data on Internet-penetration rates, in Appendix 1).

The ethical model of Internet integration represented in Figure 2 shows that ethical behaviour is related to the awareness of various contextual elements, as well as being related to the number of Internet connections. Senegal did best with respect to its ability to take remedial action. In the other two Francophone countries, this ability appeared to be underdeveloped and limited to awareness-raising. On the whole, the study shows that people were generally unaware of and uninformed about the Internet's ethical dimension, in light of which awareness-raising appears to be the appropriate remedial measure. For this reason, the existence of forums or mechanisms (for example, debates, colloquiums, seminars, conferences, articles, reports, and documentaries) to allow people to come to grips with the Internet's various aspects were strongly indicative of the level of awareness of the ethical dimension of Internet integration.

Figuring among the similarities within the Francophone group was the notion of "e-community technology," computer technology used to develop e-communities, which the informants recommended as a means of tackling the ethical issues discussed. E-community technology provides people with Internet access in public spaces that are generally, but not exclusively, the property of the state. They include Internet community centres, telecentres, and cyber cafés.

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**Figure 2. Ethical model of Internet integration
(developed by P.J. Brunet and J.M. Katambwe)**

Table 3, which represents the two Anglophone countries, Ghana and The Gambia, reveals even more striking similarities than those identified within the Francophone group. Apart from the all-but-unanimous consensus among our Gambian informants on the Internet's priority status, the two countries' experience with the Internet seems quite similar. Moreover, aside from the boundless optimism we measured in both countries, their data are strikingly similar to those of Burkina Faso and Côte d'Ivoire. This led us to the following theory: the individual possesses a dynamic that is

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impervious to the sociopolitical context of the Internet's integration. Individuals tend to react in a similar manner, regardless of national context. Of course, this theory must be verified, because definitive conclusions of this kind cannot be drawn on the basis of a sample of this size.

Table 3. Intragroup Comparisons (Anglophone)

CATEGORY OF SOLUTIONS	THE GAMBIA	GHANA
The Internet Goliath	<ul style="list-style-type: none"> • Northern Internet content is welcome • Production of local content • No censorship 	<ul style="list-style-type: none"> • Northern domination of Internet • is not a problem • Production of local Internet content should be promoted • No censorship
The Internet as priority	<ul style="list-style-type: none"> • The Internet is a priority 	<ul style="list-style-type: none"> • The Internet is or is not a priority
The state: a catalyst for progress	<ul style="list-style-type: none"> • The Internet reduces inequity 	<ul style="list-style-type: none"> • The Internet does not cause inequity
The Internet as last chance	<ul style="list-style-type: none"> • The Internet is used predominantly by government and private business • There are few cybercentres 	<ul style="list-style-type: none"> • Limited Internet use • There are few cybercentres

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CATEGORY OF SOLUTIONS	THE GAMBIA	GHANA
The Internet: Africa's golden opportunity	<ul style="list-style-type: none"> • E-community-building • Cost reduction • Reduction of customs duties • Education and awareness-raising • Encouragement of individual responsibility for use of Internet content • Integration of moral education into Internet training 	<ul style="list-style-type: none"> • E-community-building • Break-up of state's telecommunications monopoly • Cost reduction for equipment • Reduction of customs duties • Awareness-raising • Moral education
Ethical behaviour	<ul style="list-style-type: none"> • Limited awareness of ethical issues • Limited awareness of constraints on remedial action • Limited ability to act 	<ul style="list-style-type: none"> • Limited awareness of ethical issues • Limited awareness of constraints on remedial action • Limited ability to act

An Ethical Model of Internet Integration

The ethical model of Internet integration comprises *three principal dimensions*: context, penetration rate, and users' ethical behaviour.

CONTEXT

The context includes the country's *economic structure*, with its private businesses and affluent citizens, who constitute the largest, if not the only, contingent of Internet users; the *costs and financing* of equipment and infrastructure, which all informants considered as being the greatest constraints on Internet integration; and the *state*, including its priorities as well as its ability and willingness to intervene financially in support of Internet projects (see Figure 2). Another dimension of the context is *culture*, which is open to influences of a moral or sexual nature, in areas exhibiting high levels of literacy. The *social* context, it goes without saying, constitutes a key element that must be considered, because the Internet has the potential to deepen disparity and exclusivity, which some call the

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“digital divide.” *Sociotechnical* resistance to the Internet (conditions for accessibility, lack of training, and so on) constitutes another constraint, as some informants acknowledge. A final constituent of the context is its *international dimension*, which includes foreign aid, as well as trade, agreements, and disputes with other countries.

INTERNET PENETRATION RATE

Some countries, such as Senegal, reported a fairly high Internet penetration rate; that of others, average compared with other developing African countries, or rather low, as in the case in Burkina Faso.

THE ETHICAL BEHAVIOUR OF INTERNET USERS

The behaviour of Internet users is based on three variables:

- Degree of awareness of social disparities;
- Degree of awareness of constraints; and
- Degree of the country's involvement in Internet-related matters (in some countries, entire government departments are dedicated to the Internet).

FOUR TYPES OF INTERNET USER

These patterns of behaviour give rise to *four types of Internet users*: the passive, the latent, the aware, who are rare and found mainly in Senegal, and the active, who are practically nonexistent. The dimension of context affects the rate of use, which, in turn, has an impact on Internet users' ethical behaviour. This is supported by cognitive theory.

- *Active users* – Active Internet users are individuals who manifest ethically responsible behaviour toward, not only the Internet itself, but also important, related issues. In other words, to be an active user means to learn about the Internet, with an eye to political, cultural, sociotechnical, economic, financial, social, and international issues. However, it is the responsibility of the state, not that of individuals, we believe, to come to grips with this vast array of issues. Moreover, pan-African and international talks on the issue of regulation are called for. For individuals, to be actively ethical is to
 - Be an active researcher, that is, to verify sources of information;
 - Use several search engines for one and the same subject;

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- Take an interest in ethical issues related to the Internet;
 - Attend relevant colloquiums or conferences;
 - Encourage a responsible use of the Internet in one's immediate environment and at the regional and national levels; and
 - Promote media involvement to raise general awareness.
- *Passive users* – The behaviour of passive users, on the other hand, is marked by little or no ethical awareness or consciousness. They learn to use the Internet without taking an interest in related ethical issues. In contrast to active users, they
 - Manifest some investigative curiosity about the Internet without any particular concern to verify sources of information;
 - Do not use several search engines to research each subject;
 - Take no interest in ethical issues related to the Internet;
 - Do not attend colloquiums or conferences;
 - Do not encourage responsible use of the Internet in their immediate environment or at the regional and national levels; and
 - Do not promote media involvement to raise general awareness.
 - *Aware and latent users* – Aware and latent users are situated intermediately between active and passive users.

Summary: Ethical-behaviour Profiles of Internet Users

Tables 1 and 2 detail differences in the ethical behaviour of Internet users from five African countries. We will not return to the three criteria we have already defined (awareness of ethical problems and issues, awareness of constraints, and ability to act). Instead, we now introduce one last criterion to differentiate these behavioural patterns: the degree of involvement in ethical issues. This criterion describes the extent, generally speaking, to which an individual feels personally concerned by a particular ethical issue. Unfortunately, we cannot use this criterion to make clear distinctions

within our sample population, as the vast majority of our informants chose not to respond to the relevant propositions and questions. We used this lack of information as an indicator to measure the degree to which our informants felt personally affected by a particular ethical issue.

Table 4, a presentation of the sample population's ethical-behaviour profiles, shows that our informants' involvement in Internet-related ethical issues was rather limited. Internet users typically found in the survey countries belonged to the categories *aware*, *latent*, or *passive*. Passive users are not consciously concerned about any ethical issues, do not acknowledge the existence of Internet-related problems, and so are not also aware of any constraints in the way of possible solutions. The passive fatalist acknowledges the existence of constraints, but is not ready to take remedial action, as the issues are not of personal concern.

Latent users acknowledge the existence of ethical issues, but do not think they have the power to take remedial action, in light of perceived constraints and a lack of previous involvement in these issues. Aware users, in contrast, recognize the issues but do not necessarily see the constraints. In many cases, they are unwilling to take action because, the ethical issues are not a concern to them.

In light of these criteria, Senegalese Internet users were latent users, who need, first, to realize that obstacles can be overcome and, second, to take a genuine interest in the resolution of ethical issues surrounding the Internet. Users from the four other countries represented the passively optimistic, given their attitude of noninvolvement and their fairly low awareness of Internet-related ethical issues and constraints. Clearly, tremendous awareness-raising is needed in this area.

In summary, Internet users in the survey countries showed "very low" levels of involvement, because of the penetration rate, or low visibility, of the Internet. Generally speaking, therefore, their behaviour toward Internet-related ethical issues cannot be considered active. Little or no debate takes place on these issues, because they are of little concern to Internet users.

Consequently, their recommended solutions to Internet issues focused almost exclusively on measures to decrease or eliminate restrictions and increase the presence of the Internet. Paradoxically, they wanted "more Internet" to solve the problems it causes, which is why they called for state intervention to lower customs tariffs and subsidize institutions

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Table 4. Ethical-behaviour Profiles

	HIGH INVOLVEMENT		LOW INVOLVEMENT	
	TYPE OF BEHAVIOUR	TYPE OF INTERNET USER	TYPE OF BEHAVIOUR	TYPE OF INTERNET USER
<p>HIGH awareness of issues</p> <p>LOW awareness of constraints</p>	Approaches ethical issues critically	Active Searches and proposes solutions	Approaches ethical issues half-heartedly	Aware
<p>HIGH awareness of issues</p> <p>LOW awareness of constraints</p>	Approaches ethical issues with a sense of powerlessness and discouragement	Aware	Feels unable to deal with ethical issues	Latent
<p>LOW awareness of issues</p> <p>LOW awareness of constraints</p>	Optimistic Is oblivious to issues	Active Researches information in support of his or her point of view	Overly optimistic	Passively optimistic
<p>LOW awareness of issues</p> <p>HIGH awareness of constraints</p>	Fatalistic	Latent Perceives no personal connection	Fatalistic	Passively fatalistic

such as Internet community centres and schools. The ethical behaviour of most Internet users thus ranged from passive to latent. If there was one country where Internet users can be truly considered aware of Internet-

related ethical issues, it was Senegal. According to our analysis, this was mainly due to this country's high Internet-penetration rate. The degree of ethical awareness, therefore, appears to depend, paradoxically, on the Internet-penetration rate. This phenomenon mirrors developments in the industrialized world, where ethical issues have emerged only in the last few years and in the wake of exponential growth in NICTS. Furthermore, our simple emic model shows that the Internet-penetration rate itself depends on state subsidies, on costs, and, to some extent, on the community's commitment to embracing the new technology. According to our ethical model, the rate also depends on other contextual variables, such as the Internet's cultural and social dimensions (culture and inequity, respectively), the economic structure,² sociotechnical aspects (use, resistance), and international relations.

Recommendations

In light of the paradoxes we have identified in our study, we recommend that African governments adopt the ethical model of Internet integration as part of their development programs. This model calls for consideration of the various paradoxes identified by our research that highlight the ethical dimension of Internet development. They are the following:

- The Internet provides access to information while reinforcing inequity and exclusion.
- Culturally speaking, the Internet is a window on the world; at the same time, it provides access to content that is ideologically tainted, illicit, or offensive.
- The Internet is considered an indispensable information and communications tool, but its equipment, infrastructure, and telecommunications costs compete with other priorities and exacerbate Africa's dependence on the North.
- Although the Internet is expected to be universally accessible, it often leaves users feeling technologically illiterate.
- Some believe that government involvement is required for Internet development, but this is rejected by others as inappropriate state intervention.
- The Internet contributes to a country's general economic development while shoring up the economic power of multinationals, to the detriment of SMES.

Although the whole range of Internet-related issues is worthy of con-

sideration, our study has focused on the ethical questions related to this technology. In our opinion, the most ethically responsible approach to Internet integration by both the government and the population includes the following measures:

- Taking into account the broader economic context;
- Getting politically involved;
- Implementing a telecommunications infrastructure;
- Setting up illiteracy-elimination and Internet-training programs;
- Creating Internet community centres (cyber centres, cyber cafés);
- Developing support programs for the creation of domestic Internet content;
- Setting up a business-assistance program;
- Encouraging international dialogue and the harmonization of international cooperation projects; and
- Developing an awareness-raising program covered by the media (radio in particular).

All these elements fit into the ethical model of Internet integration. This model for the adaptation of NICTS

- Takes into account ethical issues related to information technologies and communication;
- Ensures preservation of, and respect for, social and cultural networks;
- Supports the production of local and national Internet content; and
- Encourages an ethically responsible integration of the Internet on both individual and collective levels.

Illiteracy elimination, awareness-raising, and training policies must go hand in hand with the development of ICTS, and the Internet in particular, everywhere in Africa. Failing that, the development of NICTS will likely tear holes in the countries' social fabric, causing problems that will primarily affect the adolescent population – the countries' future.

Conclusion

The Internet in Africa – Paradoxes and Challenges

The importance of the Internet for an African continent that is depleted, deprived of infrastructure, and in desperate need of new technology cannot be overstated. Though showing a keen interest in the use of new technolo-

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gies, most Africans are grappling with serious resource shortages at all levels: lacking communications infrastructure, training, equipment, and so forth. Unfortunately, and despite all the potential advantages of the NICTS, the African continent – particularly its Francophone countries – must deal with the fact that the North is taking little to no interest in them. And yet, expertise in these highly promising technologies, combined with an adaptation strategy, could well be the key to the development of highly valuable know-how at the local level. It is of the utmost importance for the North to prevent an information apartheid that would, once again, leave Africa on the margins of development.

Let us remember that the situation of the developing countries in telecommunications has become highly precarious, as this sector's highest authorities – the Federal Communication Commission and the International Telecommunication Union (ITU) – have decided to slash subsidies for Third World countries. Rather generous in the past, these subsidies were justified by the largely unidirectional flow of telecommunications from North to South and were intended to compensate Southern countries for this imbalance.

However, following a readjustment of global telecommunications fees, the two organizations decided to decrease contributions drastically. To justify this about-face, they argued that the Southern countries have always accessed Northern Internet sites far more frequently than vice versa. The compensation provided is therefore no longer fair. This acts to the great detriment of African telecommunications operators, who now lack the resources to take on their Northern competitors. As a result of this new imbalance, any potential investment in telecommunications made by African countries will forever serve the interests of large American corporations. Internet users from Southern countries, by way of international communication, access foreign sites far more frequently than domestic ones. Worse still, the few interesting sites created in Africa tend to relocate to the North, especially Europe and North America, to benefit from superior technical conditions. Thus, Africa is at the centre of a paradox: although it is financing local infrastructure with the greatest difficulty, the dividends of this investment exclusively benefit sites in the industrialized world. The second paradox is that even projects intended to improve the situation just described, such as the Africa One project to create an undersea fibre-optic network, have negative consequences for

Africa. Astronomical connection fees and other high costs are neutralizing revenues generated by the only truly profitable sector of international communications.

Here and there, recommendations are made on Internet-related issues. Over the last few years, the ITU has created a communications development bureau, devoted exclusively to providing assistance to developing countries to meet their specific needs. An organization by the name of WorldTel has been founded to protect developing countries against political risks, by guaranteeing loans, funds, and insurance policies to clear the way for telecommunications projects in developing regions. This initiative appears to be a solution to the problem of financing. Volunteers in Technical Assistance, a major NGO, runs a program devoted exclusively to the transfer of communications technology. Working Group 9.4, another professional NGO, affiliated with the International Federation for Data Processing, is organizing network management in developing countries and occasionally holds conferences on the subject. The *Système pilote d'information technique* (technical information pilot system), a Third-World communications network, focuses specifically on issues of information imbalance. The network gathers, processes, and disseminates information on scientific, technological, and commercial activities in developing countries.

Without doubt, then, action is being taken. But is it sufficient – is it effective? To adapt the title of the article, “Will the Internet Save Africa?” (Wané 1998), Can the Internet really accommodate Africa’s needs?

So much seems to be clear: With its infrastructure more or less nonexistent and exorbitant user fees all too often putting the Internet out of reach of potential users, Africa has scarcely been touched by the ongoing global communications revolution. However, the momentum that can be generated by information technology stands in stark contrast to Africa’s traditional economic inertia and might, therefore, constitute an effective way of opening up the African continent to the world economy. The example of Senegal is revealing in this respect: All research centres are equipped with at least one computer terminal, and the Internet appears to be the preferred research tool. However, the Internet continues to be viewed as a tool of secondary importance and of no particular relevance to the real needs of African countries. People continue to prefer social proximity over globalization and are looking for ways to reinforce it. Telecentres

are a case in point: In contrast to individually owned telephones, these centres strengthen local ties by functioning as places of social exchange and sharing. Assessed on the basis of these social criteria, the Internet will continue to play a marginal role as long as it does not lend itself to community-building. This holds true in most African countries, where communal cohesion and solidarity remain essential.

However, for those who recognize its potential, the Web holds much hope. As far as subcontracting is concerned, the Internet is a wellspring of opportunities. Following the example of Finland, where subcontractors do accounting work for Canada, African countries could benefit from new teleworking practices to penetrate new markets and create thousands of jobs. Yet, one must be suspicious of development likely to increase the South's dependence on the North, a dependence that is already substantial. In fact, from an African point of view, it appears that the Internet's main shortcoming is its global character, which tends to run counter to the social proximity Africans so cherish. It becomes clear, therefore, that Africa's acceptance of the Internet will depend on its ability to accommodate this social dimension.

Our study has shown that Internet development in Africa is full of paradoxes. On the one hand, most of the population considers the Internet an indispensable, if not the ultimate, development tool; on the other, Internet integration raises ethical issues, such as increased inequity, exposure to illicit Internet content, exorbitant costs, sociotechnical aspects (use), political choices, and economic organization. As our study has shown, only a minority of the population of our study countries was aware of these ethical questions and possible solutions. Without this awareness, we can expect Internet development to adversely affect the sociocultural tissue of African populations. Our research shows the need to understand these ethical issues in Internet development and to formulate specific policies governing this development. No doubt, this constitutes a challenge. These policies could be based on the ethical model of integration we have proposed for responsible and optimal use of the Internet. The implications are highly significant: if the African countries implement these policies, Africa could serve as point of reference for the North, because it has to deal with precisely the same kinds of Internet-related ethical issues. As a result, North-South relations would acquire greater equilibrium and Africa would have the opportunity to make recommendations on dealing

with the excesses of a technology that has become uncontrollable. If, as the African saying goes, "man is man's remedy," technology must become and must remain the servant of humankind, not vice versa. There is a very real risk that technological determinism will reverse the relationship between human beings and technology to the extent that it dictates our conduct. The Internet project that humankind has embarked on aims to use this technology to better define itself, better understand its environment, and, above all, better communicate with other human beings, who may be near or far, geographically, culturally, or socially. The issue is political but must be acknowledged by each individual user – actual or potential – of this technology. Using a tool always requires learning, minimal as that learning might be. If no learning occurs, the user risks being abused, even enslaved, by the technology. This risk is an ethical issue.

Without an ethics of individual and collective responsibility, the development of the Internet, including the ways it is used, will be marked by an excess that, once established, will be difficult to contain. However, each and every Internet user is also a citizen, one who is part of a society's social fabric and participates in its organization. Any increase in the number of Internet users has a direct effect on this social fabric and its organization. Unless users acknowledge the ethical issues of the Internet and its use, the risk of technological determinism will become a reality. In light of the results of our study, carried out among Internet users from the five countries visited, the risk is apparent. What we referred to as the degree of ethical awareness of issues surrounding the Internet and its use was found to be "low" or "very low" in most cases. The occasional case of heightened awareness was usually found among the well educated. Hence, the role of education seems once again paramount in the organization and maintenance of social relations.

In conclusion, we recommend that governments implement Internet development policies taking into account our ethical model of integration including awareness-raising and Internet training programs.

Endnotes

1. In cooperation with Joël M. Katambwe.
2. Most Internet subscribers are private businesses and more affluent people; the more plentiful these are, it seems to follow, the higher the penetration rate.

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Appendix 1: Statistical Data

Table A1. Number of Internet Users by Country, 2001–2002

	BURKINA FASO	CÔTE D'IVOIRE	THE GAMBIA	GHANA	SENEGAL
NUMBER OF US- ERS	10 000	40 000	6 000	30 000	150 000

Source: Estimates based on a variety of sources, including NUA Internet Surveys; International Telecommunication Union; Les Echos, La Lettre des Télécommunications; the Web site “African Internet Connectivity” (www3.sn.apc.org/africa).

**Table A2. Demographic, Sociocultural, Economic,
and International Indicators**

	BURKINA FASO	CÔTE D'IVOIRE	THE GAMBIA	GHANA	SENE- GAL
DEMOGRAPHIC INDICATORS					
POPULATION (THOUSANDS)	11 616	14 526	1 268	19 678	9 240
ANNUAL GROWTH (1995– 2000) (%)	2.7	1.8	3.2	2.7	2.6

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	BURKINA FASO	CÔTE D'IVOIRE	THE GAMBIA	GHANA	SENE- GAL
SYNTHETIC FER- TILITY INDEX (1995-2000)	6.6	5.1	5.2	5.2	5.6
INFANT MOR- TALITY (1995- 2000)	99.0	87.0	122.0	66.0	63.0
LIFE EXPECTAN- CY (1995-2000) (YEARS)	44.4	46.7	47.0	60.0	52.3
URBAN POPULA- TION (%)	18.0	45.8	31.8	37.9	46.7
SOCIOCULTURAL INDICATORS					
HUMAN DEVEL- PMENT INDEX	0.303	0.420	0.396	0.556	0.416
NUMBER OF PHYSICIANS (PER RESIDENT)	0.04	0.10	0.03	0.06	0.10
ILLITERACY RATE (MEN) (%)	67.0	46.2	56.9	20.6	53.6
ILLITERACY RATE (WOMEN) (%)	86.7	62.8	71.5	38.5	73.3
EDUCATION (AGES 12-17 YEARS) (%)	12.7	45.7	40.9	53.0	30.0
EDUCATION (POSTSECON- DARY) (%)	0.9	4.6	1.9	1.4	3.2
INTERNET HOSTS (PER RESIDENT)	0.18	0.43	0.09	0.05	0.32
BOOKS PU- BLISHED	12	—	14	28	42

Appendix 1: Statistical Data

	BURKINA FASO	CÔTE D'IVOIRE	THE GAMBIA	GHANA	SENE- GAL
ECONOMY					
TOTAL GDP (PPP) (MILLIONS USD)	9 333	23 162	1 766	32 022	11 809
ANNUAL GROWTH (1988-1998) (%)	3.3	2.7	3.9	4.3	2.6
ANNUAL GROWTH (1999) (%)	3.7	4.3	4.2	5.5	5.1
GDP BY RESI- DENT (PPP) (USD)	870	1 598	1 453	1 753	1 307
INVESTMENT (GFCF) (% GDP)	27.0	17.6	17.7	22.0	19.9
INFLATION RATE (%)	-1.00	0.7	2.5	12.4	0.8
GOVERNMENT EXPENDITURES ON EDUCATION (% GDP)	1.5	5.0	4.9	4.2	3.7
TOTAL FOREIGN DEBT (MILLION USD)	1 399	14 852	477	6 884	3 861
FOREIGN-TRADE INDICATORS					
IMPORTS (CUS- TOMS DUTIES) (MILLION USD)	696	3 270	192	3 505	1 763
PRINCIPAL SUP- PLIERS (%)					
AFRICA	34.5	15.5	13.8	26.8	
ASIA			41.9	15.0	
DC					30.4
EU	47.4	53.7	34.6	43.3	54.4
FRANCE	32.4	28.6			32.6

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	BURKINA FASO	CÔTE D'IVOIRE	THE GAMBIA	GHANA	SENE- GAL
EXPORTS (CUSTOMS DUTIES) (MILLION USD)	254	4 077	40	1 924	637
PRINCIPAL CLIENTS (%)					
AFRICA	13.1	28.6		16.9	34.3
ASIA	35.6			11.3	28.0
BELGIUM			71.9		
DC			5.5		
EU	44.5	50.9		51.9	23.5
FRANCE					
JAPAN			6.3		
US		9.0			

Source: Data taken from Boréal Express, *L'État du monde : annuaire économique et géopolitique mondial* (Boréal Express, Montréal, PQ, Canada, 2001).

Note: DC, developing country; EU, European Union; GDP, gross domestic product; GFCF, gross fixed capital formation; PPP, purchasing power parities; US, United States.

Appendix 2: Acronyms and Abbreviations

AISI	African Information Society Initiative
GAMTEL	Gambia Telecommunications
ICT	information and communications technology
IDRC	International Development Research Centre
ISP	Internet service provider
ITU	International Telecommunication Union
NGO	nongovernmental organization
NICT	new information and communications technology
NIICO	New International Information and Communication Order
SME	small to medium-sized enterprise
UNECA	United Nations Economic Commission for Africa
UNESCO	United Nations Educational, Scientific and Cultural Organization

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