**Information and Communication Technologies
and Social Development in Senegal:
An Overview**

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Introduction

Given the development of infrastructure and telecommunications services, the proliferation of private radio stations, the diversification of the audiovisual landscape, with packaged satellite programming, connections to the information superhighway, and the growing use of information and communications technologies in different segments of the society, Senegal can be said to have entered the information society in the early 1990s. Since then, it has been faced with an "information revolution," with its attendant social, as well as political, economic and cultural consequences. Thus, along with technological progress, we are witnessing the foundations for a societal revolution. A careful study of the causes and effects of this phenomenon must be made, in order to ensure that social development continues to be a concern of the highest priority.

Senegal's entry in the information society is occurring against a particularly difficult economic and social background. The productive structure is dominated by services sector, providing 59.3% of GDP in 1998, while the primary sector, which employs 60% of the population, contributes only 17.4% to the formation of national wealth. Notable as signs of the worsening crisis are the following facts: informal sector workers continue to represent an increasing percentage of the population; the urban unemployment rate is 29%; the annual income of the average Senegalese is US$530; and 33% of the population lives below the poverty line. Although macroeconomic balances improved following implementation of the 1993 emergency plan and the devaluation of 1994, with a marked growth rate of 6.1% in 1999, Senegal is burdened with a large external debt (US$3 billion 865 million) and ever greater social deficits.[1]

The country's population, currently 8.6 million, is increasing at the rapid annual rate of 2.7%. The population is composed of a large proportion of young people and women: 58% of the population is under 20 years of age, with women comprising 52% of the total population. Forty-five percent of the population currently lives in the cities, but with the high rate of urbanization, projections suggest that this figure will reach 63% by 2025. There is also a severe imbalance in the spatial distribution of the population, with Dakar (which comprises 0.3% of the national territory) is home to 22% of the population. Rapid demographic growth, the low average age of the population, fast-paced urbanization, and the high proportion of women, create intense social demands that remain largely unsatisfied.[2] Entire segments of the society are deprived of access to basic services, such as education, health, running water, electricity, etc., against the backdrop of widespread unemployment, with the supply of jobs unable to keep pace with the rising demand for jobs. Thus, in 1998, the rate of school enrollment was 65.1%, with a 65.4% illiteracy rate among adults. Health conditions are a source of concern: the country has high maternal and infant mortality rates; poor health coverage, according to standards recommended by WHO; a 52-year life expectancy at birth; and only 51% of the population with access to drinking water. Though women, who constitute a majority of the population, are heavily involved in agriculture in rural areas and in informal-sector work in urban areas, they are more vulnerable to poverty, disease, and illiteracy than any other group, since the allocation of funding and tools for economic and social development generally benefits others, to the detriment of women. In addition, women have

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[1] The figures cited here come primarily from the document "Senegal at a glance," International Finance Corporation, September 1999, http://www.ifc/org/sn.htm.
[2] Ministry of Economy, Finance and Planning. Planning Office: Programme national de lutte contre la pauvreté: Stratégies et éléments de programme d'actions. Dakar, April 1997, p. 11-20.

virtually no role in policy making, despite the fact that they constitute a majority of the electorate.

Strong demographic pressures and the declining standard of living among broad segments of the population are not without their environmental consequences. In urban areas, problems of household waste management, water pollution from household or industrial waste and environmental sanitation are everyday realities. In rural areas, over-exploitation of natural resources, along with environmental degradation due to climatic and human factors, are causing profound changes in the land – a situation which, in turn, is resulting in significant migration to urban centers.

Since the early 1980s, a variety of factors – a rapidly increasing population; poor economic performance of long standing; a large external debt; stagnation, or even a decline, in investment rates; a low savings rate; and degradation of environmental resources – have left Senegal with a crisis that considerably weakens the State's ability to respond to social demands. One illustration of the level of social problems is the human development index (HDI) established by UNDP, which places Senegal 153rd out of 174 countries for 1998.[3]

Despite these realities, developments in media and in telecommunications and information technology infrastructure and services have been quite impressive, compared to many African countries. In Senegal, the telecommunications sector, which accounted for 2.6% of gross domestic product (GDP) for 1996, is one of the more highly developed sectors of the economy.[4] There is, however, a virtual absence of systematic discussion -- either in intellectual and policy circles or among the general public -- concerning the technical, political, economic, cultural and social choices facing the country, or on the forms, rules and values Senegal should adopt, as it comes to play an increasing role in the information society. Indeed, the prevailing attitude appears to be that the introduction and use of information and communications technologies[5] are natural, intrinsically positive phenomena – a "normal" part of the modernization of society, which therefore calls for no particular thought or debate. In such a context, it is most often technical personnel who make the choices that affect both policy makers and the public at large. The absence of genuine national debate at the time *Sonatel*, the national telecommunications operator, was privatized illustrates the way in which the intellectual and political communities, organized labor, and the public are left on the sidelines in designing and implementing policy regarding information and communications technologies.

The current development of the Internet is taking place under very similar conditions. Without any real strategy, or even an overall policy based on a reasoned choice by the public, the State seems content to repeat, in its official speeches, its goal to make Senegal a "service country," without giving a rationale or indicating how this is to occur. Further, the political, economic, cultural and social realities of this new society are not being addressed, nor is there discussion of how it will affect the people, in terms of the quality of daily life. There is no more than

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[3] UNDP: Monitoring human development: Enlarging people's choices... UNDP, Washington, 1999, p. 137.
[4] International Telecommunications Union: Etude de cas sur l'évolution de l'environnement international des télécommunications: Senegal, ICEA, Paris, February 1998, p. 9.
[5] Information and communications technologies is used, as in the definition of Cees J. Hamelink, to mean the ensemble of technologies that makes possible the processing of information and facilitates different forms of communication between human beings, between human beings and electronic systems, and between electronic systems, and which have in common the use of digital data (cf. HAMELINK, Cees J.: New information and communication technologies, social development and social change. Discussion paper 86, UNRISD, Geneva, June 1997, p.3.).

cursory debate regarding the protection of privacy and individual freedom, use of cryptography, censorship, the preservation and promotion of cultural patrimony and values, universal access to telecommunications services, the effect on labor conditions and on individual and social relations, the gap between those with access to information and those who lack such access, rural issues, issues regarding the country's diversity of languages, gender and other issues.

The problem is not a lack of thought on these issues, but rather the fact that it is too individualized and too fragmented to provide a basis for a fundamental discussion in the most natural venues – namely, institutions of higher education and research, political parties, labor unions, civil society and the media. It is therefore imperative to mobilize a critical mass among those involved in research programs and institutions, capable of initiating substantive discussion within these arenas and within the society as a whole, to increase the awareness, among as many people as possible, regarding information and communications technologies and the questions they entail. What has, to date, been a monologue on the part of technocrats and specialists must give way to other imperatives – above all, the democratic imperative. Too often, policy making in this area is based on personal preferences, special interests or ideology – a system that must be changed, in order to provide a prior opportunity for serious assessment of possible alternatives and consideration of the implications of policy choices.[6]

Science and technology are tools that serve political, economic and social forces, creating social projects whose consequences for ordinary citizens can be highly positive or disastrous. Indeed, as Manual Castells has said, while technology does not, in and of itself, determine the direction of history and social change, its presence (or absence) affects the capacity of societies to transform themselves, as well as the uses to which – in a process that inevitably involves conflict – they decide to dedicate their technological potential.[7] In this respect, the research project launched by UNRISD represents a valuable opportunity for the social sciences research community to create a dynamic atmosphere for multidisciplinary research on the impact of information and communications technologies in our society, promoting options that maximize the potential of the people, rather than isolating them from the process.

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[6] MELODY, William H.: The strategic value of policy research in the information economy, in Information and Communication Technologies: Visions and Realities, edited by William H. Dutton, Oxford University Press, 1996, p.304.
[7] CASTELLS, Manuel: The rise of the network society, Vol. 1: The information age: economy, society and culture, Oxford, Blackwell Publishers, 1996, p.7.

Issues and methodology

The present study was prepared as a part of the research project on information technology and social development sponsored by the United Nations Research Institute for Social Development (UNRISD), aimed at providing a foundation for future research in this area. Specifically, the study attempts to present, in summary fashion:

- the history of the development of information technologies in Senegal, as well as the contribution of such technology, along with the modernization of telecommunications and of the media, to the formation of the modern Senegal;
- legal and regulatory changes in the information technology sector, as well as an analysis of national information technology policy;
- the development and funding of infrastructure, and related issues;
- information technology and the public sector;
- information technology and the business world, particularly as related to the use of information technology in production, e-commerce and export;
- information technology and democratic reforms, particularly decentralization;
- problems and challenges associated with the use of information technologies in the education and health sectors;
- the experiences of community and private telecenters, and other approaches intended to expand access to means of communication;
- sociological studies regarding the impact of new technologies on family and gender relationships, community power structures, etc.;
- the role of information technologies in the development of economies and societies;
- debate on the information society in Africa generally, and in Senegal, in particular.

In addition to examining the situation in different sectors, this study takes note of earlier studies that have served as a source of information, describing their particular biases or viewpoints. It also points out gaps that exist in the literature, in order to highlight unexplored areas requiring study. The final section addresses a number a problems that could be the focus of future research.

The fact that this work was possible is due primarily to the ability to draw on personal documentation accumulated over the years, as well as on participation in studies, colloquia, seminars, workshops, and personal contacts. It relies on documents that are part of what is known as the "gray" or "underground" literature which, though rarely confidential, are often difficult to access. Senegalese press reports have also been a significant source of information, as well as documents available on the Internet, the work of academics, articles in scientific journals, and other published work.

1. The development of information and communications technologies in Senegal

Information and communications technologies were first introduced in Senegal during the colonial period. More precisely, this began in 1859, with the construction of the first telegraph line between Saint-Louis, which was then the capital, and Gandiole, a major crossroads for trade, located 15 kilometers to the south. In 1862, the Saint-Louis–Gorée line was completed, and Senegal's telegraph network was linked with France via an underwater ocean cable stretching from Saint-Louis to Spain. As military resistance to colonial conquest was overcome, the network expanded, and was completed in 1900 with the linkage of Sédhiou and

Ziguinchor.[8] In 1911, a new stage was begun, with the implementation of the French West African radio telegraph network (AOF). Used strictly for administrative and military purposes, this wireless telegraph network was designed for public communication between ships and the coast, and between the telegraph stations distributed along the West African coast. In the first phase, lasting from the second half of the 19th century to the late 1920s, the foundation for a modern telecommunications infrastructure was established. This system was integrally related to the needs associated with colonial domination, namely, the network of administrative and military posts, placed to preserve firm control over the territory and over particular points that played a key role in producing wealth, so as to facilitate the economic exploitation of the country. In 1928, pursuing the implementation of telecommunications infrastructure, the colonial administration created the wireless telegraphy center at Dakar, including the "Dakar Coast" post for communications with ships at sea, and the "Dakar Interior" post for communications with other French West African posts and, via Morocco, with the rest of the world. Several years later, in 1932, the Dakar TSF inter-colonial post was put into service. Designed to improve communications between France and Senegal, this testing station was particularly important for receiving news bulletins from metropolitan France.

Only in 1939, with the establishment of the Radio Dakar station, did radio, as a mass medium, make its appearance in Senegal; at the same time, radio, which was also used to monitor communications for the army, continued to play a military role. Beginning in 1946, five news programs were produced and broadcast from metropolitan France for the French West African colonies, and beginning in 1952, the first locally produced programs began to be broadcast from Saint-Louis. Radio, at the time, played a role somewhat similar to the role of the Internet in today's world. The overwhelming majority of broadcasts were conceived by the French, and their content, form of broadcast and audience were primarily targeted to the needs of the Europeans, and to what at the time were referred to as the more "developed" segments of the population. Radio was essentially an urban phenomenon, limited almost exclusively to Dakar. Thus, in 1952-53, 27 of the 32 businesses that sold radios were in Dakar, comparable to today's situation vis-à-vis the Internet, in which 12 out of 13 internet providers are located in Dakar. Between 1960 and 1964, the number of radios grew from 125,000 to 180,000, following the elimination of the radio tax in 1962. An important detail, largely forgotten in the collective memory, is that, beginning in 1962, more than 145 collective listening posts were installed in the seven regions of which the country then consisted. These were supervised by teams of volunteers, including teachers, nurses, rural coordinators, or war veterans, and were regarded as "tools for the stimulation and education of the population." This system could be considered the predecessor of the community telecenters, interspersed to provide internet access to the less advantaged inhabitants of rural areas or outlying urban areas. There are now