

Technologies, Power and Society

An Overview

Momar-Coumba Diop

This United Nations Research Institute for Social Development (UNRISD) Programme Paper has been produced with the support of the Netherlands Minister for Development Cooperation. UNRISD also thanks the governments of Denmark, Finland, Mexico, Norway, Sweden, Switzerland and the United Kingdom for their core funding.

Copyright © UNRISD. Short extracts from this publication may be reproduced unaltered without authorization on condition that the source is indicated. For rights of reproduction or translation, application should be made to UNRISD, Palais des Nations, 1211 Geneva 10, Switzerland. UNRISD welcomes such applications.

The designations employed in UNRISD publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of UNRISD concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The responsibility for opinions expressed rests solely with the author(s), and publication does not constitute endorsement by UNRISD.

Contents

Acronyms	ii
Note to the Reader	ii
Summary/Résumé/Resumen	iii
Summary	iii
Résumé	iv
Resumen	v
Background	1
Many Questions	3
Rethinking Social Development in the Information Age	4
The State and Information Control	6
The Media Implosion	7
Information and Communication Technologies and Economic Changes	9
Technologies and Society	12
Conclusion	14
Bibliography	17
List of chapters in <i>Le Sénégal à l'heure d'information</i>	18
UNRISD Programme Papers on Technology, Business and Society	19

Acronyms

APS	Agence de Presse Sénégalaise (<i>Senegalese Press Agency</i>)
ART	Agence de Régulation des Télécommunications (<i>Agency for the Regulation of Telecommunications</i>)
Batik	Bulletin d'analyse sur les technologies de l'information et de la communication (<i>Bulletin of Analysis of Information and Communication Technologies</i>)
BBC	British Broadcasting Company
CFA	communauté financière d'Afrique (<i>Financial Community of Africa</i>)
CNP	Conseil national du patronat (<i>National Council of Employers</i>)
CNTS	Confédération nationale des travailleurs du Sénégal (<i>National Confederation of Senegalese Workers</i>)
FM	frequency modulation
ICT	information and communication technology
IDRC	International Development Research Centre
ILO	International Labour Organization
ONCAD	Office national pour la commercialisation et l'assistance pour le développement (<i>National Cooperation and Development Assistance Board</i>)
ONEL	Observatoire national chargé des élections (<i>National Elections Observatory</i>)
OPT	Office des postes et télécommunications (<i>Post and Telecommunications Office</i>)
OSIRIS	Observatoire sur les systèmes d'information, les réseaux et les inforoutes au Sénégal (<i>Observatory for Information Systems, Networks and Information Networks of Senegal</i>)
PDS	Parti démocratique sénégalaise (<i>Senegalese Democratic Party</i>)
PRA	Parti du rassemblement africain (<i>Party of the African Rally</i>)
PTIP	Programme Triennal d'Investissements Publics (<i>Triennial Programme for Public Investments</i>)
RF1	Radio France 1
RTS	Radiodiffusion Télévision Sénégalaise (<i>Senegalese Radio and Television</i>)
SAP	structural adjustment programme
SPIDS	Syndicat professionnel des industries du Sénégal (<i>Senegalese Industrial Workers' Union</i>)
TEC	Tarif extérieur commun (<i>common external tariff</i>)
UEMOA	Union Économique et Monétaire Ouest Africaine (<i>West African Economic and Monetary Union</i>)
UNRISD	United Nations Research Institute for Social Development
UPS	Union progressiste sénégalaise (<i>Senegalese Progressive Union</i>)
VAT	value-added tax

Note to the Reader

This is the translation of the introductory chapter to the book titled *Le Sénégal à l'heure de l'information: Technologies et société*, edited by Momar-Coumba Diop, Editions Karthala, Paris and the United Nations Research Institute for Social Development (UNRISD), Geneva, 2003. Many of the contributions to the volume referred to in this introductory chapter have been translated into English, and draft versions are available on www.unrisd.org/research/infotech.

Summary/Résumé/Resumen

Summary

This Programme Paper presents the English translation of the introductory chapter to the volume *Le Sénégal à l'heure de l'information: Technologies et société*. The book aims to illustrate, via 10 case studies, the important role of information and communication technologies (ICTs) in forming contemporary Senegal and to predict, on the basis of the collected information, major future trends. According to Diop, Senegal will continue to be marked by political changeover of the kind that occurred in March 2000, as well as by a considerable recomposition of the social and economic fabric of society.

The contributions to the volume attempt to order and analyse the relationships between technologies, power and society. They endeavour to make sense of the complex links between “the local” (mastering of ICTs) and “the global” (the reform and restructuring of the international capitalist system). Indeed, global opportunities and constraints must not be overlooked or underestimated in attempting to anticipate the changes that will take place in the Senegal of tomorrow. An overarching goal of this research undertaking was to produce a discourse based on Senegalese experience, but which is also universal.

The contributions spell out the cultural, historical and institutional factors influencing the ways in which social groups take over technologies, adapt them and use them to solve their everyday problems. Emphasis is also placed on the ways in which markets and individualism—which underpin these technologies—are taken up and rethought in a context that is quite different from those where these technologies originated. Here we enter into the heart of the debate concerning technological modernization as a way of reversing—or reinforcing—tendencies toward economic and social marginalization.

The contributions to part one of the volume are grouped under the heading ICTs and Economic Transformation. Gaye Daffé and Mamadou Dansokho set out the general framework in their study on the implications of information technology for growth and patterns of economic development in Senegal. Abdoulaye Ndiaye’s contribution focuses on the opportunities and threats posed by the Internet for small and medium-sized enterprises in Dakar; and Philippe Barry and Hamidou Diop present similar information for a sample of 50 medium-sized and large industrial enterprises. These studies trace the changes in management, in relations with suppliers and clients, and in the making of new international contacts. Finally, Abdou Latif Coulibaly looks at the role of computer-mediated systems in the modernization of journalism in Senegal.

The second set of contributions to the volume is grouped, in part two, under the heading Technologies and Societies. This part of the volume opens with Cheikh Guèye’s examination of the role of ICTs in urban transformation in Senegal. His research focuses on how information technology is being used to strengthen the religious and business interests of the Mouride brotherhood in Touba, the second largest city in Senegal. Next comes Mansour Tall’s chapter, which looks at the role of ICTs in facilitating financial and social “relations at distance”, between Senegalese migrants and their country of origin. It shows how rapid growth and diversification of telephone services and Internet options are changing the way migrants are able to participate in day-to-day decisions about family matters and manage businesses dependent on their investments. Saidou Dia’s study traces the development of radio, which—especially following the creation of FM stations in 1990—has become a vital source of information in local languages for the majority of Senegal’s people. Moussa Paye’s contribution analyses the impact of ICTs on the democratic process. The gradual relaxation of state control over the media is reviewed, as are recent attempts to improve communication with citizens through creating neighbourhood-level offices, where anyone can access public records and obtain official documents. The volume closes with two studies on the role of ICTs in Senegal’s educational system. Serigne Mbaké Seck and Cheikh Guèye review the experiences in this field

between 1960 and 1992. And Abdourahmane Ndiaye shows how ICTs have been introduced and developed at Cheikh Anta Diop University in Dakar.

In view of the structural constraints described in the different contributions to the volume, the gap that has to be reduced to give a new momentum to social development in Senegal via ICTs is not only a quantitative issue. It is above all economic, social and political. Not only has the role of the state to be rethought; but its relationships with society, and the way families and enterprises are organized, also require due attention in order to identify the cultural and social values that will enable the most advantageous use of ICTs for the majority.

Momar-Coumba Diop is a Researcher at the Institut fondamental d'Afrique noire, Cheikh Anta Diop University, Dakar. He coordinated the country-level research under the UNRISD project Information and Communication Technologies and Social Development in Senegal.

Résumé

Ce document de programme présente la traduction anglaise du chapitre d'introduction du livre intitulé *Le Sénégal à l'heure de l'information: Technologies et société*.¹ Ce livre vise à illustrer, au travers de 10 études de cas, le rôle important que jouent les technologies de l'information et de la communication (TIC) dans la formation du Sénégal contemporain et à dégager, à partir des informations recueillies, les grandes tendances de l'avenir. Selon Momar-Coumba Diop, la nature du changement politique qui s'est produit en mars 2000 et la recomposition considérable du tissu social et économique continueront à marquer le Sénégal.

Les contributions réunies dans ce volume tentent d'ordonner et d'analyser les rapports entre technologies, pouvoir et société. Leurs auteurs s'efforcent de décrypter les liens complexes entre "le local" (la maîtrise des TIC) et le "global" (la réforme et la restructuration du système capitaliste international). De fait, il ne faut pas négliger ni sous-estimer les effets, positifs et négatifs, de la situation mondiale lorsqu'on essaie de prévoir les changements qui se produiront dans le Sénégal de demain. Un des buts généraux de ce projet de recherche était de produire un discours universel bien que fondé sur l'expérience sénégalaise.

Ces contributions recensent les facteurs culturels, historiques et institutionnels qui influent sur la manière dont les groupes sociaux s'approprient les technologies, les adaptent et s'en servent pour résoudre leurs problèmes quotidiens. L'accent est mis également sur la façon dont les marchés et l'individualisme, sur lesquels misent ces technologies, sont adoptés et repensés dans un contexte tout à fait différent de ceux où ces technologies ont vu le jour. Nous arrivons ici au cœur du débat sur la modernisation technologique comme moyen de renverser—ou de renforcer—les tendances à la marginalisation économique et sociale.

Dans la première partie du livre, les contributions s'articulent autour du thème des TIC et du changement économique. Dans leur étude sur les conséquences des technologies de l'information sur la croissance et les modes de développement économique au Sénégal, Gaye Daffé et Mamadou Dansokho plantent le décor. Celle d'Abdoulaye Ndiaye porte sur les débouchés ouverts par l'Internet aux petites et moyennes entreprises dakaroises et sur les dangers auxquels il les expose et Philippe Barry et Hamidou Diop fournissent des informations comparables sur un échantillon de 50 moyennes et grandes entreprises industrielles. Ces études retracent les changements survenus dans la gestion, les relations avec les fournisseurs et les clients et l'établissement de nouveaux contacts internationaux. Enfin, Abdou Latif Coulibaly examine le rôle des systèmes informatisés dans la modernisation du journalisme au Sénégal.

Dans la deuxième partie, les contributions sont réunies sous la rubrique Technologies et société. Cette partie du livre s'ouvre sur l'étude de Cheikh Guèye, consacrée au rôle des TIC dans la

¹ Livre écrit sous la direction de Momar Coumba Diop. Il est publié par les Editions Karthala, Paris et par l'UNRISD, Genève, 2003. Les contributions dont il est question dans ce chapitre d'introduction sont disponibles sur www.unrisd.org/research/infotech.

transformación de las ciudades senegalesas. Se interesa por la forma en que las tecnologías de la información se utilizan para fortalecer los intereses religiosos y económicos de la fraternidad mouride en Touba, la segunda ciudad de Senegal. Luego viene el capítulo de Mansour Tall, que examina en qué medida las TIC han facilitado las "relaciones a distancia", sociales y financieras, entre los inmigrantes senegaleses y su país de origen. Muestra en qué medida el rápido crecimiento y la diversificación de los servicios telefónicos y las opciones ofrecidas por Internet están cambiando los modos de intervención de los inmigrantes en las decisiones cotidianas relacionadas con los asuntos familiares y la gestión de sus negocios tributarios e inversiones. Saidou Dia rastrea el desarrollo de la radio, que se ha convertido para la mayoría de los senegaleses en una fuente de información vital en los idiomas locales, especialmente desde la creación de estaciones FM en 1990. Moussa Paye analiza el impacto de las TIC en el proceso democrático. Examina el relajamiento progresivo de la mano de obra del Estado sobre los medios y el intento reciente de mejorar la comunicación con los ciudadanos creando en los barrios oficinas donde cualquiera puede acceder a los archivos públicos y obtener documentos oficiales. El libro concluye con dos estudios dedicados al papel de las TIC en la educación en Senegal. Serigne Mbaké Seck y Cheikh Guèye se centran en las experiencias realizadas en este campo entre 1960 y 1992. En cuanto a Abdourahmane Ndiaye, muestra cómo se han introducido y desarrollado en la Universidad Cheikh Anta Diop de Dakar.

Dada la existencia de obstáculos estructurales descritos en las diversas contribuciones del volumen, el desafío de superarlos para dar un nuevo impulso al desarrollo social en Senegal a través de las TIC no es solo de naturaleza cuantitativa. Es sobre todo económica, social y política. No solo hay que repensar el papel del Estado, sino también su relación con la sociedad y el modo de organización de las familias y las empresas para identificar los valores culturales y sociales que permitirán hacer un uso de las TIC lo más beneficioso posible para la mayoría.

Momar-Coumba Diop es investigador en el Instituto Fundamental de África Occidental de la Universidad Cheikh Anta Diop, Dakar. Ha coordinado las investigaciones realizadas en Senegal en el marco del proyecto de l'UNRISD titulado Las tecnologías de la información y de la comunicación y el desarrollo social en Senegal.

Resumen

Este Documento de Programa es la traducción al inglés del capítulo preliminar del volumen *Le Sénégal à l'heure de l'information: Technologies et société*.² El libro pretende ilustrar, a través de 10 estudios de caso, el importante papel que desempeñan las tecnologías de la información y de la comunicación (TIC) en la formación del Senegal actual y para predecir, con base en la información recopilada, las tendencias futuras principales. Según Diop, Senegal seguirá estando marcado por cambios políticos como el que tuvo lugar en marzo de 2000, y por una recomposición considerable de la estructura socioeconómica de la sociedad.

Las contribuciones al volumen tienen por objeto ordenar y analizar las relaciones entre las tecnologías, el poder y la sociedad. Pretenden comprender los complejos vínculos establecidos entre la dimensión "local" (dominio de las TIC) y la "global" (la reforma y reestructuración del sistema capitalista internacional). En efecto, no deben subestimarse ni pasarse por alto las oportunidades y limitaciones generales al tratar de anticipar los cambios que tendrán lugar en Senegal el día de mañana. Un objetivo general de esta tarea de investigación era preparar un tratado basado en la experiencia de Senegal, pero que fuera universal al mismo tiempo.

Las contribuciones abordan los factores culturales, históricos e institucionales que influyen en las formas en que los grupos sociales adoptan las tecnologías, las adaptan y utilizan para solucionar los problemas cotidianos. También se pone énfasis en el modo en que se aceptan y

² El volumen está editado por Momar-Coumba Diop, y ha sido publicado en 2003 por Editions Karthala, París y UNRISD, Ginebra. Muchas de las contribuciones al volumen a las que se hace referencia en este capítulo preliminar están disponibles en francés e inglés, y pueden consultarse en www.unrisd.org/research/infotech.

reconsideran los mercados y el individualismo—que constituyen el fundamento de estas tecnologías—en un contexto muy distinto de aquel en que se crearon estas tecnologías. Esto constituye el centro del debate sobre la modernización tecnológica como modo de cambiar radicalmente—o de reforzar—las tendencias hacia la marginación social y económica.

Las contribuciones a la primera parte del volumen se agrupan bajo el título, Las TIC y las transformaciones económicas. Gaye Daffé y Mamadou Dansokho establecen el marco general en su estudio sobre las consecuencias de la tecnología de la información para el crecimiento y los modelos de desarrollo económico en Senegal. La contribución de Abdoulaye Ndiaye se centra en las oportunidades y amenazas que supone la Internet para las pequeñas y medianas empresas de Dakar; y Philippe Barry y Hamidou Diop proporcionan información similar de 50 medianas y grandes empresas industriales tomadas como muestra. Estos estudios hacen un análisis de los cambios en la dirección, en las relaciones con los proveedores y clientes, y en el establecimiento de nuevos contactos internacionales. Por último, Abdou Latif Coulibaly examina el papel que desempeñan los sistemas de comunicación mediante computadora en la modernización del periodismo en Senegal.

La segunda serie de contribuciones al volumen se agrupa, en la segunda parte, en el apartado sobre tecnologías y sociedades. Esta parte del volumen comienza con el examen de Cheikh Guèye del papel que desempeñan las TIC en la transformación urbana de Senegal. Su estudio se centra en el modo en que la tecnología de la información está utilizándose para reforzar los intereses religiosos y comerciales de la cofradía muride en Touba, la segunda ciudad más grande de Senegal. En el capítulo siguiente, Mansour Tall investiga la medida en que las TIC facilitan las relaciones sociales y financieras “a distancia”, entre los migrantes senegaleses y su país de origen. Muestra cómo el rápido crecimiento, la diversificación de los servicios de telefonía y las opciones de Internet están cambiando el modo en que los migrantes pueden participar en las decisiones cotidianas sobre cuestiones familiares y gestionar empresas que dependen de sus inversiones. El estudio de Saidou Dia aborda la evolución de la radio, que—especialmente tras la creación de emisoras de FM en 1990—se ha convertido en una fuente esencial de información en las lenguas locales para la mayoría de los senegaleses. La contribución de Moussa Paye analiza los efectos de las TIC en el proceso democrático. Examina la relajación gradual del control estatal sobre los medios de comunicación, al igual que los intentos recientes de mejorar la comunicación con los ciudadanos a través de la creación de oficinas en los vecindarios, donde cualquier persona pueda acceder a los registros públicos y obtener documentos oficiales. El volumen concluye con dos estudios sobre el papel de las TIC en el sistema educativo de Senegal. Serigne Mbaké Seck y Cheikh Guèye analizan las experiencias en este ámbito entre 1960 y 1992; y Abdourahmane Ndiaye muestra como las TIC han sido introducidas y desarrolladas en la Universidad Cheikh Anta Diop de Dakar.

En vista de las limitaciones estructurales descritas en las diferentes contribuciones al volumen, la brecha que ha de reducirse para impulsar nuevamente el desarrollo social en Senegal a través las TIC no sólo es una cuestión cuantitativa sino, fundamentalmente, económica, política y social. No sólo deber reconsiderarse el papel del Estado, sino también sus relaciones con la sociedad; asimismo, es preciso prestar la debida atención al modo en que se organizan las familias y las empresas, con miras a identificar los valores sociales y culturales que permitirán a la gran mayoría aprovechar al máximo las tecnologías de la información y de la comunicación.

Momar-Coumba Diop es investigador en el Institut fondamental d’Afrique noire, de la Universidad Cheikh Anta Diop de Dakar. Coordinó la investigación a nivel de países en el marco del proyecto de UNRISD sobre Las tecnologías de la información y de la comunicación y el desarrollo social en Senegal.

Background

The aim of this book is to show how information and communication technologies (ICTs) play an important role in forming contemporary Senegal and to predict, on the basis of the information thus collected, some major trends in the future. The Senegal of the future will be marked by political change-over of the kind that occurred in March 2000, but also by a considerable recomposition of the social and economic fabric of society, which has not been widely documented until now.

When work on this project was started, research on ICTs was still in its early stages. Independent consultants, as well as organizations such as the International Development Research Centre (IDRC), through its initiative, *Acacia: Communities and the Information Society in Africa*, and the Observatoire sur les systèmes d'information, les réseaux et les inforoutes au Sénégal (OSIRIS)³ through its monthly newsletter, *Batik* (*Bulletin d'analyse sur les technologies de l'information et de la communication*) made significant contributions to this field.

Nevertheless, there is no in-depth research on the link between the local (mastering the ICTs) and the global (the reforms and restructuring of the capitalist system as described by Manuel Castells⁴ in his 1998 book, *La société en réseaux*). But to understand the changes that will take place in Senegal, it is necessary to examine the global constraints—which go beyond those relating to Senegal's insertion into the world economy. Not to do so, or to confine ourselves just to study the figures involved, would considerably hinder our efforts to understand the spirit that is at work in the economic and social restructuring under way.

The objective of this paper is to clarify the ways in which we are “living together” in an era of globalization and to determine how cultural interactions are being structured. The media are crucial in such processes, particularly in the creation and dissemination of values and role models for young people.⁵ We wanted to prepare the groundwork for new theoretical study so as to get a better understanding of the cultural, political and ideological aspects of our very existence. To this end, our efforts did not focus only on a systematic research into knowledge specific to Senegal. The real purpose of the research is to produce a discourse based on the Senegalese experience but which is universal. We believe that this kind of knowledge must be constructed while strictly respecting the rules of scientific communication. It must be possible to check and verify such knowledge and it should be done without taking sides and above all, by avoiding blind acceptance of ICTs as the new magic wand of the century.⁶ When we emphasize the notion of network we should not forget that, in spite of the tremendous changes that capitalism is undergoing, its basic logic as a violent system remains the same.⁷

Our project does not take the social engineering approach, which a careful observer would detect in the position of the central authorities when they stress the need to promote research on behalf of development. This is indeed a tendency in most African countries, indicating an increasingly clear desire of the social sciences put themselves at the services of social and economic utilitarianism. This tendency is aggravated these days by funding agencies insisting that the university is inefficient and is not integrated into economic activities.

³ OSIRIS is the result of an initiative directed and maintained by Amadou Top following a meeting held in Geneva in October 1996 on Africa and the New Information Technologies. At the end of the 1990s, OSIRIS was recognized as a non-profit association by the Ministry of the Interior. In March 1999, OSIRIS started its public activities, helping to prepare the Internet celebrations in Senegal by organizing a seminar on the new ICTs in Senegal and then, in August 1999, by launching its web site (www.osiris.sn/) and the first issue of *Batik*.

⁴ See also Castells (1997 and 1999).

⁵ These values are less and less studied and understood, particularly as regards young Senegalese women, portrayed in superficial literature as being totally subjugated to men's whims.

⁶ The failures and bankruptcies—of which Worldcom is the most spectacular example—that have been widely reported in the press constitute a significant portent. See, for example, *Libération*, No. 6590, 23 July 2002 and “Capitalisme du mensonge”, *Le Monde Diplomatique*, August 2002.

⁷ See Mbembe's remarks on the subject (2000:15).

Using data brought together by professionals who have been in the forefront of the discussions on ICT,⁸ we would like to create new grounds for reflection, based on a careful observation of “lifestyles”. To do this we must avoid rewriting the overgeneralized data from the Internet and tacking on slipshod, even boring commentary. We have to reject simple description and a tedious discussion of infrastructures and how they are performing. Nor is it a question of reviewing the considerable literature on the nature of the ICTs and the havoc they cause, especially in monetary and financial transactions at the global level, as well as the different discourses that they disseminate.

To help this research get off the ground, it was important to review the information available on ICTs. Olivier Sagna has recorded the relevant literature (Sagna 2001), tracing the development of ICTs from the first use of the telegraph in 1859 to the expansion of fixed telephones and, above all, mobile phones, and the broadening of access to the Internet. He then looked at the development of the main programmes making all this possible. His work has helped to guide researchers in drawing up their research programmes.⁹

The contributions in this book attempt to order and analyse the pattern of relationships between technologies, power and society. These relationships cannot be explained without taking global constraints into consideration, which is why we go into the dynamics of globalization and the theories that try to make sense of it. To do this it has been necessary to go beyond recording what has been learned and simply popularizing it through a summary. The texts illuminate a process: the entry of Senegal into what one of my colleagues calls “a new world time”. Authors ascribe different dates to that entry, but it has certainly accelerated toward the end of the twentieth century. In this unstable and restless world, so well described by Castells (1997, 1998, 1999), the categories that have up until now determined the relationships between technology and society have once again been called into question. But as well as this world time, there is a “local time” shaped by various factors, some of which are worth noting. There was a remarkable development at the end of the 1970s—coinciding with the beginning of the structural adjustment programmes (SAPs)—when the model of social promotion based on a university education, upon which the ruling class based the legitimacy of their access to wealth, was overturned. At the same time there was a *baolbaolisation*¹⁰ of the economy. Numerous studies examined the social situation and revealed, behind the jumble of statistics, the deepening of poverty, the degradation of health structures, the difficulty of school-age children in getting to school, the reduction of expenditure on education and health in household budgets as well as of other measures, all of which proved destabilizing both for the communities and the central authorities. Paradoxically, decision makers talk less and less of development policy, let alone social policy.

SAPs increased short-term constraints, while the need for more finance relegated the economic and social development plan to second place. SAPs depended mainly on the executive, particularly on the personnel of technical ministries and technocrats in the funding agencies, which thus became the most influential group in orienting economic and social policies. This reinforced the phenomenon that had characterized the political regime since the institutional crisis of 1962: that is, the concentration of power in the presidency. Furthermore, at the end of the 1990s, a major development was the weakening of the strategic alliances between the leaders of the *confréries* (brotherhoods) and the central power.

⁸ Amadou Top has played a dynamic role in these activities. He has a strong ICT background, as well as considerable professional experience in the field.

⁹ This first phase of the work was approved by a monitoring meeting held in Dakar, 31 January–1 February 2000. The researchers' documents then served as an outline for completing the studies. A second meeting was organized in Dakar on 16–17 July 2001 to review the results. The research included a section aimed at making certain issues concerning the development of ICTs available to the public at large. A monthly supplement dedicated to ICT in *Sud Quotidien* was published as a contribution to this. In addition, a grant was awarded to two students for their university work. For more details, consult UNRISD (2002).

¹⁰ *Baolbaolisation* is the domination of the economy by the informal economy, which is also strongly linked with Senegalese traders working abroad.

But, above all, this local time witnessed the permanent crisis of the groundnut economy, with no efforts being made to resolve it.¹¹ This must be recognized, as the authors in this book have tried to explain, if the procedures used in introducing technical innovations are to be understood, as well as the way in which they were taken over in Senegal.

Nevertheless, this book does not set out just to consider the classic theses on the inequalities caused by technological upheavals,¹² and still less to encroach on the field of the technicians. If this book were to justify itself by such simple intellectual poaching, it would surely have missed its mark.

The aim has been to spell out the cultural, historical and institutional factors influencing the way in which social groups take over techniques and use them to solve the everyday problems in their lives. The paper also highlights the way in which market and individualistic logic—which underpin these technologies—are taken up and rethought in a context that is quite different from the original one. Here we enter into the heart of the debate concerning technological modernization as a way of reversing, or reinforcing the tendency toward economic and social marginalization.

The intellectual quest of this book also tries to take into account the way in which a new kind of social organization is being diffused and to identify those responsible for it. It asks for a better understanding of the local person in the new world time.

Many Questions

There are many questions underlying this investigation. Discourses on ICTs often emphasize the technologies and infrastructures, while in fact the question of usage is fundamental. Hence more attention has to be given to the particular ways in which actors actually utilize the technologies. The present book makes an informed effort to throw light on this phenomenon. Its contributors insist that the debate on information and the associated technologies cannot be reduced to a simple technical discussion. In fact, these technologies are being used in the general framework of a profound restructuring of capitalism that gives key importance to the notion of network in the sense that Castells (1997, 1998, 1999) uses it, in other words, an ensemble of interconnected nodes. The network has an organizational matrix that includes or excludes. It is therefore important to examine the “exclusion spiral” and hence the economic and social priorities expressed by African peoples,¹³ which are increasingly outside the ambit of the political parties. These priorities are for a more dignified way of life, respect for the environment and a concern to preserve the lives of future generations. They also aspire to reduce, here and now, the flagrant, scandalous and unjustifiable inequalities in life expectancy, illness and death.

The contributions to this book attach great importance to social mores and customs, reassessment of conventional wisdom, particularly relating to that which is unfamiliar or “far away”. They emphasize the issues concerning identity and difference in the globalization era.¹⁴

¹¹ Groundnuts are a major export of Senegal and helped fuel its economic growth. But a shift in global demand in the late 1960s eventually led to a collapse of world groundnut prices in the 1980s. This had disastrous effects on the Senegalese economy.

¹² It would be foolhardy to deny these inequalities of access that run parallel with the inequality of participation in world trade. But I do not believe at all in the thesis of the “purely cultural” domination of African countries in this world context. The contributions in this book, particularly those of Tall and Guèye, show that people still enjoy, through their customs, a wide margin of manoeuvre, inventiveness and defiance, enabling them to diverge from, correct or rewrite the rules transmitted by the images and values circulating in cyberspace. For further reference to these aspects linked to culture, difference and identity in the globalization era, see www.planetagora.org and the lines of research defined by Mike Powell (2001).

¹³ See the analysis made by Martin Hall (2001).

¹⁴ Fabien Eboussy-Boulaga (1998) briefly sums up this reality:

The movement is also about particular differentiations, exclusive dispersion and marginalization. There are many zones that are outside the communication circuits and the globalized economy. The world is also an ocean of dissimilarity, the reign of differences, affirming heterogeneity as opposed to homogeneity, the other as opposed to the same.

It is thus important to examine the primary identities around which individuals regroup themselves and the resources¹⁵ they dispose of in order to adapt to the modification/restructuring of networks. Mansour Tall and Cheikh Guèye, in particular, throw light on such issues.

One aim of the research is to stress the relationships between ICTs and social development. There is emphasis on social development because all reports on economic policy, official or non-official, highlight the serious social effects of such policy, which degrades the living conditions of the majority not only by debilitating people's physical health, but also their minds. We have wanted to expose the brutality that appalling everyday conditions impose on bodies and souls, for not enough attention has been paid to it.¹⁶ This is particularly striking among young people whose creed is resourcefulness: in other words, their efforts to find their way in the informal sector. Idealizing this is another form of self-limiting, ignoring its devastating effects and accepting, in certain cases, the tough requirements of apprenticeship but also wanting to "go away" at all costs: in other words, to migrate abroad. For most young people, "resourcefulness" is also the traumatizing awareness of the failure of the post-colonial state's ambitions.

Rethinking Social Development in the Information Age

A serious economic and financial crisis has persisted in Senegal since the end of the 1970s. It was fully documented by the central authorities and the international financial institutions and, as a result, the country underwent economic reforms that changed the structures of the state as well as its relationship with society. This is the background for the gradual subversion and erosion of the basis of the legitimacy of the ruling class. The state gradually lost control over the definition and control of economic policies while its margin for manoeuvre has been increasingly narrowed by its need for finance that the economy itself cannot satisfy.¹⁷

A rapid survey of the Senegalese experience since independence shows that the first years (1960–1967) were relatively quiet (Touré 1985), despite the conflicts in the political arena between different sectors of the elite that had led the country to independence. The year 1968 was a turning point, both politically and economically. There was a series of droughts (in the years 1968, 1970, 1972, 1973) while the end of French support for groundnut cultivation brought about the stagnation—if not reduction—of the cultivated areas. The groundnut sector was run down and the rural population lost purchasing power, while the government invested heavily in unsustainable projects that were urban-oriented in order to develop the growth of the towns. Degradation of the social and political climate was the inevitable result.

By the end of the 1970s, Senegal faced increasing difficulties, which required changes in leadership as well as far-reaching economic reforms.¹⁸ These entailed moving from a phase which had been dominated by the welfare state to another phase in which whole swathes of the public sector were to be privatized. But, until the beginning of the 1990s, the consequences of the SAPs were somewhat mitigated, because the reforms were either not carried out, or carried

¹⁵ Geoffrey Nunberg (2002) shows, after examining in detail the effects of the Internet on language policies, that the approach that considers the Web as "an English sea" is, in fact, somewhat schematic. He shows that, on the contrary, the Web is a space in which languages multiply because it offers communities an opportunity to reinforce their linguistic traditions.

¹⁶ Achille Mbembe (2000) invites us to reflect on this question in his book, *De la postcolonie*.

¹⁷ See Boye (1992) on these different issues.

¹⁸ Faced with the deterioration of the overall situation, Senegalese President Léopold Sédar Senghor admitted in his address to the nation on 3 April 1980 that the African feast was over:

Nineteen years ago, on 3 April 1961, I rejoiced, as you all did, that our independence had been regained. There was the beating of the tam-tams and a happy procession of young people, as well as the national army, in our march toward the future: the integrated development of the Senegalese people as a nation. As a journalist from *Jeune Afrique* recently wrote: 'The African feast is over'. It is indeed true that this African feast, which had triumphed without tears, has come to an end. But not our joy in this twentieth anniversary of our national independence. This joy has only become graver because, since 1974, since the second world crisis of the century, we have been confronted with many, serious problems (*Le Soleil*, 8 April 1980, p.1).

out only partially, or they were simply paralyzed by “resistance from the top”.¹⁹ This provoked a major reversal in relationships between Senegal and the leading funding agencies. To deal with the economic and financial situation, which had become difficult for the country, and with the deteriorating relationships with the Bretton Woods institutions, the government launched the Emergency, or Sakho-Loum Plan,²⁰ which consisted basically of reducing wages. However, the austerity of the plan did not prevent the devaluation of the CFA franc in 1994.²¹ From this time on, a sequence of events reinforced the liberalization of the national economy. That same year the government started structural reforms²² that were accelerated by a host of legislation and regulations.²³ These decisions were described by Prime Minister Habib Thiam as “a series of unprecedented measures that our country has rapidly adopted so that our enterprises are more internationally competitive, because this can no longer be avoided.”

But putting order into the public finances served above all to pay the debt, which was so great that investment possibilities were severely restricted. The Senegalese case confirms the view that a return of growth does not guarantee the reduction of poverty. The pattern of public expenditure does not reflect the government’s objectives in social development, nor does it meet human development needs. The evolution of development statistics for achieving the objectives of the 20/20 Initiative²⁴ (Cabinet EMAP 2000) indicates that Senegal is far from having reached the minimum standards required. Moreover, an examination of public expenditure, carried out as part of the Triennial Programme for Public Investment (PTIP) shows that state intervention has had little impact on regional inequalities. Most of the “projects” favour Dakar, even though it is already the best equipped region. Furthermore, investment in the agricultural sector²⁵ is concentrated in areas where irrigated cultures predominate, whereas poverty is most frequent in the rainfed areas.

Recent developments show an increase in poverty and greater precariousness among the professional classes, which is the result of lower salaries. This is exacerbated by problems in the national pension system which, according to a study carried out by the International Labour Organization (ILO) and the Conseil national du patronat (CNP),²⁶ suffers from a notorious gap between the number of declared workers and the number of wage earners according to the census. The number of declared workers diminished between 1987 and 1998 which, in the long term, threatens the survival of the system. In addition, various institutions that make deductions from the wages of workers owe large sums of money to the social security bodies, rendering their financial situation vulnerable.

Moreover, people are showing greater resistance to meeting the obligations of the traditional solidarity systems, and there is a loosening of the links in the informal social networks that used to attenuate the damaging effects of macroeconomic policies. What is at stake in this social and political process is the questioning, slow but continual, of the redistribution mode that underpins “traditional” solidarity and the weakening of the family and professional networks of social protection.

¹⁹ See Diop and Diouf (1990); Berg (1990); Gellar (1997); World Bank (1993).

²⁰ From the names of the Ministers of Finance Papa Ousmane Sakho and Delegate for the Budget Mamadou Lamine Loum, who represented the “technocratic” tendency in the ruling class.

²¹ Immediately after the CFA franc had been devalued, the Bretton Woods institutions and France—concerned about containing social unrest in its sphere of influence—relieved the debt and took measures to avoid social disturbances and control inflation. It was against this background that 10-year plans were drawn up in the fields of education and health, facilitating access to essential medicines and health care, as well as to primary school education.

²² The reforms undertaken after devaluation take greater account of regional integration, particularly with the signing, in January 1994, of the Union Économique et Monétaire Ouest Africaine (UEMOA) Treaty, the application of the Tarif Extérieur Commun (TEC) in January 2000 and the adoption of a single rate for value-added tax (VAT).

²³ For more details, see Government of Senegal (1995).

²⁴ The 20/20 Initiative calls on developing countries to devote 20 per cent of their budget and donor countries 20 per cent of their development aid to fund basic social services.

²⁵ See Christensen (1996).

²⁶ See Faye (2000).

All this would indicate there is a need for the state to rediscover or win back its role of social architect in combatting inequalities. The gaps in development between regions (which is quite well documented in the different development plans) need to be reduced, as well as those between the towns and the rural areas as regards, for example, access to social infrastructure. It is also a question of the inequalities in income distribution but also, more fundamentally, those concerning life and death.

The State and Information Control

Radio played a key role in governmental measures to induce obedience, reinforce the state and control ideas and the representation of events.²⁷ From the beginning of the 1960s, it was seen as a major tool in the technology of command—in other words, a way of governing populations and “things”. It was a difficult operation as “noises” penetrated the national territory through foreign radio, particularly *La Voix de la Révolution*, as part of the political and ideological confrontation between Léopold Sédar Senghor and Sekou Touré and their collaborators. This is the reason why, for over two decades, the Senegalese central authorities kept a permanent watch over this precious instrument for social and political control. The contributions of Moussa Paye and Saidou Dia in this book provide us with some interesting leads in this respect. Control over the radio was all the stricter because, during the first decade after independence, there were struggles within the ruling class—as was seen in the crisis of December 1962²⁸—and between them and the opposition parties and the student and teacher unions. Riots, in 1963, and large-scale strikes, in 1968 and 1969,²⁹ merely reinforced political authoritarianism.

The Senegalese leaders adapted to this situation by reorganizing the state structures and trying to neutralize the nuclei of contestation and dissent both by repression and co-opting certain opponents. The result was, on the one hand, the collapse of the Communist left, which was also experiencing conflict among the leadership and, on the other hand, a political unification whereby the *Parti du rassemblement africain* (PRA) was integrated into the *Union progressiste sénégalaise* (UPS). Unions came back in force in 1969, after the strikes of the employees of banks and the *Office des postes et télécommunications* (OPT), workers in the oil industry and those in the *Office national pour la commercialisation et l'assistance pour le développement* (ONCAD). In August 1969, the central authorities integrated union activities into the political system through the setting up of the *Confédération nationale des travailleurs du Sénégal* (CNTS). This association adhered to the union ideology then prevalent, that of “responsible participation”.

The fact that national economic policy was subordinated to the regime's social and political pacification policy, combined with adverse weather conditions (drought at the end of the 1960s and the beginning of the 1970s) and the price fluctuations of primary commodities on the world market, particularly the oil shocks, caused a serious deterioration in the economic situation. The most highly organized and rebellious groups against the political order, like the teacher and student unions, were discontented and making demands. The ruling class was forced to make concessions and this ushered in a period known as the “democratic opening”, with the

²⁷ These efforts to control were also applied to certain forms of corporal expression, as Circular No. 11 of the *Union progressiste sénégalaise* (UPS), dated 13 October 1973, illustrates very well:

I took the opportunity of saying so during the meetings of the Political Bureau and each time an event reminded me of it. The degradation of our ways and customs is responsible for our women losing their sense of dignity. It is urgent to take action while there is still time. The Senegalese woman, guardian of our valuable traditions expressing grandeur and nobility, has always rejected all acts and gestures that damage our sense of propriety, as being unworthy of our society. The dancing displays by most Senegalese women during official ceremonies or the visits of Heads of State consist quite simply of exposing the shameful part of their bodies. I have trembled with shame each time that certain spectacles were presented to important visitors. These obscene dances are not Senegalese at all, nor are they black African. I ask you to see that an end is put to this state of affairs that does no honour either to our women or to our country (UPS Secretary-General, Léopold Sédar Senghor).

For more details on this, as well as on the efforts to control human trafficking in the towns, which originated the notion of “human congestion”, see Diop (1997:1128–1150).

²⁸ For a brief presentation, see Diop and Diouf (1990).

²⁹ For more on the subject, see Bathily (1992); and Diop and Diouf (1990).

recognition of the Parti démocratique sénégalaise (PDS) and accommodation to policies that acknowledged different currents of thought.³⁰ However, these arrangements did not pacify the demands of the urban *petite bourgeoisie*. To deal with this, a number of reforms transformed the Senegalese political system as from the end of the 1970s: freedom to form parties and successive reforms of the electoral code. President Abdou Diouf conducted these reforms while managing the serious economic and financial crisis inherited from Senghor. Rather than relying only on force, his political personnel implemented important political and economic reforms that gave a new look to the post-colonial command procedures. Diouf inaugurated a period that was no longer obsessed with regimenting all aspects of political and social life. This did not mean, however, that there was a halt in efforts to repress social, political and economic dissidence. But there was now a culture, a more refined technology, that preferred secrecy in control methods.³¹

This situation forced the state to look for new forms of political domination at a time, toward the mid-1980s, when big changes were taking place in the mass media structures. With the development of radio and television, it was difficult for the state to exercise such strict control over ideas and the representation of events. From now on the country had embarked on a flow of information over which state power—and also society—had no direct control. The state system of controlling information, not having understood the change and drawing the consequences for governance,³² was gradually weakened. It was not only that it could not control the information circulating in the world networks, a phenomenon that Castells (1997, 1998, 1999) links to the emergence of extraterritorial communication. The structural transformation of the media had direct effects on the administration system of the people, in other words, the command technology³³ and the domination formula that had taken shape and expanded. The basis of political power was increasingly eroded by the changes that diminished the ability of the state to control information. The following is a summary of the events and, at the same time, an attempt to define how the resulting power has been exercised.

The Media Implosion³⁴

The presidential elections of February 1988 constituted an important step forward in the progress of the media. A strong demand for information, particularly political information, was met by professionals whose newspapers up until then had been very discreet because of limited readership, problems of professional competence, the indifference of the governmental authorities and the means available. *Sopi*,³⁵ created by the PDS for these elections, played an important role in stimulating the demand for political information.

But this was the moment when the main private media underwent a decisive shift. *Wal Fadji*, a bimonthly created in 1983, became a weekly publication, as did *Sud Hebdo*, launched in 1987 by

³⁰ The Constitutional revision of 1976 (Law 76-01 of 19 March 1976 and 76-27 of 6 April 1976) introduced a multiparty policy limited to "three currents of thought": liberal and democratic, socialist and democratic, and communist or Marxist-Leninist. Until then there had been no limitation to the number of political parties, but the government could not tolerate the existence of an autonomous power. This led to a *de facto* single party regime that did not correspond to the juridical strictures of the time. The existence of the PDS was authorized on 8 August 1974.

³¹ Some concessions were made, for example in the transparency of voting but, at the same time, coercion procedures were secretly increased to make it impossible for the ruling class to lose through the ballot box.

³² I use this term in the sense that Michel Foucault (1989) gave it, in another context, in *De la gouvernementalité*, a course he taught at the Collège de France from 1977-1978.

I think that I could easily find confirmation of the fact that government is understood as steering the interaction between people and things, in that inevitable metaphor of the boat, which is always used in treatises on government. What does steering a boat mean? It is of course being responsible both for the boat and the cargo. To steer a boat it is necessary to take into account the winds, the reefs, the tempests, the bad weather, etc.; and the relationship with the sailors has to be preserved, as well as that with the ship that has to be brought into port, and relationships with the winds, the reefs, the tempests, etc. The creating of relationships is what steering a ship is all about.

³³ This notion is used in the sense that Mbembe uses it: "the kinds of rationality that, since the end of direct colonization have been used to govern people and to ensure the multiplication of goods and things" (2000:41).

³⁴ Parts of the following passages come from the study I carried out with El Hadj Kassé (Diop and Kassé 1998). The interpretation here, however, is mine alone.

³⁵ *Sopi* ("change" in Wolof) was the slogan of the opposition party.

Sud Communication. The emphasis on political information was very evident. Apart from the popular demand, there was an offensive by political factions belonging to the opposition that had suffered from ostracism by the public service media. In these circumstances, there was a clear tendency for the papers belonging to the political parties to decline.

The appearance of *Sud Quotidien* (which began as *Sud au Quotidien*) in 1993, thanks to the legislative elections, and of *Wal Fadjri* in 1994 constituted a real revolution; apart from the governmental daily, *Le Soleil*, there were two new private newspapers.³⁶ Three years later *Le Matin*, another newspaper dedicated to general information, appeared. At the same time the private dailies made progress, and the main weeklies were consolidated. There are now over 10 dailies sold in Dakar. Some of these publications, for example, *Thiof Magazine* and *Le Tract* – and some television shows, such as those of Moïse Ambroise Gomis – show a disrespect for certain traditional values such as the *sutura*, or discretion, by running pictures of nude or semi-nude “models”.³⁷ And the *Moeurs* newspaper brought its own style into the public arena by featuring articles about the sexual life of the Senegalese, which sometimes provoked reactions about “decadent ways”.

The second major event on the media scene was the arrival of private radios with the Sud FM station, created in 1994 by the Groupe Sud Communication. Some foreign and international radios, such as Radio France 1 (RF1), British Broadcasting Company (BBC) and Africa No. 1, were transmitted on the FM wavelength. But the advent of the national private media greatly reduced the audiences of these radio programmes which had been up until then, at least for the urban elite, the main source of so-called independent information. Private radio gave political parties an important opportunity for expressing their views. For some of them, it was even more important – it gave them a chance of existing and making themselves heard. Private radio addressed the public in French as well as in the national languages; therefore its reach was wider than just the French-speaking, literate public. The interactive programmes gave people access to education and information. Private radio broke up the hegemony of official radio, which was now obliged to adapt to this new situation. However, the new media contributed to reinforcing the dominant linguistic force – the Wolof language – in Senegal, with its tendency toward “wolofization”.

A seminar held by the government in October 1991 took these changes into account and emphasized the need for the Senegalese central authorities to communicate with the public. To do this, each ministry needed to establish a public communication service, set up a reception desk and train staff in modern information techniques. However, the review of the follow-up committee of senior defence officials on the treatment of “sensitive” information³⁸ shows very partial results. There is a lack of operational communication structures in the ministries. The report cites the case of the Ministry of the Economy and Finance: it was likened to “a citadel generally inaccessible to the press and even to the public at large”, although it is the largest department in the government.

Progress in the democratic process “liberated voices”, as can be seen through the feeling of freedom on the radio, particularly private radio. The increasingly audible voices on the air were no longer those of officials and their opponents – the cartel of organization leaders that had captured Senegalese political life since independence. Instead, they were the voices of people from outside the country (thanks to technological innovations), who talked to the public in a language and in a way that they understood perfectly. The public service media grew more

³⁶ As a counterweight to *Le Soleil*, the PDS launched the newspaper *Takusaan* in 1983, during the presidential and legislative elections of that year. It was run by journalists whose relations with the executive committee, composed of close collaborators of Abdoulaye Wade, were not always easy. The team eventually broke up. Some went to work with the Agence de Presse Sénégalaise (APS), while others were to provide the hard core of what was to become *Wal Fadjri*.

³⁷ For a while, *Nouvel Horizon* also published a regular column entitled Venus, with photographs of women, both naked and dressed. The reasons for suppressing this page were explained in issue No. 147.

³⁸ In December 1998, this follow-up committee produced a report aimed at improving state communications. The document identifies the communication problems of the governmental authorities and makes recommendations for resolving them.

responsive to the demands of the population. The wooden language of the media since independence, which was characteristic of the bureaucratic culture, began to break up. The liberalization of the economy coincided with the arrival on the scene of commentators with a new approach, whose criteria in choosing back-up support emphasized competitiveness (audience and impact). However, the results of structural adjustment policies and the devaluation of the CFA franc, together with the small public for the written press and publicity market, considerably diminished the impact of the media.

Institutional resistance prevents a complete liberalization of the sector. For example, the public authorities hesitate in opening up the television, while the high cost of the factors of production is another obstacle. Professionals also cite increasing difficulties in obtaining authorization for frequencies for broadcasting.

The consolidation of press groups is also emerging on the media scene. Press officials from the public service and the business world media³⁹ try to profit from the profound political, economic and cultural transformations⁴⁰ that are taking place. They too, are more or less directly involved in the political and economic struggles.⁴¹

The press often operates with a structural deficit. There is a growing difference between the production cost of each issue of a newspaper and its average selling price. Advertisement revenue does not bridge the gap which, in turn, inflates the debts of the newspapers to the printers. This makes the latter vulnerable and upsets their financial balance. In these circumstances, the independence of the press comes under question. To what extent can the media resist the financial pressure, particularly from the central authorities and different interest groups? By launching more competition, the creation of new radios has weakened present structures, exacerbated their deficit and in some cases, threatened their existence. The main obstacle in developing the media is the precarious economic situation and the limits of the advertising market. To this must be added the exorbitant costs of inputs—for example, the price of paper which has risen steeply since the devaluation of the CFA franc—as well as the costs of applying the collective agreement of the journalists.

The media take up and transmit not only social demands, but also business interests. In his contribution to the book, Abdou Latif Coulibaly brings new insights to this subject, as we shall see later on.

Information and Communication Technologies and Economic Changes

The texts gathered in this book describe the context in which ICTs have developed in Senegal. They show how their expansion is first of all linked to the position of the country during the colonial administration. From this standpoint Saidou Dia makes an original and illuminating contribution. He demonstrates the role played by radio during colonial expansion and then the consolidation of the state after the country's independence. He traces the installation of the radio since it was set up in 1911, the radio-telegraph network of French West Africa and the creation of Radio-Dakar in 1939, up to the present situation in which FM radios are multiplying.

Daffé and Dansokho provide a general framework, recapitulating development strategies and policies. They emphasize the reforms of 1983 to reinforce and modernize the national telecommunication network, as well as drawing up the telecommunication code (1996) and the Policy Declaration on the Development of Telecommunications (1996–2000). They show the role

³⁹ Some of the radio staff of Sud Communication come from the daily *Le Soleil* and some from the Radiodiffusion Télévision Sénégalaise (RTS). *Wal Fadjri* has two former staff from RTS (the Executive Director of the Group and the Director General of the radio). The *Dunya* and *Le Matin* groups are headed by two Senegalese businessmen whose background is, inter alia, the printing world.

⁴⁰ I use the word as Eboussy-Boulaga uses it: "The transformation is forgetfulness and the erasing of former conditions. We know how this happened once it has occurred, but we never see it coming."

⁴¹ For a presentation of these struggles, see Thioub et al. (1998).

of the state in creating the telecommunication infrastructure and how the main operator, Sonatel, took over the public programmes in the mid-1990s and engaged in an “investment race” that resulted in a considerable transfer of technology. These investments were achieved in a relatively short time and this, together with the high customs duty and the priority given to self-financing, account for the substantial telecommunication costs, according to Daffé and Dansokho. But the Sonatel directors are trying to lower their charges because of the competition they will face when their monopoly over fixed telephones and international operations ends in 2004. Sonatel’s pricing policy between 1999 and 2002⁴² has been bringing Senegal increasingly in line with international standards.⁴³

Sonatel is one of the best operators in sub-Saharan Africa. Its directors have succeeded in avoiding untimely interference in its management policies. This is a fact that should be emphasized in the Senegalese context, as this kind of enterprise often falls prey to predators. It is one of those rare operations that are quoted on the stock exchange. But its quasi-monopoly position is not, in itself, enough to explain its results.

The need to relieve the state budget of the burden of subsidies and concern for greater management efficiency has led to privatization and the liquidation of several enterprises in the parastatal sector. These operations have often been driven by penalty privatization. The argument for the privatization of Sonatel is on different grounds: it is above all a financial issue. But the liberalization of international communications could render it vulnerable because it will lose the considerable revenue received from airing the transmissions of foreign operators.⁴⁴ It is not easy, in the absence of precise information, to judge how the operator will react to being forced to be competitive at the international level. Nor is information available on the obligations that will be imposed on the authorized operators, without which they will cream off the international connections of business and the large consumer markets, leaving Sonatel to fulfil the public service obligations. One can only imagine that the company’s executives—who have not changed since privatization—have already adapted to this opening of the market.

Nevertheless, since liberalization, economic agents and associations have complained about the negative effects of Sonatel’s⁴⁵ quasi-monopoly position, which enabled it to fix Internet tariffs,⁴⁶

⁴² For more details on this question, see *Batik*, No. 33, April 2002.

⁴³ The argument about management efficiency is somewhat contested by members of certain associations. See Amadou Top’s analysis in *Batik*, No. 33, April 2002:

OSIRIS, since it was set up, has always fought against Sonatel’s exorbitant charges for connecting to the Internet, up to the point that it was being seen as an enemy of the company. Its motivation was simple: it only wanted to encourage a massive use of ICTs in general and Internet in particular by citizens and civil society organizations, the education world, the administration, local government and the private sector, so they could get the most benefit from these technologies. That meant that the costs of connection should be compatible with the purchasing power of households as well as affordable by the budgets of businesses and administrations. It was felt that the charges should not be prohibitive for the social sector (civil society, education, health, etc.) and that they should not impede the competitiveness of the national economy. On the other hand, it was accepted that Sonatel was obliged to secure a profit on its investments. For a long time Sonatel’s only reaction to this appeal was to say that the prices in Senegal were much lower than in many African countries—which was not, for OSIRIS or for Senegalese users, a satisfactory response. However, because of repeated criticism from civil society, businesses and the highest state authorities, and in view of the forthcoming complete opening up of the country’s telecommunications by the end of 2003, Sonatel has committed itself to a regular lowering of its charges.

Further details can be found in *Batik*.

⁴⁴ More precise details can be obtained from Sonatel’s annual reports, available from www.sonatelaction.sn.

⁴⁵ An example of this is the strained relationship between Sonatel and Metissacana, which was an Internet service provider and had opened the first cybercafé in western Africa. Following a further suspension of its special relationship because of delayed payments, Metissacana publicly stated its decision to terminate its activities as an Internet server provider. Among the reasons cited is the denunciation of “various actions by Sonatel, affiliated to France Télécom, in abusing its monopoly position and practising disloyal competition”. Sonatel denied this, retorting that, in spite of the various moratoria accorded to Metissacana, the cybercafé was not able to honour its commitments by the agreed deadlines. Metissacana was the second supplier of Internet services, after Point Net, to suspend its activities, including shutting down the Internet café. See *Batik*, No. 34, May 2002.

⁴⁶ This question should be studied more systematically, to avoid oversimplification. *Le Soleil* of 4 May 2001 carried Sonatel’s announcement that it had made a profit of CFA francs 42.5 billion in 2000. The reactions of the public to this are of interest. See, especially, El Hadj Rassoul Mbaye, *Télécommunications: La fleur fanée* and Moda Sèye, *La Sonatel a de réels mérites* in *Wal Fadji*, 11 May 2001; and the proposals of Léon Ciss in *Wal Fadji*, 31 May 2001. See also *Sud Quotidien*, 20 June 2001, and the various issues of *Batik* dedicated to the tariffs—which were considered exorbitant—and the quality of the service. For the year 2001, Sonatel announced a net profit of CFA francs 47.45 billion.

according to its convenience, while it was also the supplier of access to the Internet.⁴⁷ The quality of services has also been criticized, particularly that concerning the specialized lines for Internet access servers.⁴⁸

Furthermore, in spite of the successive lowering of Sonatel's charges and the elimination of customs duty on the importation of IT materials, the new technologies are still inaccessible to many businesses and the great majority of the population. The contributions of Daffé and Dansokho, Guèye and Tall outline the prospects for Sonatel, and express appreciation of this operator.

This book stresses the way in which ICTs have been integrated into the activities of business enterprises and utilized in international competition. The results throw light on the practices but also on the culture of the heads of Senegalese enterprises, as can be seen from the contributions of Barry and Diop, Ndiaye and Coulibaly.

Barry and Diop describe the extent to which the industrial enterprises have taken over the new information and communication technologies, in particular how the directors and personnel are increasingly using the Internet. There is a growing tendency to make professional use of viewdata (or videotext) in exchanges between industrial enterprises, banks and various firms in the service sector. This improves the internal workings of industries, giving them easy access to information and a new method of data management and treatment.

But the Internet is not sufficiently utilized by the enterprises for following technological changes, creating or consolidating commercial linkages, developing new products or services, and carrying out major transactions. For the most part, the industrial enterprises studied by Barry and Diop believe that the Internet does indeed offer many advantages. However, these relate to basic functions, such as reducing the costs of telephone calls, faxes and express mail, as well as searching for information, both of a professional and general nature.

The Internet is still not seen as a powerful commercial tool or as a way of carrying out transborder operations. Nor is it looked on as an instrument for making studies of products and markets, creating or consolidating commercial linkages and optimizing the value added of a product, from the input suppliers to the final consumer. Industrial enterprises have adopted Internet relatively well as far as electronic mail is concerned. But the impact on their operations is negligible because there is no online shopping. The lack of "Senegalese" content that would be useful for industrial enterprises is another constraint. Added to this is the fact that the Internet has not been fully mastered by government administration and private sector organizations. In fact, the main difficulty of these enterprises is to create the necessary conditions so that these new technologies can be utilized efficiently. The organizational structure of the enterprises and the way they make their profits do not seem appropriate for an effective use of the new ICTs.

Barry and Diop carried out their study on the industrial enterprises, most of whose members belong to the Syndicat professionnel des industries du Sénégal (SPIDS). To complete the picture, Abdoulaye Ndiaye examined the small and medium-sized enterprises and industries in different sectors. His study revealed that, for the most part, small and medium-sized industries are underequipped (79 per cent have fewer than five microcomputers), commercial enterprises are moderately well equipped (half of them have fewer than five work stations, the other half have more than 10) and the service enterprises are relatively well equipped (77 per cent have more than five work stations, of which 48 per cent total more than 10). There are very few local area networks that link several computers within one enterprise. The fact that extranet and

⁴⁷ A regulatory telecommunication agency (Agence de Régulation des Télécommunications/ART) was set up in the framework of the new code promulgated in December 2001, replacing Law 96-03. The ART director was nominated in January 2002. The main aim of these innovations is to introduce greater transparency and to ensure that telecommunication competition rules are respected. But the question arises as to whether Sonatel is in a good position to tackle this new liberal change of direction.

⁴⁸ See *Batik* for a presentation of some of these complaints.

intranet are not used much could be explained by the fact that the advantages of such communication networks are undervalued. While 30 per cent do possess an internal viewdata network, half of them are not used.

The small and medium-sized enterprises and industries seem well aware of the importance of the Internet in general, as 65 per cent of their directors have a personal connection, while 78 per cent of the enterprises studied are connected. Also, most of the senior staff have email addresses and have made a big effort to train their personnel in this field. Since 1996, development support bodies have carried out information campaigns, which have had effects on the general public and small and medium-sized enterprises. In terms of training needs, these enterprises singled out the use of the Internet; in terms of training in the use of specific software, they focused on areas such as accountancy, computer-assisted design and management.

To broaden the field of investigation, Abdou Latif Coulibaly organized a study of the press businesses. Very few (about a quarter) have a Web site, of which those offering services have the largest presence on the Internet. The Web sites of most of the enterprises studied by Coulibaly are rarely interactive. Their installation does not form part of any precise commercial strategy, rather, the Web site is used to promote an image or a product internationally. The commercial possibilities offered by the Internet are hardly exploited at all.

The contribution of Abdoulaye Ndiaye points out some important directions for jobs created by the new ICTs and the advantages of Senegal in the new economy. Nevertheless, Daffé and Dansokho are wary of the optimism about teleservices. They consider that, while the subcontracting to which teleservice enterprises are subjected can contribute to creating jobs, it also reinforces their dependence and that of the national economy vis-à-vis foreign markets. According to the writers, the difficulties experienced by teleservice enterprises is due to low profit margins and the rigidity of the contracts linking them to their external partners.

Daffé and Dansokho also warn against the belief that telecentres⁴⁹ and cybercafés can provide a great deal of paid employment for the young and underemployed. The basic question is, what is the saturation point of this very competitive market? There are a number of constraints: the irregularity and poor quality of electricity distribution, the separate development of the subsectors of the new ICTs, particularly IT and telecommunications, the lack of compatibility between the different technologies and the absence of any connection between IT systems.

Technologies and Society

This section focuses on the radio and fixed and mobile telephones. It takes into account the role of ICTs in the education system and documents the changes that have taken place within the administration.

Saidou Dia demonstrates that radio broadcasting in Senegal has not only become the most popular form of information and communication but also that it is the form of cultural expression that is closest to the population. When radio was first launched, it was the tool of the colonial administration; gradually it was invested with "missions" that were closely linked to Senegal's social and political evolution. Its role in the administration was reinforced by the requirements of the colonization process. Later, "national development" issues consolidated its political importance and enabled it to adjust both to the spectacular development of a dynamic written press and the subsequent breakthrough of a national television that was overly urban-oriented.

⁴⁹ Telecentres took up 12,600 of Sonatel's 210,000 fixed telephone lines in June 2000. At that time there were 7,000 telecentres around the country.

In the early 1990s, the arrival on the scene of what are known as community radio stations started a new trend in radio broadcasting and in the national information system, and radio reached a new level of professionalism. Finally, the radio stations' use of so-called national languages ("rehabilitated" in their natural support role in diffusing information) and the use of the new ICTs enabled them to embark on a new form of interactive communication with listeners.

Moussa Paye analyses the impact of the new ICTs on the democratic process. He stresses the changes in central administration, particularly the services of the Ministry of the Interior, following the demands of the social and political movements for greater transparency in the electoral process. Such concern is justified by the fact that, in the late 1970s, Senegalese politics broke with the preceding forms of governance. The reason for this was the vitality of the movements of contestation and dissidence—the centres of which were mostly in the urban areas—as a result of the economic changes and the reforms that had been carried out. This rupture with the past resulted from the evolution of Senegalese society, which developed new relationships between the dominant and the dominated. It brought about the reforms of the state structures and the way in which political competition was organized. In the 1990s, special attention was given to the electoral roll, as its reliability was considered a necessary condition for transparency in the elections.

During the 1990s, there were polemics that gradually brought the Direction de l'automatisation du fichier (DAF)—the service in the Ministry of the Interior that was responsible for managing the electoral roll—into the heart of the political debate. When it was exposed to pressure from the political parties, the DAF was forced to adapt itself to new political realities. By putting the electoral roll on the Internet in the interests of transparency, the Ministry of the Interior underwent a transformation that Moussa Paye describes in detail.

Furthermore, since 1996 the telephone has played an important role in retransmitting live programmes of the elections. In November 1996, the Senegalese could follow the live radio broadcasts of Sud FM and learn directly of the irregularities and disturbances of the polling process,⁵⁰ which seriously damaged the image that the new leadership of the Socialist Party had been cultivating for themselves: as an elite capable of modernizing the party apparatus and maintaining relationships with the administration that would break with the single party culture.

During the presidential election of February/March 2000, mobile telephones played an important role in the work of the journalists. They enabled instant reporting of what was happening and showed up electoral fraud. This revolution contributed, to a certain extent, in bringing about political change which is analysed in detail by Moussa Paye. Before the elections, it was the press that helped in a large way to discipline the politicians. In fact, the catastrophes—the "chaos", the "blood bath" and the "civil war"—that were being predicted in the case of electoral fraud, as well as the determination of the opposition leaders not to accept any *fait accompli*, promoted increasing demands, both from within and outside the country, for transparent polling.⁵¹

⁵⁰ Following these elections, various political parties, in a collective headed by the PDS, reorganized themselves to demand reform in the organization of elections through the setting up of an independent national election commission. In August 1997, there was a verbal exchange between the leaders of the Socialist Party, headed by Ousmane Tanor Dieng, and the "Collectif des 19" (a group of opposition parties), which led to the creation of an Observatoire national chargé des élections (ONEL).

⁵¹ Candidate Abdoulaye Wade played a key role in this communication policy of the Senegalese opposition. See the declaration by Wade: "L'armée et les jeunes doivent prendre leurs responsabilités" in *Sud Quotidien*, 31 December 1999. After the reaction of a number of politicians dissociating themselves from appeals to the army to take over power and the condemnation of such a proposal by French officials, Wade clarified his statement: "The army would be the failure of my whole life...but that does not mean that we'll leave [President] Diouf to do what he wants" (*Sud Quotidien*, 24 January 2000). Shortly before the elections he put on the pressure again by declaring: "If power is usurped, the army must face its responsibilities" (*Sud Quotidien*, 18 February 2000). These declarations of Wade, like those made by other opposition leaders telling their militants to combat electoral fraud, helped to dramatize the procedures, which was indeed their objective. They fed the forecasts that there would be an apocalypse if the elections were fraudulent, making people fear the worst, both inside the country and abroad. And the clashes during the election campaign at Rufisque, St. Louis, Thiès and elsewhere, the measures taken by embassies to ensure the safety of their nationals and the determination of the young people during Wade's "blue marches" heightened the "suicidal" predictions in the press. To complete the picture, Ousmane Diallo's cassette entitled *The Vote* implicitly advocated resistance to fraud. All the misgivings expressed by the

This section also analyses the education sector that has profited from ICT support since independence. Serigne Mbacké Seck and Cheikh Guèye review all the experiences in this field from 1960 to 1992. The use of the new ICTs in education responds to the issues that the state seeks to raise. Seck and Guèye acknowledge this in their contribution, which is rounded out by that of Abdourahmane Ndiaye who shows how ICTs have been introduced and developed at the Cheikh Anta Diop University of Dakar. However, Ndiaye lists various factors that have hindered access to ICTs in this case: the low funding invested, a freeze on the budget since 1994, and the university reform initiated by the World Bank.

On the question of ICTs utilization, the contributions of Mansour Tall and Cheikh Guèye provide stimulating insights. Guèye has shown in his study that the new ICTs have, on one hand, contributed to the integration of the town of Touba into the rest of the country, and on the other, helped to internationalize it. The Mourides⁵² from Touba took over the new ICTs to promote their religious messages. Photographs, radio, television, telephone and the Internet carried their symbols and made it possible to construct and disseminate a socioreligious identity. This is the reason traders have taken over the new ICTs—above all the telephone, but increasingly IT and the Internet—to expand their activities. The information and communication world helps them become aware of their strength but also to diversify their sources of revenue. Guèye shows how the Mourides are using the Internet to their advantage, while at the same time as marking it with their ideologies and practices.

Serigne Mansour Tall shows that international migrants have mastered the new ICTs according to their own requirements, which often does not correspond to the original function of the technology. The cellular telephone has become an instrument for helping the community of a whole village to escape its isolation. The case of Alizé Khady Diagne of the village of Gade Kébé, which is described by Mansour Tall, is a good example of a community taking over a technology. The success of radio and television media is due to the fact that they are used by the community and to the simplicity of their information. The content of the television programmes enables the village to open up to the outside world. The video recorder makes it possible for international migrants to make films that meet expectations and that helps them to participate in the social life of their villages. Tall also shows, in interesting detail, that the video cassettes of the family ceremonies organized in Senegal constitute “audiovisual matrimonial agencies”. This is indeed the way in which international migrants choose their future wives.

Tall gives information on how the new ICTs are used among international migrants. The fax and the telephone have particularly revolutionized their financial transfers. Finally, Tall shows that the new technologies have contributed to bringing globalization to the citizen, as capital, information and ideas no longer flow in only one direction.

Conclusion

The contributions brought together in this book provide information on the use of the new information and communication technologies in different sectors. Other themes or sectors could have been included, but it is necessary to apply “the enclosure principle”⁵³ to have a better grasp of reality. These studies provide information on the identities⁵⁴ that are forged or deconstructed, and on the inventiveness of Senegalese society in the disturbed times at the

barely veiled threats of the opposition, and especially the young people, of President Diouf being re-elected through electoral fraud, helped the opposition to ensure the honesty of the election. This was confirmed by the fact that not many complaints were made by party chiefs after the voting.

⁵² For more information about the Mourides, see *The Mourides of Senegal* by Donal Cruise O'Brien (1971).

⁵³ Eboussy-Boulaga (1998) explains this as follows: “to comprehend and explain something, it has to be seen as the result of a composition or decomposition of units capable of coming together to form a whole. To do this it is necessary to enclose it.”

⁵⁴ Once again I refer to the warning of the wise Eboussy-Boulaga in his paper to the Johannesburg symposium on Globalization and Social Justice: “It is possible to see the coming and going between the global and the local in people’s identities and more generally the possession of several identities exercised successively or simultaneously, according to the needs of the situation.”

beginning of this millennium. According to Castells (1997, 1998, 1999), the characteristics of this epoch are its great volatility and instability which spare neither profits nor power in its various forms.

These fragments do not only describe the main evolutions in Senegal as regards information and communication technologies. In their way they also take into account the different ways of life in contemporary Senegal, which is a country entering into a new world time. Its most visible upheavals are now to be found in the explosion created by the endless crisis of the groundnut economy,⁵⁵ which was the mainstay of the post-colonial economy.

Through their theoretical or empirical competence in different fields, the authors contributing to the present work are concerned with understanding the realities during this time of rapid transformation. The situation is so complex that many other observers have given up trying to explain it and contented themselves with purely descriptive narrative or reports. It is one of the characteristics of this new world time, this abdication of the ability to think among African societies and reluctance to tell their truth, with a preference instead for predicting future developments without risking hazardous comparisons and tacking on data found on the Internet. The contributions in this book do not fall into this trap, although their authors are well aware that they have not been able to solve all the questions raised by the topics they have chosen to study.

The analysis of relationships between technologies, power and society carried out in the different fields has shown us how enterprises, the administration (Moussa Paye) and society take over technologies that had seen the light of day in other contexts, and made them their own. From this viewpoint, the cases of Alize Khady Diagne and the Kara International Exchange, which are described here by Serigne Mansour Tall, provide food for thought. The way in which Senegalese enterprises integrate the new ICTs in their management systems, as is shown by Abdou Latif Coulibaly, Philippe Barry and Hamidou Diop or Abdoulaye Ndiaye indicates that Senegal has entered into a world time that is certainly not the one that has been described over the years by Pacheco, a popular artiste with a very restricted repertoire, who took Léopold Sédar Senghor at his word and tirelessly repeated that the year 2000 will be the age of abundance (*natangue*). This helps us understand the sense and scope of the questions posed by Daffé and Dansokho in their efforts to apprehend the opportunities offered by the new ICTs to the new Senegalese economy and the plunge into the world of customs by Cheikh Guèye and Serigne Mansour Tall. This is what has justified the concern of Abdourahmane Ndiaye, Serigne Mbaye Seck and Cheikh Guèye in the field of education.

The contributors wanted to avoid blinkering themselves into believing that the ICTs were the solution to all the misfortunes of African societies. Thus certain authors have emphasized the lag in time between the development of the provision of services and the production of goods. In Senegal, the option for developing an economy based on the provision of services has been reinforced by the reforms of the 1980s that have resulted in considerable investment in telecommunications. This expansion of telecommunications has gone hand in hand with the decline in the industrial infrastructure, the *baolbaolisisation* of the economy and the expansion of the bazaar culture.

Senegal's central power must elaborate an industrial and technological policy and not be content merely with a simple taking over of technologies. There has to be a scientific and technological basis for internal innovation in order to promote the new technologies. It is also advisable to identify the needs and demands at these different levels so as to construct endogenous bases in order to win external markets. But it is above all important for the state to renew its function of social and political regulator. In fact, its intervention is indispensable to

⁵⁵ Of interest is the contribution by Mohamed Mbodj (1992) on this question, and that of François Boye (1992) in the same volume, as well as the work of the Agence française de développement (2001).

correct social inequalities and to contribute to a more equitable distribution of wealth in order to ensure a peaceful evolution of society.

It goes without saying that, in view of the structural constraints described in the different contributions to the book, the gap that has to be reduced to give a new momentum to social development is not only a quantitative issue. It is above all economic, social and political. Not only has the role of the state to be rethought but also its relationships with society, and the way families and enterprises are organized, in order to identify the cultural and social values that enable a more advantageous entry into this new world time. The question then arises whether there is, at the national level, a social movement capable of imposing these political and economic options. It is necessary to take into account the lack of sensitivity among the political and administrative elites concerning social issues and that they are therefore out of touch with the concerns of the general population. Whence will come the pressure that will oblige the country's central power to make irreversible decisions so that the gains acquired through the reforms of social policy are not endangered by short-sighted management? This remains an open question.

Bibliography

- Agence française de développement (AFD). 2001. *Perspectives économiques et financières des pays de la zone franc*. Département des politiques et études, Division de la macro économie et des études, Projections Jumbo 2001–2002, Paris.
- Bathily, Abdoulaye. 1992. *Mai 68 à Dakar ou la révolte universitaire et la démocratie*. Chaka, Paris.
- Berg, Elliot. 1990. *Adjustment Postponed: Economic Policy Reform in Senegal in the 1980s*. Report prepared for the United States Agency for International Development (USAID), Dakar, October.
- Boye, François. 1992. "Les mécanismes économiques en perspective." In Momar-Coumba Diop (ed.), *Sénégal: Trajectoires d'un état*. Council for the Development of Social Science Research in Africa (CODESRIA), Dakar.
- Cabinet Etudes et Management de Projets (EMAP). 2000. *Etude sur l'initiative 20/20 comme option stratégique de développement*. Provisional report submitted to the Direction de la Planification. Ministère de l'économie, des finances et du plan (MEFP), Dakar.
- Castells, Manuel. 1999. *Information Technology, Globalization and Social Development*. Discussion Paper No. 114, UNRISD, Geneva.
- . 1998. *La société en réseaux*. Fayard, Paris.
- . 1997. *Le pouvoir de l'identité*. Fayard, Paris.
- Christensen, G. 1996. *Sénégal: Investissement public dans le secteur agricole*. Unité de politique agricole, Ministère de l'Agriculture, Dakar.
- Cruise O'Brien, Donal. 1971. *The Mourides of Senegal: The Political and Economic Organization of an Islamic Brotherhood*. Clarendon Press, Oxford.
- Diop, Momar-Coumba. 1997. "L'Administration sénégalaise et la gestion des fléaux sociaux." In Charles Becker, Saliou Mbaye and Ibrahima Thioub (eds.), *AOF réalités et héritages: Sociétés ouest-africaines et ordre colonial, 1895–1960*. Direction des Archives nationales du Sénégal, Dakar.
- Diop, Momar-Coumba and Mamadou Diouf. 1990. *Le Sénégal sous Abdou Diouf: Etat et société*. Karthala, Paris.
- Diop, Momar-Coumba and Kassé, El Hadj. 1998. *Evaluation des productions écrites et radiophoniques bénéficiant de contributions publiques (Sénégal)*. Mimeo.
- Eboussy-Boulaga, Fabien, 1998. *Identité et différence en sciences sociales*. Paper presented at an international symposium on Globalization and Social Sciences in Africa, Johannesburg, South Africa, 14–18 September.
- Faye, Cheikh. 2000. *Organisation et amélioration des organismes de sécurité sociale (CSS-IPRES)*. International Labour Organization (ILO) and Conseil national du patronat (CNP), Dakar.
- Foucault, Michel. 1989. "De la gouvernementalité." In Collège de France, *Résumé des cours 1970–1982*. Course taught at the Collège de France, 1977–1978. Conférences, essais et leçons du Collège de France, Julliard, Paris.
- Gellar, Sheldon. 1997. *Le climat politique et la volonté de réforme économique au Sénégal*. Final report prepared for United States Agency for International Development (USAID), Dakar, August.
- Government of Senegal. 1995. *Libéralisation de l'économie: Les fondements et les instruments juridiques*. Compilation of the laws, decrees and other texts. Cellule d'appui à l'environnement des entreprises, Primature, Government of Senegal, Dakar.
- Hall, Martin, 2001. "Straylight, Mala Mala, Pink Frikkie, Blekgelexy and Rumba Kali @ Africa." *Mots Pluriels*, No. 18, August. www.arts.uwa.edu.au/MotsPluriels/MP1801mh.html, accessed in July 2005.
- Hamelink, Cees J. 1997. *New Information and Communication Technologies, Social Development and Cultural Change*. Discussion Paper No. 86, UNRISD, Geneva.
- Mbembe, Achille. 2000. *De la postcolonie: Essai sur l'imagination politique dans l'Afrique contemporaine*. Karthala, Paris.
- Mbodj, Mohamed, 1992. "La crise trentenaire de l'économie arachidière." In Momar-Coumba Diop (ed.), *Sénégal: Trajectoires d'un Etat*. Council for the Development of Social Science Research in Africa (CODESRIA), Dakar.
- Nunberg, Geoffrey, 2002. "Langues et communautés linguistiques à l'époque du discours électronique." In Denis Lacorne and Tony Judt (eds.), *La politique de Babel: Du monolinguisme d'Etat au plurilinguisme des peuples*. Karthala, Paris.

- Powell, Mike. 2001. "Knowledge, culture and the Internet in Africa: A challenge for political economists." *Review of African Political Economy*, Vol. 28, No. 88, pp. 241–260.
- Sagna, Olivier, 2001. *Les technologies de l'information et de la communication et le développement social au Sénégal: Un état de lieu*. Programme on Technology, Business and Society, Paper No. 1, UNRISD, Geneva.
- Thioub, Ibrahima, Momar-Coumba Diop and Catherine Boone. 1998. "Economic liberalization in Senegal: Shifting politics of indigenous business interests" *African Studies Review*, No. 41, No. 2, pp. 63–89.
- Touré, Mamoudou. 1985. *Politique d'ajustement économique et financier*. Communication of 11 May to the National Council of the Socialist Party, Dakar.
- United Nations Research Institute for Social Development (UNRISD). 2002. *Les technologies de l'information et de la communication et le développement social au Sénégal: Rapport de la réunion organisée par l'UNRISD 16–17 juillet 2001, Dakar, Sénégal*. Conference Infos No. 8, UNRISD, Geneva.
- World Bank. 1993. *Sénégal: Stabilisation, ajustement partiel et stagnation*. World Bank, Dakar.

List of chapters in Le Sénégal à l'heure d'information

- Barry, Philippe and Hamidou Diop. *L'impact d'Internet sur le fonctionnement des moyennes et grandes entreprises industrielles* (The impact of internet on the operations of medium and large industrial enterprises).
- Coulibaly, Abdou Latif. *Les nouvelles technologies de l'information et de la communication et les personnels des médias* (New information and communication technologies and professionals in the media).
- Daffé, Gaye and Mamadou Dansokho. *Les nouvelles technologies de l'information et de la communication: Défis et opportunités pour l'économie sénégalaise* (New information and communication technologies: Challenges and opportunities for the Senegalese economy).
- Dia, Saidou. *Radiodiffusion et NTIC: Usages, enjeux et perspectives* (Radio broadcasting and new information and communication technologies: Uses, challenges and prospects).
- Guèye, Cheik. *Enjeux et rôle des NTIC dans les mutations urbaines: Le cas de Touba* (The challenge of NICTs and their role in urban change: The case of Touba).
- Ndiaye, Abdoulaye. *Les entreprises sénégalaises face aux nouvelles technologies de l'information et de la communication* (Senegalese industries and the new information and communication technologies).
- Ndiaye, Abdourahmane. *Technologies de l'information et de la communication et enseignement supérieur* (Information and communication technologies and higher education).
- Paye, Moussa. *Les nouvelles technologies de l'information et le processus démocratique* (New information technologies and the democratic process).
- Seck, Serigne Mbacké and Cheik Guèye. *Les nouvelles technologies de l'information et de la communication et le système éducatif* (New information and communication technologies and the education system).
- Tall, Serigne Mansour. *Les émigrés sénégalais et les nouvelles technologies de l'information et de la communication* (Senegalese emigrants and new information and communication technologies).

The papers can be found online at www.unrisd.org/research/infotech.

Note: The papers by Abdoulaye Ndiaye, Serigne Mbacké Seck and Cheik Guèye, and Abdourahmane Ndiaye are available only in French.

UNRISD Programme Papers on **Technology, Business and Society**

- PP TBS 17 **Technologies, Power and Society: An Overview**
Momar-Coumba Diop, September 2005
- PP TBS 16 **The “Pay Your Taxes” Debate: Perspectives on Corporate Taxation and Social Responsibility in the Chilean Mining Industry**
Contributors: Manuel Riesco, Gustavo Lagos and Marcos Lima, September 2005
- PP TBS 15 **Rethinking Business Regulation: From Self-Regulation to Social Control**
Peter Utting, September 2005
- PP TBS 14 **The Political Economy of Corporate Responsibility in Brazil: Social and Environmental Dimensions**
Paola Cappellin and Gian Mario Giuliani, October 2004
- PP TBS 13 **Barricades and Boardrooms: A Contemporary History of the Corporate Accountability Movement**
Jem Bendell, June 2004
- PP TBS 12 **Waking Up to Risk: Corporate Responses to HIV/AIDS in the Workplace**
Jem Bendell, October 2003
- PP TBS 11 **The Political Economy of International Communications: Foundations for the Emerging Global Media Debate about Media Ownership and Regulation**
Robert W. McChesney and Dan Schiller, October 2003
- PP TBS 10 **Technology and Transformation: Facilitating Knowledge Networks in Eastern Europe**
Jonathan Bach and David Stark, October 2003
- PP TBS 9 **The Riddle of Distance Education: Promise, Problems and Applications for Development**
Judith Adler Hellman, June 2003
- PP TBS 8 **Enjeux et rôle des nouvelles technologies de l’information et de la communication dans les mutations urbaines: Le cas de Touba (Sénégal)**
Cheikh Guèye, mai 2003
- PP TBS 7 **Les émigrés sénégalais et les nouvelles technologies de l’information et de la communication**
Serigne Mansour Tall, mai 2003
- PP TBS 6 **Corporate Social Responsibility in Indonesia: Quixotic Dream or Confident Expectation?**
Melody Kemp, December 2001
- PP TBS 5 **Regulating Large International Firms**
E.V.K. FitzGerald, November 2001
- PP TBS 4 **The Development Divide in a Digital Age: An Issues Paper**
Cynthia Hewitt de Alcántara, August 2001
- PP TBS 3 **Corporate Environmental Responsibility in Singapore and Malaysia: The Potential and Limits of Voluntary Initiatives**
Martin Perry and Sanjeev Singh, April 2001

continued

- PP TBS 2 **Corporate Codes of Conduct: Self-Regulation in a Global Economy**
Rhys Jenkins, April 2001
- PP TBS 1 **Les technologies de l'information et de la communication et
le développement social au Sénégal: Un état des lieux**
Olivier Sagna, janvier 2001

