

**New Information and Communication Technologies
and Professionals in the Media**

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Introduction

This study was carried out amid dramatic developments in the media, marked by the increasing use of computer-assisted communications systems by the print media. The growth in technologies and services resulting from advances in information technology, microelectronics and telecommunications, along with the urgent need for enterprises to enhance efficiency and productivity, have led to major workplace initiatives designed to increase the use of information technology, particularly in the press.

In Senegal, *Le Politicien* and *Promotion* were precursors of a more credible and professional private press that emerged at the end of the 1970s – a result of the daring and imagination of journalists who chose to reject the State-run system, in which government control and censorship severely hindered journalists' ability to practice their profession.

Overseen by respected professionals with broad experience, this press came to supplement the official media – national radio and television, the daily government newspaper, *Le Soleil*, and Agence de Presse sénégalaise (APS).

This “new” press appeared between 1987 and 1993 and represented a benchmark in Francophone Africa, providing a sharp contrast with the many publications in Africa during this period, which exhibited poor quality of writing and a lack of professionalism.

The struggle for greater freedom of the press – which certain totalitarian regimes were forced to grant as a result of social and political protest movements – was accompanied by the publication of newspapers that conveyed the views of political parties or advocated social positions on behalf of trade unions. In places where governments controlled the print and audiovisual media, their opponents expressed themselves through newspapers that they, themselves, created. This proliferation of newspapers, however, did nothing to ensure professionalism in the press.

Senegal's press served as a model for Africa, particularly in the French-speaking regions of the continent. The Senegalese press is not directly controlled by any political entity or labor union, and nearly all of the major newspapers were established on the basis of private investments from persons with no known political affiliation

This professionalization of journalism led to significant changes in Senegal, where, for more than 30 years (from 1960 to 1992), there had been only one daily newspaper. The establishment of a privately-controlled press was gradual. It began with the appearance of some ten weekly newspapers, most notably *Sud Hebdo*, *Wal Fadjri/L'Aurore*, *Le Témoin* and *Le Cafard libéré*. Between 1992 and 1998, four daily newspapers appeared, all with national circulation. The State-run press, which lost readers to these other newspapers, thus lost its absolute monopoly, which had acted as a major constraint on the development of a democratic society. This new competitive environment compelled the State to grant a degree of freedom to journalists employed by its own daily, while the political change at the top levels of the executive branch, which occurred in March 2000, accelerated the liberalization process.

Currently, newspaper production is between 60,000 and 150,000 copies per day. On average, 10 out of 100 Senegalese read a newspaper on a given day, and while this is far from rates

seen in Northern Europe or the United States, it appears to be excellent by comparison with many African countries.

The advantage that the Senegalese press enjoys over that of many African (and particularly, Francophone) nations lies in its organization and level of training. Organizationally, this means the ability to create enterprises that can manage production in accordance with modern economic standards. The best-run enterprises are those that belong to multimedia groups.

Groupe Sud Communication is the leader in private-sector media. In addition to publishing a daily newspaper (average circulation 20,000), with sales rates ranging from 83% to 96% in the Dakar region and 7% in the rest of the country, [source] it has a radio broadcasting network that includes 7 stations, with the parent station based in Dakar, and five other stations located in the five largest cities in the interior of the country. *Groupe Sud Communication* developed an “international expansion” section, which managed to obtain a radio broadcasting license for Banjul (the Gambian capital). The group has also established an audiovisual production center to produce documentaries and stories in Africa. These productions are sold primarily to European television stations and to image banks.

Wal Fadjri/L’Aurore is positioning itself in second place (after *Sud Communication*), operating an FM radio station and producing a high-quality daily newspaper (with circulation of between 10,000 and 15,000), which garnered an international prize in 1998 for its Internet site. Two other emerging groups are *Com 7* and *Le Matin*.

In attempts to modernize media, three national dailies have established Internet presences, publishing daily morning electronic editions. The web sites developed by *Le Soleil*, *Sud Quotidien* and *Wal Fadjri/L’Aurore* are on a par with the larger European and American newspapers in terms of content and graphic values.

Online journalism is becoming an increasingly important segment of the print media. There potential audience for this product is considerable, due to the large number of Senegalese emigrants. The Senegalese diaspora, clearly in evidence in Europe and the United States, represents a special target for newspapers. In addition to providing opportunities for increasing readership, these online ventures offer a venue for major advertising and its associated revenues. A newspaper such as *Sud Quotidien* is estimated to have 150,000 potential Internet readers in Europe and more than 50,000 in the United States, with the newspaper’s management anticipating possible subscriptions of 15,000, equivalent to the real rate of daily sales for the newspaper in Senegal. In financial terms, monthly subscriptions of US\$10 each could translate to monthly revenues of US\$150,000. Annual sales of *Sud Quotidien* are 1 billion CFA francs, or US\$1.43 million at current exchange rates, representing approximately 10.49% of annual sales. These figures highlight the importance of the new product and explain the efforts that *Groupe Sud Communication* is making to develop its site and improve and diversify its news.

The government newspaper, *Le Soleil*, which has improved in quality, has also established a serious Internet portal, and this interactive, user-friendly site is a benchmark in the field.

Today, radio – the most egalitarian communications medium – represents the only real mass media in Senegal. The emergence of private radio stations has been late in coming, but currently the movement is occurring on a fairly broad scale. Radio stations represent the major form of innovation within the nation’s media environment. Their diverse and

widespread use of new information and communication technologies (NICTs) in production and reporting have had a broad impact on society. The most notable instance of this, to date, was their use in covering the presidential election of February-March 2000.

Despite these developments in the media – advances that include a higher quality of product and greater professionalism – journalism and freedom of the press exist in the context of laws and regulations which, in both spirit and specific content, sometimes work against the principle of freedom.¹

In the law of March 22, 1979 – modeled, in part, on the French law of July 29, 1881, the Munich Declaration, dealing with the rights and duties of journalists of the former CCE, and the African Charter of the Rights of Man and Peoples – the repressiveness of the old provisions was softened. The new legislation broadened the field of social communication to include the audiovisual sector, and took account of issues of ethics and deontology (rights and obligations of journalists with regard to the conscience clause). The law is also innovative in a number of areas: free access to information sources; guarantees of professional confidentiality for journalists and those involved in technical aspects of social communication; freedom to establish newspapers (including the ability to have a professional journalist as editor and to have an editorial team, two-thirds of which is made up of information professionals); eligibility to receive press subsidies, based on regularity of publication, circulation and the composition of the editorial team; and strengthening of enforcement measures (notably, the ability to sanction a newspaper's editor).

Prior to the liberalization of the air waves, the seizure of the audiovisual sector by the Socialist Party (in power from 1960 to March 19, 2000) prevented radio and television from being effective tools for bringing pluralism to the electronic media. The Union of Information and Communication Professionals of Senegal (SYNPICS), political bodies, other unions and human rights activists have denounced this situation as unacceptable, particularly as these media, financed with public funds, did not reflect the diversity of points of view to be found across the nation. Beginning in the 1990s, the political establishment promulgated a series of laws designed to set limits on the liberalization of the press, while ensuring a sort of “tempered monopoly”² of the press.

The issue of freedom of the press is affected by factors both within and outside the political, sociocultural and economic arena. For four decades, the free press system served to benefit only the dominant party. Periods of relative liberalization coincided with the establishment of governments under the so-called expanded presidential majority.³ Moreover, the Haut Conseil de la Radio Télévision, which was created by decree on May 25, 1991, and became the Haut Conseil de l'Audiovisuel in 1998, was granted only limited authority and lacked autonomy, with its chair and members appointed by the President of the Republic.

¹ These developments are inspired by the work of the Commission Nationale de réflexion sur la Réforme de l'Audiovisuel.

² The laws in question are Law 79-44 on the print media, and Law 92-02 of January 6, 1992, establishing Radio Télévision du Sénégal (RTS) and amending Law 73-51 of December 4, 1973, which, in turn, deals with the establishment of the Office of Radio and Television of Senegal (ORTS).

³ This political formula sanctions the participation of most of the opposition parties in public governance – participation that was not preceded by signing on to a common government plan.

The repressiveness of the system is accentuated by provisions in the Code of Criminal Procedure, which criminalizes acts of defamation, slander, offenses against the head of State and government representatives, dissemination of false information, ethics violations, etc. These laws were often considered by Senegalese journalists and their union organizations (SYNPICS and its predecessor, the National Association of Senegalese Journalists, in the 1970s) to be “junk law,” intended to muzzle the press and impede its ability to investigate the disfunctionality of public institutions and report clear cases of corruption (Institut Panos 1993: 34-35).

Like all former French colonies, Senegal is plagued by government secrecy. The right to information is viewed by the government⁴ as an unacceptable form of protest, rather than as a fundamental right, viz., the public’s right to information within the limits imposed by law (limits applicable in particular to “State secrets” or to sensitive files related to national defense, patents, etc.).

The West African Journalists’ Union (UJAO) correctly notes that “the one constant one can discern, after surveying the different laws (scattered as they are) is the affirmation by all states (...) of their commitment to pluralism and to freedom of information. However, a deeper inquiry into their legal corpus shows that these laws are replete with highly restrictive provisions, though some progress can be seen – connected, no doubt, to a change in the prevailing situation.” (UJAO 1995: 6).

This progress is tenuous, given that the State, the government, civil society and the opposition have poorly defined notions of freedom of the press and plurality of expression – concepts that should be linked, to the extent possible, to the law and to the law’s central place in the lives of the people. In order to be just, the legislation must be balanced and impartial, and must respect cultural values.⁵ As elsewhere in Africa, one difficult question continues to arise in Senegal: Should the monopoly inherited from colonial France be maintained or should a system of free audiovisual communication be established? Certain states chose a free system; others, such as Senegal, maintained a monopoly, while establishing various exemptions.

⁴ In a booklet entitled *Pouvoir Judiciaire et Liberté de Presse en Afrique de l’Ouest* (March 1995), UJAO notes that this aversion to liberalizing access to information is based on the notion that “everything related to the government is, or is presumed to be, confidential.” This, according to the authors, explains the fact that access to information is perceived “as a favor granted to the communicator and not as a right” (p. 52). Moreover, judges have excessively broad discretion to punish journalists with arbitrary prison sentences or to have undesirable newspapers seized. Article 139 of the Senegalese Code of Criminal Procedure provides that “upon written, well-founded petition of the public prosecutor’s office, the examining magistrate is authorized to issue a committal warrant against any person accused of disseminating false information” or accused of any of a number of other offenses involving defamation of or attack upon the integrity of the head of State. The law provides no definition of “integrity,” and this represents a serious perversion of the principle that in redacting laws there is an obligation to define the extent and object of the offenses. Thus, the Senegalese press is developing under conditions where lack of compliance with universally accepted standards is being disguised, a circumstance that fundamentally interferes with freedom of expression and freedom of the press.

⁵ Commission Nationale de Réforme sur l’Audiovisuel (2001: 29-31).

The present study was conducted within this context. It attempts to reconstruct the process by which NICTs have been implemented, and to analyze their appropriation by professional journalists.

Issues considered in the study

This paper examines the use of computer-assisted communications systems by studying a sample of Senegalese enterprises. The study also examines the use of the cellular telephone – a tool that symbolizes the development of interpersonal communication – and, in a summary fashion, deals with the training needs arising from the adoption of NICTs. ‘

The analysis considers a range of NICTs to which media enterprises have access, and describes the ways in which they are used by these enterprises. The benefits, problems and results of using the various technologies are also discussed.

The study falls within the overall theoretical framework of how information technology is brought to bear in the workplace and, more specifically, its use in producing and disseminating news through the mass media. Defining this conceptual and theoretical framework also brings into play the question of the appropriation of NICTs. According to Pélissier and Romain (1998), in order to understand this issue, one must examine the way in which producers of technology, in order to promote their own objectives, attempt to utilize user feedback to shape the way consumers use the technology. These uses revolve around the interaction between supply and use (Vedel 1994). Such interaction makes it possible to give proper weight to the political and symbolic dimensions of the issue (Pélissier and Romain 1998) and avoid overemphasizing economic mechanisms. In this regard, the thinking of Jacques Perriault (1989) is pivotal. Perriault holds that the relation between use and technology is dynamic, involving an interactive confrontation between the instrument and its function, on the one hand, and the intention of the user, on the other. According to Perriault, the user is at the center of complex interactions involving his plans, his desires and his concept of how the technology is to be used.

The process by which users appropriate NICTs and deal with the effects of uncertain (i.e., constantly changing) supply must also be taken into account, as must users’ ability to adapt and adjust as the technologies gradually become familiar to them.

The present study attempts to clarify this interrelationship by showing how the introduction of NICTs in the Senegalese media has affected or failed to affect the practice of journalism. This, it is hoped, will provide better understanding of the impact of the technologies, and shed light on broader questions regarding the appropriation and adoption of these technologies on the part of professionals.

Methodology

Setting forth the concepts that inform this study may help provide a better understanding of the target population. One of the central concepts is that of media personnel, which encompasses two professional categories. The first consists of journalists – a journalist being a “person who participates in producing a newspaper, producing a spoken or televised news program, or reporting, analyzing and commenting on events.” This person may work full-time or part-time. Here, we have considered only those working on an ongoing basis in a print,

radio or television organization. The second category includes technicians who, in terms of their status under the law, are identical to journalists. This category primarily includes directors, production staff, editorial assistants, editors and graphic artists. The work environment of all such personnel has been affected significantly by NICTs.

Those involved in this survey were selected from four national daily newspapers (*Sud Quotidien*, *Wal Fadjri/L'Aurore*, *Le Soleil* and *l'Info 7*), three radio stations (*Sud FM*, *Wal Fadjri/Fm* and *Chaîne nationale*), APS and the regional stations *Sud FM* and RTS (Ziguinchor).

The study drew on a representative sample of 387 professionals⁶ working in the media, of which at least 330, or 90%, worked in Dakar.

The sample includes 170 professionals. The response rate was approximately 40%. Thus, the surveyed population consisted of 76 persons. However, the number of completed, usable questionnaires was 62. The questionnaire was administered between September 9 and October 15, 2000.

Two methods of data collection were employed: a self-administered questionnaire and an interview manual. The interviews were conducted in all of the enterprises targeted by the survey and primarily covered personnel involved in managing media enterprises, particularly those responsible for managing the companies on a daily basis and making decisions on the use of information technology equipment. This group consisted of directors of publication, radio station managers, editors-in-chief and managers in charge of information technology. Twenty-one persons from this category were questioned.

Prior to creating these manuals, we carried out individual consultations at the enterprises involved, in order to gather information on their equipment. We focused particularly on procurement methods and procedures and on the professional training plans in place. The consultation process consisted of informal interviews with individuals working in media. Validation of the manual involved consultations with four journalists and two audiovisual technicians, in addition to the services of two researchers specializing in press issues.

In creating the survey questionnaire, we made use of a preliminary on-site survey. This drew on 11 professionals, including seven journalists and four technicians – all working in Dakar and Kaolack. The goal was to construct an overall picture of general approaches to the supply and appropriation of NICTs in journalistic organizations, in order to determine the extent to which these technologies were used and to identify factors hindering their appropriation. This stage, which involved free-form interviews with a dozen professionals, made it possible to create the framework for the questionnaire. An outline of the questionnaire was drafted and submitted to two experts for evaluation and to twelve professionals for validation. The scientific reliability of the questionnaire was verified using an Alpha Cronbach test, after carrying out a breakdown of twelve questionnaires using SPSS software.

The data-collection instruments were not submitted to all of the respondents at the time they were first developed. It should also be noted that the preliminary surveys were carried out on a voluntary basis, and at only two enterprises.

⁶ Census data released in May 1999 during the SYNPICS conference.

Limitations of the research

The limitations of the research are primarily the result of the quality of the data and, in a small number of cases, an absence of data. In addition, it should be noted that we were unable to obtain data to evaluate the costs and expenditures associated with NICT equipment, since those questioned lacked information on the matter or were unwilling to provide it.

Once the issues were identified, it became possible, by linking the different elements, to analyze the problem of how personnel at Senegalese media organizations integrate and appropriate NICTs. Nevertheless, this approach caused certain problems. The most difficult of these was the fact that different aspects of the issue are sometimes treated in a generalized fashion; each aspect could be the subject of further study. Moreover, limitations of this sort suggest other directions for research on the appropriation of NICTs by media personnel.

Data collected using the interview manual

The process of introducing NICTs

The process of introducing NICTs in the media workplace has been characterized by a lack of coordination and uniformity. Three periods can be distinguished. The first (1985-1990) is referred to as the age of the “four musketeers” – *Sud Hebdo*, *Wal Fadjri/L’Aurore*, *Le Témoin* and *Cafard libéré*. During this period, NICTs allowed the press to grow – specifically, as a result of the Macintosh – as new layout techniques reduced newspaper production costs by approximately 40% -- a figure confirmed by managers at *Sud Communication* and *Wal Fadjri/L’Aurore*, which were the first to produce a newspaper using Quark Xpress and Pagemaker on the Macintosh. This period went a long way toward demonstrating that NICTs constitute genuine assets in developing a professional free press, provided that the political environment is favorable.

The second period, which began at the start of 2000, is marked by a strong interest in new equipment on the part of journalistic organizations. This boom was reinforced by the development of the Internet. Beyond the not insignificant effects of this “fad”, it should be noted that there was a willingness to adopt and exploit all of the possibilities offered by NICTs. This is confirmed by the statements of 93% of managers questioned. Seventy percent of the material now in use was acquired during that period – as evidenced by the case of *Le Soleil*, whose editing process became completely computerized between 1999 and 2000, and that of RTS, which installed digital equipment with assistance from the Italian government.

Following the 1996-2000 period, journalistic enterprises acquired and consolidated their technological equipment. Their aim was to use technological advances as a means of developing the media. In this area, the programs of two enterprises (RTS and *Sud Communication*) – whose programs were developed over a three-year period – stand out. According to top management at the public radio and television corporation, an estimated 2 billion CFA francs will be invested in digital equipment between 2002 and 2005. For *Groupe Sud Communication*, expected investment is 800 million CFA francs for the 2001-2004 period. Corresponding figures are not available for *Wal Fadjri*. In general, journalistic enterprises are expected to make major investments in technological equipment between now and 2006. The overall figure is estimated at 5-7 billion CFA francs, with Senegalese television accounting for the major portion.

Results of the questionnaire survey

Description of respondents

Respondents were grouped and described according to their organizational and individual characteristics. Organizational characteristics included the size of the enterprise, the sector and total revenues. Forty percent of respondents work in the print media (newspapers), 36% in radio and 19% in television, with a majority of respondents working in the audiovisual media (55%).

Organizational level and job description of respondents

The survey focused particularly on journalist-reporters (54% of respondents). Within journalistic organizations, those most affected by the appropriation of NICTs were reporters, followed by technicians. These two groups, combined, are generally representative of the those working in media.

Sixty-two percent of respondents were between 25 and 35 years of age; 11% were over 46 years of age; and 27% were between 36 and 45 years of age, while twenty-five percent of respondents were women and 75% were men – figures that reflect the sociological composition of the media, which employ more men than women (Bâ 1998).

The introduction of NICTs in journalistic enterprises

The fax machine

Table 1: Introduction of fax machines

Number of employees	Number of enterprises	Average number of fax machines available	Number of employees	Number of fax machines per employee
1 to 20	8	1.8	13	0.01
21 to 50	6	2.5	26	0.09
51 to 100	7	4.2	39	0.10
100 +	3	5.2	52	2.6

Table 1 shows that all of the journalistic enterprises use the fax machine, while an increase in the number of employees does not result in a proportionate increase in the number of fax machines. In the group of enterprises surveyed, journalist-reporters did not have direct access to fax machines. They use faxes less than others and, when they do, it is only after requesting permission from management.

However, according to the respondents, 68% of press employees claim to have used a fax, or at least state that they believe they know how to use one, while 20% of respondents state that they have never personally used this technology and lack the knowledge to do so. On average, 12% of respondents use fax machines.

The interviews indicate that management is pleased with the service provided by fax machines. The technology allows them to save considerably on the enterprise's communications costs.

E-mail

Sixty-five percent of enterprises surveyed have e-mail.

Table 2: Extent to which e-mail is used in the media.

Technology	Departments				
E-mail	Top management	Marketing	Finance/ administration	Personnel	Editing/ production
	53%	7%	10%	15%	15%

Seventy-two percent of respondents state that e-mail is not used to its full advantage. Journalists and editorial support personnel use e-mail least. Currently, the technology is used almost exclusively by management. Eighty-five percent of journalists and technicians complain that management at newspapers and radio stations does not understand their need for this tool.

Inequality in the use of e-mail by management and non-management workers is explained in part by the fact that the telephone lines required to provide access to e-mail are available only in the offices of management – a circumstance typically justified on the basis of financial considerations.

The Internet and its use

Internet use is still very limited, despite the fact that it makes it possible for newspapers and radio and television stations to have an online presence. In rare instances, journalists use the Internet for documentary purposes (10%), for reading news service dispatches (38%) and for reading the foreign press (52%). However, this technology is gaining increasing popularity, with 45% of respondents indicating both a need to use it and a desire to learn how to use it.

Despite the low usage of the Internet, there is a definite interest in establishing web sites, with nearly all newspapers surveyed having an Internet site. Only two, however – *Sud Quotidien* and *Le Soleil* – update their content on a regular basis. While *Wal Fadjri/L'Aurore* has a nice package of products, its publications, at least during the period of the survey, lacked regularity, while the web site of *Sud Quotidien*, though published regularly, is rather unexciting. In this respect, *Le Soleil* serves as a benchmark, both in terms of editorial content and appearance.

Use of the Internet by journalists is more extensive than among other professionals. Across the spectrum of professionals, more than 30% confuse the Internet with e-mail, while 51% consider them to be the same.

The majority of enterprises questioned regard web sites as merely a way of presenting the product of their newspaper or radio station — a formula that tends to produce a static result, rather than taking advantage of the possibilities of interactivity. While there is a desire for innovation, particularly in the print media, the establishing of web sites is not always

consistent with a defined marketing strategy. The aim of the web site is usually to display the product on the international scene so as to enhance the brand image. However, the marketing possibilities offered by the Internet remain almost totally unexploited. At the same time, use of e-mail is limited primarily to management and editorial staff, with journalist-reporters and technicians rarely utilizing it.

There appear to be certain differences between print journalists and journalists working in the electronic media. The former make far more use of e-mail (68%). This can be explained by the fact that their organizations have more computers, due to their need for word-processing. Writers working in the print media have an average of one computer for every 4 persons, while in the electronic media the figure is one to 10. Intranet service has not been introduced in press enterprises.

Vocal servers and voicemail

Voicemail, which is a recent technology, is in use at less than 1% of enterprises surveyed. None had the equipment on site, though several indicated plans to install voicemail. The cost of acquiring the technology and the difficulties of installation are the main obstacles to its development.

At the same time, all of the radio stations had vocal servers available to their listeners. This technology is available through two providers: *Infotel* and *Africatel*. The vocal server is a source of revenue for the radio stations. Already in wide use, it is attracting increasing interest among radio stations as a way of handling listener response. It represents no expense to management, which merely signs a contract with a service provider, under an agreement by which the two parties share revenues from the telephone charges levied on listeners. This system is particularly applicable to the case of listeners who participate in games, contests and other interactive exchanges.

Use of portable telephones in the media

During the presidential election of February-March 2000, portable telephones played an important role in the work of journalists covering the election. Indeed, portable phones made it possible to transmit live accounts of occurrences likely to mar the honesty of the election. This revolutionary development contributed to the shift of political power that came about..

The data provided in Table 3 indicate that all journalists in radio station news rooms have portable telephones, making clear the importance of this new means of communication in the press.

Table 3: Use of portable telephones in newsrooms

Newsrooms	Percentage
Print press	94%
Radio	99.8%
Television	87%
News services	79%

Use of videotext

The majority of press enterprises questioned did not have this technology, though the national television station has a plan to provide it in the medium term.

Comparison of technologies used

We attempted to verify empirically the influence of factors that the literature cites as important in making decisions to acquire each of the technologies under consideration.

Media executives ranked the technologies used in their enterprises in order of importance. Beyond this, however, there are practical factors that lead to decisions to install given technologies. For example, the anticipated volume of international communications is responsible for the fact that many heads of enterprises believe that e-mail is a useful service for their organizations, providing a dual advantage: on the one hand, speed and instantaneity of communication; on the other, reduced costs.

There is a symmetry between the cost of international communications and economic benefits. A difference can be noted between the two, because the economic benefits are not calculated, here, strictly in terms of financial costs linked to the communications themselves. Gains in time, in how work is organized, and in how effectively tasks are carried out are among the factors that affect the performance of the enterprise and improve its relationships with the range of its business partners. The economic advantages go well beyond the economic and budgetary gains achieved from the reduction in communications costs.

Reasons for acquiring technology

Table 4: Technologies and supporting factors in their acquisition⁷

Supporting factors	Fax	E-mail	Mobile telephone	Videotext	Voicemail
Increase in international communications	25%	30%	30%	3%	15%
Costs of inter-city and international communications	30%	20%	10%	2%	3%
Increase in volume of domestic communications	10%	5%	40%	5%	20%
The "fashion" effect	2%	5%	5%	3%	2%
Economic advantages	33%	40%	15%	87%	60%

The economic benefit associated with each technology justifies its acquisition by a journalistic enterprise. On average – except for the portable telephone (15%) – the percentage of users citing specific reasons for acquiring given technologies ranges from 35% to 87% (videotext). Voicemail is acquired primarily for its economic advantages (60%), as is true for e-mail (40%).

⁷ The percentages in this table are not horizontally cumulative. Each percentage relates to a given technology. It was not possible to aggregate the statistics.

Technology use and supporting factors affecting use

Table 5: Technology use

Supporting factors	E-mail	Fax	Mobile telephone	Voicemail
Ease of use	10%	10%	50%	15%
Effectiveness and adaptability	20%	35%	45%	60%
Services provided	20%	30%	30%	1°%
Costs of use	35%	15%	19%	5%
Availability in the work environment	15%	10%	1%	10%

Employees of press enterprises highlight an essential factor in justifying their propensity for using one technology vs. another. Thirty-five percent of employees explain their choice of e-mail by the cost of using it, its efficiency and the services it provides.

Press employees give efficiency (35%) and the services provided (30%) as the reasons for using fax machines. Among users questioned, 45% cite efficiency as a reason for using the portable telephone, while 30% cite the services it provides.

Employees using or knowledgeable in using a given technology

Employees can master the use of a technology without necessarily becoming users – e.g., when they have someone carry out the task for them, or when they do not have access to the particular device. The portable telephone is the most accessible and most utilized technology, followed by fax and e-mail. Table 6 shows that the potentials of the technologies cited are under-utilized due to lack of training on the part of users. The portable telephone was used by 74% of those surveyed, but only 63% of these users know how to use all of its functions and take advantage of all of the possibilities it offers.

Table 6: Level of use of NICTs

Level of use of NICTs	Little	Fairly little	Often	Very often	Not at all	No response
Internet	10%	24%	11%	5%	40%	10%
E-mail	13%	17%	12%	5%	45%	3%
Fax	10%	7%	40%	20%	15%	8%
Computer	5%	9%	41%	30%	7%	14%

According to Table 6, use of these technologies is low among 74% of professionals surveyed, while 30-50% use them very often. These rates are important, given that work in the media has been totally transformed by these technologies. Since journalists and other professionals are often assisted by technicians in using these tools, it is reasonable to conclude that journalists remain on the periphery of technological change.

In the print media, manuscripts of certain journalists are typed into the computer by staff members assigned to this task. At *Le Soleil*, this is true for 70% of articles, while the corresponding figure at *Sud Quotidien* is 30%.

NICTs are used most frequently by print journalists, particularly those working at newspapers, where 80% work with computers. In the electronic media (radio, specifically), the percentage is only 38%. These figures are consistent with rates of ownership of personal computers – 30% for print journalists and 10% for their colleagues in the electronic media, where use of NICTs appears to be the exclusive domain of technicians.

Nevertheless, 85% of respondents believe that NICTs are indispensable tools for their profession, despite the fact that 65% of them are unaware of the specific types of assistance that these inventions can provide. This paradox arises from two main factors. First, journalistic organizations and the mass media lack bold, deliberate policies aimed at installing the relevant technologies; hence the absence of budgetary items that include an “investment” category dedicated to NICTs. The technologies are generally acquired as a result of earmarked subsidies from foreign organizations. Thus, while there is a general desire for the technologies, it does not translate to decisive action. In order for the media to appropriate NICTs in a major way, general business plans must include policies that give priority to providing funding for these technologies and emphasize NICTs as a way of rationalizing and optimizing human resources.

Presence of NICTs

Table 7: Extent of the presence of NICTs

Employees and NICTs	Radio	Television	Print press	News services
Access to a computer	20%	15%	66%	75%
Possession of a personal computer	5%	5%	25%	20%
Actual access to the Internet	3%	5%	35%	55%

Table 7 shows that media personnel have limited access to NICTs – a situation resulting directly from the prevailing economic environment in the press.

A number of journalistic enterprises see multiple advantages in the connectivity provided by e-mail systems. However, NICTs are not strictly advantageous, and should not be viewed as a panacea for the under-developed state of the media. It is perilous to consider new technological inventions an end in themselves. They can only be tools, and their adoption and use must take account of the conditions and objectives defined by the actual users. The adoption of NICTs in the media must be part of comprehensive business plans, and must be rationally thought out. Management must be wary of giving in to fads or to a frenzy for new technology, which can be every bit as devastating as the failure to innovate.

Equipment needs

A distinction must be made between what is needed by the print media and what the electronic press requires.

Print media

Above all, the print media need tools to aid in the publication process – particularly software and material that allows, for example, for digital filing. Press computer graphics, which require ultra-modern equipment, seem to be the poor relation within the equipment family as a whole, despite the fact that 98% of print executives consider it necessary for their organizations to have this technology.

The electronic press

Financial requirements are greatest in television, with its need for images, digital sound and storage of digitized images. Up to 85% of the equipment for television production and broadcasting needs to be changed to conform to current broadcast standards.

The digitization of data and the major technological changes this entails for television and radio explain the nearly hopeless feeling among many executives. Costs are prohibitive and resources limited, at a time when it is vital to move to the third generation of equipment. Both the national television station and radio stations lack concrete plans for successfully making this transition.

With the exception of *Sud Fm*, commercial radio stations have entirely digitized their production units. The challenges for the electronic media are enormous, and their future, at least in the long term, depends on having these new technologies.

Obstacles to the appropriation of NICTs

Obstacles arise on two fronts: organizational factors and the economic environment. In both cases, conditions are not conducive to increasing the use of NICTs in news rooms and technical areas. Nevertheless, where the media have been able to sustain development and even to achieve spectacular breakthroughs, it has been the result of these technologies – in particular, the computer. The most striking example, as indicated earlier, is in the print media, where the appearance of desk-top publishing and related tools provided by the Macintosh has reduced newspaper production costs.

Media enterprises have rarely taken advantage of NICTs beyond the simple practical implementation of desk-top publishing. Personnel have limited knowledge of the resources at their disposal and only basic competence in using them. Appropriation of any new technology requires appropriate procedures. This involves psychological and physical adaptation, which calls for rigorously planned training and upgrading of skills. The results of our survey, however, indicate that the presence of NICTs in the media workplace has had no impact on the organization and implementation of short-, medium- and long-term policy for updated skills training. This is confirmed by 80% of management personnel surveyed.

The rare staff training offered consists of brief workstation sessions that provide practical knowledge of basic tools – specifically, the computer. These are brief and limited to the specific skills needed to handle new equipment. The instructors are experts trained for the purpose by the enterprise, and they are present only for a period of three days to a week. This system means that when on-the-job problems occur, confusion can set in, since permanent staff does not necessarily have the skills and confidence to find solutions.

Eighty-three percent of professionals questioned indicate having received brief training in Internet skills. However, a similar proportion (90%) expressed an inability to take full advantage of this resource, showing that workers trained to use a given system need more education than they are currently receiving in order to understand and accept it. “Training” here is to be construed in terms of “applied” knowledge, while “education” entails understanding and interpreting that knowledge. At all of the sites surveyed, technical training was limited to training carried out at workstations.

Highly indebted media enterprises often acquire NICTs with external assistance – a subsidy, or a loan, which is difficult to repay. The investment budgets of these enterprises are extremely small. The government newspaper, *Le Soleil*, by contrast, has a well-organized internal investment plan. *Groupe Sud Communication* is attempting to implement a strategic five-year plan that incorporates a major NICTs-investment component, while RTS is planning strategic changes to develop these technologies. Our survey did not uncover other projects designed to implement NICTs.

Economic pressures represent a serious obstacle for many press organizations. In order to restrict freedom of the press, certain governments use underhanded means – namely, economic favors. This method suppresses demand for greater press freedom and prevents the coalescing of a unified enemy, since the media are targeted individually on the basis of their financial situation. While media favorable to the government are rewarded with lucrative advertising contracts with State enterprises, low-interest loans from nationalized banks and tariff exemptions, the “recalcitrant” media are denied these favors, which account for nearly 80% of press-sector revenues. While this situation has changed considerably with privatization and the concomitant loosening of State control, advertising revenue continues to be the “carrot” in carrot-and-stick policies.

Training needs – expressed and addressed

Here, the question is to what extent training provided to journalists corresponds to the training they themselves say they need. Asked whether ongoing training in their field is of major importance, many working in the media indicate that they consider it a “right,” stating that it is a basic factor in their ability to advance within their profession.

Improving general knowledge through training is considered essential by 63% of workers questioned. The emergence of NICTs in the media has given rise to distinct needs for training. Ninety-five percent of respondents consider training to be crucial in mastering the techniques of their profession.

There are significant correlations between the gender of respondents and the training needs they express, with women experiencing the greatest need for training. There is also a significant correlation between age and the need for training. Young respondents express the greatest need for training, emphasizing specialized information technology skills for multimedia, Internet access and e-mail.

Responses reflect the significance attributed to these specialized skills. Professional techniques which, until now, were priority items for continued training, have now largely been supplanted by NICTs. Seventy-seven percent of those interviewed demand reform in this area – a demand that acquires additional weight in view of the fact that each professional uses at least one NICT.

NICTs represent a major concern for Senegalese journalists, particularly in regard to acquiring new knowledge and skills. Those engaged in technical tasks in the media are experiencing a distinct need for training in order to master digital editing and production, deal with sound and handle imaging and computer video graphics.

Conclusion

Related to the integration and appropriation of NICTs in the Senegalese media is the more general issue of technology transfer in developing countries, particularly in Africa. Some propose providing the poor with “tickets” to the web by making less expensive computers with specialized functions. Others envision the poor countries as “dustbins” for technology from the north – places where material discarded by the West can be recycled. Michael Dertouzes makes the following observations in this connection: “The industrialized West dreams of films-on-demand and productions on DVD, at a time when barely 2% of people in sub-Saharan Africa have telephones. Expecting a country to move from the agrarian age to the information age – skipping over the industrial age – is as unrealistic as believing that a child can learn to dance without first learning to walk.”

This captures perfectly the futility of many initiatives designed to ensure increased introduction of NICTs in African societies. There is little chance that these societies will benefit spontaneously from such efforts. Given the financial unfeasibility of specialized programs and initiatives, it is important to establish a new approach to promoting development, so that programs such as that of the Francophone Conference’s Agence de Coopération culturelle et technique (ACCT) can be implemented. This program represents a major source of funds for accessing the information superhighway, and one aspect of the program is devoted specifically to NICTs in the African media. The funds target training and technology for a large number of news rooms. UNESCO has a similar initiative, known as the International Program for the Development of Communication.

Exchanges represent an excellent means of promoting NICTs in the media in Senegal, as in other parts of Africa. The continent needs massive contributions of know-how and information technology. Investments must be made in training journalists, so that their level of knowledge can be increased. This is an area that deserves priority attention. Entrepreneurs (in both electronic and print media) have invested heavily in equipment, presses, computers for color printing, distribution, promotion, marketing, display and advertising, in hopes of reinventing their enterprises. At the same time, they have done little to mobilize financial resources to provide the training needed to foster a new type of journalism and to ensure improved performance on the part of their personnel.

References

Accardo Alain 1996, *Journalistes du quotidien*, Bordeaux, Le Mascaret.

Ba Awa, 1998, “Les femmes dans les médias au Sénégal: à l’assaut de la citadelle des hommes,” Dakar.

Bélanger Pierre, 1995, “Premier tour de piste sur l’autoroute électronique,” Jean Guy Lacroix et Gaston Tremblay (eds.), *Les autoroutes de l’information*, University of Quebec Press.

Bourdieu Pierre, 1996, *La télévision*, Paris, Fayard.

Commission Nationale de réflexion sur la Réforme de l’Audiovisuel, 2001, Rapport de la Commission nationale de réflexion sur l’audiovisuel déposé au chef de l’Etat, May.

Coulibaly Abdou Latif, 1999 “Les régimes juridiques et évolution des médias au Sénégal.” [Communication at the International Conference on Media and Globalization, University of Wisconsin, Madison.]

De la Brosse Renaud, 1996, “L’explosion des radios locales en Afrique de l’Ouest francophone,” *Les Cahiers de la Francophonie*, October: 104-106.

Institut Panos, 1993, *Atelier sur le Pluralisme de la radio au Sénégal* [Dakar, May 18-19].

La Haye Yves, 1985, *Journalisme, mode d’emploi. Des manières d’écrire l’actualité*, Paris, La Pensée Sauvage.

Palmer Michael, 1996, *Journalisme au quotidien*, Bordeaux, Le Mascaret.

Pellier Nicolas and Romain Nicolas, 1998, “Journalisme de presse écrite et nouveaux moyens d’information,” *Les Cahiers du Journalisme*.

Perriault Jacques, 1989, *La logique de l’usage : essai sur les machines à communiquer, [éditions?]*

Quéré Louis, 1982, *Des miroirs équivoques : aux origines de la communication moderne*, Paris, Aubier.

Rochard Yves, Ruellan Denis and Thierry Daniel, 1987, “Productions en réseaux et mutations professionnelles du journalisme” [Programme de recherche de l’Observatoire des NTIC et des Métiers].

Rogers Everett, 1983, *Diffusion of innovations*, New York, Free Press [3rd edition].

Ruellan Denis, 1990, “Le professionnalisme identité et savoir-faire des journalistes français,” *Bulletin Crei*, No. 7, March.

Union des Journalistes de l’Afrique de l’Ouest, 1995, “Pouvoir Judiciaire et Liberté de Presse en Afrique de l’Ouest,” Dakar.

Union des Journalistes de l'Afrique de l'Ouest, 1995, "Médias, législation et déontologie en Afrique de l'Ouest," Dakar.

Virilo Paul, 1995, *La vitesse de libération*, Paris, Galilée.