TITLE

The Quality of Public Administration Information Services on Internet through Electronic Mail

AUTHORS
Dr. Antonio MUÑOZ CAÑAVATE
Facultad de Biblioteconomía y Documentación. Universidad de Extremadura. Avda.
JoséMaría Alcaraz y Alenda, 1. 06011 Badajoz, Spain. Fax. +34.924.259957;
e-mail: amunoz@alcazaba.unex.es

Dra. Celia CHAIN NAVARRO
Departamento de Informacion y Documentación. Universidad de Murcia. Campus de
Espinardo, Murcia, Spain. Fax: +34.968. 363924
e-mail: chain@fcu.um.es

ABSTRACT
The content originally developed on Internet had fundamentally been based on the academic and research world. Since the middle of the nineties there has been a qualitative and quantitative jump due to the major growth of internet servers outside the R&D environment. Within this framework, those responsible for public administration conjecture that new systems of disseminating information could be created for the citizen with a system available which reached into their own homes. This present work describes the results of research applied to the various organs of Spanish Public Administration from 1997 to 1999, with the aim of determining the degree of effectiveness of public information services, measured through electronic mail. This investigation forms part of the context of a research project which has been in progress from the end of 1996 until April, 2000.

INTRODUCTION

Communication is the central process of all organizations: none can function without the existence of communicative processes. Traditionally these processes have been through personal communication, i.e., a real personal presence in the contact between individuals, without neglecting the communications carried out via the earliest forms of immediate distance communication, such as the telegraph, telephone, etc. The arrival of methods which use computer-based information technologies has changed these communication processes, permitting, on the one hand, an increase in the number of communications, and, on the other hand, for them to be performed with no need for any kind of physical presence.

The successive European and North American plans on the Information Society (Gore Plan, Delors Plan, Bangemann Report, plans of action of the European Commission) and those elaborated specifically for Public Administrations have definitively delimited the objectives to be achieved by Public Administration as they adapt to the new requirements. Very briefly, they consist of replacing paper-based communication by electronic mail between administration and citizen, and within the administration itself, and of the creation and development of integrated interactive services.

As a new form of communication, electronic mail thus forms the basis of our work.

There are numerous studies on the use of electronic mail in different types of organizations. Stillman[i], for example, studied the organization, technical, and cultural barriers to the use and development of electronic mail in institutions. More recently, Weiner[ii] has studied its use and misuse in the context of the North American workplace, and Bauman[iii] the use of all the developments of the initial electronic mail software as marketing tools[iv], with recommendations to company managers and executives concerning electronic information policies[v].

Finholt & Sproull[vi] analyzed the use of electronic groups, whether formed by mailing lists or other systems, and concluded that they have created a new social phenomenon which could eventually control the development of an organization.

Other authors have developed studies on the use of electronic mail. Rice[vii] studied the use of electronic mail in a 500 member organization dedicated to research, and analyzed the relationship between the different labour categories. Levy & Foster[viii] structured and analyzed the principal characteristics which appear after applying electronic mail in library networks.

Electronic mail is not only used in person to person communication, but permits the dissemination of electronic bulletins, discussion groups through mailing lists, electronic journals, etc. Glawsiusz[ix] carried out studies on the use of electronic mail in the information services. Works such as those of this author attempt to discover how electronic mail alters the dissemination of information in the information services. The study concludes that the use of electronic mail improves communication between users, reduces paperwork, reduces personal displacement, and changes the substantial form of working.

Another author, Sloan[x] brings the concept of a digital library to the reference services, and identifies the role of these services as one of the most important of the

electronic library, reflecting various working models, including those which develop reference services through electronic mail, and those which use videoconferencing.

There have been historical works which analyze communication as a central process of all organizations. Thus Mitzberg[xi] studied the role of authority and communication networks. Allen[xii] studied how communication flows affect the aims of the organization, and Galbraith[xiii] how communication structures help organizations respond to the demands made on them.

These communication processes have given rise to the traditional forms of communication, which themselves defined well demarcated organizational structures, adapting in establishing new configurations, so that there has been a change from a vertical hierarchical structure to a horizontal structure. This has been pointed to as a democratizing[xiv] effect which raises the forms of information dissemination, and which not only augments within-group messages, but also the information which expands to outside the organizations and which is not addressed to any specific group.

Electronic communication, however, also has its problems. Some authors[xv] wonder if in reality it does not depersonalize communication, thus leading to negative consequences in human relationships. New viewpoints are taking over, however, from the theory of electronic mail's dehumanization of communications. Indeed the conclusion has been that quite the contrary is the case. It appears that electronic mail communication enhances the need of the virtual communicants to meet face-to-face or by telephone[xvi].

There have also arisen differences between traditional communications and those established through Internet. According to a Harvard study, the establishment of virtual communication in a business environment encourages so-called "informational opacity" (*haggling script*): information tends to be hidden because the other person who makes contact over the network is unknown. This is in contrast to the traditional face-to-face situation where the participants tend to offer as much information and data as possible to make themselves understood and achieve a fruitful level of communication (http://www.people.hbs.edu/Kvalley/bio.html).Th

e characteristics of electronic mail (fast, cheap, convenient, and simple) have made it an indispensable element in this new stage of Public Administration, with its possibility of access through computer-based telecommunication networks. However, not all is positive in the use of the new communication tool. It is necessary to have access to a connection point and a computer (and not all citizens, nor all civil servants have them or know how to use them); there is still (although at increasingly lower levels) the fear of the unknown and a reticence which are holding back information technology. The Administration, too, will have to create new jobs or bring up to date the functionaries to fill them.

Some of the great problems facing these Administrations, such as the perception of lack of quality, the huge amount of data which leads to problems in its diffusion, the difficulties in locating the information, or the inadequacy of communication between Administrations or between Administrations and citizens, may (in many cases) be solved by way of information technology in general, and by the use of Internet in particular.

In this context the citizen figures as the keystone of the bureaucratic framework. These are circumstances where the application of information technology to the creation of new services to inform the citizen must lead to a series of consequences for the Administration; the provision of a 24 hour a day service; a greater offer of services to the citizen; reduction in the number of telephone inquiries; elimination of queues at the windows of Administration offices; reduction in the production costs of information services; and, in general, a better image at the same time as a greater usefulness of the service.

The idea of bringing the Public Administration up to date means a change in outlook and, at times, in the corporate and ideological structure. An Administration which is has an Internet presence, but which has not changed its way of working, will find it difficult to respond to the new needs of the citizens.

Evidently, and as with other forms of communication, if one of the interlocutors does not respond, the communication is not only not effective but is not established. The answering capacity of the Administrations to the applications sent by the citizens through electronic mail may therefore be considered as an indicator of the quality of the answering services of the Administration from whom help or information is being sought.

OBJECTIVES

There has been a multiplication in the number of works based on studies of Public Administrations in western countries. One of the documents that has analysed the new forms of "electronic government" is the Green Paper on Public Sector Information in the Information Society T[1].his describes the three most important functions (information, communication, and transaction services) that Administrations have to carry out in setting up a digital network service model at three levels (everyday life, distance Administration, and political participation).

Likewise, the Government Online Project of the G7 bas[1]es its goals on various postulates, noteworthy amongst which is that of replacing paper-based communications by electronic mail.

The application of electronic mail to communicate with Administration functionaries has become one of the keystones of the services of distance Administration, and it has also been the axis around which the present investigation was developed.

The processes of electronic mail communication tend to seek novel means of communication. Their application must either speed up the bureaucracy or simply solve straightforward requests for information that previously required personal displacement when the telephone was inappropriate.
This is t
he context in which the authors have begun a line of investigation in Spain to measure the penetration of Internet since 1996 in the ambit of public authorities (Administrations), and in particular to investigate the flows of information to the citizen.

In this work we consider the time taken to answer the petitions made by electronic mail as a variable with which to test the quality of the electronic information services which use Internet as a platform for communication with the citizen.

The objects of the study are the electronic information services of different Spanish Administrations:

- Local Administration (Townhalls), i.e. institutions governing Spanish towns.

- Regional Administration (governments of the Autonomous Communities).

- General State Administration (central ministerial services, central directorates, and public organisms depending on the ministries).

The work, which is part of a broader analysis which analyzed the impact and evolution of the information systems that use World Wide Web technologies in the Spanish Public Administration, aims at determining whether the "receptivity" of these services on Internet are also manifest in reply services through electronic mail addresses which appear on the principal pages of these websites. I.e., whether or not active citizen-administration interaction is really possible, as measured by the speed of the response that is offered.

METHOD

One way of testing the receptivity or the response capacity of the Administration to the citizen using Internet is precisely by using the service. A method was developed which permits us to show, in the most objective manner possible, the answering time for each message sent. The messages were sent at different times of day, and on different days of the week. The question asked was on the origin of the service itself, and was sent to the electronic mail addresses which figure on the principal pages of the Web information services.

To homogenize the study, we assumed that the persons who answered us worked in the mornings and that 14.00 was taken as the limit for reading and answering the electronic mail. In this way, if the message was sent after 14.00 it was considered to have been sent the following day, and if it was sent after 14.00 on Friday, it was considered to have been sent on the following Monday.

Example:
[S]   Normal [ ]   town_council@xxx.xx   14:03 4/11/97 +0100   1   information

(The previous message was considered as sent on 5/11/97)

[S]   Normal [ ]   town_council@xxx.xx   17:10 7/11/97 +0100   1   information

(The previous message, sent Friday 7/11/97, was considered as sent on Monday 10/11/97)

The messages were sent over 17 months, between December 1997 and April 1999, and is part of a broader work which has been in progress from the end of 1996 until April, 2000.

The number of messages obviously varied between the three Administrations: there are fewer administrative units in State and Regional Administration than in Local Administration.

RESULTS

Table 1

ADMINISTRATION	Nº of messages sent	Nº of messages answered	Percentage of replies
General State Administration	63	28	44,4%
Regional	38	18	47,3%
Local	342	127	37,1%
Total	443	173	39%

Table 2

	Same day	**1 day**	**2 days**	**3 days**	**4 days**	**5 days**	**6 days**	**7 days**	**+ 7 days**
Central	43%	3,5%	18%	3,5%	3,5%	7%	-	3,5%	18% (1)
Regional	44,5%	17%	11%	-	5,5%	-	-	11%	11% (2)
Local	48,8%	14,5%	11%	1,5%	3,1%	2,3%	1,5%	1,5%	15,7% (3)
Total	47,3%	12,7%	12,1%	1,7%	3,4%	2,8%	1,5%	2,8%	15,6%

(Answering time. Percentages on total number of messages answered.)

(1) 1 message answered at 14 days, 2 messages answered at 21 days, 1 message answered at 26 days, 1 message answered at 30 days.

(2) 1 message answered at 8 days, 1 message answered at 22 days.

(3) 6 messages answered at between 8 and 10 days, 4 messages answered at between 11 and 20 days, 10 messages answered after 20 days.

Table 3

	Central Government	Regional Governments	Local Governments
Answer	44,4%	47,4%	37,1%
Whithout answer	55,6%	52,6%	62,9%
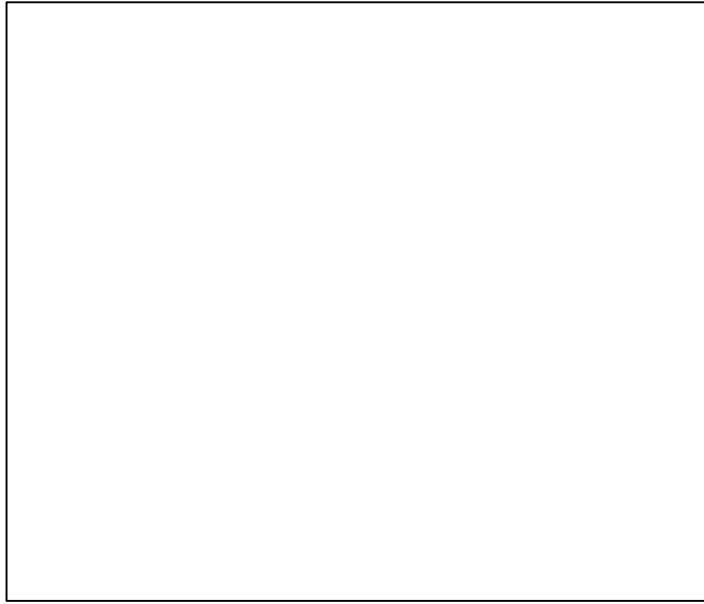
CONCLUSIONS

The results of the investigation are given in Tables 1, 2 and 3 and Figure 1.[1] FINHOLT

Es tremendamente significativo que menos del 50% de los correos enviados hayan tenido respuesta en las tres Administraciones. Es decir, que la pretendida "receptividad" sólo es efectiva para una parte de las unidades evaluadas. Otro dato importante es que de los mensajes respondidos en torno a la mitad lo han hecho entre el mismo día y el día siguiente. Es decir, que cuando la Administración responde (y sólo lo hace en la mitad de los casos), en un porcentaje en torno al 50% responde inmediatamente, **y disminuye progresivamente el porcentaje de respuestas conforme avanzan los días que se tarda en contestar.**

Si hacemos una división de Administraciones, se puede comprobar que no hay diferencias dignas de destacar, aunque podemos ver una mayor rapidez de respuesta en los ayuntamientos.

En resumen, bajo nivel de respuesta, relativa rapidez en las respuestas enviadas y poca diferencia a la hora de los porcentajes en las tres administraciones analizadas.

Estos resultados se pueden dar porque todavía exista en las Administraciones Públicas necesidad de actualizar a parte de su personal o de contratar especialistas para atender las nuevas necesidades planteadas. Ello pone de manifiesto que en las políticas informacionales de los organismos públicos todavía no esté todavía suficientemente asentada la idea de que la auténtica interactividad que ofrece Internet no se manifiesta si no hay receptividad, es decir, las tecnologías potencian, facilitan, pero no solucionan por sí solas todos los problemas o las necesidades que se van creando. Los nuevos planteamientos de "Libertad de Información", de "Gobierno abierto" y de calidad en la administración pública, difícilmente llegarán a ser realidad sin una apuesta clara por el cambio en el servicio ofrecido al ciudadano. O lo que es lo mismo, saber previamente qué servicio se quiere ofrecer, cómo puede llevarse a cabo, y los medios técnicos y humanos necesarios para ello.

De hecho, ya están apareciendo en el mercado internacional programas que facilitan la respuesta a los mensajes de correo electrónico recibidos en las empresas. Son motores semánticos que a través del denominado "sistema de respuesta inteligente" pueden contestar automáticamente consultas sencillas, parecidas a la planteada en esta encuesta, a través de un análisis de las palabras utilizadas en el mensaje recibido. Sin embargo, no son efectivos cuando la consulta es algo más complicada, o el enfoque no se adapta a los parámetros definidos en el programa[1].

Al margen de la atención que las Administraciones Públicas españolas ofrezcan al correo electrónico como sistema de atención al ciudadano. La potencialidad el correo electrónico es un servicio todavía sin explotar, si analizamos

la población española con acceso a Internet. **En las fechas objeto del análisis la población varía desde el 3.9% de ciudadanos con acceso a la Red a finales de 1997, al 8% en abril/mayo de 1999[1].**

De esta manera podemos concluir señalando que el escaso nivel de respuesta de las Administraciones españolas se corresponde con el escaso porcentaje de españoles que tiene acceso a Internet.

REFtml

RENCES

[i] **STILLMAN, N.J. E-mail: Essential ingredient in streamling operations. *Public Manager*, 1996, vol. 25, nº1, p. 53-58.**

[ii] **WEINER, A.K. Busoness-only e-mail policies in the labor organizing context: it is time to recognize employee. *Federal Communications Law Journal*, 2000, vol. 52, nº 3, p. 777-793.**

[iii] **BAUNMAN, A. E-mail in the workplace. *Ingram's*, 2000, vol. 20, nº 3, p. 28-29.**

[iv] **DYSAR, J. E-mail marketing grows up. *SDM Security Distributing & Marketing*, 2000, vol. 30, nº 3, p. 149-151.**

[v] **LEEDS & MORROD, H. Rewiew e-mail policies with employees before problem occur. *Business Press*, 13/08/1999, 12, 16, p.3A.**

, T. and SPROULL, L. S. Electronic Groups at Work. *Organization Science*, 1990, vol. 1, nº 1, p. 41-64

[vii] RICE, R. E.; HUGHES, D. and LOVE, G.Usage and outcomes of electronic messaging at an r&d organization: Situational constraints, job level, and media awareness. *Office, Technology and People*, 1989, vol. 5, nº 2, p. 141- 161

[viii] LEVY, P. and FOSTER, A. Communicating effectively in the networked organization; using electronic mail in academic libraries. *Journal of Documentation*. December 1998, vol. 54, nº 5, p. 566-583

[ix]GLAUSIUSZ, J. A.; YATES-MERCER, P. A. Some Impacts of electronic mail on information services. *Journal of Information Science*, 1990, vol. 16, p. 249-256

[x] SLOAN, B. Service Perspectives for the Digital Library Remote Reference Services. *Library Trends*, 1998, vol. 47, nº 1, p. 117-143.

[xi] MINTZERG, H. *The Nature of Managerial Work*. New York: Harper and Row, 1973

[xii] ALLEN, T. *Managing the Flow of Technology*. Cambridge, MA: MIT Press, 1973

[xiii] GALBRAITH, J. *Organization Design*. Reading, MA: Addison-Wesley, 1977

[xiv] ROMM, C. et al. Virtual Communities and Society: toward and integrative Three Phase Model. International *Journal of Information Management*, 1997, vol. 17, nº 4, p. 266.

[xv]KIESLER, S., SIEGEL, J. y MCGUIRE, T.W. Social psychological aspects of computer-mediated communication. *American Psycologist*, 1984, 39, p. 1123-1134.
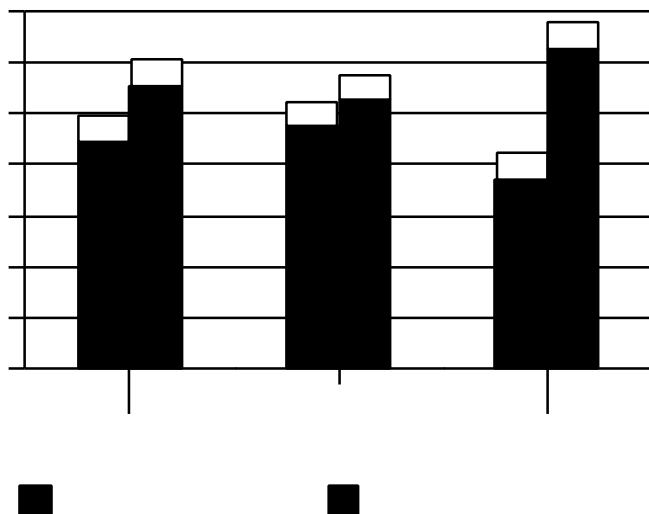
[xvi] **CORNELLA, A. Comunicamos más de lo que simplemente decimos. Extra-net, mensaje 486, 2000,02/10. Available at: http://www.extra-net/articulos/en000210486.htm**.

[xvii] **Green Paper on Public Sector Information in the Information Society. COM (1998) 585.**

[xviii] **The Government Online Project. Available at:** http://www.ispo.cec.be/g7/projects/theme9.html

[xix] **SHAPLEY, Deborah. Dr. Email Will See You Now. January/February 2000. Available at:**