

THE PROMOTION OF THE INTERNET AS A SOURCE OF INFORMATION ON WATER AND SANITATION

Executive Summary

by

N. Kibata, C. A. Buckley and F. A. O. Otieno

Centre for Water Pollution Research
Department of Civil Engineering
University of Durban-Westville
Durban

Pollution Research Group
Department of Chemical Engineering
University of Natal
Durban

Report to the Water Research Commission on the Project

The Promotion of the Internet as a source of Information on Water and Sanitation

Head, Pollution Research Group : Professor C. A. Buckley
Head, Centre for Water Pollution Research : Professor F. A. O. Otieno
Project Leader : Professor C. A. Buckley

WRC Report No : K5/735
ISBN No :

Background to the Study.

Recent developments in electronic networking through the Internet have opened up new possibilities for the exchange of information between institutions and professionals in the water and sanitation sector. However, information and particularly, on water and sanitation on the Internet is scattered and hard to find. In an attempt to help find a solution to this problem, the International Association on Water Quality (IAWQ) and the Water Research Commission of South Africa agreed in 1995 to support the Pollution Research Group (PRG) at the University of Natal, Durban and the Department of Civil Engineering at the University of Durban-Westville in creating an *information gateway*, in the form of a home page on the Internet, to be provisionally known as the Water Supply and Environmental Sanitation Services Electronic Network for Developing Country Needs (WENDY).

The IRC International Water and Sanitation Centre, together with the United Nations Centre for Human Settlements (Habitat), the Environmental Health Project (EHP) of USAID, and the Water, Engineering and Development Centre (WEDC) at Loughborough University were invited to become members of an International Steering Committee to guide this development. Following a demonstration of a prototype *information gateway* at the Third Global Forum of the Collaborative Council for Water Supply and Sanitation, held in Barbados in November 1995, the Council approved the inclusion of the Internet initiative in its programme of activities for 1996-97, and authorised the Steering Committee to function as a Council Task Force on the subject, under the coordination of IRC.

Following discussion among Task Force members, it was decided to change the name of the initiative to INTERWATER in order to establish more clearly its connection with the water sector for users of the Internet.

The overall goal of INTERWATER was to contribute to the more effective delivery of services in the water supply and sanitation sector in developing countries through improved information provision. This is in accordance with the aims and objectives of the Collaborative Council for Water Supply and Sanitation, which are

... to enhance collaboration among developing countries and external support agencies so as to accelerate the achievement of sustainable water, sanitation and waste management services to all people, with special attention to the poor ...

While the general objective of INTERWATER was to promote and facilitate the exchange of data, information, knowledge and experience among water and sanitation institutions and professionals, its general objectives were to promote and facilitate, through the medium of the Internet:

- w awareness of and access to sources of information,
- w the generation and dissemination of information, and
- w the establishment of effective networking among sector institutions and professionals.

INTERWATER was originally hosted at the Computing Centre for Water Research (CCWR) in Pietermaritzburg. Later on, it was shifted to a server in the UK.

Following the interest generated by the INTERWATER initiative, the Water Research Commission agreed to fund a research project aimed at increasing the overall usage of the Internet in the water and sanitation sector in South Africa. This was seen as a prerequisite in order for South African role players in water and sanitation sector to exploit the opportunities afforded by the Internet.

Objectives of the Study

The Internet is a dynamic media. It has seen phenomenal growth in the last 4 years. Thus, whereas the research was designed 2 years ago, some of the original intentions of the research may have been overtaken by the developments on the Internet. The objectives from the original research design were:-

- w to support South African policy makers and organisations involved in the planning, design, financing, implementation and operation of water and sanitation services with an efficient information service.
- w to make available, to South African organisations involved water and sanitation, international information on the topic.
- w to assist in making South African expertise in water and sanitation available worldwide.

In addition to the research report, it was envisaged that other deliverables would be:

- w a web site linking South African water and sanitation organisations with other international organisations.
- w guidelines on improvement of speed of connectivity for water and sanitation organisations.

Subsequently, inclusion of a web site as a deliverable was abandoned. This was necessary in order to avoid duplication of efforts as INTERWATER was considered adequate for that purpose.

Major Findings from the Research

This research was somewhat different from other traditional forms of research. Whereas it did not have clearly measurable outputs, a parallel could be drawn where the equivalent of a *pilot plant* in a traditional form of research was constructed. This involved establishing various pilot sites on the Internet for leading water and sanitation organisations in South Africa. Once they were established, the next step involved observing the performance of the sites and drawing up the necessary conclusions. In order for the *pilot plant* to be established, various steps were necessary. The steps invariably lead to various role players in the water and sanitation sector in South Africa as well as the rest of Africa receiving some form of Internet support from the project team. The coverage was less than 1 % of the role players. The research was intended to act as a catalyst through which the role players could be lobbied into using the Internet to a greater extent in their operation. To this end, the project team was able to reach out to various role players. However the impact of the project might not be fully known until a specialised quantitative study is conducted.

The research established that that the demand side of water and sanitation information continuum tended to be easier to lobby than the supply side. In this way, several individual and organisations were exposed to the potentials of the Internet in the water and sanitation sector. In this way, South African water and sanitation sector was able to borrow from other water and sanitation organisations in the rest of the world. However, there is a limit to the length to which the organisations can continue to expend their resources on the Internet if no substantive sector information is forthcoming. This is where a threat to the opportunities created for use of the Internet in the sector lies.

In supporting the role players in the South African water and sanitation sector, special attention was paid to the supply side of the information continuum once it was noticed to be the bottleneck. In so doing, sector organisations were encouraged to publish their information on the Internet. In this way, South African expertise in the water and sanitation was availed worldwide. Once again, this was limited to the organisations that had been lobbied but it is hoped that the action would have a catalytic effect. In order for the *pilot project* for the project to be established, various steps were necessary. The steps invariably lead to various role players in the water and sanitation sector in South Africa as well as the rest of Africa receiving some form of Internet support from the project team. Once again, sample coverage was less than 1 % of the role players. The research was intended to act as a catalyst through which the role players could be lobbied into using the Internet to a greater extent in their operation. To this end, the project team was able to reach out to various role players. However the impact of the project might not be fully known until a specialised quantitative study is conducted.

From the research, it has been demonstrated that in order to promote the use of the Internet as a source of information on water and sanitation in South Africa, the 2 facets of the sector in so far as the use of information is concerned have to be addressed i.e. the demand and the supply side of the information on water and sanitation.

Findings from the Literature Survey

The available literature on the Internet is emphatic that the Internet is changing various facets of the society that we live in. Most notable among the changes has been the emergence of an information economy that is predicted to outgrow all other known economies by the turn of the twentieth century. It was established from the literature that among the opportunities afforded by the emerging information economy will be:-

- w** widespread and equitable access to communication and information services through accelerate deployment of national information infrastructure and effective integration into international communication and informations network.
- w** systematic improvements in functioning and competitiveness of key economic sectors through strategic information policies and systems,
- w** new ways to use information technology to help solve the problems of human and economic development.

From the literature search, it was also established that the Internet although new, has features that are akin to the traditional media and in other instances completely different. The literature argues out a case for establishment of grassroots structures for electronic networking in order to spread the benefits of the Internet to the communities. The various challenges facing increased Internet usage in the water and sanitation sector have been identified through literature search as escalation in *information poverty*, the rise of *cultural and linguistic imperialism*, lack of universal Internet access, information redundancy on the Internet, lack of political will on the part of governments to free up the telecommunications sector, perceived security risk on the Internet and poor speed of access to the Internet for developing economies.

The literature finally identifies instances where the Internet can be or has been successfully employed in assisting technology transfer in water and sanitation.

Promotional Activities in the Water and Sanitation Sector

Promotion of the Internet was limited to various role players in the sector. It is then hoped that the role players would then impart the Internet usage culture to the larger community in the sector. Eventually, it is hoped that grass-root electronic networking would be achieved in this way. The activities that were undertaken were:-

- w advocacy and Internet support for the Mvula Trust,
- w advocacy and Internet support for NETWAS,
- w advocacy for Internet usage at various water and sanitation forums.
- w transfer of responsibilities for maintenance of INTERWATER to the International Reference Centre for Water and Sanitation (IRC) at the Hague.
- w advocacy and Internet support for the National Community Water and Sanitation Training Institute.
- w lobbying organisations and individuals through the Community Water Supply and Sanitation (CWSS) division of the Water Institute of Southern Africa (WISA), KwaZulu Natal Branch.
- w participation in 2 conferences covering various aspects of water and sanitation.

The research developed a protocol to be followed for any organisations in water and sanitation that wish to undertake in the promotion of the Internet usage. From the research, it was noticed that it takes a long time to change an organisation culture, to using the Internet as a source of information and a medium of information dissemination. This is slow and needs time to

- w demonstrate
- w convince
- w budget for capital and recurring expenditure
- w acquire equipment

- w evolve information dissemination and acquisition strategy
- w implement

These challenges should be taken cognisance of and plan accordingly in any initiatives intended to promote Internet usage in the sector.

Further to these, generic issues/problems that arise with respect to the Internet based paradigm shift are:

- w who owns the information once it is availed over the Internet
- w can such information be marketed and sold.
- w if the information can be marketed and sold, how? who are the prospective customers?
- w funding and
- w sustainability.

Scope for Quantitative Analysis in the Research

During the research period, it was observed that a probable scope exists for quantifying the impacts the use of the Internet on the water and sanitation sector. The report recommends further research into the method and full development to enhance its potential. It has been established that potential exists for enhancing the benefits of the Internet and adopting them in the water and sanitation sector. If this mechanism was well understood and perhaps quantitatively so, then strategies for maximising the benefits would be drawn out from an informed point. Positive results from such a study would justify any investment in the Internet technology by policy makers in the water and sanitation sector. Further, increased investment on the Internet has the potential to improve on the supply side of the water and sanitation information continuum that the study has established.

Major Recommendations from the Study

The research recommends that steps be taken to enhance positive grass-root networking among the communities both directly and indirectly. This way, a community that is positively disposed towards using the Internet as a source of information on water and sanitation is established. It should be noted that this was attempted in the project although it fell beyond the scope of the project. Influencing the role player was as far as the project went. On the other hand, it is imperative that policies that encourage growth of the Internet are fostered in South Africa and other developing countries who form the source of information. To this end, the report makes policy recommendations that are deemed to be necessary.

The research has noted that a policy shift on the supply side of the information continuum is usually much more difficult than on the demand side. The impact of this problem is made worse by the lack of supply of water and sanitation information on the Internet. To this end, the report recommends proactive measure that will include financing profiles to enable organisations involved in provision of water and sanitation services to avail the information on the Internet.

The report recommends various activities to water and sanitation stake holders in gaining access to, and developing creative uses for, Internet services:

- w promote policy and regional coordination of Internet strategy for rural development,
- w establishing more pilot projects as undertaken during the project,
- w extending the *communication for development approach* as practiced by advocacy practitioners in the water and sanitation field to incorporate the use of the Internet,
- w support efforts to liberalise telecommunication policies in developing countries. This is because ultimately, the success of Internet usage in South Africa will depend on the availability of substantive information on water and sanitation from other developing countries,
- w support local Internet entrepreneurs and other service providers in developing countries,
- w assist stake holders in advocating for Internet service provision and telecommunication infrastructure and policy improvements,
- w orient existing Internet information services to users in developing countries,
- w support rural and agriculture educational sector Internet capability,
- w provide Internet awareness building and demonstration,
- w support rural and remote infrastructure development, and
- w support creative Internet applications and information services for rural development.

The policy support envisaged for the national, regional and international organisations involved in the water and sanitation are outlined here. It should be noted that for an effective policy on water and sanitation, combined efforts by all the role players in the water and sanitation sector is necessary.

- w encourage more agencies to become involved in the INTERWATER Initiative which is coordinated by International Reference Centre for Water and Sanitation and communication technology stake holders and other regional networking forums. It may be noted here that INTERWATER was originally an initiative based in South Africa.
- w achieve commitment among development agencies to collaborate on a clear strategy for information and communication technology support in developing countries in order to improve planning, resource sharing.
- w improve the availability of information on the existing water and sanitation projects
- w improve access to technical skills
- w Improve information and communication technology for use in developing countries, which can include network administrators from the developed countries becoming familiar with the specific challenges faced by Internet users in developing countries,

- w increase support for the development of local content and the conversion of existing standalone computerised information systems to networked access, integration with decision support systems, and develop new information-based services that exploit local potential.
- w develop and publicise key pilot projects. This has partially been achieved through the research but scope does exist for building on the foundation that has been laid.

The research recommends supports for **all** the organisations involved in water and sanitation to publish their information on the World Wide Web. It should be noted that recent improvements in web publishing technology have made it possible for organisations to publish their documents to the web directly from hard copy. The organisations are likely to be holding their information in hard copies rather than electronic copies. With basic investments in scanners and appropriate software, this wealth of information can be converted to portable information fast. The documents will include manuals, project reports, documentation of lessons, brochures e.t.c.

It is recommended that such an initiative be carried out on a project basis and in phases. The first phase would involve taking an inventory of all the organisations that fall under this category. The final phase would involve *mass processing* of the information held by the organisations to the extent the organisations deem prudent and necessary for their operational goals. The information so processed would then be published on the Internet. The project costs could be borne by sponsors for a certain period after which the organisations would be responsible for the maintenance.