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FLOOD OF GATEWAYS AND PORTALS ON WATER DROWNING IN AMBITION

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ABSTRACT: A flood of gateways and portals is emerging in recent years. This is contributing to confusion rather than helping Internet users who search the web on water issues. Part of this confusion is the result of definition problems of what makes a “portal” and what not. In this paper we give some recent examples, try to create more clarity by providing definitions and types, discuss key lessons learned and raise key issues for further discussion and research. This is based on various Internet searches and an annotated selection of various gateways/portals by IRC. For each of them a short description of content, topic, date of establishment and page views are provided. The majority of the gateways/portals described here focus on the broadest possible water topic: water resources and management.

IRC will put this paper on its web site and announce it in Source Weekly and will ask visitors/readers to react. These reactions will be documented in the final paper for WIS 6.

INTRODUCTION

The Internet has been inundated with new gateways and portals on water over the last couple of years, as witnessed by information specialists at the IRC International Water and Sanitation Centre. The New on the Net section in Source Water and Sanitation News <http://www.irc.nl/source/section.php/12> carries 54 news items since July 2002, of which seven refer to “gateway” or portal. Unfortunately, many of them only serve to confuse instead of help people who search the web for water-related information. Part of the problem resides in defining what constitutes a “portal” and what doesn’t. Another issue is that most portals do not seem to

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have a clear notion of their intended visitors - and their motives for visiting. As a result, the portals lack much-needed focus.

In this paper we give some recent examples, try to create more clarity by providing definitions and types, discuss key lessons learned and raise key issues for further discussion and research. This is based on various Internet searches and an annotated selection of various gateways/portals by IRC staff.

Here are five examples of sites, none of which have all the functionality of a portal yet. The closest example of a portal is the BBC Water Portal - The Water Debate, http://news.bbc.co.uk/2/hi/in_depth/world/2003/world_forum/water/default.stm that was launched early June 2003. This is not only an impressive interactive site for the general public with video, audio, expert views, fact files and water stories. It also provides fun options such as online opinion polls and a water quiz. However, it does not contain an option for online collaboration.

The IRC International Water and Sanitation Centre (established in 1968) family of web sites (<http://www.irc.nl>) provides news and information (including advocacy/communication, publications, and bibliographic database) on low-cost water supply and sanitation in developing countries. It has a number of topic sites. It also provides a starting point for the Source Water and Sanitation News service and the InterWATER guide to more than 650 organizations, in collaboration with the Water Supply and Sanitation Collaborative Council. The search engine (Atomz) provides access to all these related sites. The IRC DOC online database contains 15,000 bibliographical entries on developing country water, sanitation and hygiene documents, books, periodicals, videos etc. The www.worldwaterday.org site maintained by IRC contains information on one topic per year that is selected by the UN. Visitors can add comments, and events.

Sanitation Connection <http://www.sanicon.net/>

Sanitation Connection is an Internet-based resource that gives access to accurate, reliable and up-to-date information on technologies, institutions and financing of sanitation systems around the world. Institutions of international standing contribute to the information base by providing and maintaining a topic of their specialization.

Water portal of the Americas

<http://www.WaterPortal-Americas.org>

Is a combination of a gateway (entryway or portal) and a community of practice. Is basically a search engine, further a structure and system for other organizations to copy or fit in. It is still a prototype that may grow into a collaborative portal. "The goal is to provide both an entryway (portal) to water information and to create a water information network, community, and resource that will provide qualified, trusted, and verifiable information and contacts."

At the March 2003 Third World Water Forum the prototype of a "Water Portal for the America's" was shown by UNESCO/World Water Assessment Programme and the Waterweb Consortium, a year and a half after it was first announced at the Fifth water Information Summit. The prototype gave an impression of what will be on the site, with only limited content. This is

the first regional water portal that is scheduled to become part of the UNESCO WWAP/Waterweb Global Water Portal, as was announced in Japan. Funding for this started in April 2002.

The US based WaterTechOnline

http://www.watertechonline.com/news.asp?mode=4&N_ID=31857) is one of the commercial portals addressing business needs. It contains breaking daily news stories about the water and wastewater treatment industry, as well as industry bulletin boards, searchable supplier directories and article archives, industry opinion polls, new product announcements and other industry-specific information.

These examples illustrate the proliferation of water portals, gateways and websites. It also raises questions about the definitions, users and relevance of these internet-based initiatives.

DEFINITIONS AND TYPOLOGIES

General information on portals can be found on the Portals Community site. This advertises on Google.com as “The Definite Enterprise Portal Resource” and offers Portals information, White papers, networking, and research.

<http://www.portalscommunity.com/registration/member.cfm?code=TDXTL05>

Defining water portals

From About.com and own sources: A portal is a kind of Web site and provides a single point of access to aggregated information – a virtual front door. The term originated with large, well-known Internet search engine sites that expanded their features to include email, news, stock quotes, and an array of other functionality. Some corporations took a similar approach in implementing their intranet sites, which then became known as enterprise information or corporate portals.

There are general portals and specialised or niche portals. Some major general portals include Yahoo, CNET, AOL, and MSN. Examples of niche portals that are accessible to the public include Garden.com (for gardeners), Fool.com (for investors), and DPReview.com (for photographers). These are sometimes also called vortals - vertical portals. Private niche portals are those that are used by employees of a company.

Typical services offered by public portal sites include a start page with rich navigation, a directory of Web sites, a facility to search for other sites, news, a collection of loosely-integrated features (some of which may be provided by partners or other third parties) like weather information, stock quotes, phone and map information, e-mail and sometimes a community forum. Private portals often include access to payroll information, internal phone directories, company news, and employee documentation.

For the purpose of this paper we define a portal as: “a one-stop, client-oriented web site that offers visitors a broad array of interactive resources such as news, data bases, discussion forums, search options, space to collaborate online and links on water-related topics”.

Searches

IRC staff did various online literature searches:

On “Water portals” on the All the web search engine in April May and June 2003. Of the 45 results shown 32 were relevant. On Google.com 22 out of 42 were relevant. The other results were mainly related to game sites.

On the specialized on ICT site Whatis.com there is lot of information on corporate portals through Best web links, news headlines expert technical advice and web results.

CONCLUSIONS

Main conclusions are:

1. there is a wide variety of “portals” on water, definition wise, topic wise and language wise, and 2. even in the world of corporate portals the concept is subject to confusion in the marketplace (Peter A. Buxbaum, Nov 2001, searchEBusiness). Buxbaum quotes:

“... , there are several different types of corporate portals, each sporting different capabilities and each requiring different technologies and technology providers. Experts segment the enterprise portal arena into at least three components. Information portals emphasize data and document retrieval and management. Knowledge portals enable collaboration and information sharing as well as expertise and knowledge capture. Application portals provide end-users with interfaces to enterprise systems. What do all these have in common? As IDC defines it, they all manage end-user access to multiple applications and information sources on the corporate intranet." Looking at the software giant SAP’s recent steps in its portal strategy Buxbaum leaves us with a nagging question: “If a software giant like SAP can’t explain portals clearly, how are its potential customers supposed to understand them?”

2. Most of the sites that claim to provide a water “portal” can be more correctly described as providing a start page or gateway to web information. There is in fact a flood of gateways, but too many providers are drowning in ambition.

3. An interesting paper that describes pros and cons of a portal from a university point of view in easily understandable language is Kevin Lowey’s University Portals FAQ, University Web Developers' Mailing List 2002

http://www.usask.ca/web_project/uwebd/portals_faq.html

4. Some interesting findings emerge from a user survey of electronic information services (EIS) among 25 UK institutions of higher education (Armstrong et al, Sep 1999 - July 2000). The effect of the Internet on information seeking by staff and students is hugely significant; search engines and known sites are the first resort for most academic queries, as well as for many personal domestic queries. There was a wide range of engines used and indications of haphazard searching.

5. Another major conclusion from the same survey is that subject gateways are notable only for their lack of mention among students and academic staff, although there is some use among library and information staff.

LESSONS LEARNED/WHAT NEXT

The majority of the gateways/portals described here focus on the broadest possible water topic: water resources and management.

The claims for “The Water Portal” can not be justified. At best we can help clarify what the sites we have selected are focusing on, what they are, what they deliver to visitors (who?) and how interactive they are.

Two good examples of the different approaches are the Netherlands-based start page on water (www.water-pagina.nl) that provides four pages of clickable names divided over 32 categories, compared to the recently established www.h2o-scanner.com. This has a start page from where searches can be done combining countries, segments, issues and content.

With a portal the emphasis is shifting from a public web site showing on-line pamphlets to a user-oriented web site that provides tools, reports, and services specifically designed for that individual.

Given the fact that 85 percent of all the visits to any web site come through Google and other search engines a good water portal will mainly contribute to return visits and building of communities of interest.

Our Selection

Below is the selection made by IRC staff with short write ups of the most interesting water gateways and portals, dividing them up based on the following criteria:

- relevance for IRC and partners and the topic focus on water, environmental sanitation and hygiene
- international gateways/portals
- other language gateways/portals
- commercial portals
- one-organization gateways/portals

They add up to 23 in total. For each of them we provide a short description on content, topic, date of establishment and page views.

The various experiences documented here show that developing water portals costs more time and resources than usually planned.

It would be useful to add web page views to the gateways/portals selected for this review.

People doing searches should be consulted about their views on the need of a portal. It should be explored if a number of water organizations present on the water web are willing to do a combined effort on their sites and/or electronic newsletter asking question about this among their constituencies.

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Appendix 1 IRC selection of 'portals'

International:

1. Eco-Portal - The Environmental Sustainability Info Source
An Information Gateway Empowering the Environmental Movement.
Very much US oriented.
<http://www.eco-portal.com/Water/Organizations/>

The overview below shows the number of items per category on this site:

Water

Categories:

Drinking (23)	Rivers (37) new
Information (42)	Science and Research (23)
Lakes (18)	Threats (15)
Organizations (21)	What You Can Do (5)
Protection and Solutions (40)	Wildlife (12)
Regions and Countries (74) new	

Looks like a big search engine. "Contact us for assistance with you information technology needs in regard to ecological planning, management and advocacy. Experts in web development, database design and GIS mapping".

Established:

Topic: IWRM,

Page views:

2. IRC, Source, InterWATER and World Water Day web sites:

The IRC International Water and Sanitation Centre (established in 1968) web site (<http://www.irc.nl>) provides news and information (including advocacy/communication, publications, bibliographic database) on low-cost water supply and sanitation in developing countries. It has a number of topic sites. It also provides a starting point for the WSSCC related activities such as Source Water and Sanitation News service and the InterWATER guide to more than 650 organizations. The search engine (Atomz) provides access to all these related sites.

- Source Water and Sanitation News Service is a joint endeavour of the [IRC](#) International Water and Sanitation Centre Water Supply and Sanitation Collaborative Council ([WSSCC](#)). SOURCE brings a bi-weekly update of short news and a bi-monthly special features edition including news from the WSSCC and IRC.

- InterWATER offers contact information about organizations and networks in the water supply and sanitation sector related to developing countries. These organizations are able to provide additional information in various forms, including newsletters, reports and publications, technical expertise, products, training courses and Internet sources

- IRC DOC online database containing 15,000 bibliographical entries on developing country water, sanitation and hygiene documents, books, periodicals, videos etc..
- the www.worldwaterday.org site maintained by IRC contains information on one topic per year that is selected by the UN.

On all these sites and pages comments and sometimes events can be added.

Dissemination of IRC information; subscription to Source. "News and information, advice, research and training, on low-cost water supply and sanitation in developing countries"

Established: Jun 97

Topic: Water; Sanitation; Hygiene

Page views: 790,000 (2002)

3 Sanitation Connection

<http://www.sanicon.net/>

Sanitation Connection is an Internet-based resource that gives access to accurate, reliable and up-to-date information on technologies, institutions and financing of sanitation systems around the world. Institutions of international standing contribute to the information base by providing and maintaining a topic of their specialization.

The site is structured around the following themes:

[Policies and Strategies](#) [Urban](#)

[Finance and Economics](#) [Rural](#)

[Technology](#) [Coastal Settlements](#)

[Health and Social](#)

[Environment](#)

Basically a showcase for the organization.

"It is a World Wide Web-based resource intended to facilitate access to information on sanitation".

Established: Jan 2001

Topic: Sanitation; Hygiene

Page views:

4 Water Web Consortium

[WaterWeb Consortium](#) - promotes the sharing of information concerning water and the earth's environment.

<http://www.waterweb.org>

Its focus is mainly on water in USA and Latin America. In April 2002 it received funds from UNESCO (IHP/WWAP) to produce a Water of the Americas portal that was launched at the 3rd WWF in Japan in March 2003

Basically a showcase for the organization.

"WaterWeb's goals are to advance water related issues, promote the use of quality information, and share information with water use stakeholders and decision makers"

Established:

Topic: IWRM

Page views:

5 Development Gateway 2002: [Water Resources Management](http://www.developmentgateway.org/node/130676/)

<http://www.developmentgateway.org/node/130676/>

In early 2002 the independent Development Gateway Foundation took off (with US\$ 52 million funding)

Guide is Karin Kemper, who works with some advisors and two editors.

Cooperating Organizations for Water Resources Management are: [FAO - Food and Agriculture Organization](#), Global Water Partnership.

Is interactive, after subscribing and password (that many people usually forget)

"Good reasons for registering, Add knowledge, Receive tender alerts, Receive e-mail alerts, Receive our e-newsletter" Unquote. Some user commenting is possible.

"The Development Gateway is an interactive portal for information and knowledge sharing on sustainable development and poverty reduction. The Gateway offers: ? AiDA - the most comprehensive database of development projects ? dgMarket - an international procurement marketplace ? knowledge sharing on key development topics ? and much more... "

Established: 2002

Topic: IWRM

Page views:

6 The Water Page

Len Abrams of Water Policy International has established this new page which incorporates the African Water Page. The Water Page will have a broader international approach whilst still featuring development issues. Topics include: water in developing countries, water policy and law, international water law, water in the UK, groundwater, water-related disasters, climate change, water conflicts, private sector engagement, and water facts (for school projects). URL: <http://www.thewaterpage.com>

Basically a showcase for promotion.

Realistic in outreach (see second quote).

Quote "The Water Page is an independent initiative dedicated to the promotion of sustainable water resources management and use. A particular emphasis is placed on the development, utilisation and protection of water in Africa and other developing regions." Unquote. Quote "As the size of The Water Page grows and the number of features, sections and articles on the page increases, it is becoming increasingly difficult to see what is available and to find the resources you need. Three methods are suggested:

a) Perhaps the easiest method is to use the Search Facility (it is in the top right-hand corner of each page).

b) Browse through the past and present features below;

c) Use the Site Map. "

Established: 1999?

Topic: IWRM

Page views:

7. Watershed Window : resources for developing countries' watershed management

Web site hosted by the Michigan State University, in collaboration with the World Bank's Bank-Netherlands Water Partnership Program. It disseminates information and literature on watershed management in developing countries and aims to create a global community of watershed practitioners and scholars. Main emphasis is on the social, institutional and policy aspects of watershed management and development.

Resources for developing countries' watershed management.

"The purpose of this site is to create a community of scholars and practitioners of watershed development around the world, focusing particularly on watershed issues in developing countries. Specific activities will include providing web-based information on watershed programs, projects, literature, and providing a forum for sharing information, experiences, and innovations."

Web address: <http://www.watershedwindow.org/>

Topic:

Water resources management, reuse of water

Established: Mar 2003

Page views:

8. BBC Water Portal - The Water Debate,

http://news.bbc.co.uk/2/hi/in_depth/world/2003/world_forum/water/default.stm. This is not only an impressive interactive site for the general public with video, audio, expert views, fact files and water stories. It also provides fun options such as online opinion polls and a water quiz.

However, it does not contain an option for online collaboration.

Topic: Water general

Established: early June 2003

Page views:

Other languages:

9. Aqu@docINTER

International and multilingual portal for water managers, a network of partners in the International Network of Basin Organizations (INBO). Mediterranean countries, Europe (France, Hungary, Poland, Czech Republic, Romania), Latin America (Brazil, Colombia, Mexico). Developed and maintained by the International Office for Water (Oieau), France <http://www.aquadocinter.org>

Basically a search engine for information and organizations / people. Quote "AQUADOC-INTER" is a worldwide system of apportioned and approved information on know-how in the water sector." Unquote.

Strong points:

chapter: WHO ARE THE USERS? WHAT DOES IT CONTAIN?

Established: 2001

Topic: IWRM

Page views:

10. H2Onet

http://www.h2o.net/partners/services/francais/s_frame.htm

Basically a service provider showcase.

Quote "Les services peuvent varier de la mise en place des projets dans le domaine de l'assainissement jusqu'à la création de sites internet, en passant par la définition et la réalisation de contenus rédactionnels. Carrefour de l'eau et des nouvelles technologies, h2o Asso peut vous mettre en contact avec des spécialistes et instituts de recherche." Unquote

Established:

Topic: IWRM

Page views:

11. Réseau Francophone sur l'Eau et l'Assainissement (RéFEA)

This site is the result of collaborative effort between the Office International de l'Eau (OIEau), the Centre Régional pour l'Eau Potable et l'Assainissement à faible coût (CREPA), the Biosphère d'Environnement Canada and Programme Solidarité Eau (pS-Eau). It is a French-language resource for low-cost water supply and sanitation in developing countries. It includes sections on appropriate technologies; water-related organizations; background information on water supply; project management; aquatic ecosystems; and case studies. URL: <http://www.oieau.fr/ReFEA> Showcase organization and project repository. Quote "La communauté francophone très impliquée dans ce secteur sur tous les continents encourage et promeut les échanges d'informations. Traduction concrète de cette orientation stratégique, l'animation de ce site est destinée mieux faire connaître et à diffuser l'usage de place de technologies à faible coût en eau et assainissement." Unquote

Established:

Topic: IWRM

Page views:

12. Saneamento Básico, o SITE

This new Brazilian water and sanitation industry portal, provides product information, vacancies, daily news, studies, events, links, a chat facility, online bookstore and a water and sanitation directory. URL: <http://www.saneamentobasico.com.br>

" This new Brazilian water and sanitation industry portal, provides product information, vacancies, daily news, studies, events, links, a chat facility, online bookstore and a water and sanitation directory. "

Established:

Topic: IWRM

Page views:

One organization focal 'portals'

13. FAO Water Portals

FAO/AGL - Portals - Portals of the Land and Water Development Division

The FAO - Water Resources, Development and Management Service has set up a number of portals including one on Water Information -

<http://www.fao.org/waicent/faoinfo/agricult/agl/aglw/prtwat.htm> - which gives access to relevant reports and official FAO publications. There is also a portal dedicated to Irrigation -

<http://www.fao.org/waicent/faoinfo/agricult/agl/aglw/prtirrig.htm>.

Basically document repository

Quote "The Land and Water Development Division is concerned with the development of technology, strategy and policy, and the provision of advisory and technical services to FAO Members to ensure a more productive and efficient use of land and water resources and plant nutrients in order to meet present and future food and agriculture demands on a sustainable basis." Unquote

Established: [SOURCE Weekly 15-16, 1 May 2000](#)

Topic: IWRM; irrigation

Page views:

14. UNESCO Water Portal

Water Portal of UNESCO - water information and links from the United Nations' Education Scientific and Cultural Organization (UNESCO)

The site provides links to the current UNESCO programmes IHP and WWAP on freshwater and will serve as an interactive point for sharing, browsing and searching websites of water-related organizations, government bodies and NGOs, including a range of categories such as water links, water events, learning modules and other on-line resources.

URL; <http://www.unesco.org/water/>

Basically search engine, further a structure and system for other organizations to copy or fit in. May grow into a collaborative portal. Quote "The UNESCO Water Portal is intended to enhance access to information related to freshwater available on the World Wide Web. The site provides links to the current UNESCO and UNESCO-led programmes on freshwater and will serve as an interactive point for sharing, browsing and searching websites of water-related organizations, government bodies and NGOs, including a range of categories such as water links, water events, learning modules and other on-line resources. Surfers can also add or modify links to help maintain an accurate online resource. All water managers are invited to participate by providing information on activities, useful links, news and content which they wish to share with others and generally make more widely available. " Unquote

See also: UNESCO-IHP (International Hydrological Programme)

See also: UNESCO-WWAP (World Water Assessment Programme)

The site provides links to the current UNESCO programmes on freshwater: IHP (International Hydrological Programme) and WWAP (World Water Assessment Programme), and will serve as an interactive point for sharing, browsing and searching websites of water-related organizations, government bodies and NGOs, including a range of categories such as water links, water events, learning modules and other on-line resources.

Established: [SOURCE Weekly 15, 15 April 2002](#)

Topic: IWRM

Page views:

15. Water portal of the Americas

UNESCO-WWAP (World Water Assessment Programme)

Proto-type for international cooperation, launched at the third World Water Forum in Japan, March 2003. This regional portal provides information on legal documents, publications, organizations and events. You can access these directly or via the geographical coverage from global to local. It also provides quality guidelines (for peer reviewing) and meta data tables.

Web address: <http://www.WaterPortal-Americas.org>

This will become part of the UNESCO WWAP/Waterweb global Water Portal, as was announced in Japan.

A combination of a gateway (entryway or portal) and a community of practice. Basically search engine, further a structure and system for other organizations to copy or fit in. May grow into a collaborative portal.

Quote: "The goal is to provide both an entryway (portal) to water information and to create a water information network, community, and resource that will provide qualified, trusted, and verifiable information and contacts." Unquote

Topic: IWRM, hydrological data, water cycle
Established: part of prototype in March 2003
Page views:

16. UNEP.Net Freshwater Portal

This new web site provides information resources ranging from documents, to databases, to maps and graphics, covering the critical freshwater issues. There are key issue theme pages on: water scarcity, irrigated agriculture, water and sanitation (at present the database includes 219 items on this topic), water quality, groundwater, transboundary water management, water and ecosystems, floods and droughts, and Urban water. The site is maintained by UNEP/GRID-Arendal in Norway, one of the United Nations Environment Programme's (UNEP) partner offices dealing with environmental information systems and state of the environment reporting.
URL: <http://freshwater.unep.net>

Basically search engine and collection of communities of practice.

Funny: Constant user survey: Was this page useful to you? Yes A little No.

In carrying out its role as the lead global environment agency, UNEP acknowledges and recognizes that there are numerous specialized environmental institutions with a wealth of scientific information that they currently distribute to specific target audiences through the Web and other information distribution channels. It is this reality that led UNEP to initiate the UNEP.Net partnership in September 2000, so as to bring these specialized scientific environment communities together under one umbrella.

Contact: Aake Bjoerke, bjoerke@grida.no

Established:

Topic: IWRM

Page views:

17. The [Global Water Partnership \(GWP\)](#) aims to support high quality, integrated activities at country-level and, at the international level, to bring a global learning perspective to these activities. A Technical Advisory Committee is charged with ensuring that programmes follow the principles agreed at the Dublin and Rio conferences in 1992. The GWP has close links with the World Water Council, drawing overall policy-guidance from the WWC and translating it into specific actions at country level.

Main part of the site is the water forum, providing links to various databases, libraries and other websites, discussion groups. The GWP website further offers information about GWP's activities and projects, news, events; publications.

Showcase for global partnership

Established: 1997

Topic: IWRM

Page views:

18. WatsanWeb

Developed by SKAT, this site provides an overview of Internet links on water and sanitation in developing countries. It has sections on: online magazines and newsletters; online publications;

technologies; events; training courses; networks; databases; discussion lists; and sector organizations. URL: http://www.skat.ch/ws/link/watsan/ww_index.htm

"WatsanWeb is an internet portal to the water and sanitation sector, with a focus on developing countries. It provides you with carefully selected links from disaster relief to development cooperation. Its topical structure enables you to find the information you are looking for quickly and easily."

Established:

Topic: IWRM

Page views:

Commercial portals:

19. WaterTechOnline - US based

contains breaking daily news stories about the water and wastewater treatment industry, as well as industry bulletin boards, searchable supplier directories and article archives, industry opinion polls, new product announcements and other industry-specific information.

The Water Technology B2B Trade Group uses site traffic measurement software by WebTrends, Portland, OR, a market leader in web analytics and e-business intelligence.

WaterTech e-News Daily is an "opt-in" daily news service e-mailed to more than 14,000 subscribers worldwide. It contains the headlines for the daily stories posted to the WaterTechOnline website. Those who wish to subscribe to it can do so at the Subscriber Services Center at WaterTechOnline.

http://www.watertechonline.com/news.asp?mode=4&N_ID=31857)

Established:

Topic: commercial content for water and wastewater treatment

Page views: User visits 1.5 million in 2001.

The website also hosted almost 145,000 user visits in May 2002 by more than 49,000 individual (unique) visitors, of which about 12,000 returned at least once during the month.

20. The Utility Connection

- Wastewater International Links

http://www.utilityconnection.com/page4b.html#WWW_int_util

Includes web links to:

International Utilities

Regulation

International Information and Associations

Includes IRC, WSSCC and InterWATER

Established:

Topic: wastewater

Page views:

21 Waternunc.com The Network for the Water Business. The Water Economy page

<http://www.waternunc.com/gb/indexgb.htm>

Contains news, projects, business-to-business, resources and links from water companies and the [European Commission DG](#) in five languages. Is maintained in France and updated only irregularly.

Established: 1998

Topic: Fresh water, business

Page views:

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http://www.usask.ca/web_project/uwebd/portals_faq.html

Source Weekly, <http://www.irc.nl/source>

Source Weekly, New on the Net, since May 2002, <http://www.irc.nl/source/section.php/12>