The RAIN Network - Regional Public Internet Broadcasting

Studies in the application of Data Visualization and audio/video components as key elements for effective use of Internet based electronic publications at the regional and community level

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Our study will emphasize the use of GIS, audio and video based Internet publishing tools as key elements in the expansion of the scope and reach of the Internet as a public information vehicle.

The global Internet has made possible the creation of a digital library which permits scientific, technical and humanities publications to exist within a global environment, with peer review and public access possible worldwide. What was once only a memory of the great library at Alexandria and all that it represented is now a reality on the global network.

The establishment of internationally accepted standards for publication in, and access to, this global digital Information resource, is under discussion and review in most countries currently working through the complex issues of nation wide Internet access for their people.

As Director of a Non-Government Organization responsible for Pacific Rim technology applications in the areas of distance education and telemedicine I continually have to confront issues of standards in delivery, methodologies for effective distribution, and use of resources via the Internet. The Regional Alliance for Information Networking is one of the oldest non-commercial public Internet broadcasting networks in the United States and has worked with the National Science Foundation, the US Department of Agriculture, the US Department of Commerce (NOAA) and the Department of Education, to develop models of Internet delivered public information which are easily, and usefully, accessible by many sectors of the public. One of our starting points has been to go into a community, create data access to as broad a section of the community as possible, and then measure what kinds [of effects this has].

Assessment and review of electronic publications, the actual usefulness and impact on daily life, resulting from open public access to online information, is essential at this stage in our development of an International Information Infrastructure. Assumptions of universal access, with regard to electronic media, cannot be made. Many Countries are still in the process of working out the complex issues of making electronic resources, such as the Internet, available to their people.

My current work with US Federal agencies such as the USDA Rural Utilities Service, is in many respects a direct extension of work done in 1995-96, through the US National Science Foundation. At that time we sought to create demonstration models of rural or developing area deployment of electronic information via the Internet. We experienced success in many areas during the early part of our work, developing models of regional or 'community' targeted electronic publication that effectively bridged both literacy and 'technology' barriers, opening up a full range of electronic materials to communities that had previously had no contact with the Internet world. Testing the effective distribution of electronic resources, and our subsequent ability to have local populations actually use those resources, was at the heart

of our project. That last issue, getting local populations to actually and effectively use electronic materials (online publications having to do with telemedicine, distance learning, land and water management, economic development, etc.) proved to be one of the most crucial, and least studied areas in the vast complex of standards and methodologies evolving around implementation of Internet based electronic publishing worldwide.

A recent paper I delivered to the US National Research Council's CODATA committee addressed the issues of effective distribution of electronic data in developing and rural areas. In this instance some unusual definitions were used. Profiles for populations being served, as far as literacy, receptiveness to new technology and economic standards, between 'inner city' or very large urban areas demonstrated remarkable similarity with 'rural' communities served. Methodologies for successful delivery of essential electronic publications such as health, education, economic and community development resources, via the Internet, must be established. Solutions which bridge certain barriers to successful public use of electronic publishing, such as the application of audio, video, data imaging (GIS) and vrml, must now be designed into scientific, academic and public electronic publications. Implementation of global standards for both browsing and searching these resources must come into play now as well. The necessity for more clearly defined standards with regard to international distribution of information electronically, is essential. International standards regarding search and browse, as well as cataloging of electronic publications, should be put in place now and is one of the goals of our distance education research. The focus of my paper to the NRC CODATA group was the importance of a new Metadata element - 'The Public'. The end user who receives an electronic publication has become a significant, interactive, virtually dynamic element within the publication. Online publication permits a type of interactively not possible in traditional, print based, publishing models. Standards for gathering, accessing and cataloging that new data are essential as the "Community" level of information on the Internet grows.

Our goal has been to develop a literature that can draw on real case examples which demonstrate changes in the way we go about publishing information, for education, telemedicine, government or for 'community' and 'regional' economic development and human services.

Our work also has taken us into the area of image based electronic publication. Working with GIS data imaging systems to create a new level of access to scientific literature dealing with land, water, energy and transportation management as well as literature published on historic and cultural issues has proven to be essential to fully utilize the Internet. Online data imaging tools such as GIS are changing the way we approach both electronic publishing, from design and cataloging to content and application.

Going a step beyond the data imaging tools, such as GIS, we have begun work with the application of Internet based audio and video, as key elements within a publication provide a means to bridge literacy barriers as well as an entirely new level of data presentation.

We will review two areas of our current work with electronic publishing. First we will review our efforts to create 'community' or 'regionally' effective electronic publications that work via the Internet but evolve as dynamic, interactive components of the "community" being published to, whether the community in question is a group of scientists or a local neighborhood..

Second, we will review our work with GIS and related data imaging tools , demonstrating applications which dramatically expand the scope and effective application of online or electronic publications. Working hand in hand with the application of data imaging tools such as GIS as a key element within an electronic publication, we will also review our current work with the USDA and California Department of Education directed at the study of the use of Internet delivered audio and video as core elements within an electronic publication.