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The Internet's Influence on Environmental Awareness

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Abstract

This paper will examine the influence that the mass media have had on environmentalism issues since the early 1960s, and how the convergence of media on the Internet has changed the way environmental topics are communicated to and perceived by the public. For the purpose of this paper, mass media refers to all media technologies which are used for mass communication including radio, television, newspapers, the Internet, and films. Using BeGreenWeb, a web site about environmentalism, as a case study, this paper will examine the role of media in environmental awareness and how the Internet can be used effectively to inform the public about environmental issues.

Introduction

In the past decade, sustainability and environmental awareness have gained increased media attention as public figures such as former Vice President Al Gore and Charles, Prince of Wales have brought environmental issues into the limelight. Due to increasing media coverage, our society is becoming more aware of the effect that our activities have on the health of the environment. Creating and maintaining a more sustainable environment is imperative to the survival of future generations.

I work for the U.S. Army Corps of Engineers Chicago District, where I am part of the office eco-committee. Earlier this year, the group was discussing what the best strategy would be for sharing information and tips with the district. Since printing and hanging flyers would have been a waste of paper and our district only sends out a newsletter a couple of times a year, I suggested that we create a web site. It wouldn't use any extra resources and our entire district, including area offices, would be able to view it. We could update it instantly and frequently. This gave me the idea for creating my own web site to illustrate that the Internet can be the best source for distributing environmental information.

I built a web site called BeGreenWeb with a goal of promoting green living, sustainability, and environmental awareness. The web site contains blog posts with spotlighted articles and videos, a list of shopping web sites that carry eco-friendly products, background information about sustainability and climate change, news feeds, a large list of links to other web sites with an environmental theme, widgets including a recycling center search, green DIY projects, a Twitter feed, and a Facebook Page that gives visitors another way to participate. Due to limited time and resources, BeGreenWeb is not a news site with original articles. Since there are many great web sites on the Internet that are dedicated to creating new content about environmentalism, BeGreenWeb acts more as an aggregator by posting content from several different web sites in one place.

In the documentary *An Inconvenient Truth* (2006), Al Gore claims that our overuse of natural resources is the primary cause of climate change. There is an evident correlation between higher levels of carbon dioxide emissions, which Gore argues is the main cause of climate change, and the economic development of society. The Intergovernmental Panel on Climate Change (IPCC) first issued a report about the effect of green house gas emissions on the

environment in 1990. There was little response to each successive warning as the level of risk continued to rise. Carbon dioxide is created by burning fuels such as oil, natural gas, and diesel. Some carbon dioxide is released into the air naturally, but when we drive automobiles, heat buildings, and use electricity, the level of emissions is much higher. In order to maintain our ever-improving lifestyles, we've been increasingly careless about our consumption of precious resources such as fossil fuels and clean water. The problems that are caused by high levels of air pollution and human congestion have been disregarded for so long that some of the damage is irreversible. IPCC's 2007 evaluation made it clear that there would be catastrophic consequences for our ecosystems, and life as we know it, if we do not reduce our GHG emissions (Boyce and Lewis 4).

In order to get people to understand and care about a social problem, you must first get their attention. As the public tends to search the Internet for topics they already have an interest in, first introducing a social issue through other media formats, such as television or films, can often be a good strategy in gaining support for a movement such as environmentalism. Since movies are a very popular medium for entertainment, it is not a surprise that films such as *The Day After Tomorrow* and *An Inconvenient Truth* were able to help raise awareness of climate change. Lowe et al. found that the film *The Day After Tomorrow* (2004) had an effect on filmgoers' attitudes, causing many of them to be more concerned about climate change immediately after seeing the movie (438). In the same year, the documentary based on Al Gore's global warming campaign, *An Inconvenient Truth* (2006), was released and eventually won an Oscar resulting in an international rise in environmental awareness. A 2007 survey conducted by The Nielson Company claimed that 89 percent of people who had viewed the film said that it made them more aware of global warming and 75 percent of viewers said that they

had changed some of their habits in result of their new awareness (Butts). Personally, watching

An Inconvenient Truth was the origin of my own interest in climate change and ultimately led me

to create BeGreenWeb so I could help spread awareness of a very important issue.

The promotion of environmental awareness is essential, and citizens have a responsibility

to take part in improving the environment's sustainability for the future. A sustainable

environment means harmony between humans and nature while not jeopardizing the lives and

opportunities of future generations. A focus on environmental sustainability has been

increasingly present in our media. According to Butler and Pidgeon, media's role is "to deliver

scientific information in ways necessary to allow citizens to make informed choices" (52).

Methods for delivering news have multiplied and evolved, originating with print, then adding

radio, broadcast television, cable, and finally the Internet. The Internet has converged traditional

media with new media, which has produced an eclectic and multifaceted resource for consumers

to get news.

Many environmental web sites have been launched and a variety of environmental issues

have been popular topics on blogs, Twitter, and Facebook. The U.S. Environmental Protection

Agency dedicates a portion of its web site to sustainability, which it updates frequently. In

addition, web sites such as TreeHugger.com, SaveOurEnvironment.org, Humanityy.com, and

Environment911.org are completely devoted to environmental awareness. It is a global issue

that has gained a lot of attention and its advocates aim to educate people on how they can help.

With much of traditional and new media converged online, the Internet is often the best resource

for an infinite amount of content about environmentalism. In addition, it has a huge reach across

the world and allows participation and discussion. These features make the use of web sites and

online communication tools the most powerful approach to promoting environmental awareness and advocating change.

  The Internet is an exceptional tool for communicating and distributing information, and environmentalists have taken advantage of its usefulness in reviewing literature, raising questions, and discussing the best ways to work towards social change.

    According to Laurie Kutner:

    Environmental activist groups are successfully using the Internet

    and electronic communication technologies as mechanisms

    through which to access, use, create, and disseminate information.

    Internet-based technologies are impacting the information

    functions of grassroots activist movements as groups develop

    voices that expand their traditional social, political, and geographic

    boundaries. (1)

As an individual interested in the environmental movement, I can also use the Internet to access, and use information, and BeGreenWeb can help me create and disseminate content.

  BeGreenWeb is a collection of information, web sites, articles, videos, ideas, and tools about environmentalism. When learning about a new topic, such as environmental issues, the ability to navigate from page to page via links, watch embedded videos, and view content seconds after it is published provides people with access to more information than they could ever get from using just one type of media alone. The Internet also allows discussion about a subject in a way that was never possible before. People from all over the world can participate in a conversation and exchange ideas. Through BeGreenWeb, I can share my own thoughts and opinions with a potentially unlimited audience and encourages dialogue via comments and social

media. New voices are being heard, and many advocacy groups are playing a larger part in promoting environmental awareness due to technologies such as blogs, online forums, social media, podcasts, and streaming video. Thirty years ago, these technologies did not exist and the public had to rely heavily on newspapers and television for information about the environment, which was limited and subject to bias and inaccuracies. The Internet has not alleviated these problems, but it has given the public an opportunity to do their own research by means of a huge wealth of information that is accessible to more people. Throughout this paper I will describe several Internet tools and technologies and how they are used on BeGreenWeb to promote sustainability and green living. While the Internet has many positive aspects, I will also point out a few potential drawbacks that are important to be aware of.

BeGreenWeb

In order to recognize how web sites such as BeGreenWeb can be effective for promoting environmentalism, it is necessary to understand what communication methods were used in the past and how the Internet has built on those strategies. The Internet has provided the world with many new tools for sharing information that were not available when environmental issues first became present in the media. However, the convergence of media has allowed traditional media to be consumed in conjunction with new media. BeGreenWeb employs many different media that have been used to teach and promote environmentalism for years, which are now available digitally, including written articles, video, and radio.

According to Victor Scheffer, environmentalism began with claims from scientists and a few concerned individuals, which led to the formation of pressure groups and organizations. Pressure groups, which are groups that try to influence public policy in the interest of their

particular cause, played a large role in initially turning the government's attention to environmental issues. Groups that formed in the 1970s actively sought to use the mass media in order to influence the political arena and public attitudes. Early environmental organizations had to first engage in fact finding and then publicize their beliefs outside the group with promotion and education (113). Anders Hansen claims that the flow of concern for environmental issues began with these special interest groups, which aimed to educate the public by putting out independent publications. Eventually, general interest magazines began publishing articles about environmental issues, followed by television news programs and widely circulated newspapers. Coverage on television and in newspapers began in the 1960s and initially peaked around 1970, then fell back and reached a plateau in the 1980s. Interest in the topic subsided until the mid-1990s, when it quickly regained international attention and coverage has been on the rise ever since. Before the World Wide Web made it possible for environmental organizations to create web sites and online forums, they had to use more traditional methods to get their message heard. In the early days of environmentalism, the public had few sources other than the mass media to get information and television served as the primary source for most Americans (Hansen 445-447).

Even with the rapid increase of Internet usage, television has remained one of the most widely-used media technologies. However, a convergence of media is occurring and television and Internet will no longer have to compete for audiences. We are entering an era where media will be everywhere and we will use all types of media in relation to each other. According to Henry Jenkins, media convergence is the collision of "old media," including print and broadcasting, with the "new media" associated with digital publishing (2). The Internet doesn't replace old technologies. Instead, it links many technologies together to use all at once.

BeGreenWeb contains online articles, similar to what would be found in a newspaper or magazine. The web site also embeds short videos, which is an example of how television and the Internet are merging into one. And while BeGreenWeb does not currently have an original podcast, my web site links to radio shows that can be streamed over the Internet or downloaded onto a computer or portable device.

I chose to make BeGreenWeb an aggregation-based web site because I wanted to provide visitors with news and stories on a near daily basis and I wasn't able to create my own content as often as I would have needed to. There are a huge number of great environmental web sites on the Internet that employ enough writers to have new articles every day. Many people do not know about all of these resources or have time to browse them each day for articles. So BeGreenWeb takes news, articles, and videos from a wide range of web sites and organizes it all in one place.

BeGreenWeb utilizes several Internet technologies and media. I'm currently using the blog to share articles, videos, and news clips from other web sites. However, I eventually will use it to write my own posts as well. Blogs are a great tool for many reasons that can help in promoting and discussing environmentalism. The ability for visitors to write comments on each post is key because it opens topics up for discussion and creates a forum where others can share their own insights, experiences, opinions and ideas. Hearing from readers can add a lot of good content to the site and benefit both the author of the post and everyone who reads the comments. Since BeGreenWeb is still a new web site, there are not many visitors and consequently not many comments. Jill Walker Rettberg says that "blogging is as much about reading other blogs as writing your own" (1). Based on my own experience with blogging, reading and commenting on other blogs and being part of a blogging community is the fastest way to get readers and

comments on your own blog. Thus, once I begin to write original articles and become more immersed in the online environmental community, I hope that people will start commenting on my posts so that BeGreenWeb can benefit from the dialogue that blog comments can produce.

The Internet is full of blogs about "being green" and sustaining a healthy environment written by both experts and concerned citizens. The concept of blogging began to take off in 1999 when free and easy platforms for blogging were made available to the public. Open Diary, LiveJournal, and Blogger.com were the first blog hosting web sites to be launched and thousands of people took advantage of these free tools to write about their thoughts, ideas and opinions. According to Jenna Wortham, blogs gave people a voice that they didn't have before ("10 Years of Blogs"). "Instead of mass communication from a few producers to large, mostly passive audiences, blogs support a dense network of small audiences and many producers" (Rettberg 57). Environmentalists were able to publish their findings, thoughts, and concerns instantly and develop a following of people who were also interested in the subject and could provide feedback and ask questions in the comment section of each article.

BeGreenWeb's blog is set up in reverse chronological order so visitors to the web site will always see the most recent posts first. This is a key characteristic of blogs and if they are updated often, visitors will always have access to fairly recent information. Ideally, frequent updates and current information will keep blog readers interested so that they will come back. Regularly adding new content to a web site is important for maintaining readership. In addition, if blog posts are able to generate new conversation, the web site will be a more interactive place for individuals to visit and learn about the subject matter. A great feature of most blogging software is the creation of a permanent link for each blog post. This is a useful feature because it allows others to link directly to a post that they find enjoyable or useful. Readers can also

submit a blog post to share sites such as Reddit or Digg using its permanent link, which is a great way to generate traffic to a web site.

One of the main reasons I decided to incorporate a blog into BeGreenWeb is because it gives me the ability to tag each entry with a few keywords, or tags, describing what the post is about. If I share an article about recycling, I will tag it accordingly and it will be archived in the recycling category. I have created tags for several different topics such as recycling, computers, DIY, animals, energy, etc. and all of my blog posts will be put in the relevant categories. This will be useful for visitors who are looking for information on one particular topic. If they have never been to my web site before, then they haven't seen all of the articles that I've shared in the past. Instead of having to skim over many posts to find a topic they are interested in, they can just click on the "recycling" tag on the sidebar and the blog will present all of the entries with that tag. Visitors can also look for specific topics or keywords using the search function, located at the top of the side bar, which searches blog posts, tags, pages, and comments.

BeGreenWeb has an "About" page that gives visitors a little information about the web site, me, and why I created it. I also posted a few paragraphs about the background of this project that describe the importance of having access to environmental information and why the Internet is one of the best ways to distribute it. The "About" page is important to BeGreenWeb because it allows visitors to know who the information is coming from. I make it clear on the page that I am not a scientist or expert in environmental issues. Instead, I explain that I am a student who has a profound interest in the environment and what can be done to combat climate change. Sharing this information about who I am with my visitors will hopefully make them feel comfortable with getting information from BeGreenWeb and know that I will not post any information that cannot be backed up with credible sources.

The page called "Why BeGreen?" includes a short introduction to what the term "being green" means and why it is important to be environmentally conscious. Also included in this section are two subpages about climate change and active campaigns. The section has information about Keep America Beautiful, a volunteer-based organization founded in 1953 that focuses on engaging individuals to take greater responsibility for improving the environment. I've included this information because of the organization's important contributions to the environmental movement. In 1960, Keep America Beautiful partnered with the Ad Council to create a campaign that illustrated how litter and pollution were hurting the environment. Their message was that it is the responsibility of every American to help protect the Earth. They also had a goal of fighting the negative attitudes and behaviors that lead to pollution. The first anti-litter campaign featured "Suzy Spotless," a little girl who scolded her father for littering by saying "Every litter bit hurts." The ad went on to show streets and parks covered in trash and then gave tips on how to avoid littering. Shortly after, in 1970, Keep America Beautiful began offering free brochures and more than 100,000 copies were requested in the first few months, which suggested a new public interest in pollution prevention.

Many people consider the first Earth Day, which took place on April 22nd, 1970, to be the birth of the modern environmental movement. Earlier that year, U.S. Senator Gaylord Nelson announced his idea for a "national teach-in on the environment" to the media and assembled a staff of 85 people to help him promote events across the nation. As a result, 20 million Americans took to the streets on April 22nd to demonstrate for a sustainable environment in huge rallies across the country. The first Earth Day led to the creation of the United States Environmental Protection Agency (EPA) and the passage of the Clean Air, Clean Water,

Endangered Species, Environmental Education, and National Environmental Policy Acts (Earth

Day Network).

On Earth Day 1971, Keep America Beautiful put out another PSA which featured a

Native American named Chief Iron Eyes Cody who cried when he saw what pollution had done

to the land. The PSA, which is often referred to as "The Crying Indian," won two Clio awards

and was named one of the top 100 ad campaigns of the 20th Century ("Ad Council"). Keep

America Beautiful's PSAs, which aired on local television stations all over America, were

among the first video clips about environmentalism. Video and broadcast quality has greatly

improved in the past forty years, but despite the old format of the PSAs, the message in Keep

America Beautiful's campaigns is still very relevant. So while these PSAs have not aired on

television for decades, they can be viewed online at any time and used for promoting

environmental awareness. I embedded both PSAs into BeGreenWeb's "Campaigns and PSAs"

page because of their historical significance and because they contain a valuable message that is

still appropriate for new generations. I also list several active campaigns that visitors can

participate in including Energy Star's Change a Light campaign and the EPA's Plug-in to

Ecycling campaign. For those who are new to the concept of being green, these campaigns are

an easy way to get started.

The "Climate Change" page contains two embedded videos that provide a crash course

about climate change and the risks. I'm hesitant to add more to this page because I think that my

visitors should learn the facts from scientific sources such as University Corporation for

Atmospheric Research (UCAR) and the U.S. Environmental Protection Agency. I would prefer

that visitors to my web site learn about climate change from a credible source, and then use

BeGreenWeb to discover ways that they can be green. For this reason, I link to the UCAR's

FAQ on climate change, which is extremely detailed and informative.

The "How to BeGreen" page was created to share some simple ways for people to live

greener. The list is abbreviated, but many more green tips can be found in the articles that I

share on the blog. The section also has two subpages, "BuyGreen" and "DIY Projects." The

"BuyGreen" page features a list of online stores that are completely dedicated to selling green

products. I've chosen not to link to specific products because I do not want to make it appear as

if I am advertising. The do-it-yourself page lists simple projects that can be done at home and

allow people to reuse items that would have otherwise been thrown out. I update this list when I

come across new projects and am in the process of doing each project myself so that I can post

the steps and photos on BeGreenWeb's blog.

I want BeGreenWeb to be a place where people can go for environmental news and I am

working on embedding RSS feeds into the site. Really Simple Syndication (RSS) is a simple

way for web sites to share headlines and stories from other sites. RSS is used to publish

frequently updated works, such as blog entries, news headlines, audio, and video, in a

standardized format. If an RSS feed is embedded into a web site, headlines about a certain

topic—gathered from all over the Internet—are shown in real time on the page. The news page I

on BeGreenWeb currently uses a Google Elements application, or widget, to show news for

specific key words. A web widget is an application that can be put on a web site, blog or social

profile and can quickly provide your visitors with specific information or additional

functionality.

There are several useful environmental widgets, including a recycling search so I created

a page for them. The widgets on BeGreenWeb provide visitors with atmospheric carbon dioxide

updates, allow visitors to search for recycling centers, and calculate the eco-savings of using

recycled paper and more. I do not have the skills to develop the type of web applications that I

use on my site, and it was only possible for me to include these features due to the open source

software. The Open Source movement began in the mid 1990s and has always relied on

volunteers to develop and adapt software created for building environmental information

systems. The development of new information services for the public requires money and

resources to implement and maintain, so in order to save costs, developers create software and

then give unrestricted access of the source code to users who will in turn provide constant

feedback and even revisions to the code. This reduces maintenance costs and allows developers

to provide access to environmental information for a low cost while providing open access to all.

One of the first open source software programs created for disseminating environmental

information was the application created by APNEE (Air Pollution Network for Early Warning

and Online Information Exchange in Europe), which used graphs and maps to show users data

from local monitoring stations. The application was originally created for the web accessed by a

computer, but a version for Web-enabled personal digital assistants was released shortly after.

The mobile version allowed users to obtain current environmental information in real time while

they were on the go (Bassoukos 5-8).

In the 1990s, digital mobile communication networks were set up to allow mobile devices

to access environmental info such as local air quality measurements for people with asthma,

water quality measurements of lakes and rivers for swimmers, and an updated report on current

depths of rivers and weather forecasts. These new mobile services allowed public authorities to

provide the public with current environmental information *(*Bassoukos 12). Today, as

smartphone usage continues to swell, more environmental applications are being released for

devices on the Android, Apple, and Blackberry operating systems for mobile phones. For example, Ecorio, available on Android phones, is an application that allows you to track your carbon footprint and learn ways to reduce it. Greencard is an application for Apple devices that lets you create and send a digital business card in order to avoid wasting paper. In addition to environmental mobile applications, all content on BeGreenWeb is viewable on most mobile phone Internet browsers. This function makes it possible for visitors to read articles and watch on my web site when they are not near a computer.

The "Links" page links to environmental discussion forums, podcasts, and many of the web sites where I get information and share articles from. The ability to link to other pages is a useful feature of a web site. After a visitor is done looking at my site, they can easily continue their research on any of the web sites linked from this page and they will be able to find new and interesting reads at each one of them. In addition, the "Links" page allows me to point visitors to resources that are not available on my own web site, such as a message board and podcasts.

Environmentalists can use social media tools such as Twitter, a microblogging service, to instantly post and read short messages that can be seen by everyone who subscribes to their updates. Users can categorize each tweet by adding a hash tag followed by the topic (#topic), making it simple for others to search for tweets that are of interest to them. A popular hash tag for tweets about environmental sustainability is #BeGreen. According to Cliff Atkinson, Twitter is all about starting a bigger conversation. While he focuses more on using the platform as a backchannel for presentations, the idea remains the same. By using hash tags and retweeting others' tweets, Twitter allows a user to communicate with a much larger audience that all want to talk about the same topic.

I created a Twitter account for BeGreenWeb using the username @BeGreenWebcom. I include the hash tag, #BeGreen, in most of my tweets. While Twitter is very good for sharing news, information, and articles, I find it most useful for staying up-to-date on environmental topics. Many of the feeds that I follow are credible news sources such as the *New York Times* and CNN who have created Twitter accounts exclusively for environmental news. I am able to get relevant news and information quickly by subscribing to their tweets, as well as discover interesting articles that they share with followers. I then re-tweet some of the articles and news clips to BeGreenWebcom's followers.

I created a Facebook page in addition to BeGreenWeb in order to have increased visibility and encourage more interaction with the green community. BeGreenWeb's Facebook page has information and a link back to the web site and I frequently share news articles and videos on the Page's Wall, which automatically shows up in the News Feed of anyone who has "Liked" the Page. Facebook is a social networking web site that first launched in February 2004 and currently has more than 600 million users. During sign-up, Facebook prompts users to create a personal profile. Once a person has established a profile, they can add other users as friends with whom they can send messages, chat, share photos, invite to events, play games, and more. Each user has a "Wall" where they can post updates, share links, and upload photos and videos. Users can also post on their friends' walls, which, generates a lot of communication and interactivity.

A more recent feature added to Facebook is the ability to create a "Page" that represents a public figure, business, product, or community. Once a Page is established, it will have a profile and "Wall," similar to a user profile, but people cannot add a Page as a friend. Instead, Facebook users can "Like" a Page, which will then subscribe them to that Page's updates. The News Feed

is also an important element of Facebook. When a user logs on, they are taken to their News

Feed, which is a real-time feed of their friends' and Pages' updates. This allows people to see

whenever their friends change their status, share a link, post a photo, "Like" a page, and more.

I am using the BeGreenWeb Facebook Page to reach a larger audience. Since the web

site is still new, my audience is still minimal. Facebook allows me to share information with the

hundreds of people that I am personally connected with. Many of my Facebook friends "Liked"

the BeGreenWeb Facebook page and are now subscribed to my updates and everything I share.

It is likely that those people would have never visited the web site, so Facebook gives me another

way to reach them and spread environmental awareness.

I also use Facebook to interact with the green community by "Liking" other

environmental Facebook Pages. I can use Facebook "as BeGreenWeb" and comment on those

other Pages' articles and even share their content on BeGreenWeb's Wall. The News Feed is

very useful because it displays content from all of my favorite environmental organizations,

saving me from having to go to each of their individual web sites every day. When I leave

comments and "Like" items on other Pages, they will often return the favor.

Facebook is especially useful for organizing and promoting events. BeGreenWeb has not

sponsored any events, but I am able to find out about other organizations' events and share them

with my followers. During the 1980s, membership of environmental groups was increasing

rapidly and Greenpeace and other national and international groups almost doubled in size.

Some of the more sophisticated environmental groups were using fax machines and electronic

mail to accelerate their growth even further, which also made it possible to organize protests and

rallies almost instantly. However, many people that did not have access to e-mail and fax felt

like they were being left out because of their inability to correspond with the larger

organizations. (Assael/Zankin, 280). Today, access to fax machines and e-mailing is much more common in the United States. E-mailing is still an effective method for organizing large groups and disseminating information, but it is now used in conjunction with other online communication tools such as web sites, message boards, instant messaging, and social networking.

There are a number of online tools that have not yet incorporated into BeGreenWeb, but are useful for promoting environmental awareness. The first is an Internet forum, or online message board, which is a tool where people can discuss topics related to the subject matter of the hosting web site. It is similar to an email conversation, but anyone with access to the web site can read and contribute to the discussions. Unlike a chat room, conversations are often asynchronous and participants are able to respond to discussions on his or her own time. Each discussion, often referred to as a thread, is categorized by topic so that it can be easily found by others. Many Internet forums require users to be registered in order to contribute and there is often a moderator who must approve each post before others can read it. There are many active messages boards online related to environmentalism, including HGTV's Environmental Living Message Boards, TreeHugger Forums, and the environmental section on USMessageBoard.com. Message boards are useful for promoting environmental awareness because they allow users to ask each other questions, share ideas for green living, and even inspire others with personal stories. Public boards can bring strangers with the same interests together to collaborate and support each other. They may not be the best tool for research, but online forums are great for discussing environmental topics and learning from others. Eventually, I would like to build a message board on my web site, but BeGreenWeb needs to become more established and get more web traffic before that type of tool would be useful. In the meantime, I've provided links

to these active forums. Successful Internet forums typically have a large number of visitors that contribute daily, keeping the discussion going.

Podcasts are examples of another useful online tool that can help people learn more about environmental awareness. Podcasts are digital media files made available on the Internet for downloading to a portable media player or computer, and can be useful in spreading environmental awareness because they may appeal to people who prefer to listen to or watch content over reading it. They can reach an audience that may not be want to read blogs or articles, but are still interested in learning about climate change or ways to work towards sustainability. Podcasts, similar to radio shows, often have a theme, one or more hosts, and are released via web syndication. Viewers or listeners can subscribe to a podcast and all episodes will be downloaded to their computer or media player once they are available. Although podcasts were originally non-streamed webcasts, many podcasts are uploaded onto video sharing sites and can be streamed over the Internet. BeGreenWeb currently links to several podcasts about the environment and being green.

Although I am confident in my ability to share a wide variety of information and stories on BeGreenWeb, it is important to remember the bias that exists in all types of media. According to Andrew R. Cline, "Simply communicating by written or spoken words introduces bias to the message… language cannot be neutral; it reflects and structures our ideologies and world views" ("Media/Political Bias"). An ideology is a set of ideas or beliefs that shape a person's aspirations, interests, and way of thinking. Thus, my ideology effects how I think about climate change and environmentalism, which is communicated through my interactions on BeGreenWeb even though I aim to be unbiased. "There is no such thing as an objective point of view… human communication always takes place in a context, through a medium, and among

individuals and groups who are situated historically, politically, economically, and socially"
(Cline).

The fact that I select one article over another to post on BeGreenWeb is ideologically
bias because I choose it based on my interests and beliefs. An example of this is evident in the
tag cloud, where certain tags are larger because those topics show up more frequently than
others. I don't consciously make a point to post more content about recycling than health, but
the fact that I do reflects my personal interest, or bias, towards the topic. This may mistakenly
lead visitors to deem recycling more important than other issues, which is not true. Another
clear example of bias is simply in the fact that I made a web site to promote environmentalism.
My belief that taking better care of the Earth is important was constructed by many factors such
as the time period that I am living in, what the media has exposed me to, and the views of my
friends and family. Not everyone believes that climate change is a problem or that human beings
are responsible. Consequently, I am bias towards my own beliefs about the matter and
BeGreenWeb, simply by existing, exemplifies these beliefs. So while I cannot claim that
BeGreenWeb is free of any bias or partiality towards a specific view point, I do refrain from
making statements about what is right and what is wrong.

The Internet as a Source for Environmental Information

The Internet's huge reach and accessibility make it one of the best resources for people
all over the world to find information about climate change, environmentalism, and how to be
green. In the 1980s, it would have not been possible for me to distribute information to nearly as
many people as I can now do with BeGreenWeb. Millions of people have access to the Internet
and could view my web site if they were aware of it. Before the Internet became commercialized
in 1995, there were far fewer outlets for people to speak out and to participate in the

environmental movement. Many Americans were exposed to information about the environment because the issues were reported on in television, radio, newspapers and magazines, but most media communication was one-way and the audience had little opportunity to respond or participate outside of their communities. This is one of the main reasons why I implemented social media on BeGreenWeb—to avoid one-way communication. Social media, as the names suggests, is social and allow others to talk back and participate. Our society usually feels that only experts should talk about important issues and thus our communication can still sometimes be one-way, from an expert to a non-expert. Because of this, environmental advocacy groups find the Internet attractive for disseminating information because their web sites can report to the public when the media chooses not to. And while it is good practice to learn about important issues from experts, they are not the only sources for good information. Advocacy web sites, individual blogs and web sites such as BegreenWeb, and even Wikipedia can contain valid and relevant information and therefore should not be dismissed.

As of June 22nd, 2011, a Google search for 'climate change' turned up approximately 119 million results, with EPA.gov/climatechange being the first result and the Wikipedia page for climate change second. Because of its high ranking in most Google search results, many people use pages on Wikipedia as a source for information. Wikipedia.com is a "free encyclopedia that anyone can edit" currently offered in 239 different languages. The widely-used online encyclopedia is a wiki, which is a piece of server software that allows users to freely create and edit web page content using any web browser. Wiki supports hyperlinks and has a simple text syntax for creating new pages and crosslinks between internal pages on the fly (Leuf and Cunningham). Users can easily create and edit web site pages that are powered by wiki software. Wikis are often collaborated on by many users and can serve several different

purposes. Examples are company intranet pages and community web sites. Some set various levels of access and only certain users have editing rights that allow changing, adding or removing material. Others may allow anyone to view and edit material.

Wikis can be a great source of information and a way to collaborate with others. However, with web sites such as Wikipedia, there are so many users adding and editing content that it is difficult to know if the information is accurate and coming from a credible source. Content added to Wikipedia could be completely opinion-based and thus it is not necessarily a good way for one to be educated on a controversial topic such as climate change. However, most information contained in a Wikipedia page is cited in the footnotes, so it can be a great place to learn the basics on the topic and then use the sources for further information. I use Wikipedia for researching topics that I want to incorporate into BeGreenWeb. I am not always sure where to find scientific information about environmental information, so I use the sources on Wikipedia pages to begin my research.

Another wiki that I use for research and to find sources for BeGreenWeb is Green Wiki, a collection of nearly a thousand wiki pages about various environmental topics that aims to be "the best resource for citizens of the Earth to learn about the environment and how to live a more sustainable life" (Wikia Green). The entire web site is a wiki that can be edited by anyone and strives to be a trusted place to share knowledge about the environment with others. Green Wiki is a great web site for discussion of green topics and hearing many different viewpoints on pertinent issues. I am trying to find a way to incorporate Green Wiki into BeGreenWeb because it is a great resource for learning the meaning of various environmental terms and vocabulary. I am hoping that Green Wiki will create a widget in the future, but for now it is linked in the sidebar of BeGreenWeb and I use it to learn more about sustainability and green living.

In addition to showcasing articles and videos, BeGreenWeb is a good web site for someone to begin learning about climate change and how to be eco-friendly because it links to many other great resources. For those who want to gain a better understanding of environmental issues, the Internet is an exceptional source for research. The Word Wide Web is home to countless news articles, studies, blogs, and discussion forums about environmental topics. David G. Schwartz wrote that "until the advent of the Internet, major libraries and text repositories were considered by all as bastions of information, but the Internet has opened up a treasure-trove of information for researchers and seekers of knowledge throughout the world" (263). It is common for researchers to turn to the Internet because it is a convenient source of information. In addition, research databases such as JSTOR and ProQuest give subscribers access to download digital versions of millions of books, journals, and references. The Internet is the simplest way to research environmental topics and to stay informed as new information becomes available.

The Internet is convenient for getting news. Pointing a browser to any of the many Internet news sites that are online will bring up all of the latest headline news stories as well as many others organized by topic. For environmental advocacy groups, a web site can be used to solicit donations and recruit volunteers or supporters. Video and audio capabilities make it so the Web can take events such as rallies into people's homes. In addition to broadcasting events online, most news web sites post videos of their news segments on their web site so that viewers can watch the news at their own time. If a story was on television but a person wasn't watching when it aired, they would likely be able to find the video online. With video sharing sites such as YouTube and Vimeo, people can find videos to watch on nearly every topic. Since I like to share videos on the BeGreenWeb blog every few days, I will often search video sharing web

sites for news, mini-documentaries, how-to videos, PSAs, or public interest stories about environmentalism. Once I find a video that I want to share on my web site, the video sharing sites provide a code to embed the video into BeGreenWeb with ease.

The big broadcast stations are responsible for covering so many different news categories that they can't focus too much air time to one topic. However, there are hundreds of cable stations that primarily focus on just one topic, a niche market. Discovery has a cable station called PlanetGreen which focuses on eco-friendly living 24 hours a day but you must be subscribed to the station to view the content. According to the station's web site, 56 million American households are subscribed, which is less than half of the number of households in America. Online, there are web sites on every topic and most do not require a special subscription. As of May 2011, an estimated 246 million individuals in the United States, or approximately 78 percent of the U.S. population, had access to the Internet through home or work computers (Nielsen). Far more people have access to the Internet than to PlanetGreen, so for those who are looking for another 24-hour environmental information source, they can turn to BeGreenWeb and other ecological web sites.

In January 2011, 99 percent of households in America had a television. While more North Americans have access to television than to the Internet, the number of people going online for their news is growing. According to data from Pew Research Center, as of January 2011, 41 percent of Americans said that their main source for national and international news was the Internet, which is up 17 percent since 2007. With 66 percent of Americans claiming it to be their main source for news, television remains the most widely used media outlet for staying informed. However, that number is down from 74 percent in 2007 and 82 percent in 2002. These figures suggest that the popularity of the Internet as a news source is growing while the

reliance on television news is declining. Furthermore, the Internet surpassed television as the main new source for people under 30 and the number of 18 to 29 year olds claiming the Internet as their main news source has doubled since 2007, from 34 percent to 65 percent. While most people are not able to watch television at their work place, more than two-thirds (68 percent) of working Americans use a computer at work ("Technology Survey"). Thus, for many people, going online for news and information is a convenient way to stay updated on what is going on in the world.

While the Internet is widely accessible in North America and most other developed countries, it is important to remember that there are places in the world where Internet access is not readily available. "A large segment of the world population misses out on the tremendous political, social, economic, educational, and career opportunities created by the digital revolution. This gap between the information haves and have-nots is commonly referred to as the digital divide" (Yu 2). Internet penetration is limited in sub-Saharan Africa, the Middle East, Latin America, and South Asia. As of March 2011, only 11.4 percent of Africa's population, 23.8 percent of Asia's population, and 31.7 percent of the population in the Middle East are Internet users (Internet World Stats). These regions can likely feel the effects of climate change, but may have little access to information about why it is happening and what they can do to fight it.

People can be affected by the digital divide even if they do have access to the Internet if they are not able to adapt to the rapidly changing technological environment and all of the new tools that are being introduced. Computer illiteracy and technophobia have posed significant barriers to participation in the new technology-based economy. While there are many programs that aim to narrow the digital divide, those who are not able to become acclimated with new

media will likely be left in the dust. With this in mind, I've attempted to make BeGreenWeb as user-friendly as possible so that light users of the Internet will not be confused or frustrated while navigating the web site.

I chose to create a web site to share information and news about environmentalism because the Internet gives me the opportunity to reach the most people. The Internet makes it possible for anybody to create and publish a web site online, a feature that has its pros and cons. This allows the public a plethora of information about any topic they are interested in, including journals and news articles written by professionals. However, it also allows anyone to publish anything they wish, which makes researching on the Internet more complicated because you must always be mindful of who and where your information is coming from. Even if an online source appears to be credible, there is nothing stopping them from posting fabrications or personal opinions. Anyone can write a blog entry, comment in a forum, and edit wiki entries, but just because it is in print does not necessarily mean that it is true. In order to promote credibility online, bloggers and webmasters should fully disclose associations and expertise when writing about specific topics. In addition, Internet users should look for those disclosures on web sites and establish a list of sources which have provided accurate information over time and can be considered credible. On BeGreenWeb, all information and articles are linked back to their original sources allowing readers to look into each author and web site's credibility. Since I am not an expert on environmentalism, I do not make any scientific claims on BeGreenWeb that cannot be backed up by a reliable source.

In both broadcast television and print journalism, a story's content generally goes through a screening process to verify sources and check the accuracy, and then is edited down for use in a balanced report.

Some critics of the news media however argue that this is precisely

what is wrong with journalism—that this screening and selectivity

is influenced by various biases and therefore the news is distorted

before it reaches the public. Based on this argument, the news

organization's Internet product should provide as many links as

possible and let news consumers decide what they want to believe

and what they choose to ignore. (Seib 77)

 The controversy in this model is that Internet products look like news but have not gone through

the same screening process as their print or television journalism counterparts. Some may enjoy

the ability to read through the huge array of information and develop their own opinions without

being influenced by a potentially biased journalist. However, others may prefer that media

decipher the information for them and separate the relevant news from the nonsense. While not

always the case, an article written for the web often links to each of the sources that were used,

allowing the reader, not the writer, to decide on the credibility of the claims. According to Seib,

this "fosters an intellectual open market for news consumers to pick and choose among varied

offerings, based on the assumption that these news consumers will discriminate wisely in their

evaluations and choices" (10).

One of the biggest effects that the Internet has had on media reporting is that news can be

instantaneous. The public does not have to wait very long for information. In May 2011, news

that Osama Bin Laden had been killed in Pakistan was leaked via Twitter more than an hour

before President Obama announced it in his address to the nation. According to the *New York*

Times, the first tweeter to leak credible word of bin Laden's death was Keith Urbahn, former

Defense Secretary Donald Rumsfeld's chief of staff (Smith). Within seconds, news about the death went viral on Twitter and Facebook as millions of users commented on the news in their online statuses. While the television networks such as ABC, CBS, and NBC tend to report breaking news as soon as it happens, not everyone is near a television. However, many people in the U.S. have easy access to the Internet either through computer or on a smart phone.

The instantaneousness of the Internet can cause mistakes if people send out information too quickly, hoping to be the first to break the news, however that has been an issue before the Internet. One of the most famous wrong headlines in American history appeared on November 3rd, 1948, when the Chicago Tribune proclaimed "DEWEY DEFEATS TRUMAN" when in fact Truman won the 1948 Presidential election in the United States. However, reporting information too quickly online can create a bigger problem because people can read it seconds after it is posted. If there are any errors, readers may not know right away and bad information can go viral before anyone realizes the mistake. In addition, once something is posted online, it can be recorded, copied, or downloaded by others immediately, making it nearly impossible to undo. When I post something on BeGreenWeb's blog, the content is syndicated and sent to anyone who is subscribed to the feed. Thus, even if I delete the post later, copies of it would still exist. On Twitter, when I send out a "tweet," all of my followers can see it instantly and other users could retweet it, making copies of the text that would be difficult to eliminate. However, since BeGreenWeb is not a "breaking news" source, I usually do not have to rush to post things, which helps me to avoid errors.

There is a paradox between the advantages of computer-based education for sustainability and negative impacts on the global environment resulting from use of the technology (Smith 64-70). As of 2009, the Internet uses an estimated 152 billion kilowatt hours

yearly, equal to about 2 percent of human caused CO_2 emissions – as much as all the coal, oil and gas burned in Turkey or Poland, or more than half of the fossil fuels burned in the UK. And while very useful in disseminating information, computers also consume a lot of energy and create waste. Electronics contain hazardous materials that can damage water, soil, and air quality if not disposed of properly. According to the U.S. Environmental Protection Agency, electronic waste is the fastest-growing type of garbage in the nation. Each family in the United States has around 24 electronic devices in their home, according to the Consumer Electronics Association. Each year, approximately 2 million tons of unwanted electronics are accumulated, but less than 20 percent is recycled. The other 80 percent are taken to landfills, where their toxic and dangerous materials can leak, potentially causing human health and environmental problems (Smith). While not all of the discarded electronics are computers, it is important to keep in mind the negative effects that technology have on the environment. We can combat this problem by buying durable electronics that will last longer, taking good care of our electronics to lengthen their life, donate old electronics to charity, and recycle obsolete or broken electronics responsibly. In addition, computers are getting more energy-efficient and data centers are trying to green up. I chose a web hosting company called 1&1 to host BeGreenWeb due to its outstanding efforts at "going green." 1&1 Webhosting uses highly efficient power supplies with less than 20 percent heat loss, offsets 100 percent of the energy used in its Kansas data center by purchasing Renewable Energy Certificates (RECs), and maintains a green office that uses natural light, recycling programs and reusable kitchen supplies ("1&1 Going Green").

Conclusion

BeGreenWeb is a web site dedicated to green living and an example of how the Internet can be used to provide information and share ideas with the public. Web media tools such as the blog, widgets, a Facebook Page, and Twitter provide BeGreenWeb with more functionality and create more visibility for the web site. BeGreenWeb and other environmental web sites are able to share information and support open discussion in ways that other communication media cannot. As environmental awareness becomes increasingly present in the media, people need reliable sources to turn to for information about the issues, as well as ideas for how to live a greener lifestyle. While television is still a very popular news source, the number of people going online for their news is growing. Now that more than 75 percent of North Americans have access to go online, the Internet has become an effective tool for disseminating information. Like television and print journalism, information found on web sites is still subject to bias and inaccuracies. However, the volume of credible online sources is growing rapidly and people are able to research a variety of viewpoints environmental issues and come to educated conclusions. The Internet also allows the public to get news almost instantaneously, often as it is happening. With smart phones and other web-enabled devices, many people are able to take their news with them wherever they go.

Quality environmental information should be available to as many people as possible in order for citizens to be able to understand the problems and make smart decisions that will lead to a better and more sustainable environment. The Internet's ability to disseminate information can create greater environmental awareness, encourage a free exchange of views, and promote participation and change. Thus, using the Internet to inform and engage the public about

environment problems and solutions is an effective approach to creating awareness and working

towards a more sustainable environment for future generations.

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