

Implementation of Social Media for Dissemination of Research Activities at the Center of Excellence in Remote Sensing Education and Research at Elizabeth City State University

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Abstract - The Center of Excellence in Remote Sensing Education and Research (CERSER) at Elizabeth City State University (ECSU) was established in the spring of 2003 to develop innovative and relevant research collaborations focused on remote sensing applications to coastal, ocean, marine, and polar research. The program has supported various other projects through grants and collaborations with the National Science Foundation, Office of Naval Research, the National Aerospace and Space Administration, and other various government and educational entities.

CERSER has utilized the web site located at <http://cerser.ecsu.edu> to provide documentation of research activities to funding agencies, faculty, students, and event attendees from its inception. This site provides information regarding past, current, and future events as well as research conducted by students in the program and with affiliated universities or government agencies. The sister site located at <http://nia.ecsu.edu> is the original location used for documentation of information from previous and current research projects under this program and remains active today.

In order to reach out to a broader audience, the implementation of social media was explored during this project. The primary goal of this research was to establish a social media presence on Facebook, Twitter, Instagram, and Google+. The secondary goal was to research the practicality of other social media applications in areas such as events, video, pictures, and bookmarking. The pros and cons with regards to increasing the distribution of CERSER program information were explored.

This project explored the implementation of each social media application and identified appropriate audiences and methods of disseminating information. The methods included what information to post, when to post it, and how often to share. Best practices were taken from both educational and commercial sources

Index Terms— Facebook, Twitter, Google+, Instagram, social media, research, CERSER, ECSU, promotion

I. INTRODUCTION

Social media is defined as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content." [19] Web 2.0 is a

description of web sites that have client-developed content and are interactive. This is not a technical specification, but describes how pages are created and used.

Research institutions conduct research and publish their findings. Many institutions are able to publish; yet their research is not easily accessible to members of the public. The goal of this research project was to target solutions for research institutions trying to promote themselves and their research. The study consists of using social media in order to promote the Center of Excellence in Remote Sensing Education and Research (CERSER). The research demonstrates how to properly use social media for effective communication, promotion, and usefulness. The research explored the social media applications Facebook, Google+, Twitter, and Instagram.

Many programs currently also allow users to easily share and promote their content. For this reason, this research focused on social media applications by implementing four of those that are the most popular. The constant changes social media applications undergo makes any study applicable for the time of the research. Therefore this research is based on the current time span in which the study was conducted.

II. APPLICATIONS

A. Facebook

Facebook is an online social networking site first developed for students at Harvard University. There were 1.59 billion active Facebook users as of December 31, 2015. The term Facebook is derived from the online directories at universities commonly known as "face books." Facebook is available as an application for smartphones and tablets. Facebook does have a range of privacy options for its users. Users have the option to make their own pages private, public, or for friends only.

Once a user is registered they then create a profile and connect with other users as "friends." They can then exchange messages, photos, and videos or create a general update known as a "status post" which can be viewed by anyone depending on certain parameters set by the user. Status updates can be in the form of videos, pictures, words, and music. Users can

comment, like, and share the status updates making the application interactive. There is not a limit to how many pictures a user can post on Facebook. Users can also join or create groups based on common themes such as family, work, or school.

Facebook accommodates different features such as the Marketplace so that users can post and read different ads. "Groups" is another feature that allows users with similar interests to put together and interact. [1]

Mark Zuckerberg was a sophomore in college when he and his college roommates began developing the first site that would become Facebook. The original website was known as Facemash, which was launched on October 28, 2003. It was created by Mark Zuckerberg, Andrew McCollum, Chris Hughes, and Dustin Moskovitz. [21]

B. Twitter

Twitter is an online social networking service that enables users to send and read short 140-character messages called "tweets". Registered users can read and post tweets, but those who are unregistered can only view them. Users access Twitter through the website interface, SMS, or mobile device app. [17]

Twitter was developed at the company Odeo, which consisted of Jack Dorsey, Biz Stone, and Evan Williams. [16] The original developers acquired the company from the investors and shareholders and formed Obvious Corporation with other members from Odeo. [15] Twitter expanded greatly in 2007 when the company used a marketing plan to display Twitter messages on large plasma screens at the South by Southwest Festival. On that day, Twitter usage went from 20,000 tweets per day to 60,000 per day. During the event, Twitter won an award in the blog category.

C. Instagram

Instagram is an online mobile photo-sharing, video-sharing, and social networking serving service that allows users to take images and videos, and share them publicly or privately. Instagram is a free mobile application that is distributed through App Store and Google Play and is available for iPhone, iPad, iPod Touch, and Android, while other third party Instagram apps are available for BlackBerry and Nokia-Symbian Devices. In September 2015, Instagram version 2.0 became available and included new and live filters, instant tilt-shift, high resolution pictures, no mandatory borders, one click rotation, and an updated icon.

Kevin Systrom and Mike Krieger founded Instagram, on October 6, 2010 as freeware, in twenty-five languages. [<https://www.instagram.com/about/us/>] Before developing Instagram, Mr. Systrom was a part of the startup Odeo, which later became Twitter, and worked two years at Google dealing with programs such as Gmail and Google Reader. The two were working on an HTML5 check-in project, Burbn, and decided to focus their development on mobile photography. The term "Instagram" is a combination of "instant camera" and "telegram."

After acquiring Instagram in 2012, Mark Zuckerberg noted that Facebook was "committed to putting together and growing Instagram independently." [14]

D. Google+

Google+ is a social media site created by Google. Many people already use Google for everyday electronic functions such as Internet searches, site summaries, and email. Google+ combines many of Google's programs into one program.

Vic Gundotra created Google+ with a special Google team. The idea was to create a social media platform with Google's vision of organizing the world's information. Google has had previous work with social media sites such as Orkut, Wave, and Buzz. Orkut was very popular in South America and India but did not become popular in the United States and Google terminated it. Mr. Gundotra left the company in 2014, yet the site continues to grow under the guidance of the vice president of engineering, David Besbris. [13]

The new version of Google+ has removed many features of classic Google+. Therefore, by removing features, Google is creating a simpler Google+. The new layout focuses on information through one column. The menus are also simple and located on the left as a sidebar. [12]

E. Hashtag

A hashtag is a phrase after the pound symbol or hash mark that is used to categorize an Internet post. They can be used to express an emotion, describe an object or event, or as a filler for the post. The word hashtag is a combination of hash mark, describing the symbol, and tag, describing the grouping of posts. Hashtags were designed for Internet Relay Chat originally and then implemented in Twitter, a social media application. Today they have been implemented in many social media websites. While originally meant to categorize social media posts, users also now include hashtags to make humorous comments such as: #awkward, #funny, and #happyfriday. [11]

III. METHODOLOGY

A. Facebook

1) How to Sign Up

A user can sign up for Facebook by going to Facebook.com and scrolling down to the "Sign Up" section. Follow the screen prompts such as "First Name", "Last Name", "email or mobile number", "Re-enter email or mobile number" (this is used for confirmation purposes), "New Password" and lastly the user's birthdate. Next, the user needs to select submit. After the user has signed up, they can upload a profile. [10]

2) Creating the a Facebook Page

Facebook users also have the ability to create their own pages inside of Facebook. These are called "Pages". Pages can be created for uses such as promotions, small businesses, and advertisements. The first step taken in creating the Facebook CERSER page was to log into the CERSER administrator's Facebook account and go to the "Create Page" label on the left hand side of the page. The next task consisted of the user choosing the category of "Company, Organization, or Institution" and then the subcategory of Education. Next the administrator would type in the "Company Name", and afterwards select the "Get Started" button. The administrator

was directed to the next page which was titled "Set up Name", this page consisted of three sections ("About", "Profile Picture", and "Preferred Page Audience"). In the "About" section the administrator gave a brief description of the page and had the option to add a unique web address so that is easier for other users to find the Page on Facebook. The web address for the CERSER Page is www.facebook.com/ecsucerser.

3) Privacy Settings

When it comes to having a Facebook page, there are many settings that the user may need to take into consideration. Privacy settings are the most important. These can be changed to where only certain individuals can see posts. People can request users to ask for permission before tagging themselves in a post. [9]

B. Twitter

The first step in creating the CERSER Twitter account was to utilize the web master's email address to create the account. The next step was to go to the Twitter website and select "sign up" at the top right of the page. Information was then entered: name, phone or email, and a password. Once all of that was entered a username was chosen for the account. The last step was to confirm the account by checking the CERSER administrator's email and selecting the confirmation link sent by Twitter.

Once the administrator completed the account setup the homepage was then displayed. The administrator can now enter tweets at the top of the screen in the box labeled "What's happening?" A tweet is information that the administrator is conveying and may take the form of text, images, and/or videos. Once the administrator finishes putting in the information, they select "Tweet" and Twitter will post the information to the timeline. The location of the administrator can be attached to the tweet.

C. Instagram

The process of creating an Instagram account was completed through a mobile device. The first step to creating the account for CERSER was to download the app through the Apple App Store or the Google Play Store. The CERSER web master's email was used in the account registration.

Instagram prompted the registrant to create a username then set up a password for the account. Instagram requested the user to input their full name. A privacy setting can be set if it is not desirable for the name to be displayed.

The CERSER logo was then added to the account. Once the process was complete, Instagram provided the chance to follow other accounts.

The CERSER admin can now post images and three to sixty second videos, and be able comment and use hashtags and tagging in posts. [8]

D. Google+

In order to create the CERSER Google+ page, a Google account was created using the webmaster's email. Once the Google account is established, the administrator's name is then entered followed by the gender. Profile, logo, and cover images are then uploaded to the account. Much of the information

needed is connected to the users Google account so entering of information is minimal.

A CERSER Community was established in order to link program alumni with the current page. This will be a two information link allowing the alumni to view what is going on inside CERSER today and gives the program a method of following graduates through their continued instruction and careers.

E. Hashtags

Hashtags should be used strategically to promote CERSER by including relevant hashtags to every post to social media. With every post created, CERSER should have a maximum of three hashtags and a minimum of one. On Twitter, certain hashtags can be created for the event attendees to use such as #ECSURW16 for the 2016 ECSU Research Week. CERSER can view the tweets, or posts, made by both event organizers and attendees using the hashtag. This can be utilized to see photos, gather feedback, and promote certain events. [6] [7]

IV. RESULTS

This project entailed many decisions that would not affect a basic user of these social medias. The fact that a Facebook account is required to be an individual and cannot be a group or organization led the researchers to use Facebook Pages. Facebook Pages are used by many major universities such as Boston College, UC Berkley, and Michigan State University. [<http://blog.hubspot.com/marketing/best-college-facebook-pages>]

Twitter and Instagram were easily set up and required minimal input to get to a working state. A valid email and posting of logos and cover photos allowed the sites to come online quickly.

Google Plus held a variety of options, but each was dependent on obtaining a basic Google account first. One of the options was utilizing the Google Pages to add CERSER to searches and maps as well as supplying the interactivity of a standard Google Plus account. This option was utilized as a starting point for future research into this social media.

V. CONCLUSION

Entering the social media arena is a daunting task when taking on several sites at once. This did allow the team to compare capabilities between each and possible interaction between them. While Facebook has been the most used in the past, Instagram and Twitter are quickly gaining ground in usage. Facebook still remains the most used and most versatile of the four social medias researched with its access to many applications for extending the capability of the page.

This project forms the basis for further research into the usage and interactivity of the four social media platforms implemented. Focused research on the individual usage of each media should be completed for greater skill in utilizing the sites to full potential. Social media is a fluid dynamic with constantly changing faces making it an ever-moving target.

VI. FUTURE WORKS

This project should continue to develop and be monitored for future events. Once the CERSER Facebook Page reaches 30 likes, the Facebook analytic tool Insights will be available to monitor usage [3] Twitter and Instagram will need external analytic software that is available on the Internet to monitor their usage. Google+ uses Google Analytics to further examine others who use the social media sites. With Google analytical data, the developers could gather information about the viewer's age, gender, and more to determine if the social media content is being promoted correctly. [2]

The social media sites established during this project should also be included in events such as the Celebration of Women in Mathematics, IGARSS, and Summer REU. In these events attendees will be able to post photos, videos, and relevant text to provide followers with instant feedback on their research and experiences. Through this interaction, future projects should be able to gather information about the successfulness of the events, which events are most posted about, how to further improve events, and better ways to integrate social media into future events. The project should also be able to obtain content from current students when they attend conferences and other program related activities.

Currently the social media applications Facebook, Instagram, and Twitter have the capability to be linked. This ability allows a user or administrator to post to one site and the information be displayed on the other two. Future research should focus on linking these accounts in a way that does not intrude into the privacy of the site administrators. [4] [5]

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