Evaluating the Appropriateness of Using Web Technologies to
Promote Farm Safety to New York Farmers

A Master’s Thesis

Presented to
School of Information Design and Technology
State University of New York
Institute of Technology
Utica, New York

In Partial Fulfillment
Of the Requirements for the
Masters of Science Degree

by
Samantha Park
May 2014
SUNYIT
DEPARTMENT OF COMMUNICATIONS AND HUMANITIES
CERTIFICATE OF APPROVAL

Approved and recommended for acceptance as a thesis in partial fulfillment of the requirements for the degree of Master of Science in Information Design and Technology

_________________________________________________
DATE

_________________________________________________
Steve Schneider, Ph.D.

_________________________________________________
Russ Kahn, Ph.D.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF FIGURES</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABSTRACT</td>
<td>iii</td>
</tr>
<tr>
<td>Chapter</td>
<td></td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>4</td>
</tr>
<tr>
<td>Statement of the Problem</td>
<td></td>
</tr>
<tr>
<td>Significance of the Problem</td>
<td></td>
</tr>
<tr>
<td>REVIEW OF RELATED LITERATURE AND RESEARCH</td>
<td>4</td>
</tr>
<tr>
<td>Evaluation Components</td>
<td></td>
</tr>
<tr>
<td>Program Components</td>
<td></td>
</tr>
<tr>
<td>PROCEDURE</td>
<td>12</td>
</tr>
<tr>
<td>Description of Sample</td>
<td></td>
</tr>
<tr>
<td>Description of Instruments Used</td>
<td></td>
</tr>
<tr>
<td>Data Treatment</td>
<td></td>
</tr>
<tr>
<td>Data Arrangement</td>
<td></td>
</tr>
<tr>
<td>Data Analysis</td>
<td></td>
</tr>
<tr>
<td>RESULTS</td>
<td>16</td>
</tr>
<tr>
<td>SUMMARY</td>
<td>20</td>
</tr>
<tr>
<td>Conclusions</td>
<td></td>
</tr>
<tr>
<td>Recommendations</td>
<td></td>
</tr>
<tr>
<td>Program Recommendations</td>
<td></td>
</tr>
<tr>
<td>Research Recommendations</td>
<td></td>
</tr>
<tr>
<td>DESIGN CAMPAIGN</td>
<td>21</td>
</tr>
<tr>
<td>Website</td>
<td></td>
</tr>
<tr>
<td>Facebook</td>
<td></td>
</tr>
<tr>
<td>Print</td>
<td></td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>32</td>
</tr>
<tr>
<td>APPENDICES</td>
<td>34</td>
</tr>
<tr>
<td>A. Key words</td>
<td></td>
</tr>
<tr>
<td>B. IRB Approval</td>
<td></td>
</tr>
<tr>
<td>VITA</td>
<td>38</td>
</tr>
</tbody>
</table>
Tables, Figures, and/or Illustrations

Figure 1: Survey tool used for data collection

Table 1: Farmers uses of the internet

Table 2: Internet usage for gathering farm information broken into topics

Table 3: Percentage of farmers that seek out health and safety information

Table 4: Internet as a source for health and safety information among those who seek it out

Table 5: Internet as a source of health and safety information among those with children on the farm

Table 6: Sources of health and safety information for those who seek it out

Table 7: Top websites used for farm information gathering

Figure 2: Website home page mock-up

Figure 3: Sample Facebook page that targets the farmer

Figure 4: Sample Facebook page that targets the farm family

Figure 5: Sample “about me” Facebook page

Figure 6: Print concept #1

Figure 6: Print concept #1

Figure 8: Print concept #3
Abstract:

In the past, internet and smart-phone use was not common among the farm community. With advances in technology, the average number of cell phone owners has increased, as well as access to high speed internet. More farms are looking to social media for promotion for their farms, and this study aimed to determined if the farm population also uses web 2.0 technologies to find information related to safety practices.

Surveys with the farming community were administered at trade show events, and targeted small dairy and livestock farmers. These surveys collected information about access to technology, technology use, and information gathering practices.

The study revealed that farmers do indeed have access to mobile devices and internet connections, and they commonly go to the internet as a source for their farm questions. This allows us to believe that if used in conjunction with the other two main information gathering practices (reading publications, and talking to peers), we could successfully reach our target with a web 1.0 and web 2.0 campaign.


**Introduction:**

This study will evaluate the appropriateness of both web 1.0 and web 2.0 technologies, including social media, web pages, and advertisements within web pages for agricultural safety promotion to New York farmers.

We know that farming is major source of revenue in the United States, and that we rely on this occupation for many commodities. We also know that farming is a very dangerous industry to work in. This literature review discusses how farming, safety, social marketing, internet and social media are all used to keep farmers current in business and aware of the hazards they face daily.

**Literature review/ Background/Conceptualization:**

**Farm Safety and PTO**

Despite a decrease in number of farmers and an increase in technological advances in the industry, farming continues to be one of the most dangerous occupations in the United States, where farmers are seven times more likely to be killed than the average American worker.\(^1\) The
annual rate of fatal injury among American farmers was 24.9 per 100,000 workers in 2011,\(^1\) with equipment entanglements being the third leading cause of these fatal injuries.\(^2\)

Power take-off (PTO) drivelines are long rotating shafts that are used on farms to connect a power source to an implement used for various reasons, such as a mower, or manure spreader. They are also commonly associated with equipment entanglement injuries. A typical PTO shaft can wrap your arm or leg around the PTO shaft nine times in one second at 540 rams per minute.\(^23\) Such speed doesn’t give the operator enough time to move out of the way often leading to an injury, or even death. Non fatal PTO entanglement, such as ground away skin, muscles, tendons, or broken bones also results in substantial morbidity among farmers. Between 1970 and 2003, an analysis of PTO entanglements found that 40% of PTO driveline injuries resulted in amputation.\(^3\) These severe injuries, in turn, contribute disproportionately to healthcare costs. For instance, entanglements account for 15% of farm injury hospitalizations in Canada, yet these injuries are responsible for 40% of agricultural injury-related healthcare costs.\(^4\)

Farming is also one of the few industries in which family members get involved, simply because they work or live on the premises, putting them at risk of these fatal and non fatal injuries. Elevators, augers, and conveyors have been identified as the equipment most commonly involved in PTO entanglements,\(^3\) and because machinery is often stationary and operated near farmhouses and barns, farm children are particularly susceptible to entanglements. Twenty-one percent of all PTO driveline related injuries are to children under the age of 18.\(^3\)
Regulatory efforts to improve PTO safety and decrease the incidence of entanglement-related injury and death have only impacted a small percentage of the at-risk population. While Occupational Safety and Health Administration (OSHA) standards require that all PTO guards be in place during operation of equipment, farms that employ fewer than 11 employees are exempt from OSHA regulations. In 2007, out of approximately 2.2 million farms in the US, less than 2% employed more than 10 workers. While a contributing factor to replace damaged or missing shields, is an oversight on the operators part, cost of shields, difficulty finding correct parts, and lack of time to perform needed repairs all contribute to the problem. Finally, given the fact that missing guards do not prevent a machine from functioning, farmers have no (non safety) incentive to install or replace PTO shields.

Social Marketing

Social marketing is an intervention development strategy that pays close attention to barriers to and motivators for behavioral change or adaption of recommended behaviors. Social marketing has been around since the 1960s, and was first described in published form in Kotler and Zaltman’s 1971 paper titled ‘Social Marketing: An approach to planned social change’. While at its start social marketing grew slowly, it became a common practice in the 1990s when its focus was on behavior and gained acceptance, and large institutions, such as the Centers for Disease Control began using it within projects.

Social marketing has been most widely used and explored in the public health community because the need for change and understanding health effects make it easy for a social marketing
campaigns to successfully persuade people to change behaviors. From the public health perspective, social marketing has similarities to other community-based participatory approaches. Both methodologies are based on interaction with the community or target population through focus groups or similar activities to gather information that is later used to develop interventions for that same population.⁰¹²

When understanding how social marketing techniques may be used to guide interventions, we first must understand the differences between barriers and motivating factors. Once we have the understanding of why people do and do not do something due to their limitations and behaviors, we are able to design the interventions and promote safety and best health practices. Social marketing also incorporates incentives with marketing activities or interventions to convince individuals that the benefits of a recommended behavior exceed the costs. Again, successful marketing requires a clear understanding of the barriers to change and the development of strategies to address them.

Social marketing, as referred to in this literature review, is different than marketing though social media such as Facebook, Twitter, Blogging, YouTube, or other types of personal and group contacts, even though a social marketing campaign can be promoted through the use of social media. They are similar in the fact that they are interactive campaigns, some with the use of technology and a distinct focus on community; but social marketing uses messages to change one person’s behavior, and social media is a tool used for networking through group conversations and interactions. The social acceptance of understanding a need for change allows for a social
marketing campaign to be successful. The social acceptance and interactions through online communities, and user comments allows for social networking to be successful.

**History of the Internet; Web 1.0 & 2.0**

Since the mid 1990s, the use of the internet has changed our society and culture. With access to near-immediate communications and information gathering we, as a society are able to get answers more efficiently, and communicate more readily. As time has progressed, so have the capabilities of the internet. With the inception of the internet and the term web 1.0 referring to websites that contain read-only information or a place where users go for knowledge, we have found that these sites will always be available. Even when internet trends and pages become more interactive the web 1.0 sites will still be available to teach us how to use the newer technologies.

According to the Pew report of 2013, 72% of American adults are able to access the internet at home. Web 1.0 technologies are used with a basic understanding of these sites as a source of information. As time has passed and advances in technology have become a major factor in society and information gathering, consumers are able to become more comfortable with technology and its uses, in turn making them more inclined to need or obtain gratification from them. Web 2.0 technologies are dynamic platforms used to create interactions with its users and are important when developing and sharing content as a community. Generally, web 2.0 is the “read/write” web, while Web 1.0 is read-only web. Some examples of web 2.0 are social media,
blogs, and wiki pages. Web 2.0 pages are commonly associated with user generated pages where the user may have access to change the information contained within the sites.24

When designing a social marketing campaign, it would be vital to use web 2.0 sites, such as social media, in conjunction with web 1.0 sites so the user can first learn about the program, or products, then work together as a community to share and discuss the content. Having a clear understanding of the risks associated with a certain task, in this case farming entanglements and the people who could be affected by such an event would be necessary when persuading the target that the need to change is there. Then web 2.0 technologies would become important in the form of peer recommendations. Peer recommendations are extremely powerful when forming opinions about common practice on farms as many farmers look to other farmers for advice. Web 2.0 sites can provide a platform for this to take place. Finally, creating hype around a topic should be common practice within a social marketing campaign to build responsiveness and recognition of need for change aiding in the campaigns’ success. This would be most powerful coming from other farmers.

Social Media & How Farmers Use the Internet

Social media is one of the most vastly used web 2.0 platforms, with a focus on user-generated content. According to the most recent Pew Report, 73% of adults use a social media site of some kind. Among them 42% use multiple platforms; with Facebook being the most predominately used site.18 These users typically check the sites at least once a day. The fastest growing age bracket to sign up for Facebook today is people aged 45-54. The higher end of that spectrum is
approximately three years younger than the average age of the United States farmer. This could potentially account for the recent increase in use of information technologies within the farming community, or it could simply be a recognized need by the farming community. 189 million Facebook users are ‘mobile only’, so not only does Facebook have millions of users who don’t access it from a computer, but mobile user generates 30% of Facebook’s ad revenue as well. When it comes to using social media for businesses, 93% of marketers use these technologies. It goes without saying, if you want to directly meet your market, or interact with the public in any way, it is necessary to have a web 1.0 online presence in addition to using web 2.0 technologies. When understanding that mobile applications are generating nearly a third of advertisement revenue we can see that it too is a useful platform for promotions.

For farmers, their livelihood depends on what is going on in their fields. It is widely known that for decades, they have depended on radio, television, and newspapers to find out information on the weather forecasts and commodity markets. Their day to day business was carried out the way the generation before them had. If they discovered an unknown pest or disease attacking their crops, they would have to contact a nearby farmer, or go to their local agronomist to find out what it was, and how to treat it. Today, technology is so readily available that farmers can check commodity prices throughout the day, or take a simple picture of the pest and find it online. This would then expedite the treatment process, by supplying them with information on a specific treatment plan for each individual problem. Most agricultural organizations also provide web 1.0 site as a resource for their business. Farmers are able to look to the internet to get any information they need on various farm topics, such as equipment upgrades, management practices, and locating services.
With these technologies readily available and the need to find information we can still see that some farmers prefer to look to print publications and peers more frequently. Discussions with other non-safety organization that target the agricultural community revealed common themes among information gathering techniques. The manufactures felt that company websites are the most frequently used web tools, and social media when used properly has potential to be effective for promotion purposes. Purchasing email addresses and doing e-blast can be an efficient tool when trying to reach dealerships and other manufactures also.

These manufactures also felt that print tools are still, and will continue being functional when targeting folks who aren’t online and looking for specific information. Face-to-face interaction is always a valuable marketing technique when dealing with this target group also. Trade shows and other social settings tend to draw the crowd to you, rather than having to seek the farming community out, giving you the opportunity to reach, and persuade them personally.

Research shows there is an increase in the use of cell phones, computers, and the internet among the farming community. There was a large jump from 37% of homes in 2011 to 70% of United States farms having access to a computer in 2013 according to the United States Department of Agriculture’s latest estimate of farm computer usage and ownership. Even though research shows trends of computer ownership and usage within this community are slightly behind the typical American household, we can see that there is a push to use these technologies for good farm practice, and advances in these technologies allow for farmers to make faster farm management decisions.
Methodology

Understanding Farmer’s Behaviors

Marketing safety and behavior change to the New York farm community has typically been a hard sell in the past. With information from the United States Department of Agriculture (USDA) we know that the average age of farmers is increasing, and the number of farms in New York is decreasing, making it difficult to target this group and persuade them to use safety equipment. Time and money are typical barriers to buying or replacing safety equipment, and farmers tend to have an acceptance of risk; they understand what they do is dangerous, but they also understand that the work still needs to get done. When interviewing farmers about behaviors and typical work practice, risk appears to be inherent within the farm environment. Every day the farmer engages in dangerous tasks and is exposed to risk, so that eventually risky behaviors become an accepted, or ‘normal’, part of the job. This in turn allows them to maintain the belief that they do not need such safety equipment.

Protection of Rights of Study Participants

Prior to surveys being administered this study was approved by Bassett Healthcare Networks’ Institutional Review Board (IRB). Each participant was asked verbally to participate, and was informed that the information gathered would be used to collect common themes among information gathering practices and would not be linked to them personally. No personal identifiers were collected. The IRB approval from can be found in the appendix.

Administering the Survey
Surveys were administered at the New York Farm Show in Syracuse, NY. The farm show is the largest technology showcase in the northeast, and during this three day event, roughly 25,000 people circulated the event. This convenience sample consisted of 51 New York farmers who visited the trade show. Surveys were administered in paper format, and information pertaining to technology use and information gathering practices were collected. Questions related to the purchasing of safety equipment were also asked. Figure 1 below shows the survey tool used to capture this data. During data collection, notes were taken on topics, for example if the participant selected that they used the internet for information on machinery upgrades, I asked what sites specifically. If the participant admitted to looking for information on farm management from publications I recorded the top three publications they utilized also.
Figure 2: Survey tool used for data collection

Limitations

Although the use of information technology including use of web 1.0 and 2.0 website, in addition to print marketing appears to be successful in reaching my target audience, there are some limitations worth mentioning.

Due to time constraints and limiting surveys to one venue we had a small sample size, and the sample of people consisted of people who are inclined to attend trade shows. We did not get a
sample of data from organic farmers, nor did we get a sample from newer farmers, or farmers that hadn’t just begun farming within the past 5 years. Most of the surveys were completed by people who have been farming their whole life. Finally the geographic location does not account for all regions within New York State, but mostly central New York farmers.

If I were to speculate how other approaches or targets might have led to different results I would say; newer farmers tend to be more inclined to seek out safety and good farm management practice information. From past experience with this community we can see that generation farmers (farmers who have grown up on the farm and typically inherited the farmstead) are less likely to take advice from safety organizations. They have seen what their family did before them and follow suit of their best practices. Most often safety isn’t taken into consideration. One exception to this rule is if a family member was severely injured or killed previously. Trends in the data I collected found that very few farmers actively seek out information on health and safety.

Farm size should be taken into consideration also. I only surveyed four large farms (farms with over 200 animals). We commonly find that larger farms tend to use technology more readily. If I had to speculate why, it would be need of communication and to keep track of workers on the farmstead. Larger farms also use more technology for promotion of their business. Smaller farms tend to produce just enough to keep them afloat, while larger farms aim to meet distribution requirements, and keep business production at a profit. Technology can help boost business and generate interest in their company.
Compiling the data

Once all the information was collected, data was inserted into a spread sheet for analysis. We wanted to be able to compile data in a format that answered how many farmers use technology and where they look for information. We were able to create pivot tables that showed relationships of several variable and linked internet usage to age, internet usage and farm size and how frequently they use the internet, or other mediums to access farm information. This helped us to decide what platforms may be most successful in reaching our target.

Results/ Analysis

After surveying 51 small dairy and livestock farmers we were able to see that 92% of the farmers surveyed have internet access in their homes, with 84% using it. Ages ranged from 22-63 with the majority of the farmers being in the 45-55 age range.

Analysis:

Social marketing does not target education or knowledge change as an end point; rather, it targets behavior change. In order to successfully achieve this, data on where to promote these messages needed to be collected to ensure the effectiveness of the campaign.

From our data we can clearly see that most of the farming community is using the internet. Among the selected farmers, 84% are using the internet access in their homes, which is slightly
higher than the national average, and 65% of farmers surveyed use the internet to access some type of farm information; mostly machinery upgrades. This can be seen in table 1. The remaining 10 farmers that use the internet, but not to obtain farm information use it solely for social media.

<table>
<thead>
<tr>
<th>Internet usage</th>
<th>Internet usage at home</th>
<th>Using the internet to gather farm information; including farm management, equipment updates, and H&amp;S Info</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>43 (84%)</td>
<td>33 (65%)</td>
</tr>
<tr>
<td>No</td>
<td>8 (16%)</td>
<td>18 (35%)</td>
</tr>
<tr>
<td>Total</td>
<td>51 (100%)</td>
<td>51 (100%)</td>
</tr>
</tbody>
</table>

Table 1: Farmers uses of the internet

<table>
<thead>
<tr>
<th></th>
<th>Looking up information on Farm Management</th>
<th>Looking up information Equipment Upgrades</th>
<th>Looking up information Health and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>19 (37%)</td>
<td>26 (51%)</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>No</td>
<td>32 (63%)</td>
<td>25 (49%)</td>
<td>46 (90%)</td>
</tr>
<tr>
<td>Total</td>
<td>51 (100%)</td>
<td>51 (100%)</td>
<td>51 (100%)</td>
</tr>
</tbody>
</table>

Table 2: Internet usage for gathering farm information broken into topics

<table>
<thead>
<tr>
<th>Seeking out health and safety (H&amp;S) Information</th>
<th>Yes</th>
<th>no</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total: 51 (100%)</td>
<td>23 (45%)</td>
<td>28 (55%)</td>
</tr>
</tbody>
</table>

Table 3: Percentage of farmers that seek out health and safety information

When it comes to searching for information on health and safety only 10% of farmers surveyed used the internet. See table 2 above. While this number is low, the overall theme that farmers don’t actively seek out health and safety information, unless there is a specific concern, must be taken into consideration. This would not discourage me from promoting health and safety on the
internet at all because when looking at the number of participants who admitted to looking up health and safety information, 22% use the internet, more than doubling the original 10%. See table 4: internet as a source for health and safety information among those who seek it out.

<table>
<thead>
<tr>
<th>Internet as a source of H&amp;S information among all participants</th>
<th>Internet as a source for those who look up H&amp;S Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>No</td>
<td>46 (90%)</td>
</tr>
<tr>
<td>Total</td>
<td>51 (100%)</td>
</tr>
</tbody>
</table>

Table 4: Internet as a source for health and safety information among those who seek it out

The farmers that were safety conscious tended to have children on the farm. This can be seen in table 5. It shows that 70% of the farms with children on them seek out health and safety information, with various sources reported being used. The top three choices used were publications, peers, and the internet.

<table>
<thead>
<tr>
<th>Percentage of farmers with children on the farm</th>
<th>Percentage of these farmers who look up H&amp;S information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>10 (20%)</td>
</tr>
<tr>
<td>No</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>N/A</td>
<td>41 (80%)</td>
</tr>
<tr>
<td>Total</td>
<td>51 (100%)</td>
</tr>
</tbody>
</table>

Table 5: Internet as a source of health and safety information among those with children on the farm

<table>
<thead>
<tr>
<th>Source of H&amp;S information</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Publications</td>
<td>7 (28%)</td>
</tr>
<tr>
<td>Cooperative Extension</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>Internet</td>
<td>5 (20%)</td>
</tr>
<tr>
<td>Peers</td>
<td>6 (24%)</td>
</tr>
<tr>
<td>Dept. of Labor</td>
<td>1 (4%)</td>
</tr>
<tr>
<td>NYCAMH</td>
<td>4 (16%)</td>
</tr>
<tr>
<td>Total</td>
<td>25 (100%)</td>
</tr>
</tbody>
</table>

Table 6: Sources of health and safety information for those who seek it out
When questioned about internet use, most farmers did say they used this tool. When I asked them to recall which sites in particular that they used, it was much harder for them to have a definite answer. Most responded typical internet searches. This doesn’t allow us to pin point individual websites to advertise within, but it does tell us that a website for the program would be effective in reaching the target, if they were in need of a shield. While this doesn’t exactly help us with the social marketing aspect of the project, and clarifying their behavior change, it does allow us to provide information to farmers that inquire due to interest in the subject.

<table>
<thead>
<tr>
<th>Top websites used for information gathering</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Google search</td>
<td>19 (58%)</td>
</tr>
<tr>
<td>TractorHouse.com</td>
<td>8 (24%)</td>
</tr>
<tr>
<td>Dealership Website</td>
<td>2 (6%)</td>
</tr>
<tr>
<td>Craigslist</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>Tractordata.com</td>
<td>1 (3%)</td>
</tr>
<tr>
<td>N/A</td>
<td>2 (6%)</td>
</tr>
<tr>
<td>Total</td>
<td>33 (100%)</td>
</tr>
</tbody>
</table>

Table 7: Top websites used for farm information gathering

When it came to social media use, I found that 67% of the people surveyed had at least one member in their household that used Facebook, making it the most predominate used social media site within the farming community also. We found that 39% of farmers use this site, and 100% of spouses and/or children use the site. From this finding we can conclude that reaching the farmer through social media may be hit or miss, but reaching family members should be very easy.

From our analysis we can see that farmers are still going to publications as a main source of information gathering with peers and the internet as additional sources top sources. A list of the
top publications used for farm information gathering was compiled, and used in the development of my advertising campaign. With an increase in use of the internet we can get an understanding that this is a powerful promotional tool, but at this time it should be used in conjunction with other mediums to ensure maximum reach.

**Conclusions:**

When trying to reach farmers on a topic that doesn’t typically interest them, or that they don’t initially seek out, I would conclude that it would be best to promote within the mediums that they do refer to most often, publications. This exposure of the message to the farmer subconsciously could allow for the social marketing campaign to be successful, in terms of behavior change. Once the farmer sees the persuasive message, and purchases the shield the behavior change becomes successful. The point of the campaign is to increase shields on farms. Getting the farmer to purchase a shield, to replace one that is missing or broken becomes the end goal. I am also aware of the fact that farmers are using the internet, however I do not have a firm understanding of which sites they are using regularly. I found a few themes within my survey, but not enough to develop a full internet advertisement campaign that would help to make the social marketing promotion a success. With the number of farm resources on the internet, I cannot choose which site would be most effective at reaching my target, as I did not collect which website was most useful to my target. This was due to the fact that the farmer admitted to using generic Google searches more often than specific sites.

While the use of an internet campaign may not be useful in developing a successful social marketing campaign at this time, internet is still a feasible option to promote services to the farm
community in general. With advances in access to these technologies and increased use, it would be vital to use a multimedia safety campaign to fully reach the target. Web 1.0 is important in reaching and informing, web 2.0 is vital in peer education, and print is important as it is decidedly the most common source for information gathering among the farming community. While each of these mediums would be effective in reaching the target in some way, all three used in conjunction would maximize infiltration.

**Designing the Campaign:**

When deciding how to promote the Power Take-off (PTO) Shield Program, I feel a multi media promotions campaign could still be most effective. Using powerful messages that ‘hit home’ are often very persuasive when encouraging behavior change. These themes often include, loss of limbs- implying that you may not be able to do what you love anymore, tying in family and protection, and the fear of death. Within the farm community we see that the farmer typically has the purchasing power, but the farmer’s spouse and children typically weigh heavily on the importance of safety. With that said, it is important to promote directly to the farmer and in-directly to the farmer’s spouse and children.

My media mix would include a website for the project, a Facebook page, as well as general print advertisements in weekly and monthly publications. The print medium would be useful in terms of evaluating the social marketing campaign to see if the messages that were created are successful, and the website would be useful when farmers recognize a need for this equipment, and seek the information out on their own. Facebook would then become useful when promoting in-directly to the farmer through spouses and children.
Website design:

When designing a webpage that is likely to be visited by farmers seeking information on power take-off shields there are many factors to consider. What type of information is important to them, how likely are they to see and buy online vs. in person, and how much time they would devote to the site would all need to be taken into consideration.

As we know from previous research time and money are two of the biggest barriers to replacing broken or missing shields. With that said it would be vital for us to predominantly display price and ease of use on the home page. The low cost incentive, as well as the list of steps to install can accurately portray that the product is new technology that overcomes the preconceived issues farmers have had in the past. Farmers also like the idea of a universal fit; knowing that one shield fits 90% of implements is a huge purchasing factor.

In order to show that we are a reputable company it would be best to have an ‘about us’ page that could link to our www.nycamh.org page and have a brief history with our mission. Finally in order to educate, we should also have an information page. This page would include facts about power take-off injuries and informative statistics on shielding. This information with ‘tags’ or ‘keywords’ included in the copy may aid in bringing traffic to the site with generic Google searches on PTO safety.

Page layout

When designing the website I was able to follow a 960 grid in Photoshop. It is vital to keep your information in a coherent manner among the grid boxes. I used a full column for the top portion
of the site, to draw the viewer’s eyes to the main section of the site. I then used half columns below that to break up the page and allow for the flow of information to keep the viewers attention.
Facebook page:

When developing a Facebook page there are several available options. I could create a fan page, a profile, a group or a community page. While profiles are typically used by individuals, previous experience with a fan page shows that a profile may be more effective at reaching our target. In the past we have found that people are more likely to be your friend than ‘like’ your page. With a Facebook fan page, your exposure relies heavily on likes and sharing. The more likes or shares you have on each post, the more your information is promoted. Posting frequently and tagging other organizations can also increase your exposure. While it may be more difficult to gain likes from a fan page, you are still able to do the same things you would be able to do with a profile page.

My target audience for the Facebook page is the farm family. While we know that more than a third of the farmers are using Facebook, we know that 100% of the people I surveyed with a spouse and/or children stated that their spouse and/or child use the site. This allows me to conclude that if I wanted to target them I would need to include a little more information on what the program is, and really explain the necessity of this piece of equipment. Doing so would insure that the spouses or children, who may be removed from the farms operations, understand the dangers associated with the work. I could also link them from the Facebook page to the website often.

If I was going to target the farmer I may have a page like the one pictured in figure 3.
Figure 3: Sample Facebook page that targets the farmer

If I am going to target the wife or older children of a farmer my page might look more like figure 4.

Figure 4: Sample Facebook page that targets the farm family
Finally the “about me” page, seen in figure 5 would have to have all the details needed to fully persuade the reader that they can convince the farmer of what is needed, why they need it, and how much it would cost them. Here is an example of the about me page I could include.

**Figure 5: Sample “about me” Facebook page**

**Print campaign:**

From my research I found the following print publications would be best for promotion to my target;
With feedback from previous promotion campaigns to the farming community I would suggest full page advertisements monthly for the first six months, then reducing the advertisement to half page ads for the next six months. Going forward, based on demand, and an evaluation of the campaign, we could continue on with these publications or revamp and re-evaluate the target. I do not have a clear understanding if a full page verses a half page advertisement would be more beneficial, but an evaluation at the six month mark could determine if there is a need for change.

Below are three messages we will use within the social marketing campaign. These messages were developed from a previous research study and will be used when we launch this campaign this fall. The campaign would begin with the use of one concept being used within the first year, gradually mixing in the last two concepts when we feel that the target has become immune to the original advertisement or market saturation has taken place. One way to determine if saturation has taken place would be to evaluate the success of the program, by determining if there has been an increase of PTO sales within the central New York target region.
Try out the new, affordable PTO shield.

It's easier than farming without limbs.

Don't let an accident take down you or your farm. Your local dealer can deliver and install a new and improved PTO shield for less than $99. You won't have to pay a penny—or any interest—for 90 days.

www.PTOshield4U.com | 1-800-PTO-SAFE
It took three generations to build this farm and one broken shield to lose it.

Don’t let an accident take down you or your farm. Have a new, affordable and easy-to-install universal fit PTO shield delivered to your doorstep—with no payments or interest for 90 days. Our toll-free number makes it easy to order. Call 1-800-PTO-SAFE or visit http://www.ptoshield4u.com to learn more.

1-800-PTO-SAFE | www.PTOshield4U.com

Figure 7: Print concept #2
After I was injured by a PTO, do you know what I would like more than anything?

I would really like to hug my granddaughter again.

Don’t let an accident take down you or your farm. Have a new, affordable and easy-to-install universal fit PTO shield delivered to your doorstep—with no payments or interest for 90 days. Our toll-free number makes it easy to order. Call 1-800-PTO-SAFE or visit www.ptoshield4u.com to learn more.

www.PTOSHI ELD4U.com  |  1-800-PTO-SAFE

Figure 8: Print concept #3
With all of the efforts combined, an increase in sales of PTO shields within the northeast should be established. This not only shows a success in this project, but it also allows us to make the farming environment a little safer. Evaluations of this project as a whole will be followed out by farm audits in the year 2015. This will entail farm visits and surveying farm machinery to see if PTO shields are in place and in working order.
Bibliography


Appendix

Key words:

Farm Safety, Social Marketing, Power Take-off Safety, Web 1.0, Web 2.0, Social Media, Internet, Information gathering, Technology, Internet usage, smart phone, farm community, farm population, Safety, Technology usage
THE MARY IMOGENE BASSETT INSTITUTIONAL REVIEW BOARD
Report of Protocol Revisions

RECEIVED
FEB 1 2014
IRB Office

Project #: 992
Study Title: Social Marketing of Machinery Safety Shields
Principal Investigator: Julie Sorensen

1. Check all items that were revised/added as a result of this amendment:
   (This form is available electronically. Double-clicking with the left side of the mouse on the checkboxes allows you to check the appropriate box.)
   - Sponsor/Investigator Protocol; New version date:
   - Informed consent document(s); New version date: (include 1 clean and 1 highlighted copy)
   - Advertisement (i.e. recruitment posters, letters, brochures)
   - Addition/Deletion of a study team member; If addition, educational training in human subjects research completed? □ Yes □ No
   - Change of PI (new PI must submit an amended page 1 of the IRB application with the signature section completed - new PI and Chief of Service or Department Head signatures are required). If PI is leaving the institution, see Protection of Human Subjects Handbook for additional requirements.
   - X Other: Media channel survey to be administered

2. Include a summary of the changes made with a rationale for each change
   (in addition, for sponsored studies, attach any correspondence).
   Approximately 100 Surveys will be administered to a convenience sample of the farming community at trade show events, and will target small dairy and livestock farmers. These surveys will be administered in paper format, and will collect information about technology use and information gathering. Questions related to the purchasing of safety equipment will also be asked. This study seeks to determine if the farm population also uses web 2.0 technologies to find information related to safety practices. No identifiers will be collected, only demographic information on commodity, farm size, age, and years of experience.

3. Are subjects currently enrolled in this study? □ Yes □ No

4. Will this change require a revision of the consent form? □ Yes □ No
   Identify any plans to reconsent current participants.

□ Principal Investigator Signature
□ Date

2/6/14
Vita

Samantha Sue Park
PO Box 458
Cherry Valley, NY 13320
315-264-8372
Samantha_park1@fitnyc.edu

Education

**MS in Information and Design Technology**, State University of New York Institute of Technology, Utica, 2014
Thesis: Evaluating the Appropriateness of Using Web Technologies to Promote Farm Safety to New York Farmers

**BS in Advertising and Marketing Communications**, State University of New York, Fashion Institute of Technology, New York, NY, 2009

Employment

**Research Assistant II Media Specialist**, The New York Center for Agricultural Medicine and Health/ Northeast Center for Agricultural and Occupational Health (Affiliated with Bassett Healthcare Network), Cooperstown, NY, August 2011 – present
In addition to the continuation of all work related to the research assistant position, additional responsibilities include website maintenance, social media coordination, creation and dissemination of marketing materials, promoting the work of NYCAMH at outreach events as well as at state and national conferences.

**Research Assistant**, The New York Center for Agricultural Medicine and Health/ Northeast Center for Agricultural and Occupational Health (Affiliated with Bassett Healthcare Network), Cooperstown, NY, July 2010 – August 2011
Responsible for the assistance and day to day operation of several NIOSH funded research projects. This requires assisting coordinators manage projects, data entry, analyzing data, as well as aiding in grant and scientific paper writing. Other duties involve working with HealthWorks Occupational Health Services by performing quantitative and qualitative respirator fit testing or EKG lead placement, acting as editor of the NYCAMH Healthy Horizons Newsletter, and promoting our safety services at tradeshows and events.

Research

**Research Assistant**
2U54OH007542-11 1/15/2013-Present
The National Institute for Occupational Safety and Health
Center for Agricultural Illness and Injury Research, Education and Prevention
Social Marketing of Machinery Safety Shields
The over-arching goal of the PTO project is to reduce the fatalities and injuries that are associated with PTO entanglements in NY state by increasing the proportion of shielded equipment on farms. To do this we have proposed to 1) identify an ideal segment of the NY farm population to serve as the 'target population', 2) conduct considerable formative research with this population to identify their barriers and motivators to installing shielding on unshielded PTO driven equipment, 3) use this information to both improve the design of PTO shielding and develop ads and a promotional campaign that will encourage the target population to install shielding on unshielded equipment and 4) launch the social marketing campaign and evaluate its effect on farmer's readiness to install shields, as well as the proportion of shielded equipment on farms.

**Research Assistant**  
5R21OH009796-02  
1/15/2013-Present  
The National Institute for Occupational Safety and Health  
Center for Agricultural Illness and Injury Research, Education and Prevention  
Generating Structural and Financial Support for Tractor Retrofitting Initiatives  
Specific aims include: Identify the groups, networks, relationships and stakeholders that are vital partners for leveraging financial and social support of a national ROPS Initiative. Develop strategies and promotional materials aimed at OLs, to organize a rollover protective structure (ROPS) Strategic Alliance made up of OLs to implement a national ROPS intervention. And finally distribute strategies / materials to high risk states, NIOSH and NIOSH Agricultural centers to recruit center personnel to participate in intervention implementation.

**Research Assistant**  
(August 2009 to present)  
5 U50 OH07542-05  
7/15/2010 - 8/29/2011  
The National Institute for Occupational Safety and Health  
Center for Agricultural Illness and Injury Research, Education and Prevention  
Statewide Surveillance of New York Farm Injuries – an EMS-based method  
This surveillance effort develops a new methodology to track farm-related injuries and fatalities in New York by using centralized EMS ambulance reports. This data are supplemented by intensive community surveillance in a sample of agricultural counties throughout the state. The information gathered will be used to compile a statewide estimate of agricultural injury rates for New York, and researchers will assess the feasibility and completeness of such a surveillance method.

**Presentations**  
The Development of the Migrant Clinician’s Website, a tool for Migrant Health, November 2012, Mid West Migrant Health Stream Forum, San Antonio, Texas  
Does Style Affect the Use of Personal Protective Equipment?  
(Poster), October 2011, American Public Health Association Annual Conference, Washington, DC  
Revamping the NYCAMH Website, June 2011, NYCAMH/NEC Advisory Board Meeting, Cooperstown, New York

**Professional Societies**
International Society for Agricultural Safety and Health (ISASH)- Associate Member, 2010-Present
American Public Health Association (APHA)- Member, 2011-Present