Effective Information Campaigns That Meet the Needs of Diverse Audiences

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Background

Fire ants and water are hot topics in Texas, as well as across the South. It seems as though we always have too many fire ants and not enough water.

The State Legislature in the mid-1990s gave Texas universities and agencies a mandate -- do something about both problems. This was to be accomplished through research and education of the general public about red imported fire ants and water conservation.

When a land-grant university is given the occasion to get information to the public, it can either be a tremendous opportunity for name recognition or a thorny problem, especially in a state as big as Texas.

This paper will discuss the communication challenges and opportunities of public information campaigns that are created for diverse audiences with individual needs. It will address the strategies we used and an evaluation of our efforts.

Method

In 1996 -- after Ag. Communications helped devise a communications plan to educate legislators and the general public about a state Fire Ant Plan and the involved funding -- the Legislature appropriated $2.5 million a year for a six-year effort.

We had the money -- now we developed specific strategies to implement the plan.. The Extension Service had never fully engaged in a coordinated, statewide communications effort before. Gov.

George Bush was tapped to proclaim Sept. 14-20 as Fire Ant Awareness Week to help coordinate the effort. The next year -- with a legislative resolution -- the second week of September was declared Fire Ant Awareness Week. This resolution helped to legitimize what we were doing.

A communications task force -- with representatives from Texas A&M, Texas Tech University and the University of Texas, as well as from the Texas Department of Agriculture and Texas Parks and Wildlife Department -- was set up and anything we did was "elec tronically approved." (We used e-mail a lot.) Then, we decided to have fun and create material that would catch the public's eye. Because Texans love football, we decided to associate fire ant control with fall and the football season. Research has shown if neighborhoods treat for fire ants at the same time using environmentally safe baits, ants won't travel from yard to yard, and that if people also broadcast baits between late August and October, then the baits will kill the ants over the winter and result in fewer ants in the spring. Our campaign slogan: TACKLE FIRE ANTS IN THE FALL FOR FEWER ANTS IN THE SPRING. We came up with cartoon fire ants wearing helmets and looking "tackled." Everything emphasized the team (neighborhood) approach to treating fire ants. All of our materials contain the tackled ants.

We decided to capitalize on the county Extension agent network to disseminate and localize materials for their own use. Since we didn't h ave a budget to buy ad space, we suggested ways how agents could "team up" with their local retailers and media to get the educational message out. We created pocket folders with, "We're all on the same team when tackling fire ants" slogan to distribute the materials to county agents. The agents also used the materials and folders to approach local businesses for support.

During the first campaign, the county agent packet included ready-made and fill-in-the-blank news releases, recorded versions of the radio PSA, fact sheets, Q&A sheets, versions of the camera-ready art, artwork for possible billboards, and an expert list for media contacts.

To a certain extent, we tailor-made packets during the second campaign. We included the above items in packets that went all over the state (even though fire ants are not found throughout the state, we wanted agents to have that information available), and we added different news releases, and print versions of the PSAs. Agents asked for and received Spanish versions of the fact sheets, camera ready art and radio news briefs for their Latino radio stations. Additionally, one new item that was popular was a simple 4x8 postcard that touted the fire ant Web site at http://fireants.tamu.edu. County agents found these easy to hand out at educational meetings, and many asked for additional copies. Each of the packets had a sheet that gave suggestions on how to use the material, but as will be explained later, some of the agents were very creative.

We tailor-made packets for those agents in areas that had fire ants and mid-size television stations. These stations are typically those that run our video news releases as is, and we included a television PSA and b-roll in the packet for these county agents. These agents received a little more assistance in how to use these materials from the communications specialist assigned to that area.

In the second year, we abandoned the billboard art that had been a part of the first year's campaign. We found we couldn't -- with donated space -- count on getting prime locations for the billboard.

However, Mary Porter, communications specialist in Dallas, and Mike Merchant, Extension entomologist, tailor-made a campaign for that area that included signs on buses and posters in shopping malls with a metro toll-free telephone number that served North and Central Texas.

For the water conservation campaign, we tried those things that worked best in the fire ant campaign. First a name -- Blue Gold -- was chosen because of water's value to Texas. News releases and fact sheets were included in the county agents' packets. A radio PSA -- featuring Junior Brown singing "Water Patrol" and provided by the Texas Natural Resource Conservation Commission -- was included. The packet contained news releases, fact sheets, contact sheets, ideas on how to use the material, bumper stickers that featured the "Water Smart" logo and a list of resource materials and experts.

Results

Due to the lack of time before the first campaign for both fire ants and water, we were not able to do a pre-survey. However, we have and are still evaluating the results of the campaigns.

Our measurements of success of the fire ant campaign have been:

- During the 1998 campaign, we held a September news conference to kick off the campaign. During Fire Ant Awareness Week, "hits" to the fire ant Web site increased from 2,000 a month to 100,000 a month. Forty Extension agents who responded to our survey said they worked with organizations to place the educational inserts into paychecks, electric bills and bank statements. Feed stores, floral shops and lawn and garden centers distributed the educational flyers. Dallas water bills (that went to more than 150,000 households) included an insert on the Two-Step method promoted in the campaign.

- In 1998, county agents appeared on cable television meetings with their county commissioners, still others made presentations at home improvement stores and to Master Gardener classes. Still others used the artwork for paycheck "stuffers." Estimated contacts in Houston alone was more than 3 million people. The fire ant agent for the Dallas-Fort Worth metro area had an estimated 2 million contacts. In San Antonio, estimated contacts were about 250,000 people, and in Austin estimated contacts were more than 650,000.

- In 1998 and 1999, we disseminated about 30 print releases statewide, 13 radio stories to 147 outlets (reaching more than 200 English and Spanish-language stations), six video releases to 51 television outlets, and several articles for magazines, including The Cattleman and Texas Association of Nurserymen's newsletter. We responded to media inquires from as far away as Japan and Brazil.

- As a result of the mall posters and bus signs in 1999, the Dallas and Tarrant counties Extension offices received an average of 50 calls each pe r day during Fire Ant Awareness Week in 1999. Additionally, 93 calls were received at the toll-free metro number, with 52 requesting mailed information.

- We created a postcard that not only went to the county agents, but also was distributed to more than 700 public and research libraries in Texas and to regional and national magazines and news organization.

- Homeowner associations in Dallas, Fort Worth, Arlington and school districts such as Mansfield organized neighborhood "bait days" that garnered television coverage.

- Every major Texas newspaper in fire ant-quarantined areas published one or more articles based on the news releases; overall more than 500 articles were published in connnection with the 1998 and 1999 campaign.

- Educational information through the mass media has complemented the county fire ant agents' demonstrations, many of which have resulted in neighborhoods seeing fewer fire ants than in previous years. For instanc e, one subdivision in Austin reported significant results -- only two fire ant mounds were found when the neighborhood was surveyed in the spring of 1999. Native fire ants were alive and well, another plus for the program.

- The overall communication effort helped to show legislators and the public how to manage fire ants as well as see the rapid progress we are making in collaborative fire ant research, helping the project receive $5 million in state funding for the next biennium.

- The communications team has received numerous local, regional and national awards for its communications efforts.

- Both the fire ant and water campaigns increased Ag. Communications' visibility and value to the A&M administration.

With the Blue Gold water campaign:

- Counties that participated stretched from the High Plains to the Rio Grande Valley, with most being in Central Texas.

- The water PSA played at least 147 times on 21 radio station s across Texas. Many stations ran it several times a day and continued to do so throughout the summer.

- More than 70 newspaper columns and 27 columns from the Extension Service ran in at least 60 newspapers, with a combined circulation of more than 350,000 readers. The majority were weekly newspapers. Additionally, in Bexar County, where there is a constant need for water information, the Extension Service has been the source of more than 26 news articles and 14 columns in 1999.

Again, we feel part of the success of the campaigns came about because Ag. Communications provided the material and gave basic instruction to the county agents. Part of that success came about because faculty who specialize in water conservation and entomology provided additional training to them. However, much of the credit has to go to the creativity and assertiveness of the agents

themselves. Some of their ideas included:

- The McLennan County Extension agent conduc ted a water audit as part of the Sports Athletic Field Education (SAFE) program and invited the local media. That event resulted in a full-page story in the Waco Tribune Herald and a news story on KCEN-TV newscast.

- In Lamb County, the county agent teamed up with a local radio station for a call-in contest, in which people could win circus tickets if they could correctly answer a question about wise water use. One-hundred tickets, valued at $10 each, were paid for and given out by the station.

Agents who participated in both campaigns said the fact sheets by Ag. Communications were the most helpful items.

The Florida Agricultural Community's Communication Efforts During the 1997 and 1998 Infestations

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Background

INTRODUCTION
In 1997 and 1998, Florida's agricultural community was forced to focus time and resources communicating to the general public about the Mediterranean fruit fly (Medfly) and the control methods used to eradicate the pest when the fly threatened the state's $6.8 million agriculture industry. Activist groups were able to get the attention of the mass media as the groups challenged the use of the insecticide malathion, asserting that the chemical poses health and environmental risks. Local and state media picked up the story of both the Medfly infestation and subsequent protests, often leading to "front page" stories. The activists also began pressuring governmental agencies to revoke the temporary permit allowing the use of aerial malathion bait spray, the most efficient and effective means of eradicating the destructive fly. Agricultural communicators representing both private industry and the governmental agencies, who were legally charged with the re sponsibility of eradicating the pest, defended the use of malathion as part of an overall Medfly eradication plan designed to protect the economic contributions made by agriculture as well as the landscapes and gardens of Floridians. They were forced to engage in public relations in order to manage the attention placed on both the eradication and the industry.

The Infestations
In late May 1997, a Mediterranean fruit fly was found in a trap in Hillsborough County. Aerial spraying of malathion began June 5 over the town of Brandon; at that time, state agriculture officials assured the public about the safety of malathion. "Malathion is just about the safest of all pesticides being used," said Dr. Mary Jo Hayes, a biologist with the state Agricultural Department's Division of Plant Industry (Attack on Medfly Set to Begin, 1997). By mid-June, the spray area had expanded to 300 square miles and Commissioner of Agriculture Bob Crawford publicly declared an "all-out assault" on the Medfly as a Medfly was detected in Lakeland, Florida, the heart of Florida's citrus production area. By early August, the citrus industry began to worry that the quarantine would negatively impact early citrus crops, especially since the mandatory fumigation associated with the quarantine could cost several hundred dollars per truckload of fruit (Sloan, 1997).

During the infestation, the United States Environmental Protection Agency became involved to declare spray buffer zones around bodies of water and to require 24 hours of notice to residents before spraying could begin. The University of South Florida and the Hillsborough County Health Department began a study to look for people who felt they were suffering ill effects from the spraying.

On September 21, administrative law Judge Mary Clark declared that the emergency rule under which the eradication plan had been operating since May was invalid for further spraying. CRAM (Citizens for Responsible Application of Malathion), a Hillsborough County-based activist group, had challenged the rule based on provisions that allow an emergency rule to last for no longer than 90 days; under state law, emergency rules are not renewable (Judge Rules Against Medfly Spraying, 1997). The 1998 infestation ended with 748 flies having been trapped in five different counties and 82 different crops quarantined in areas where Medflies were found.

Little attention, other than that placed on the controversy surrounding malathion, was in the news until the 1998 infestation began with the discovery of a Medfly in a Dade County on April 1; ground application of malathion began almost immediately. The 1998 infestation also flared up in Lake County's and in Manatee County. Although the eradication program was initially limited to ground application of malathion, the EPA approved a request to aerially apply malathion over areas in Manatee County.

< BR>Communication and Controversy
The community activist group CRAM formed in Hillsborough County on June 5, 1997 in response to eradication plans. Although membership was initially small, it swelled to hundreds in just two weeks (Another Medfly found..., 1997). Members of CRAM were vocal opponents of malathion, particularly when sprayed aerially. The World Wide Web page for the group stated that the group believes that "the State of Florida is trying to save the citrus industry at the expense of the land and our lives" (CRAM, 1998). They encouraged citizens to join their group because "every single person who helps will aid us in stopping this wholesale poisoning of the people, the animals, and the land for the sake of the orange juice and petroleum industries" (CRAM, 1998) the group began collecting signatures on petitions of protest against the eradication program, and eventually succeeded in getting an administrative judge to invalidate the emerge ncy rule that allowed the malathion application.

Although less mentioned in the newspapers in 1997, SCRAM (Sarasota/Manatee Citizens Rally Against Malathion) was more successful in preventing aerial application of malathion. SCRAM managed to raise enough opposition to aerial malathion spraying that state officials agreed to only apply malathion to the ground 200 meters around the finds (Sarasota says SCRAM and Fly Sprayers Back Off, 1997). SCRAM paid to fly in "experts" from California to discuss health and environmental issues related to the eradication program. One of these experts was a California State University biologist who told the U.S. House of Representatives that Florida's Medfly that eradication plan was "scientifically corrupt" (Sarasota says SCRAM and Fly Sprayers back Off, 1997).

During the summer of 1998, newspaper articles featuring complaints about malathion use began regularly appearing in newspapers. In particular, ther e were complaints from people with chemical sensitivities, parents, organic farmers, beekeepers, and tropical fish farmers. As spraying reached Tampa Bay's most populated areas, the hotline established for public questions and comments was

receiving up to 1,000 calls each day (State Expands Spraying Area As Aerial War Reaches Downtown Tampa, 1997) though none of the calls resulted in a confirmed case of malathion poisoning. A project at USF began tracking reported health problems, and state health officials asserted that state agriculture officials had not notified them before the eradication program began. (Attention Turns to Spraying's Effects, 1997).

Toward the end of the 1997 infestation, several newspaper articles were highly critical of malathion use and provided an opportunity for those who believed that their health had been impacted by malathion to air their complaints. Several in The Tampa Tribune, the main paper serving the Tampa area, asserted that malathi on caused health problems in children exposed to yards and pools that had been exposed to malathion.

The 1998 infestation was by far more widespread and involved more than twice the number of flies than were found in 1997. It was also different in that Lake County is a rural area whereas those involved in the 1997 infestation were urban and suburban areas. Very little public comment was been made about the eradication efforts in Lake County, but residents of Manatee and Sarasota counties were not so quiet.

When it was announced that aerial application would take place in Manatee County, residents "screamed and hissed" at a panel of state agriculture and health officials (Kamins, 1998). SCRAM, teaming up with a group called Floridians Against Chemical Trespass (FACT), unsuccessfully attempted to take legal action to stop the spraying. Matthew McMilliam, an attorney for both CRAM and SCRAM wrote Marcia Mulkey of the EPA's Office of Pesticides a lette r that stated in an April 20 letter that "my clients cannot think of anything which would allow them to accept the continued use of malathion." In the letter, he also stated that discontinued use of malathion for Medfly control would not have any negative impact on agriculture. A flier was distributed by an organization identifying itself as "Kids Who Care" that described malathion as "a nerve gas" and listed symptoms of toxicity that are not consistent with those listed in medical or scientific literature for malathion (Fuller, 1998).

Public Relations Models

Grunig's four models of public relations (1992) are useful tools for describing the type and quality of the Florida agricultural communicators' public relations efforts. His press agentry/publicity model describes one-sided communication geared toward manipulation of the message and audience. The second model is the public information model and was developed by corporations in response to accusations made by muckrakers. It generates one-sided communications that are slanted in favor of the organization but are also truthful and accurate. His third model is the two-way, asymmetrical model in which an organization gets input from its publics in the form of research, but that input is used for the purpose of convincing and persuading those same publics.

The two-way, symmetrical model was the fourth model, which Grunig believed would lead to excellence in public relations. In this model, organizations use various means of research and communication to better understand their publics and use that information to facilitate understanding and communication, (Grunig & Grunig, 1992) rather than to motivate or persuade. In the symmetrical model, understanding is the main goal (Grunig & Grunig, 1992). Given that the Florida agricultural

community is such a diverse group, it is possible that all four models of communication were practiced at some p oint and time.

The Medfly infestations also required the agricultural communicators to practice issues management in regards to the core concerns raised by the public and media in regards to eradicating the Medfly. In their discussion of issues management, Heath and Cousino (1990) developed four issues management functions that are needed in order for a company to achieve maximum profit, operate without conflict from the public policy environment, and foster positive relationships with publics: 1) involvement of public policy experts in strategic business planning and management, 2) issue communication, 3) issue monitoring and analysis, and 4) efforts to meet changing standards of corporate social responsibility. Although it may be the product of activism, Gaunt and Ollenburger (1995) point out that issues management is a proactive strategy that tries to identify issues and influence decisions regarding them before they can cause problems. In the case of the agricult ure community and the Medfly, issues management would most likely take the form of managing environmental and public health-related issues before an infestation put them in the spotlight.

In order for agricultural communicators to practice effective crisis communication, a program of proactive public relations is necessary (Guth, 1995). Guth observes that an inappropriate response to a crisis can pose tangible loss, such as damage to property or lost revenue and intangible losses such as a loss of public confidence in an organization. This is an especially important point for Florida agriculture to consider.

Much of the agricultural communicators' public relations efforts also fell into the category of risk communication, which is communication specifically designed to convey messages about risks and the potential benefits from those risks. Public relations practitioner William Adams (1992-93) made the following observations about how the media react to risk communication: 1) the news media will generally ignore your organization's experts in favor of government or activist sources, 2) journalists often lack a knowledge of the environmental and/or scientific facts surrounding a particular risk, 3) there is a tendency for journalists to personalize a risk-related story. Adams asserted that if a practitioner is able to anticipate how and why journalists react to risk issues, it may be possible to "anticipate and/or mitigate damage caused by inaccurate or incompetent reporting" (1992-93, pp.29-30).

Significance

This case study is significant for three reasons: timeliness, economic impact, and lack of case studies that focus on agriculture, specifically Florida agriculture. First, this study is timely. The 1997 Medfly infestation was the largest since 1956; the 1998 infestation was even larger. With the infestations still fresh on the minds of the agricultural community, this study was able to get an inside look at how communication was carried out, how messages were sent and interpreted, and how important communication decisions were made. In addition, this study is timely because of the growing pressure on the agriculture industry regarding the use of pest control chemicals. As the general public becomes more intolerant of chemicals used in the production of food and fiber, the agricultural community must be prepared to effectively communicate its position on such matters.

Second, this study is significant because of the economic impact of agriculture on Florida's economy and the cost of eradication efforts. Agriculture brings almost $7 billion into the state every year. The Medfly attacks over 250 different fruits, vegetables, and nuts, many of which are economically important to Florida agriculture. Florida citrus, a particular favorite of the Medfly is a $3.6-billion-a-year industry that provides 75 percent of the citrus in the United States.

Finally, th is study is significant because there is a lack of case studies about agricultural communication problems. The agriculture industry faces problems that no other industry faces and must communicate about a staggering number of complicated issues; yet there remains a lack of documented cases from which industry professionals and students can learn.

Purpose and Research Questions

The purpose of this study is to provide an in-depth look at the Florida agricultural community's communication efforts relating to 1997 and 1998 infestations of the Mediterranean fruit fly. The communications will be examined from a public relations perspective and recommendations will be made for improving the agricultural communicators' public relations efforts.

This research was designed to answer the following specific questions:

· From a public relations perspective, what messages were the agricultural communicators in Florida trying to communicate to the public and wh y were these particular messages chosen?
· How did communicators from different agricultural organizations coordinate their messages and cooperate during the infestations?
· What media did the agricultural communicators use to convey their messages?
· What messages did the communicators perceive to have been sent to the public via the mass media?
· Did the agricultural communicators gain and document knowledge that can be used should a similar situation occur in the future?

Method

This qualitative study was conducted using a descriptive case study technique in which a detailed account of the selected phenomenon -- the agricultural community's communication efforts regarding the two most recent infestations of the Mediterranean fruit fly -- is presented.

A primary advantage of the case study methodology is that it allowed the researcher to obtain a wealth of information and provide detail about this research topic (Wimmer & Dominick, 1987). Merriam (1998) observed that a case study design is employed to gain an in-depth understanding of the situation and that "the primary interest is in process rather than outcomes, in context rather than specific variables, in discovery rather than confirmation" (p.19). This methodology was also chosen since good situations for case studies are those that address an instance of some concern, issue or hypothesis and those that are intrinsically interesting. The Medfly communications are of great inter est to the Florida agricultural community and are likely intrinsically interesting to those who are involved in the public relations profession.

Wimmer and Dominick (1987) discussed the three main criticisms of the case study approach. The first relates to a lack of scientific rigor in many case studies. In his influential 1984 book Case Study

Research, Yin asserts that truly rigorous case studies require a great deal of time and effort. The second criticism is that case studies are not easily generalized and should not be used when the goal of the study is to make statistical statements about the frequency of an occurrence (Wimmer & Dominick, 1987). Fortunately, the purpose of this particular study is to describe what occurred during a specific occurrence. The final criticism is simply that case studies are time consuming and can produce such large quantities of data that they are difficult to summarize and interpret. Also, since the researcher is the primary instrum ent of data collection, there is also always the risk of the researcher's personal biases or perspectives being projected, intentionally or not, into the study.

The data gathering method was face-to-face interviews conducted by the researcher during the fall of 1998. Eight interviews were conducted with members of the agricultural community who actively participated in the communication regarding the 1997 and 1998 Medfly infestations. The communicators included in the interview process were representatives of industry associations, Extension personnel from the University of Florida, USDA personnel, and a representative from the Florida Department of Agriculture and Consumer Services (DACS).

A list of interview questions was developed and was refined under the advisement of a number of instructors and public relations professionals including faculty members in the Department of Agricultural Education and Communication and in the College of Journalism and Comm unications. Once a set of acceptable questions was been developed, two "test interviews" were scheduled with members of the Florida Agriculture Institute, an organization of agricultural communications professionals. After the test interviews were completed, the questions were revised as necessary. All interviews were recorded, transcribed, and analyzed.
In addition to the primary data gathered, secondary sources of information were reviewed and used to develop the interview questions, as well as to fill in the details of the events that occurred during the 1997 and 1998 Medfly infestations. The researcher conducted an informal content review (not content analysis) of newspaper coverage related to the Medfly infestations, as well as reviewed memos, letters, e-mail, and trade publication. The purpose of this was to become as familiar as possible with what was presented in the mass media as well as to be able to understand and respond to any comments made about mas s media coverage by those interviewed. In reporting the findings, the individuals interviewed were randomly assigned pseudonyms so that their comments could be referenced without revealing their identities.

Results

1) The Medfly infestation and resulting media coverage, particularly the coverage published in The Tampa Tribune, did indeed have significant impacts on the organizations affected.

Andrew, an agricultural communicator, described the media's impact on the public's perception of the problem in the following way:
"They were able to strongly convince the public that malathion was going to kill them, that malathion was going to cause damage to their children, that they were going to have deformed babies in five year, that it was going to get in the water supply and that everyone was going to be drinking malathion."

Many of the communicators said they believed the media reports with the most negative impact were

written by Jan Hollingsworth, an environmental reporter for The Tampa Tribune. All of the agricultural communicators said Hollingsworth's aversion to chemical control methods was reflected in her writing and had a significant impact on how th e general public - particularly those in urban areas of Tampa - perceived the chemical control program. As Catherine said:
"If you've read a lot of Jan Hollingsworth, you know she was a major factor in the problem. The fact that you had a reporter who wanted to spend so much time and clearly showed a bias in her presentation of the story had a huge impact on the public's perception and the political perception of the issue."

In fact, all of the communicators cited The Tampa Tribune's coverage of the issue as a major factor in the communications crisis that surrounded the 1997 Medfly infestation. Mary Ann, a public relations practitioner for the agriculture industry, described the paper's coverage the way:
"In Tampa, the public saw in the Tribune - other media actually handled the issue pretty fairly - they saw headlines that said 'Chemical Warfare.' They had a picture of the lone helicopter that they were using at that point in the program, th is big photograph on 1A. It was incredible. That's what the public saw during the first few weeks of the program, and that momentum continued."

The agriculture industry's communicators also said they felt that the groups organized against the use of malathion were able to manipulate the media in a way so the impacts were greater. Mary Ann went on to say,
"Their [the activists'] message was simple, and they were loud, and they were very savvy with the media. They did the protests, and they had the hand literature, and they did the petition. They held up the petitions along the wall of the county commission meeting in Tampa so the TV cameras would get them on screen looking like the victims. They were doing street theater, holding rallies, they were very visual, and they would put their people out there holding petitions that were taped together that would run 30 feet long. They knew how to manipulate television, and they had some very willing participants in the newspapers. I would say that CRAM and, to some extent SCRAM down in Sarasota, had a huge impact on the public's perception of the issue."

2) The activist groups were able to "strike first" and control the media message for a period of time that was damaging to the agricultural industry.

Most of the communicators indicated that activists groups were able to grab the attention of the media and promote their messages, unanswered by the ag community. As ag communicator Andrew aptly put it, " We were unprepared, and they had their facts together and their people speaking before we even realized what was going on." Another communicator, Alex, said "In 1998, we were late in understanding the level of public concern in the Tampa area - probably five weeks late (^Å.) Our antennae were not properly attuned, for one reason or another, and we were not focused early enough on the PR needs of that program."

A few of the communicators felt that they may have initially underestimated the potential for a public relations crisis because the activists groups were relatively small. Several of the communicators expressed their belief that the activists groups were not very large, but that their level of organization allowed them to get out in front of the issue and control the messages. Alex said:

"In proportion to their numbers, I think they had an incredible impact. Early on, they gained credibility with the media as the spokesman for the opposition. Every time the United States Department of Agriculture (USDA) and the Florida Department of Agriculture and Consumer Services (DACS) would make a statement, CRAM was recognized for the other side. They established credibility early on. They got a lot of ink. I think it was out of proportion to their numbers."

Several of the communicators also expressed that one reason their organizations' efforts were not immediately directe d toward public relations for the Medfly eradication was because they were busy with the complex process of planning and implementing the eradication program itself.

3) Although the Medfly eradication program and the associated industry received negative press, the mass media also delivered some important, positive messages to the public for the agriculture community.

All of the communicators agreed that although the media, especially The Tampa Tribune during 1997, carried many messages that were negative toward the eradication program, they also carried messages that were very important for the agriculture industry to get to the general public. Both the broadcast and print media discussed the potential financial impact to the state's economy if the eradication was unsuccessful, gave information about safety precautions to be taken during the malathion applications and disseminated the spray schedules when available. Catherine said:
"To the new spapers' credit, many covered every angle they possibly could without doing a commercial for the industry. They covered the economic impact of how the Medfly would impact growers and those employed by growers. They covered health risks and water supply issues. They talked a lot about logistics of spraying schedules and tactics and techniques used to distribute the malathion."

Ag communicator Mary Ann said:
"Other papers such as [The Lakeland] Ledger, the St. Petersburgh Times and the [Orlando] Sentinel were much more balanced in their approach. Though they covered the spraying side of it and raised questions about the spray, their coverage was still more balanced. They explained the bait spray better. We just didn't have the alarmism in the headlines or in the stories that we saw in The Tampa Tribune. They made more of an effort to get agriculture's side of it."

4) None of the communicators' organizations had a plan to specifically a ddress communication needs related to a Medfly infestation; general crisis communication plans were also absent from most of the organizations.

Only one of the communicators belonged to organizations that had what could be considered a formal crisis communication plan in place. A few of the communicators had what they considered to be communications plans, but those generally consisted of phone lists and the names of important contacts. Half of the communicators said they believed that plans were difficult to develop because "each crisis is different." Others said that they "just knew what to do when situations like this come

up."

The sole organization that has a communications plan developed it after a 1990 Medfly infestation. Nicole said:
"The last major eradication program was in 1990 in Miami. That was the first time there was any opposition of any type. Of course, that was still very minor. And after that, we came up with a formal program for this. In fact, we trained 16 people to take homeowner calls."

5) The individual organizations within the agricultural community were able to communicate messages that were consistent with one another.

The individual communicators sent messages to the public via the mass media that were clear and consistent with one another. Among the most important of these messages were the economic importance of agriculture to the state's economy, the importance of agriculture to the local economy, the agricultural community's support for the eradication program, the potential for destruction should the pest go uncontrolled and the proven efficacy and safety of the products being used in eradication.

6) The major factor that contributed to the consistency in messages and coordination of communication was the communicators' participation in the Agriculture Institute of Florida.

The Agriculture Institute of Florida is an associ ation of communications professionals actively involved in the agriculture industry. Five of the communicators interviewed were members of its board of directors at the time of the interview, and the remaining three belong to organizations that are represented on the board. The relationships established through participation in this professional organization formed a crucial foundation that enabled the communicators to network their communication efforts. In regards to the impact of the Agriculture Institute, Catherine said:
"It was nice to know that suddenly, when the Department of Ag called and asked, 'What are we going to do?' all you had to do was run down the list of the board of directors and you knew who the 'A List' was. When you have a bunch of people on a list who know how to handle something like this and understand what needs to be done, that's half of your crisis plan right there. It worked quite well because we knew each other already - knew each other' s strengths and weaknesses. We understood the capacity for communication and regional restrictions, where offices were located, who was a good writer, who was a good schmoozer, who had computer savvy to make sure the data got transmitted, who had connections in Tallahassee. All of that stuff got taken care of in two and a half hours on a Friday because we had everyone we needed."

7) The communicators used a variety of media to get their messages disseminated. Personal relationships and personal contact were essential in communicating with the public and quieting fears.

Television, newspapers, radio, brochures, phone hotlines, and Internet Web sites were all among media used by the communicators to get out their messages regarding the Medfly infestations and control programs. In addition, communicators recruited farmers from affected areas to give talks regarding the possible impacts to their industry and their livelihoods. These speakers were per ceived

to be quite effective since they could give first-hand testimonials regarding the need for Medfly eradication.

In at least two counties, the communicators recruited volunteers from various agriculture-related youth organizations and hosted free car washes to residents in area that were being impacted by the malathion bait spray (the protein in the spray could damage auto paint if not washed off in a timely manner). These events were held as ways of generating good will toward the industry and the eradication program in the communities in which they were held. In addition, communicators in at least two of the counties organized "town meetings" at which citizens were invited to dialogue with local and state officials involved with the eradication program.

Communicator Michelle described her organization's efforts by saying,
"The first thing we did was inform community groups, local officials - mayors, councilmen and councilwomen, cou nty commissioners, state legislators - from the affected areas. After that, we held press conferences. We put out media alerts all of the time. We had town meetings. We had public meetings at local high schools, and middle schools in the evenings to explain to the community what it is we found and why we had to treat it, what we were doing, how we were doing it, and when we were going to do it. And then, if you are talking about the Tampa Medfly eradication program, we set up a command post at the Florida State Fair. And every day we had two daily press briefings to tell local radio, TV, and print reporters, what we were doing that day, what area we were going to spray tomorrow, and what times the sprayings would happen."

8) Non-governmental organizations looked to governmental agencies to be the leaders in contact with the public about the Medfly and its eradication. Although private organizations recognize that government agencies made significant contrib utions to communication efforts about the eradication, they also consider the government's communication during the 1997 infestation to be late and inadequate.

Most of the communicators interviewed felt that governmental agencies were, at least in part, responsible for the agriculture industry's slow response to criticisms. Catherine said:
"I think the big communications error in 1997 was that project officials did not realize what the public relations downside of the whole Medfly program could be until late in the game. There were not enough communications officers and regular communication briefings or releases in place. And there were a bunch of guys operating out of the fairgrounds that were operating almost in a vacuum."

Andrew said that from his point of view, the problem was that although the industry looked to the government for leadership, the government agencies were unaware of what communications efforts were necessary. "Part of that problem was that when this first started we [industry communicators] thought, OK, this is a DACS thing, but DACS was not prepared for it either. Initially, they just weren't giving enough information to the public."

Two of the communicators said they felt that the initial lack of communication of important information such as spray schedules lead to a perception that the eradication program was being mismanaged. As a response to such criticisms, one governmental communicator said:

"I've seen that criticism. I personally don't believe it. We had briefings twice a day. We communicated with every radio, TV and newspaper in the Tampa Bay area. We had two daily, live briefings. We had town meetings. I'm not sure that you can do more communicating than that. We did press releases, we did press conferences. We did all kinds of things. People who under any circumstances wouldn't have been happy with what we did, may say, 'Well, you should have communicated more.' I'm not sure five times as much communication would have satisfied the die-hard people who did not want us spraying.

However, all communicators acknowledged that the governmental agencies responsible for the eradication program were helpful in providing experts to speak at public gathering and, later in the course of events, in communicating spray schedules and other important information.

9) Significant improvements were witnessed in the agricultural community's communication efforts during the 1998 infestation when compared to its efforts during the 1997 infestation.

All of the communicators agreed that the communications efforts during the 1998 infestation were much more effective and better organized than those in 1997. "In 1998, it was done the right way - they has sufficient personnel, and they had regular briefings," Catherine said.

The communicators believed that lessons learned by the USDA and DACS during th e 1997 infestation helped improve subsequent efforts. The biggest difference noted in the 1998 communication effort was that the efforts took place before spraying took place. Communities were informed and consulted prior to the application of malathion. Nicole, a communicator for a governmental agency, said:
"We learned that not only do people want to know what's going on in their community, they also want to talk to you about it.... They want to ask you questions. This year, we had public meetings in all of the communities before we did anything."

Another important difference that likely contributed to less public outcry and negative publicity in the mass media is the fact that one of the primary areas affected by the 1998 infestation was a rural community that had a stake in the agricultural health of the area and was more familiar with the use of pesticides.

10) A need is seen for more proactive communication within communities.

Most of the communicators indicated that they see a need for more communication between agriculturists and the communities in which they operate. They stressed the importance of building "good will" in communities and gaining the trust of local citizens and governmental entities. Bruce, a long-time agricultural communicator said:
"If you have not established your reputation as an organization or as an industry that is a contributor to its community^Å as being a valuable asset to the community - when you are in a crisis the community will find no reason to support you. In agriculture, I think it's especially difficult to do that because your farmers and your ranchers are the busiest people you'll ever meet. Mother Nature doesn't take weekends off and neither do farmers, but we need for them to try."

11) The communicators often dismissed the activists as extremists whose arguments were invalid and without merit.

Throughout the interviews, many of the communicators referred to activists, protesters and those against the use of malathion by terms such as "loonies," "crazies," and "tree-huggers." The overall attitude was that the people who were against the application of malathion were misinformed and anti-agriculture. When addressing this issue, Catherine said:
"One of the criticisms I would have for my own industry is that there was a lack of appreciation for the personal convictions that the people who were doing this had. They weren't just people who were misinformed or ignorant or had a hatred for the industry. A lot of them were intelligent, compassionate people who maybe had farming in their history, but they had genuine, sincere, heart-felt concern about their families' health.

"They were lawyers and businessmen. And there were some people who weren't screwed on tight all the way too. But at least half of the group I witnessed were reason able people who believed in their hearts that something was wrong. And we had to reach out to those people as an industry and not just roll them."

Conclusions

Much of the early communication efforts on the part of the government agencies responsible for the eradication efforts were either of the public information or one-way, asymmetrical models. Issuing press releases, giving press briefings, and publicizing spray schedules were clearly not sufficient for communication with the target audience. Clearly the public wanted the opportunity to voice their opinions and give input. However, the methods that were used were effective in getting across "facts" such as the possible impact of Medfly infestations and the economic necessity of eradication. Two-way, symmetrical modes of communication, particularly public meetings and face-to-face interaction were very effective for allaying public fears and should become the communicators' "first line of defense."

A lack of issues management, monitoring and analysis hampered the agricultural community's ability to communicate about Medfly eradication in a timely mann er. Although environmental issues have become prominent in the news media, the communicators were caught unaware when the activists organized and protested the use of malathion in urban areas.

The media's reaction to the Medfly eradication efforts is consistent with the risk communication predictions made by William Adams: the media tended to favor the activists as sources of information, particularly at the height of the controversy; journalists lacked knowledge and facts about malathion and eradication protocols; and there was a tendency for the journalists to personalize this risk-related story. Agricultural communicators who intend to be successful in avoiding communications crises can no longer afford to ignore or minimize environmental concerns. Not only must they closely monitor the activity of activist groups in their localities, but in many cases they must act as advisors to the leadership of their organizations regarding potential public relations pit-falls that may be associated with some courses of action.

A lack of crisis communication plans forced the agricultural communicators to "make it up as they went along." Had they already developed plans, they probably could have communicated faster and with more precision. It is unfortunate that more of the organizations within the agriculture community did not take this opportunity to develop crisis communication plans. In addition, the fact that few of the communicators adequately documented their communications efforts during the infestations is a significant opportunity lost.

Despite contrary opinions from one government communicator, most of the communicators interviewed felt that the governmental agencies in charge of the eradication did not recognize the need for additional communication in a timely manner. The activists were able to establish their position in the media unopposed for a period of several weeks. Incorporation of lessons learned duri ng 1997, as well as a shift in the demographic of the affected communities, led to improved communication efforts during the 1998 infestation. USDA and DACS became proactive in their communication efforts in 1998. In addition, they employed more communication methods that were two-way and symmetrical. It would be beneficial for communicators from all aspects of the agriculture industry to meet and establish specific responsibilities for both public and private entities prior to the next infestation.

The personal relationships and pre-established professional network provided by participation in the Florida Agriculture Institute was a key factor that allowed the communicators to communicate consistent messages as soon as it was determined that outside organizations were needed to supplement the government's communication. Continued participation in this type of professional association is highly recommended for all communicators.

Additional community relations for the agriculture industry is needed. The industry needs to build awareness of their significance to the communities in which it operates. These communications need to be ongoing and should not end when the crisis situation is resolved.

As a final recommendation, the researchers suggest that many of the agricultural communicators take a closer look at the demographics and the psychographics of the activists involved in the protests of malathion. To dismiss them as "loonies" and unreasonable people or to discount their points of view because of a lack of knowledge about agriculture is to make a very dangerous decision that has the potential to further distance agriculture from mainstream society. There is growing evidence that environmentalism is becoming entrenched in everyday life. From recycle bins in the nation's offices to increased demand for organically grown produce, all signs point to a public that is more aware than ever of the factors that impac t the environment. By its very nature, American agriculture must have some negative impacts of the environment if it is to continue to feed the country and the world. But the communicators responsible for the industry's issues management also must acknowledge that it is very likely that mainstream American people will continue to challenge traditional methods of agricultural production.

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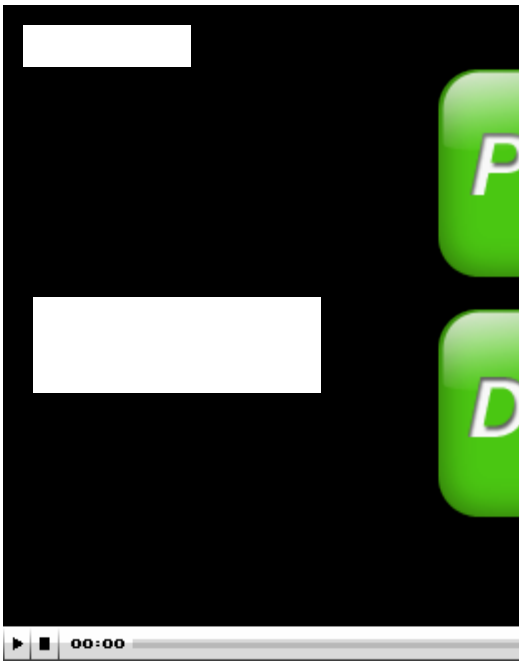

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Prior Experience, Perceived Usefulness and the Web: Factors Influencing Adoption of Internet Communication Tools

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Abstract

This study, using the Technology Acceptance Model as a theoretical framework, investigated the effect of prior experience and degree of innovativeness on subjects' perceptions of the perceived usefulness and their intent to use Internet communications tools.

Results indicated that respondents who had relevant prior experience and those who scored high in degree of innovativeness had the most favorable perceptions of the perceived usefulness of these technologies. Further, those subjects who had high levels of experience and perceived usefulness were most likely to use Internet communications technologies, while those subjects who scored low in both of these areas were least likely. Linear regression analysis indicated that, for all subjects, experience and perceived usefulness were the strongest predictors of behavioral intent to use Internet communications tools.

Introduction

The Internet is said to be one of the fastest diffusing technological innovations of all time (Nielson, 1995), with an estimated 71 million users worldwide (Matrix Information and Directory Services, 1997). As a new and rapidly diffusing communication technology, adoption of the Internet as a communications tool represents a potential opportunity for agriculture, where developing more effective communications and a stronger frame of reference, whether it be with traditional stakeholders, extension clientele or the general public, has always been a key objective.

In the educational setting, one of the oft-cited advantages of Internet use is the degree of interaction and asynchronous information exchange potentially achievable between sender and receiver through adoption of interactive communication tools such as email, World Wide Web-based bulletin boards and online discussion forums designed to augment or extend instruction and information delivery. For example, some studies have found slightly higher student achievement levels when mode of instruction includes interactive computer applications that facilitate communication and collaboration (Martin & Rainey, 1993; Means, 1993). Yet, within the traditional stakeholder audiences of agricultural students and extension clientele, the user base is still relatively low. In a three year longitudinal study, Suvedi, Campo & Lapinski (1999) found that, although the percentage of respondents who used the Web to gain extension-related information increased from 1.4 % to 10%,

the vast majority of respondents did not use it. Trede and Whitaker (1998) found that beginning farmers rated "cutting edge", Internet-delivered instructional technologies much lower than traditional instructional techniques, perhaps owing to lack of familiarity and prior experience with these technologies.

Usage of Internet communications tools may be seen as a way to meet the challenge to increase the effectiveness of extension program delivery methods and the communication needs of students enrolled in on and off-site agricultural programs (Donaldson & Thompson, 1999; Miller & Pilcher, 1999); however, understanding the factors which influence adoption and user perceptions is still a critical need. In a number of studies focusing on attitudes toward technology, information technology researchers such as Davis (Davis, 1989; Davis, et al, 1989; Hendrickson & Collins, 1996; Chau, 1996)) have examined the relationship between perceptions and adoption of new technologies. Drawing on Fishbein and Ajzen's Theory of Reasoned Action (1975), Davis (1989) developed the Technology Acceptance Model (TAM) which posits that individual perceptions as to the perceived ease of use and perceived usefulness of a technology can predict its usage. Research suggests, however, that these factors, in turn, may be influenced by other external factors which might prove useful in helping to predict the likely users of a technology, as well as their attitudes and subsequent usage behavior.

The objective of this study was to examine the assumption that two contextually relevant external factors, prior experience and degree of innovativeness, might exert an influence on perceived usefulness, defined in the TAM model as the degree to which a user believes that using a technology will be beneficial in some way. Using the TAM as a theoretical framework, this study was designed to examine the effect of prior experience and degree of innovativeness on intent to use Internet-based interactive communication tools to complete a communication task, with a view toward ascertaining how these factors influence adoption of interactive technologies. Understanding how these factors influence adoption and user perceptions will be important in the development of Web-based initiatives hoping to use these tools to enhance communication and information delivery to agricultural audiences.

Conceptual and Theoretical Framework

The Technology Acceptance Model

The Technology Acceptance Model, or TAM, stems from the Theory of Reasoned Action, or TORA (Fishbein & Ajzen, 1975), well known as a seminal work in attempting to understand and predict behavior and behavioral intentions. The basic proposition of both models is that in order to predict a behavior ***B*** (such as using a technology to complete a task), one must try to measure an individual's intent to behave, or ***BI*** (such as intent to adopt a technology for this purpose), itself a function of attitudes or perceptions toward the target behavior (and, in the case of the TORA, subjective norms). In both the TORA model and the TAM, attitudes are a function of beliefs about and assessments of perceived benefits/risks of acting in a certain way, such as beliefs about the advantages or disadvantages of using a new technological innovation.

The TAM attempts to explain user acceptance and adoption of a technology based on two specific behavioral beliefs, perceived ease of use (EOU) and perceived usefulness (U), the influence of which

determine an individual's behavioral intention to use (BI) a technology. (See Fig. 1). Perceived ease of use is the extent to which it is believed that a technology will be easy to use, while perceived usefulness is the extent to which it is believed that using a technology will be beneficial in some way (Venkatesh, 1999).

Two different formulations of TAM exist in the literature. Although many studies, especially in the IT literature, omit attitude, the original model shows the perceived usefulness and perceived ease of use variables influencing attitude toward use, which subsequently impacts usage behavior (Hubona, G.S. & Geitz, S., 1999).

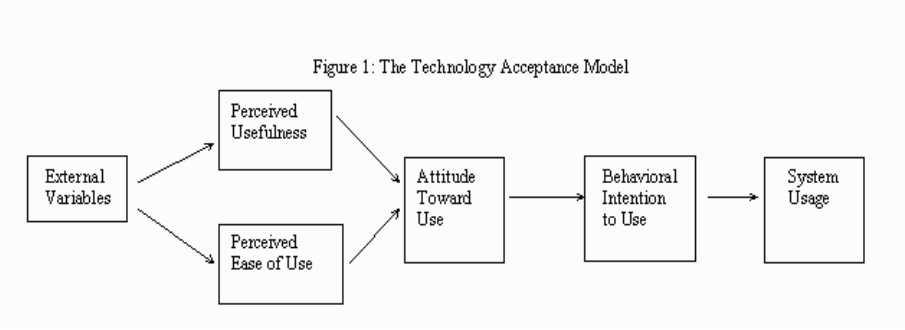

Fig. 1. The Technology Acceptance Model. (Hubona, & Geitz, 1999).

Davis et al (1989) suggested that external variables such as documentation and user support might influence perceived usefulness and ease of use, but empirical research on the effect of external variables has been limited. Of the limited research that has been done, Agrawal and Prasad (1997) conducted a study which showed that innovation characteristics, i.e., an individual's perception of the characteristics of an innovation, can predict acceptance behavior. In a subsequent study, the researchers identified a set of individual difference variables, including prior similar experience, that exerted significant influence on TAM's belief constructs (Agrawal & Prasad, 1999). Doll, Hendrickson and Deng (1998) used multi-group invariance analysis to assess a series of incremental cross-validation studies, the results of which, while providing support for the validity and reliability of the model, also revealed variation from other sub-groups for individuals with no prior computing experience.

Direct Experience

Some researchers have argued that behavior is largely a function of an individual's perceptions of an event and its potential outcomes (Fazio, 1995). In this context, one of the critical aspects related to user perceptions of new communications technologies might be relevant prior experience. Studies have shown that the attitudes of people who have had direct prior experience with an attitude object were moderately related to subsequent attitude-relevant behaviors, whereas attitudes of people without direct experience had slight or no relationship (Fazio, & Zanna, 1978a).

Along these same lines, direct experience of Internet -based communications tools such as e-mail, bulletin boards and online discussion forums should serve to strengthen user perceptions and enhance the consistency of the attitude-behavior relationship with respect to usage of these tools. Within the context of Internet communications technologies, subjects with direct experience would presumably

be more likely to hold stronger perceptions as to ease of use and perceived usefulness of a technology, based on their ability to generate more beliefs and past behaviors related to their experience. Yet, in a domain where weakly held attitudes based on limited experience are the norm, behavior and intention to behave might be influenced by a variety of factors that could make predicting outcomes difficult.

Attitude Toward Use

Attitude toward use has usually been conceived of, as in TAM and also the TORA, as a variable constructed on the basis of a subject's belief perceptions and evaluations of the consequences of engaging in some behavior. In their original conceptualization of attitude toward use within the TAM model, Bagozzi, Davis, & Warshaw (1989) found three distinct attitude components: attitudes toward success, failure and the process of learning to use or use a technology. Hubona and Geitz (1999) saw attitude as a moderator variable within TAM, influenced by the belief perception constructs and directly influencing intentions to use a technology.

In his research, Fazio (1986) took a different approach from both the TORA and the TAM, focusing instead on accessibility and automaticity of attitudes. In Fazio's view, attitudes were often automatically (without conscious thought) activated on a subject's being confronted with an attitude object. Through a process of selective perception, combined with the immediate perception of the attitude object, the subject developed a definition of the event, itself modified by both norms and a definition of the situation or context for the behavior. According to Fazio, definition led directly to the behavior, "simply following" from perceptions without any necessary conscious thought (Fazio, 1986, p. 237).

Fazio contended that variables such as direct experience strengthen the attitude-behavior correlation because they are more accessible, i.e., more easily called up from the subject's memory upon contact with the attitude object. From Fazio's perspective, attitudes can be activated upon exposure to an attitude object, either called up from memory or automatically activated upon exposure. Attitudes can therefore have a greater or lesser degree of accessibility. Fazio held that the more accessible an attitude, the stronger it would be, and the stronger and more consistent the relationship between attitude and subsequent behavior.

Degree of Innovativeness

One of the motivating forces which underlies formation of attitudes and beliefs with respect to adoption of new technologies in general is innovativeness, an innate personality characteristic which has been explored extensively in the consumer behavior literature. Innovativeness, a construct that evolved out of diffusion theory, was originally associated with the adoption and use of new technological innovations (Rogers and Shoemaker, 1971). Many subsequent consumer behavior studies have used the concept of consumer innovativeness to examine purchase behavior related to adoption of new products.

In its original conception, Rogers defined innovativeness as "the degree to which an individual is relatively earlier in adopting an innovation than other members of his or her social system," (Rogers & Shoemaker, 1971, p. 27). Hirschman (1980) defined innovativeness as the desire for new experience, and traced the development of the construct to its roots in the diffusion and personality literature. According to a study by Venkatraman and Price (1990), consumer innovativeness can be

defined as a latent personality trait that predisposes people to buy new products.

In the 1970's, Leavitt and Walton (1975) critiqued the results of several previous diffusion studies on the basis of smaller than expected variance in the dependent variable of adoption. Calling personality variables the "soft underbelly" of the problem, they postulated that a trait might exist that would underlie rational media choice behaviors. The researchers made the argument that the many psychological studies of close mindedness, dogmatism rigidity, etc., could be counterbalanced by an attempt to scale a new open-minded, constructive trait they called "innovativeness." The subsequently developed Leavitt and Walton innovativeness scale has been extensively tested for predictive validity and reliability by subsequent researchers (Craig & Ginter, 1975; Goldsmith, 1984).

Some researchers have also attempted to relate innovativeness to the internal need for stimulation, arguing that as stimulation, variously categorized as complexity, arousal, enjoyment of risk, etc., falls below a certain level, individuals will seek out stimulation through behaviors such as exploration and variety seeking (Price and Ridgeway, 1983). As such, the construct is closely related to novelty seeking (Flavell, 1977), and to creativity, especially productive thinking and problem solving (Welsh, 1975; Guilford, 1965).

In a subsequent study, (Venkatraman, et al, 1990) the researchers employed a categorization based on Roger's diffusion typology of relative advantage, compatibility, complexity, trialability and communicability in an attempt to differentiate innovators further, by looking at demographic and information processing differences. Results of the study indicated that innovation tendencies did impact adoption behavior, a result that enabled the researchers to construct innovator profiles based on demographic and personality trait differences. This work suggested that innovators tended to be young, male, more highly educated than the general population and to monitor a greater number of media vehicles for information. Innovators also tended to buy new products and visit new stores earlier than others.

Rationale for the Study and Hypotheses

Although significant evidence supporting TAM exists in the literature, limited research has been conducted on the effect of external variables and their influence on the perceived usefulness and perceived ease of use belief constructs. Further, researchers such as Robertson and Gatignon (1986) have argued that most research dealing with diffusion of technological innovations has typically utilized survey methodologies, as exposed to experimental approaches designed to illuminate causal processes. Therefore, the rationale for this study is based on using a quasi-experimental approach to examine the effect of prior direct experience and degree of innovativeness as external model variables impacting perceived usefulness and intent to use Internet based communications tools to complete a communication task. Based on Fazio's direct experience research, as well as the TAM user acceptance studies focusing on individual differences, it can be expected that subjects with prior direct experience of the technology will be more likely to use Internet communications tools than those who lack experience.

H1: Perceived usefulness will be significantly higher among subjects with a high level of experience of Internet-based communications technology compared to those with a low level of experience.

Diffusion theory postulates that early adopters, i.e., innovators, will be first to adopt new

technological innovations (Rogers and Shoemaker, 1971). Diffusion researchers have also looked at individual personality traits that might influence adoption behavior. Midgley and Dowling (1978) re-conceptualized the adoption of behavior approach as less a measure of the time it takes to move from awareness to adoption than a personality construct which an individual could possess to a greater or lesser degree. According to Midgley and Dowling, innovativeness is "the degree to which an individual is receptive to new ideas and makes innovation decisions independently of the communicated experience of others." (p 236). Therefore, within the context of this study, it can be expected that subjects who possess a high degree of innovativeness will be more likely to accept and adopt new communications technology to complete a communication task than those who have a low degree of innovativeness.

H2: Perceived usefulness will be significantly higher among subjects who possess a high degree of innovativeness as compared to subjects who possess a low degree of innovativeness.

In addition to predicted main effects, this study sought to make predictions as to the effect of model relationships on the basis of an experimental manipulation of the perceived ease of use variable. According to TAM, perceived ease of use and perceived usefulness are moderating variables that influence attitude toward use and behavioral intent to use. Therefore, by manipulating subjects' perceptions through exposure to a stimulus message framing use of Internet communication tools according to either the benefits or risks associated with perceived ease of use, it can be expected that subjects in the benefits-oriented perceived ease of use condition who also have a higher level of experience will have a stronger behavioral intent toward the target adoption behavior, while those subjects in the risk-oriented framing condition who have a lower level of experience will have a lower level of behavioral intent. Further, exposure to the stimulus message should serve to similarly affect subjects who are high or low in innovativeness.

H3: There should be a three-way interaction between experience, perceived usefulness and the perceived ease of use stimulus such that:

H3a: Behavioral intent will be highest for those subjects in the high perceived usefulness condition who also have high levels of prior experience;

H3b: Behavioral intent will be lowest for those subjects in the low perceived usefulness condition who also are low in prior experience.

H4: There should be a three-way interaction between degree of innovativeness, perceived usefulness and the perceived ease of use stimulus such that:

H4a: Behavioral intent will be highest for those subjects in the high perceived usefulness condition who also are high in degree of innovativeness;

H4b: Behavioral intent will be lowest for those subjects in the low perceived usefulness condition who also are low in degree of innovativeness.

H5: Perceived usefulness and prior experience will prove to be the most significant predictor variables of behavioral intent for subjects with and without direct experience of the target adoption behavior.

Methods

Research Design

Subjects were drawn from a random sample of college students (*n*=120) enrolled in an agricultural writing class. The research design was a 2x2x2 factorial consisting of experience (two levels), innovativeness (two levels), and perceived ease of use (two levels). To conduct the study, a questionnaire instrument was developed which included 67 five point bipolar semantic differential scale items. Experience was measured on the basis of a four item index designed to measure subjects' experience with Internet communications tools, specifically, email and online discussion forums. Degree of innovativeness was measured by a series of 24 scale items, half of which were reverse coded, derived from form B of Leavitt and Walton's Innovativeness scale (1975). Perceived ease of use was manipulated on the basis of exposure to a message designed to frame usage of Internet communication tools as either easy to use and beneficial to the user, or as difficult to use and not beneficial. The dependent variables measured in the study, which included the 12 item perceived usefulness index, the ten item attitude toward use index, and the five item behavioral intent index, were derived from Hubana and Geitz's (1999) TAM scale.

The questionnaire instrument was reviewed by a panel of judges, and a manipulation check was included to insure the validity of the perceived ease of use experimental manipulation.

Procedure

At the beginning of the experiment, subjects were randomly assigned to one of the two perceived ease of use conditions, which were incorporated into the color-coded copy of the questionnaire booklet each subject received. After filling out the scale items that measured experience and degree of innovativeness, subjects were instructed to read a one-paragraph message statement and then complete the rest of the questionnaire. Subjects in the high perceived ease of use condition were exposed to the following message:

Sending a document electronically, either through an email message that contains an email attachment or by posting to an online bulletin board forum, is one way of making sure that your communication gets there right away – and you can save a copy for yourself to prove you sent it. It's efficient, because such messages don't require that you print out a hard copy version, so you save on paper, and convenient because you can do it right on your computer.

Subjects in the low perceived ease of use condition were exposed to the message that follows:

Sending a document electronically, either through an email message that contains an email attachment of by posting to an online bulletin board forum, may be a problematic form of communication, since your communication could get lost or deleted without your being aware of it. It requires that you have access to a computer that's fast enough to access the Internet and run the special software that is needed, and it may not be very convenient, since you need to learn how to use the software in order to send your document.

In the items which followed, subjects were asked to indicate their perceptions as to the perceived usefulness, as well as their attitude and behavioral intent toward using two specific forms of Internet

communication, sending an email attachment and posting a message to an online discussion forum, to complete a communication task involving communicating details about an assignment required in the class they were taking. Finally, at the end of the questionnaire, subjects were asked to re-read the perceived ease of use message statement, and then to answer a series of four items designed to serve as a manipulation check on respondents' interpretation of the message statement contents as either a benefits or risk oriented description of the perceived ease of use of the specified Internet communication tools.

Results

Exploratory factor analysis was conducted on all of the variable indices in the study, resulting in a one-factor solution for all of the indices used in the analysis, with the exception of degree of innovativeness, which returned a seven-factor solution, representing the seven subscale factors as in Craig and Ginter's (1975) validation of the original scale. For all hypotheses, descriptive statistics were obtained and mean splits were used to recode the independent variables of experience and degree of innovativeness into high and low levels for each variable. Reliability analyses for all of the indices used in the study were subsequently run using Chronbach's alpha statistic. The resulting standardized item alpha for the experience scale was .62. Standardized item alpha for the degree of innovativeness scale was .70. Standardized item alpha for perceived usefulness was .90; for attitude .89; and for behavioral intention .72. Standardized item alpha for the four-item manipulation check was .84.

Descriptive statistics were then calculated for all indices, which yielded the resulting means table reporting means and standard deviations for the full design. (See Table 1.) Scores for the items rating perceived usefulness of Internet communications tools were recoded to range from 1, indicating that perceived usefulness was highly unlikely, to 5, indicating that perceived usefulness was highly likely.

Table 1. Table of Means for Effect of Experience, Degree of Innovativeness and Perceived Ease of Use on Perceived Usefulness of Internet Communications Tools in Completing Communication Task.

	High Perceived Ease of Use		Low Perceived Ease of Use	
	High Innovativeness	Low Innovativeness	High Innovativeness	Low Innovativeness
High Level of Experience	3.52 *SD*=.80	3.15 *SD*=.71	3.61 *SD*=.70	3.58 *SD*=.63
Low Level of Experience	3.34 *SD*=.58	2.94 *SD*=.81	3.48 *SD*=.86	2.75 *SD*=.73

Manipulation Check

A manipulation check, developed to insure that the observed responses were in fact due to the perceived ease of use manipulation, was conducted. To conduct the manipulation check, a four-item index was constructed which asked respondents to indicate whether or not the message to which they

had been exposed represented a high (benefits) or low (risks) level of perceived ease of use. For this index, item scores ranged from 1 =strongly disagree to 5 = strongly agree. A full factor 2 (experience) x 2 (degree of innovativeness) x 2 (perceived ease of use) ANOVA was run, using the manipulation index as the within subjects factor. The results, as anticipated, were non significant for all groups F (1,80)=1.53, p < .2, indicating that the manipulation was successful in terms of all subjects similarly perceiving the stimulus message (*M* = 4.93, *SD* = .67).

Hypotheses Tests

Hypothesis 1, which predicted that perceived usefulness would be higher for subjects with a high level of experience of Internet communications tools than for those subjects with low levels, was supported. To test this hypothesis, a 2 x 2 x 2 ANOVA model was run, utilizing experience (two levels) by degree of innovativeness (two levels) by perceived ease of use (two levels) as between subjects factors. A main effect was found for experience, F (1, 119) = 9.62, p < .01, which indicated that subjects with higher levels of experience (*M* = 3.44, *SD* = .75) had a more favorable perception of the usefulness of Internet communications tools than did subjects with a lower level of experience of these technologies (*M* = 3.14, *SD*=.79).

For hypothesis 2, which predicted a main effect for degree of innovativeness, results revealed the main effect, F (1,119) = 5.31, p < .02, indicating that subjects who possessed a higher degree of innovativeness were more likely to favorably perceive the usefulness of Internet communications tools to complete a communications task (*M* = 3.50, *SD* = .75) than those who possessed a lower degree of innovativeness (*M* = 3.10, *SD*=.74).

For hypothesis 3, which predicted a three way interaction between level of experience, perceived usefulness and perceived ease of use on the within subjects factor of behavioral intent, perceived usefulness was recoded on the basis of a mean split into high and low levels. This hypothesis was not supported, F (1,117) = 1.41 = p < .2, but a two way interaction was found between experience and perceived usefulness, F (1,117) = 4.48, p < .04, and main effects were found for experience F (1, 86) = 7.32, p < .01 and perceived usefulness, F (1, 86) = 19.88, p< .01. Comparison of means revealed that behavioral intent was highest for subjects who were high in level of experience and perceived usefulness and lowest for subjects who were low in level of experience and perceived usefulness. (See Table 2).

Table 2. Means Table for Effect of Experience and Perceived Usefulness on Behavioral Intent.

	High Perceived Usefulness	Low Perceived Usefulness
High Level of Experience	3.98 *SD*=.75	3.17 *SD*=.63
Low Level of Experience	3.79 *SD*=.73	2.08 *SD*=1.33

Hypothesis 4, which predicted a three way interaction between degree of innovativeness, perceived usefulness and perceived ease of use on the within subjects factor of behavioral intent, was not supported, $F(1, 86) = 2.46$, $p < .1$, but a main effect was found for perceived usefulness, $F(1, 86)$, $p < .001$.

Hypothesis 5, which predicted that perceived usefulness and experience would be the strongest predictor variables of behavioral intent to use Internet communications tools, was supported. To test this hypothesis, all TAM predictor variables were loaded into a linear regression model that utilized the behavioral intent index as the dependent variable. Linear regression analysis was performed, and the regression proved to be significant, $F(1, 5) = 13.97$, $p < .001$. Results indicated that, for all subjects, experience and perceived usefulness were the most significant predictors of behavioral intent to use Internet communications tools. (See Table 3).

Table 3. Prediction of Behavioral Intent to Use Intent Communications Tools

Variables			
	r	Beta	R^2
Attitude Toward Use	.11	.107	
Experience	.32	.268**	
Innovativeness	.14	.114	
Perceived Ease of Use	.04	.032	
Perceived Usefulness	.39	.403**	.386

**p < .01

Discussion and Conclusions

This study provides support for the usefulness of the TAM model with agricultural audiences and within the context of Internet communications tools as a technological innovation. In addition, the study supports the argument that the external factors of prior experience and degree of innovativeness do play a role in acceptance of these technologies and ultimate usage behavior. It seems clear that individuals who are more innovative are more likely to accept Internet communications tools, and that those with relevant prior experience are also more likely to accept and use these technologies. Based on these results, an implication of these findings may involve a need to consider the level of relevant prior experience and tendency toward innovativeness of an audience when implementing communications technology in the agricultural classroom, or when attempting to reach external

audiences.

The lack of any significant interactions between the perceived ease of use message stimulus and the other model variables seems to suggest that both experience and degree of innovativeness exert their influence on an individual's perceptions of the benefits or risks associated with using a technology, as opposed to impacting subjects' evaluations of the perceived ease or difficulty associated with a technology's use. This seems logical, since both of these variables would seem to have a definite association with an individual's determination of the usefulness, or lack thereof, of adopting some technology. On the other hand, it would seem likely that experience should also affect perceived ease of use, which was not specifically tested in the research design. Further research in this area, looking more specifically at the paths of interaction and direction of influence of the relevant prior experience variable, appears warranted on the basis of this study. A study of these same model relationships with other agricultural audiences is another area for future research.

In addition to the above, one of the key findings of this study involves the implication that while both prior experience and degree of innovativeness may exert an influence on an individual's sense of the perceived usefulness of a technological innovation, it is relevant prior experience that seems to interact with perceived usefulness and serves as a highly significant predictor variable of behavioral intent toward usage. Given the fact that the Internet is still a relatively young and evolving communication medium, the level of usage, and consequently, experience, within an agricultural audience is likely to remain low compared to other communication methods for some time. Even in the classroom setting, many students' experience of these technologies is limited to browsing a web page as part of a class assignment or to gain material for research.

Based on the results of this study, it would seem apparent that it is not only an audience's level of experience, but also the quality of that experience that will be a critical factor in determining usage behavior. From the institutional perspective, there are obvious incentives in developing communications that utilize technologically innovative techniques such as Internet communications tools. But, while early adopters may be intrinsically motivated to adopt a new technological innovation and ignore any minor disadvantages or risks, the larger populations of late adopters and early majorities may have quite different experiences, perceptions and motivations which drive their adoption behavior. To be successful, a technologically communication innovative communication tool may not only need to be perceived as effective by the institution, but also capable of being framed according to the benefits of its use and the positive prior experiences of at least some users who are also members of the potential audience.

On the other hand, the undeniable efficiency and potential of the Internet communication tools, in the classroom, in the field, in the county extension office and with the public in general, provides a compelling rationale for continued efforts aimed at growing the experience base and providing opportunities for our constituencies to access and use these tools to communicate about important agricultural issues. In the classroom setting especially, it seems even more critical that our students continue to develop skills and experience in these areas as well, for they will be the ones who most stand to benefit from the efficiencies and communications potential these tools can provide.

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Marketing From the Inside Out: Marketing Yourself to Your Organization

A Paper Presented to the Southern Association of Agricultural Scientists
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Background

Abstract:

In 1997, the two communications units in the University of Georgia's College of Agricultural and Environmental Sciences were merged into a new single unit called the Education, Communication and Technology unit.

After the merger was complete, ECT's first task was to create a comprehensive plan outlining the support and services we offer the college. Our second task was marketing our new unit to the organization.

Two areas of the college, research and extension, were accustomed to having communications professionals devoted solely to them. The third area of the college, instruction, wasn't accustomed to having personal service. We had a very heady task of explaining to research and extension how we were going to continue to serve their communications needs with fewer people, and to show teaching how we could support them.

We developed a comprehensive college communications plan, something that had never been done before. Parts of that plan have now been completed, including launching a massive student recruitment effort, developing a collective college Web-based employee newsletter and teaching a series of media trainings to faculty and administration throughout the state.

This paper will share our strategy, successes and disappointments. It will also show faculty reaction to the new unit's effectiveness.

Method

Introduction

With the creation of ECT, the UGA College of Agricultural and Environmental Sciences moved to a new level of college-wide thinking. By combining two communications groups, the college gained the potential to unite its message to the people of Georgia.

To chart our course, ECT needed a good map. Before we could present a unified message that supports the college, we needed to know what the college is now and where it wants to go. Building a detailed map required an honest assessment of the college, its departments and its functions from people both inside and outside the college.

It took a review of current thinking about the land-grant role and mission, changing demographics and current realities surrounding the college. It required a supportable list of the college's gold star accomplishments, its internationally recognized achievers and its greatest hopes for success.

With these facts in hand, ECT set its goals and formu lated key messages and strategies to deliver those messages. The outcome was a communication and marketing plan that could solidify financial and philosophical support, unify the college, support the strategic plan and build awareness and recognition.

ECT set four goals, followed by objectives and strategies to reach those goals.

GOAL #1: Develop communications products for internal and external audiences of the college to promote and enhance the college and its various functions in an integrated way and to extend the educational resources of the college.

OBJECTIVE: To promote unity within the college.

Internal newsletter: ECT will compile, write and distribute a quarterly college-wide newsletter on the Web and in hard copy, with customized sections for the Griffin and Tifton campuses, county extension programs and teaching.

Print on Demand: Develop an on-line procedure to order publications and print them to order. This system wou ld eliminate the need to mass produce and warehouse publications, cutting printing costs and responding to demands for publications.

Current Projects:
"Ag Explorer": A video newsletter features college success stories. It is distributed to departments, county faculty and administration to use for both internal and external audiences.

Visuals Self-help Room: Provides hands-on training in preparing visuals for presentations, designing newsletters, preparing poster sessions and other related skills taught through informal mini-seminars.

Unified publications procedures: Extension and research publications editors are working together to

combine procedures where possible.

College Welcome Center: The multi-media and static exhibits designed for the new center will promote unity by featuring collaborative efforts within the college.

Ongoing efforts:

ECT Services: Printing, duplicating, poster presentations, larg e-format printing (Athens only), Media Library, photographic services, programs and signs. Unit members will critique newsletters and other documents, make point-and-shoot cameras available at the Tifton and Griffin campuses for faculty and staff retirement parties, coordinate 4-H communications and photography projects, support college awards programs with news coverage and hometown releases, and assist publicity committees of college associations with photographic support if the association covers travel, film, processing and distribution expenses. Note: The ECT services that require high-maintenance equipment and materials, such as printing, video production, photography and signs, are fee-based services. The prices cover only equipment and material, not staff time.

OBJECTIVE: Reach external audiences with defined messages
to promote the college and extend the knowledge of the college.

Marketing strategy for county staff: Support county staff with a strategy and materials to market the college and its educational message to the people in their counties.

Reaching Urban Georgia: Improve the image of the college in Georgia metropolitan areas by conducting a communications campaign directed at urban Georgians. Define urban issues, promote the college's outreach capabilities, set the life sciences in context for urban Georgians and promote the value of agricultural education and careers. Conduct news conferences, set up a speakers bureau, conduct in-service training on working with the media, concentrate news efforts in urban centers and disseminate impact statements and other information at various urban venues.

Web development: Produce an ECT Web page designed to entertain and reach non-traditional agricultural audiences with information about the college, focus Web services on targeted news departments, develop a Web-based publishing system, create Web-based training materials on communications skills an d build a Web Design Support Group that serves the college.

College exhibits: Place 20 college exhibits targeted at college themes and objectives in circulation around Georgia. ECT will purchase the exhibit hardware, initiate the design and distribution, and set up a master calendar of potential exhibit locations.

Sunbelt Exposition: Create a highly interactive exhibit structure and layout to give the college a dynamic presence at the Sunbelt Agricultural Exposition. It should reinforce a college image that is progressive, diverse and forward thinking.

Infographics Delivery System: Develop a system to design and deliver infographics for news stories, exhibits, videos and Web materials.

Current Projects

Special exhibits: An exhibit is being designed for the Rock Eagle 4-H Center's Natural History Museum to feature careers in agriculture, and an exhibit is in the works in partnership with Fernbank to educate elementary and middle s chool children about agriculture.

College Welcome Center: Mentioned earlier to promote unity, the Welcome Center will also promote the college to alumni, potential students and their parents.

Update educational video productions: Revise "So Easy to Preserve," a nationally recognized videotape series on the art of home food preservation, including eight 30-minute videotape programs and a 300-page book. Update "An Outdoor Classroom: Georgia's Environmental Education Program" to inform teachers, curriculum planners and other educators about this program.

Ongoing efforts

Video news releases: Produce products for Georgia viewers and build in regional and national appeal where possible. The team plans to establish a new weekly satellite distribution of at least two stories.

Public Service announcements: This is a cost-effective way to increase the college's visibility while broadcasting educational information thro ugh cooperating television stations. Ag PSAs are also sent out monthly to 85 radio stations and the Georgia News Network.

Radio services: Subscribing county agents receive taped programs that feature agricultural specialists presenting a two-minute report. Agents get a total of 12 programs per month (the team plans to change to 6 pieces per month, distributed by Web rather than cassettes). Four radio stories 20 to 30 seconds long are fed by telephone to the Georgia News Network for use on their Friday and weekend programs. The network has 107 subscribing radio stations. Atlanta's WSB-radio receives a live report about every other week. The telephone network service is an automated 800 call-in service for radio stations to get a full story as well as soundbites to produce their own story.

Print news services: The CAES Research and Extension News stories are available as a printed, mailed news packet for 266 Georgia newspapers and magazines; on E-mail listserv s that include 365 subscribers, including 49 newspapers, magazines, on-line news sites and other media; and as a Web site that generates nearly 600 hits a week, for a total weekly distribution of 1,210 outlets. Individual features are also sent by direct computer feed to three newspapers and are included in fax services to more than 60 others. Many major newspapers, wire services, magazines and other outlets require personal contacts and a supporting fax and E-mail brokering of news stories. Stories are also repackaged and distributed to a database of nearly 500 national publications, based on specific interests.

Collaborative efforts: Although print and broadcast products are obviously different, the ECT news team finds ways to collaborate and coordinate efforts to get the most exposure possible for each story. They intend to enhance these efforts by developing a "Story of the Week" for all media outlets.

Web-based news and image delivery syst em: Media can download text and industry-quality photographs and information-graphic images. The team intends to develop its portion of the ECT Web page into a high-impact news center to make the site the primary delivery mechanism for print, broadcast and on-line news media.

OBJECTIVE: Support student recruitment efforts.

Current Projects:

College Welcome Center: Present dynamic, future-thinking exhibits and displays to attract students to the college.

Student recruitment package: Based on materials developed for the College Welcome Center, follow up with a package of student recruitment materials, including departmental brochures, a college promotional video, a disposable exhibit for college recruiting days at schools, packets for guidance counselors, a student recruitment message on the college Web site and other products. ECT looks for non-traditional ways to target junior high school students with special materials such as the " ;Seeds to Satellite" exhibit on display at Fort Discovery.

GOAL #2: Attract public and private financial support through communications products.

OBJECTIVE: Encourage legislative and other governmental support.

"Hit the Issues" Day: Organize county clusters to invite legislators and other decision makers to a college-wide event held simultaneously throughout the state to present how the college responds to key issues. Researchers would be on hand to explain current projects and benefits. ECT would prepare impact statements tailored to each meeting site.

Develop dean's exhibit: Develop an exhibit for the dean and associate deans about the college that can be assembled quickly and easily, and displayed in high profile locations.

College video: Prepare a video about the work of the college, available through the Media Library for administrators, county staff and others.

County exhibits: Redesign the extension marketing exhibit for counties to promote the total college.

Legislative marketing strategy: Develop a marketing strategy for members of the college to present key information to legislators throughout the year.

Current Projects

"Your Money's Worth" series: ECT collects impact statements electronically from throughout the college and prepares a series of fact sheets from this information. The series can go to decision makers based on geographic location or subject matter. The material from the impact statements can

also be used for media contacts, college annual report and other outlets.

"Ag Explorer": This video newsletter features college success stories. It could be distributed to selected legislators.

Ongoing efforts:

Administrative support: Printed materials and packages for tours and visits by legislative and congressional delegations, university administration and Board of Regent members; spee ches for the dean; a college annual report and materials for other university requirements for annual reports; public relations efforts to promote the college; and publications as needed.

GOAL #3: Teach and train faculty and staff of the college in communications skills and strategies.

OBJECTIVE: Prepare members of the college to communicate.

"Working with the Media" training: As part of the Urban Georgia initiative, ECT proposes a college-wide training series for administrators, scientists and extension staff to help them weigh the risks and benefits of working with the media, learn interviewing skills and techniques, and other basic communications skills.

Ongoing Efforts:
Training: ECT offers a wide range of training opportunities for faculty and staff of the college. It conducts media training during the Foundation Training sessions for county agents; and it offers courses during the Extension Winter School on such topics as column writing, writing impact statements and designing with computer software. It responds to requests from extension districts for secretarial and agent training in such topics as photography, newsletter design, customer relations, marketing, presentations and Web design. ECT is ready to expand its training to the entire college.

GOAL #4: Carry out applied research in the communications field.

OBJECTIVE: Learn from applied research.

Audience analysis: Any marketing strategy, whether it is for county agents, donors or legislators, must include a science-based analysis of the audience. ECT should work with UGA market analysts to prepare surveys and other instruments to learn about our audiences.

Ongoing Efforts:

Impact statements: ECT intends to continue collecting impact statements annually and to work with the technology unit to refine methods of collection. This rich database will be the foundation for valuable information on how to collect and communicate impact.

Media surveys: The print and broadcast team members regularly survey their media contacts to learn how their products are being viewed. The results help them refine their product and report to other

communicators on media trends.

Communication research: Members of ECT pursue a scholarly interest in the field. They take every opportunity to learn about trends, changes, ideas and techniques in the field of communications. They carry out applied research and present it at professional meetings when appropriate.

OBJECTIVE: Seek professional development opportunities.

Ongoing Efforts :

Professional associations: Many members of ECT are active in professional associations. Like other educational professionals, they learn from and contribute to their field of study. The college should support and encourage their active participation in these associations.

Learning opportunities: Me mbers of ECT must seek out and attend training opportunities, receive materials and search for knowledgeable sources to keep them current in their fields. The unit's budget should include funds to support these necessary skill- and knowledge-building opportunities.

Results

Results

To date, the newly formed ECT unit of the UGA College of Agricultural and Environmental Science is well on its way to carrying out the above plan.

Several of the original goals have been met. Others are under way.

To begin the process, the unit leaders met with college department heads and presented the Communication/Marketing Plan. The presentation was followed by a "Working With the Media," training for department heads and college leaders as outlined in Goal # 3.

The training was then offered to faculty and staff in several locations around the state, and to county agents at their annual winter training school. The seminar was so well received, it was repeated for a second round.

The second step in the plan was to establish a college newsletter to help foster internal communications in the unified college, as called for in Goal #1. The newsletter was designed and a marketing plan set (see complete plan attached). The Web-based newsletter debuted in the Spring of 1999. Thus far, response to the newsletter has been positive.

Also outlined in Goal 1 was the plan to move to a print-on-demand system. That system is now up and running.

Other objectives in Goal 1 call for efforts to improve understanding in urban Georgia, more Web

development and developing an infographic delivery system.

An extensive five-year marketing plan to reach urban Georgia has been completed (see complete plan attached). Phase I of the plan has been completed and Phase II will kick off March 15 with a pilot project in cooperation with Zoo Atlanta.

A new Web work team has been established and three employees have been devoted to developing new web products.

Infographics are now available to media each week on ECT's on-line news center. AGlimpse, a weekly color graphic can be downloaded and reprinted.

The new student recruitment package is underway. Team membe rs are nearing completion on a new recruitment brochure for each of the college's 21 majors, an overall college brochure and a brochure highlighting new careers.

Goal 2 calls for action to attract public and private financial support through communications products. The "Hit The Issues Day," debuted last year. County extension agents were given an on-line template to present their impact statements and other local information to legislators and other decision makers in an attractive, concise form.

A continued push to collect impact statements for use in an on-line data base that can be customized by legislative district yielded a 50 percent increase this year. More than 1,000 impact statements were turned in from across the college.

Goal 4 outlines plans for continued research and audience analysis, along with continued professional development.

The Public Affairs Team recently completed a survey of the state's media, and exhib ited the new on-line news center at the Georgia Press Association's state convention. The group developed a comprehensive media guide to agriculture and will conduct a training in cooperation with the Press Association in May.

Conclusions

Outlook

ECT has made significant progress in many areas, including major projects to reach goals. It has used the communications/marketing plan as a blueprint for progress, which has allowed it to move out of the reactionary response form and into a more proactive stance.

However, it has been hampered by a loss of staff through attrition with little ability to replace these positions. The loss in staff has forced the unit to restructure and refocus its efforts, placing importance on Web support, media relations and a print-on-demand delivery system for publications.

Ironically, the loss in staff has also allowed ECT to use position requests to help determine its direction and focus. If and when these position requests are funded and new staff are in place, ECT will be in an excellent position to continue the work of its plan to support the College of Agricultural and Environmental Sciences.

A Framework for Choosing Technology Mediated Approaches to Instruction

A Paper Presented to the Southern Association of Agricultural Scientists
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BACKGROUND

Technology-Mediated Training (TMT) is any learning experience taking place using learning infrastructures (LIs) supported by technology that result in a change in an individual's knowledge, attitude, skills, or behavior.While traditional approaches using classrooms and face-to-face instruction are still valued and have a strategic role in education, technology mediated training will play a critical role in agriculture and science education due to the ability of TMT systems to:

- Provide flexibility in where and when a participant can learn.
- Allow the learner to initiate the learning on demand.
- Be scaled to reach large numbers of individuals.
- Be more cost effective.

Learning Approaches

Learning systems, supported by digital and analog technologies, allow educators to create learning experiences using a variety of ways.Ideal approaches seek to use a mix of learning systems to address the varied needs of the learners, the context in which learning takes place, and content being taught.The following learning systems are in use today:

"Face to Face" describes learning environments where both the students and instructor meet in the same location.

"Two-way Interactive Video (w/engineer)" refers to facilities where two-way video and audio is transmitted between two sites and engineers are working at both sites to manage the video and sound inputs.

"Two-way Interactive Video (w/software)" refers to facilities where two-way video and audio is transmitted between two sites and software is used to manage video and sound inputs. Instructors may also have limited capabilities in managing video and audio inputs via a console.

"One-way Video/Two way interactive Audio" refers to facilities where one site, usually referred to as the originating site, transmits video to another site, while both sites have the capability to transmit audio. An engineer at the originating site manages video and audio.

"Two-way Interactive audio" refers to a facility where audio can be transmitted between two sites.

"Electronic Collaborative Rooms" refers to electronic working spaces, which provide chat rooms, white boards and other conferencing tools to individuals through their desktop computer using the Internet.

"MUDS & MOOS" refers to multi-user interactive role-playing environments that reside on Internet. Originating in the gaming world, MUDS and MOOS provide an electronic world where learners can take on roles and participate in scenarios that provide insight into real world situations.

"Interactive World Wide Web Space" refers to sites on the Internet that enable the learner to interact with models, individuals, and content on a specific topic. These sites seek to engage the learner in the mastering of a specific skill or concept.

"Online Chat Rooms" refers to sites on the Internet that allow individuals to type messages to a group of participants all logged into the chat room. This enables groups to have a discussion (via typing) with everyone able to participate.

"Electronic Mail" refers to the ability of learners and instructors to send electronic messages to each other and to others involved in the class.

"Electronic Discussion Groups" refers to electronic mailing lists or newsgroups that allow individuals to e-mail a message to a group of individuals.

"One-way video: broadcast" refers to video distributed to other sites by broadcasting across satellite or cable systems.

"One-way video: tape" refers to video distribution to other sites by physical distribution of videotapes.

"Publications" refers to print publication distribution to other sites.These publications are non-personal and written to be read by groups of individuals instead of tailored to a specific individual's needs.

"Personal Mail" refers to technique of sending physical mail to an individual to address their specific learning needs.

METHODS

A review of the literature yield a number of criteria that might be useful to educators and agricultural scientists interested in using technology mediated learning systems to provide educational programs. Findings were combined and evaluated as to their usefulness and importance. While the literature reports some findings, little research can be found that addresses the complex task of choosing the correct digital and analog technology for each learning experience planned in a formal or non-formal educational program. A model was developed that would provide support to the technology decision process and shared among selected experts from the field of information technologies, agricultural education, adult education, and technology mediated instruction. Experts provided insight allowing several learning systems to be further defined and validated criteria chosen. Experts were also asked to evaluate learning systems using the each criterion. Results were evaluated and a matrix was developed.

Findings from this effort were then provided to the North Carolina Cooperative Extension (NCCE) Blue Ribbon Committee for inclusion in their study of training and development within NCCE. These findings, after further validation by members of this committee, were included in the Blue Ribbon Committee's recommended actions to the College of Agriculture and Life Sciences at North Carolina State University.

FINDINGS

Individuals seeking to design learning opportunities are faced with a host of choices.The following criteria were found to be useful in evaluating which technologies best meet the requirements of a specific learning experience.

Total Cost of Technology

The concept of total cost of owning and operating a piece of technology as a criteria in technology decision making is relatively new to the education community.While the Gartner Group (1999), an independent research firm, has for years examined the total cost of owning technologies like a personal computer and notebook computers, little can be found in the literature that classifies the true cost of many of the learning technologies used today in education. Liebmann (1998) stresses that the concept of total cost of ownership doesn't just apply to personal computers, it is critical to the operation of every other type of resource. Educators should examine both the fixed and operating costs of technologies before utilizing them in educational environments, there by using each technology when it is most effective and efficient for the learning to take place.Ideally, instructors would then use a host of technologies with the delivery of an educational program with each technology supporting the learning through its most efficient use.The model present in this paper classifies costs in two ways:

Fixed Costs - The cost of building the infrastructure of a learning system (those costs which are expended prior to normal operation) are best analyzed separately from the cost of operating the learning system. In cases where the learning system can be scaled to reach a large number of learners with low operating costs, large investments in fixed costs may be easily justified.

Operating Costs - The cost of operating a TMT may be useful in evaluating which technologies to use. In many cases, a learning system with low operating costs would be useful for specific learning tasks to reduce the overall cost of offering training.

Potential Learner to Instructor Ratio

The potential of a learning system to reach a large number of learners is an important criterion, especially when evaluating learning systems with high fixed and variable costs. One useful ratio is the calculation of the estimated total cost of ownership of a learning system per potential learner. When evaluating several learning systems to get a true comparison of costs, this ratio provides an excellent tool for comparison.

It should be noted that the learner to instructor ratio has been a significant topic among educators concerned with improving the impact of education (Brydolf, 1997).Bracey (1999) reported that initial research suggested that 15 learners per instructor is the ideal ratio, but also stresses that it depends on the socio-economic nature of the learners.The context and the content being taught should also influence what might be an effective learner to instructor ratio. The model presented in this paper attempts to address these concerns by providing the criterions *teaching methods*, *interactivity*, and *richness* for instructors to use when examining this issue.

Teaching Methods

A host of teaching methods exist and are used in instruction today. Ample evidence has been found among the literature to accept multiple teaching methods as a significant principle or concept for education programs (Mustian, Liles, & Pettitt, 1988).In situations where multiple teaching methods are use and learners choose from a battery of activities with which they wish to participate, activities will more closely match the learning style of the learner (Claxton,

1988). Mustian, et al, (1988) suggested that content will also influence selection of methods as well as the context in which the learning takes place. When developers consider the needs of individual learners and examine the demands of teaching a specific content, the flexibility of a learning system to support multiple teaching methods may be critical to successful learning.

Richness

Daft & Lengel (1986) defined information richness as the "ability of information to change understanding within a time interval" as it is passed along from individual to individual. Information technologies vary in their capacity to process rich information. In order of decreasing richness, the media classifications are (1) Face to Face, (2) Interactive Video, (3) Telephone, (4) Chats, (5) E-Mail, (6) Personal Documents [letters, memos], (7) Impersonal written documents. (p. 560).For educators interested in Technology-Mediated learning systems, richness refers to the clarity by which an individual can communicate a message across the learning system to another person or group.Learning systems have varying levels of richness due to their ability to support multi-sensory communication and real-time interaction. Learning activities also require varied levels of communication richness to be successful. Effective and effective use oflearning-mediated technologies is achieved when activities are matched the level of richness needed

Interactivity

Ryder (1999) defined an activity or interactivity as the engagement of a subject toward a certain goal or objective. People tend to learn better, when they are actively involved in the process. This is especially true of TMT where a distance between the learner and the instructor often exists.Knowles (1980) stressed the importance of engaging the learner and implemented four principles of andragogy, one of recommended the need for active learning for adult learners. Since Knowles' work, a host of research has supported his recommendations.Although interactivity is easier to facilitate in a face-to-face learning system, instructors have devised a variety of ways to build interactivity into many of the learning systems available.Due to the nature of how they work, some learning systems may be more effective when implementing interactive learning techniques in a training session.

Learning Accessibility

Technology mediated training is often put in place to distribute the learning environment to a more convenient location for the intended learner. In addition to extending the reach of the learning to remote locations, many learning systems also extend the flexibility of the learner to use multiple locations to participate in the training.

CONCLUSIONS

In the absence of any decision support tool for evaluating the various choices for TMT, the following matrix has been developed to enable educators to analyze and evaluate the choices for hosting a learning activity via TMT. Educators interested in using TMT should examine specific learning activities against the matrix to determine which TMT or group of TMTs is best suited the specific learning objectives.Educators will need to examine the needs of the content and learners in developing their learning activities so as to insure a good fit once the matrix is used in the decision making process. Since learning activities should vary in their need for interactivity, richness and teaching methods, it is likely that various TMTs will be employed in the delivery of educational program that use this approach. Educational program administrative activities that assist in the delivery of the education program should also be examined using a similar approach. Through this model, educators should be able to improve the efficiency and effectiveness of technology use in the agricultural science education.

Several questions need further study. Content validity was established using an expert model, but further work in establishing the validity of this matrix would be useful. While the model is ground in sound research and has been reviewed by several experts, further assessment of its merit would be useful to the author and the education community. Additionally, further work in evaluating whether this matrix is both useful and effective in assisting educators who are designing TMT programs is necessary.

Matrix of Technology-Mediated Learning Systems and Selected Criteria

	Fixed Costs	Operating Costs	Potential Learner to Instructor ratio	Teaching Methods	Richness	Interactivity	Learner Accessibility

Face to Face	Expensive	Very Expensive	Low	Many	Very High	Very Fast	Difficult
Two-way Interactive Video (w/Engineer)[1]	Very Expensive	Very Expensive	High	Many	High	Very Fast	Difficult
Two-way Interactive Video (w/Software)[2]	Very Expensive	Expensive	High	Some	High	Very Fast	Difficult
One-way Video; Two-way interactive audio	Very Expensive	Very Expensive	High	Some	High	Fast	Difficult
Two-way interactive audio	Inexpensive	Average	Moderate	Limited	Medium	Fast	Easy
Electronic Collaborative Rooms[3]	Expensive	Average	Low	Some	Medium	Fast	Easy
MUDS & MOOS[4]	Expensive	Average	Very High	Limited	Low	Fast	Easy
Interactive WWW Space	Expensive	Expensive	Very High	Many	Medium	Fast	Easy
Online Chat Rooms	Average	Inexpensive	Low	Limited	Low	Fast	Easy
Electronic Mail	Inexpensive	Very Inexpensive	Very High	Limited	Low	Slow to Fast	Easy
Electronic Discussion Groups	Inexpensive	Inexpensive	Very High	Limited	Low	Slow to Fast	Easy
One-way Video: Broadcast	Expensive	Expensive	High	Limited	Low	None	Difficult
One-way Video: Tape	Expensive	Average	High	Limited	Low	None	Easy
Publications	Very Inexpensive	Inexpensive	Very High	Limited	Very Low	None	Easy
Personal Mail	Very Inexpensive	Inexpensive	High	Limited	Low	Slow	Easy

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[1] Room requires an engineer to operate cameras and sound.

[2] Instructor operates cameras and sound via a console.

[3] Electronic collaborative rooms provide online working spaces that include chat rooms, white boards, & other conferencing tools.

[4] MUDs or "Multi-user dungeons" are actually multi-user interactive role-playing games on the Internet.

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Hit Me Baby! Attracting Readers To Educational Web Sites Through Commercial Partnerships

A Paper Presented to the Southern Association of Agricultural Scientists
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Background

When AccessAtlanta, the web site for the Atlanta Journal-Constitution, WSB-TV Channel 2, and WSB 750AM Radio, began offering free web sites on their system to local, service-oriented organizations in 1977, the Georgia Extension Service was among the first to sign up.

This paper will detail how this partnership with the commercial web site, which has grown to one of the top 5 most visited web sites in the city, has helped drive traffic to the Georgia Extension Service site and other University of Georgia College of Agricultural and Environmental Sciences sites. It will also show how this new form of media relations, public relations and marketing offers big dividends on an extremely low investment.

This has been a highly successful partnership for us and for AccessAtlanta. As the Cox Enterprises-based company begins to spread their services nationally, there are implications for other states to develop similar partnerships.

Method

Introduction

In the late 1990s communications began moving rapidly toward the web. For many communicators the technology was moving faster than our budgets and learning curves would allow us to follow.

There was also the problem of offering local information to a global audience.

In 1997 the Georgia Extension Service got an offer from AccessAtlanta, a new Cox Enterprises venture that is the flagship of their new Cox Interactive Media division, and web home to the Atlanta Journal-Constitution, WSB TV (Atlanta's ABC affiliate) and WSB Radio. They were kicking off a new community section of their on-line news service and were searching for service-oriented community organizations to sign on.

With the partnership agreement, AccessAtlanta offered a free web site on their server. The site came with easy-to-use templates that would allow you to cut and paste from most any word processing program, and the template would automatically convert the te xt to html code. They offered free

training for using the site so the partnership also served as an easy way to get web site training while waiting for our technology and education to catch up.

It also offered the solution to the local vs. global problem. In the November issue of Media Life Magazine, a story on AccessAtlanta said: "One major function of the web of the not-too-distant future may be to take up the role once served by the local newspaper -- to give people not just news but all sorts of useful and timely information about lots of things they care about in their communities.

"This is the theory behind the so-called local portal, a web site offering the functionality and resources associated with national portals such as Yahoo or Netscape while being focused on one specific market or region."

We took advantage of the web site offer and the partnership has since flourished. Below is a case study on how the partnership develo ped and the impact it has had on our communication products.

Case Study

At the beginning of the partnership we were locked into a simple, newsletter style format. We were asked to present mostly home and gardening-type information, but were allowed to include other types of information, also.

The format was simple to use and took very little time to upload. For the most part, we mirrored the news product we released to the media each week. We began immediately getting email requests and questions from visitors to the site.

After about six months, we upgraded the site to include original products including Family and Food and Gardening for Kids sections. We also moved away from the stiff, preset template to a new format that allowed us to write our own html codes giving us greater design flexibility. We were also able to include a link to our college's news site from the related pages.

The new look and design, along with the or iginal products made us a natural for promotion. We received more than a dozen prominent promotions from AccessAtlanta that appeared on rail for the front page of the on-line version of the Atlanta Journal-Constitution. (See Attached)

On the days that the promotions appeared, traffic to the college's news site increased from an average of 48 hits without promotion to an average of 178 hits on promotion days. Showing an increase in traffic to the news center of 74 percent. The promotion also helped boost page views on the AccessAtlanta site from an average of 428 to more than 1500 views promotion days.*

In late 1998, we became the only gardening site on AccessAtlanta and the site added a new search engine. This gave us even higher visibility with an audience whose number one leisure activity is gardening.

In February 1999, the UGA College of Agricultural and Environmental Sciences introduced a new

PBS television series, "The Georgia Gardener.&quo t; The AccessAtlanta site was an easy way to place pre-season show promotions. Working with AccessAtlanta's promotion director, we were able to set up a live, on-line chat with the Extension agent who hosts the television series.

The chat was scheduled for noon the day before the show debuted. Fifty-six gardening questions were answered during the one-hour chat. So the chat proved to be very success for both parties.

The site has now expanded to include standard sections: Gardening, Food & Family, Gardening for Kids, Science Zone and Georgia Gardener. We also have had special feature sections on Fall Gardening, Spring Gardening, Drought in Landscapes and others. The site also now has an extensive archive of gardening, science, food and home information.

Results

Results

As a result of this partnership, we have a steady presence on one of the most viewed web sites in our market area. We have been able to introduce more readers to our web products and take advantage of some unique marketing opportunities for other college products.

In the next five years, the college will turn its marketing focus toward reaching urban Georgians. This established product gives us one good vehicle to deliver that message. According to Media Life Magazine, AccessAtlanta now reaches more than 26 percent of Atlanta's web audience at least once a week.

In the third quarter Media Matrix market report, AccessAtlanta.com moved into first place as the highest rated local site in the market area. It was ranked ninth among all web sites in the market area. As reported by Media Metrix's web gainer's list for the week ending Oct. 31, 1999, AccessAtlanta.com had the largest gain in unique visitors of all U.S. web sites with 122 percent grow th.

AccessAtlanta's continued growth makes them a very powerful ally.

This partnership has been very efficient for our communications unit. Because of the investment of the commercial site in easy-to-use software, we have been able to maintain this site with one editor spending an average of three hours per week working on the project.

Conclusions

Implications

We are planning other products for AccessAtlanta including sites for local 4-H clubs, allowing them to compete for the best site and display 4-H photo contest winners. We also plan to introduce a Master Gardeners' site devoted to answering gardening questions.

Cox Interactive Media is already operating in about 30 markets, and they are moving into markets across the county each year. The potential is there for other land-grant organizations to take advantage of similar opportunities.

Note: Media Metrix reports on 38 local markets and is the leading digital media audience measurement firm in the country. Their third quarter numbers come from reports based on reach, which is defined as the percentage of Atlanta Internet users visiting a site at least once during the month. Gainers are defined as sites with the highest percent growth of visitors from home and work from week to week.
AccessAtlanta.com's 25.6 percent reach is 2 .2 percentage points higher than the second quarter and 9.6 percentage points higher than the same time period last year.

*These numbers will require more study because the promotions were run on Thursdays which are our usual news release days and generate some extra traffic on their own.

ADROIT ACCOUNTABILITY OR KEEPING A STEP AHEAD

A Paper Presented to the Southern Association of Agricultural Scientists
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Abstract

From its inception, Cooperative Extension has a history of being accountable for its programs and funding. With accountability continuously becoming of even greater importance, plans and proactive efforts must be undertaken to assure that useful program accomplishment information is made available to identified audiences in an aggressive manner. Yet, remaining continuously vigilant to the changing circumstances or political landscapes within a county or state is a critical must to assure that when questions of the value of Extension programs arise, its programs and budgets can withstand the scrutiny. Three case studies are described in which proactive measures have been undertaken to have program information information readily available and providing needed accountability information in a timely manner to policy makers and citizens. Changing political directions in the county governments and their implications are explained. Significant accountability measures prior to certain policy shifts, during the stressful period that resulted, and following the shifts, resulted in strong Extension programs being able to fend off adversity or to even gain greater support. In circumstances of political tranquility or in periods of great change, a large measure of organizational risk can be avoided by keeping Extension's accountability a step ahead of inevitable changing circumstances.

Introduction

Since its initial authorization, the United States Cooperative Extension System has always had to be accountable by law (Rasmussen, 1989). This accountability requirement is dictated by the federal government. While this accountability requirement is longstanding, any veteran extension worker knows from experience that many other entities expect and often require a multiplicity of

accountability functions as well. As its name implies, Cooperative Extension has partners other than the federal government. These partners are the states and counties or cities who provide taxpayer funding, as well as numerous other groups or individuals. Each of these entities may expect or demand their own accountability information which may be quite different than what others expect. Such expectations can provide excellent opportunities for Extension to tell its story, but some expectations can create major pitfalls that if unattended or misjudged can lead to disastrous outcomes through reduced funding, employee layoffs, and office closures. These negative situations createcircumstance that Extension prefers to avoid. In seeking to avoid accountability misjudgments, the opportunity exists for proactivity on the part of Extension to provide the right information to the right people at the right time in the right format (NCCESTMTF, 1998). The key is to actively perform these rights insuch a manner that few if any accountability surprises occur that may have negative consequences.

This paper examines three case studies in which changed political or other circumstances resulted in Extension moving from the known to the unknown in meeting accountability requirements to positively meeting these changes. These case studies as well as inferences from similar circumstances that have occurred in other Extension locations appear to give some indicators th at may be useful for establishing an ongoing accountability system. If so, assurances of some degree of organizational protection may be provided, even when major political or other situational changes occur.

Results

A Western North Carolina County Experience

In a county located in western North Carolina, changing situations has placed all county departments on alert for policy changes. The county has a rapidly growing retirement community in addition to its strong agricultural and manufacturing sectors. Cooperative Extension has consistently maintained strong programs that have been driven by considerable citizen involvement in planning, implementing, and marketing its programs. The Extension staff has been on the forefront in utilizing program impact information in its communications to elected officials, clientele, the general public, its advisory committees, and to other local groups. The accountability efforts by Extension have been labeled as exemplary by administrators of the North Carolina Cooperative Extension Service (NCCES). The staff s approach to publishing success stories that verify significant program impacts on the community and its citizens has been seen as a model and has been used in training presentations by NCCES both in North Carolina and in other states as well. Accolades have been given to the staff by the Governor of North Carolina, as well as some county commissioners and many citizens.

Over the past years, the county commissioners have consistently supported the Extension program in a positive manner and have been very receptive of the county Extension program. In the last couple of elections however, new people have been elected that know little about Extension or agriculture and typically are not originally from the area.

Under these changing political circumstances, in addition to the many accountability efforts delineated, even more efforts were focused specificallyon internal accountability. The county Extension director (CED) shared program information at county department head meetings. A

quarterly packet of program information goes to the county manager, with all brochures, flyers, etc., indicating program activities, citizen involvement and program impacts. New commissioners were given information about Extension along with a letter from the county Extension director. The commissioners and county manager are invited to the annual Extension Highlights report to the people. Usually three out of the five commissioners attend. The Extension staff discusses programs with commissioners when the opportunity arises. This includes chairing Farm-City Day activities as well as being included in county volunteer recognition ceremonies by being asked to provide the keynote address.

Changed Circumstances Requiring Program Defense

In 1999, a generally conservative fiscal climate was set by the Board of Commissioners and supported by the county manager. Each county department was instructed to justify its programs or face budget reductions or elimination. Subsequently, some departments were faced with reduced budgets. Cooperative Extension, however, used its program impact data as well as its strong citizen support to fend off any reductions. In gaining approval for filling a vacant agent position, the Extension Advisory group played a pivotal role in influencing the commissioners to match the state share of the position, and the position was subsequently filled. Without such citizen support, the initial indications from the board were that there would be difficulty in securing approval for the position.

Present Situation

As a result of its many proactive and ongoing accountability and program marketing efforts, Cooperative Extension was able to engender needed support even as other departments were suffering. Some county departments have had people dismissed, and there have been personnel shifts in other departments. Each county department is going through an intensive review by the commissioners, but no negative actions have befallen Cooperative Extension. The CED credits the sustained accountability efforts of the staff and citizen supporters for enabling the county center to satisfactorily weather intense budget and program cuts in county government.

Johnston County Extension Faced Changed Situation

Johnston County is located in the east central part of North Carolina. It is adjacent to the bustling metropolitan areas of the Research Triangle, which includes Raleigh and Durham as the two largest cities. The county hashistorically been a major agricultural county, but it now has the fastest growing population in the state. With this rapid growth, the demographics of the county have changed dramatically. With these changing demographics, political change has also occurred.

For many years the members on the Board of Commissioners has predominantly been of one party. The composition of the citizens of Johnston County is changing, and the past two elections have changed the composition of the board to another political party. The resulting change in controlling parties resulted in the county manager of about 18 years being dismissed. Obviously, a new county manager was employed who was more suitable to the majority of the Board of County Commissioners. Very quickly, it became evident that the new administration had a greater interest in accountability than had the long-entrenched administration that was ousted. The CED reported that emphasis was now being placed on impacts of programs of each of the county departments rather than on each agency's activities.

Past Accountability Functions

Historically, Johnston County Extension has had a program of accountability for the county administration and the general public. The problem was that from the Extension staff's point of view, they never knew if the administrators were listening. The Johnston County Extension Director stated that ... we never really knew if they were getting our message. We were going through the motions and our faithful (advisory groups) were listening, but we did not know about the commissioners.

However, the staff persevered in their accountability efforts. Each month, individual staff members completed a Commissioners' Report providing statistical information on the number of group activities, the number of individual contacts and the use of mass media. Also included was a short narrative of staff activities for the month. A summary was prepared and delivered to the County Manager's office for inclusion in the monthly agenda for the commissioner's monthly meeting. The CED stated that ... program effectiveness was never addressed. We were trying to earn their favor through good works.

In addition to the Commissioner's Report, each year the Extension staff invited the Extension Advisory Council and county commissioners to a Report to the People Luncheon, where the staff gave a yearly summary of their activities. They always gave a written report for the commissioners to take with them. For many years the report was a book, but it was finally acknowledged that it was not being read. Then, the staff report was changed in format to a bulletin, but it was deemed to be no better than the book: The staff observed that most copies were simply being left on the table where the commissioners had sat.

A shift has now been made whereby only a one-page summary is provided in the Commissioner Report each month. The summary is very brief, with the individual narratives focusing exclusively on program impacts on county citizens rather than on Extension program activities. This changed focus to an impact-laden single-page summary has proven to be quite popular with the Commissioners as well as the county manager. Also, a single sheet entitled "Johnston County Success Stories" has proven especially popular with the Commissioners. Again, the success story leaflet contains only people successes resulting from Extension's programs. The commissioners have requested copies of these success story leaflets to hand out at functions in which they are speaking. They have indicated that the success stories demonstrate that the tax dollars they are appropriating for Extension are producing real impacts on county citizens. Indeed, they are using the success stories to use as a blanket description of how they are efficiently spending taxpayers' money.

Impacts on Extension Programs From Political Change

Even though the entire political landscape changed in Johnston County rather quickly, Cooperative Extension's programs were never threatened. Credit for this positive development came about because of the long-standing efforts of Extension to involve and educate a large number of county citizens about its programs. An active Advisory Leadership System gave structure to the citizen support and input efforts. Also, a continuous program marketing effort through local newspaper reports helped citizens to be aware of Extension's presence in the county and of its many activities. However, the staff s ability to recognize and immediately respond to the shifting requirements toward program impacts rather than activities helped to endear Extension in the commissioners minds, as a county

agency that is worthy of strong support. As a result, during the past two years, Extension's budget has been increased 30% and an additional county-funded agent position has been added as well. Proactive accountability and continuous program marketing has proven to be effective for Johnston County Extension. The shift to reporting program impacts rather than activities has been the impetus for significantly increased support in this new political landscape.

Palm Beach County Makes Proactive Adjustments

Palm Beach County, Florida, is a heavily populated county of 1,040,000 with seemingly polar opposites. On its west side, a major production agriculturalindustry of 565,000 acres exists, while the east side is a major population center with significant industry and tourism. Changing political circumstances in the early 1990s along with a national trend toward increased expectations for accountability significantly impacted Palm Beach County's Extension program.

The difficulty with the county budget was in 1993. It was during the recession and a reinventing-government emphasis by the Board of County Commissioners. Several new commissioners had been recently elected. The chair was new, and she had a point to make. The whole issue was exacerbated by the economic slump. With the Cooperative Extension Service, then titled the County Agriculture Department, being at the top of the budget workshop list, all of the budget issues came to Extension first.

Response to Adversity

As a result of the threats on its budget, Extension formed a group of citizens, while the budget process was ongoing, to look at what Extension was about and to recommend some changes. These were a cross section of people who were Extension's friends and some who knew nothing about the agency. In the end they did a report suggesting changes that should be made.

At that time the recommendations called for Extension to look for more funding from sources other than the county, charge for some programming, hire a public relations director and take other action.

Upon analyzing the recommendations in retrospect, a primary factor that made Extension much stronger in Palm Beach County has been the acquisition of more grants and other funding. While it hasn't generated tremendous amounts of dollars, the county budget narrative for the Department is used to communicate and reflect county funding, grants, state funding and private support. The latter has been running about $250,000 a year. The support of the Friends of the Mounts Botanical Garden is significant. This support group, started by the County Extension office in 1983 for the office s botanical garden, has helped to focus and capture support from the urban horticulture audience.

With outside funding coming in, the county has never said, "We will cut your budget because you have more dollars and don t need as much county support." Instead, in at least two cases, matching funds from the county have been provided when a grant from someone else became available. It appears more aggressive efforts in seeking outside funds generates more respect from the county thereby, creating a stronger partnership.

Extension Looked to for Leadership

In 1994 the county was funding a strong economic development program, and they wanted to do something to "stabilize, diversify and enhance" agriculture. They provided Extension $500,000 to conduct agricultural economic development programming. An agricultural enhancement council was formed to meet monthly and give Extension consultation and guidance. It is still ongoing with a $200,000 annual budget. It is a challenging effort with the county expectation of new jobs, new businesses and creation of value added products providing a great deal of pressure to succeed. The deputy county administrator selected Extension to be the lead, and 5 years later it is being funded as an annual supplemental budget request. Agriculture sales are at $1 billion annually, which has prompted the county commissioners to acknowledge its importance and help maintain its viability.

As a county department, Extension has attempted to take advantage of anything that will allow any Extension agent to be involved in projects that are of great importance to the county commissioners. This has included the restoration/clean-up of the Lake Worth Lagoon (the inter-coastal waterway in Palm Beach County). Several Extension agents have been intensely involved inassisting in resolving issues relating to the agricultural reserve which is receiving tremendous pressure for urban development.

Supporter Involvement

During the budget crisis in 1993, Extension reached out to involve its supporters. However, the CED was threatened by the chair of the board of county commissioners with his job if the supporters got too carried away. Since that time, however, that same county commissioner has been described as a reasonable person and has said a few nice things about Extension from time to time. During that time, for one year, a decision was made to keep the Extension office open on Saturdays to see if more people could be served. This experiment did not help much and caused considerable morale problems among the staff. Since then, the office has reverted to being open Monday - Friday, although the botanical garden is open seven days a week.

The botanical garden support group is very close to finalizing a deal with the county for 100 more acres to develop a major new botanical garden attraction on their own, that will be privatized. It is anticipated to be a $30 million capital project. The county has committed $1 million, and a private donor is to commit $5 million before the end of the year.

Ultimate Outcome

In a retrospective analysis, Extension did some of the things that the study committee suggested in 1993 but not all of them. A publicity person was never hired. Extra funds have been raised. Restructuring the local Extension office was not significant. The Family and Consumer Sciences program, which was most in jeopardy, was retained and strengthened. It resulted in the Family and Consumer Sciences program leader going for grants where there had not been the stimulus before. There are almost $200,000 in the Family Nutrition Program grant. An additional grant with the city of West Palm Beach for $20,000 provides a half-time Extension agent to work with first-time home buyers to insure they do the saving and money management necessary to keep their home. To date there have been zero defaults, and more than 80 homes have been purchased.

Extension charges for some of the programs. There is a very large landscape industry in the county. The professional landscape industry personnel were continually wanting to send their personnel to the

Master Gardener training but never returned the volunteer time. A 15-week professional landscapemanagement (PLM) course was created, very similar to the Master Gardener program, and is offered once a year. There is a $250 registration fee with 20-25 persons generally enrolled. When they pay their $250, they are serious. Other programs have fees, but the PLM course is the most expensive. Two 16-session courses for sugar cane growers have been conducted with only $25 for registration.

Orientation for new county commissioners has been conducted but with mixed results. The botanical garden effort has brought some key Extension supporters in contact with county commissioners, and this has benefitted the entire Extension program.

Conclusion and Implications

Each of these case studies indicate the use of many key components of an effective accountability system. Obviously, Cooperative Extension s programs themselves must be effective. Also, the programs must be inclusive and meaningful to its audiences. With this inclusiveness comes the need for Extension to communicate within those audiences the many impacts that are occurring among program participants. Furthermore, other audiences, including the general public, need to be informed of program successes. These informational initiatives must be planned and maintained as an ongoing component of an Extension program. Then, with changing circumstances and situations inevitable, Extension will be prepared to proactively meet in asuccessful manner adverse circumstances that may arise.

To be effective, Extension must package its accountability efforts using the same criteria that it uses to package it educational programs. It has to be put in a format that the user can understand and interpret. It must be concise and yet have a punch that will be worthwhile to the end user. While Extension clientele seek information that is relevant to their situations, the people appropriating tax dollars want information that will assure voters that they are using the money in an efficient manner.

As a nonmandated public entity, Cooperative Extension must continuously project its program impacts in order to keep an established rationale for public funding. In order to accomplish this, public relations and program marketing efforts must be a prime consideration. Gone are the days when some of the commissioners or legislators grew up on a farm or had grandparents in farming. Many of the new commissioners or legislators being elected have never heard of Cooperative Extension. The question should be asked, if we are doing allof these wonderful things, why have some people never even heard that Extension exists? Many Extension employees function much like worker bees, by working and producing program impacts, but are often very poor marketers of those impacts resulting from Extension s programs. Unfortunately, there is often a lack of appreciation for the need to market Extension programs until it is too late or great pressure is being exerted. In this regard, there is apathy among many agents, and they may be described as wishing to hide from view (Boyle, 1999). These people are usually very dedicated individuals who are doing their job well and feel that is enough for the program to market itself. Yet, in the competition among agencies for public money, those who expect their good work to communicate its worth may come up woefully short.

The key to having the competing edge is to be focused. Extension brings many resources to the table and often claims that it can deliver all of these resources from the universities. However, in reality,

there is only a certain amount Extension can do and do well. It is better to focus on the things that it does best and use them as the cornerstone of its programs. Often, people may question why Extension is involved in so many different things. However, we must continuously ask ourselves and those we serve, what their real needs are so that we can implement programs that have real impact on them as well as on the communities in which they live. Likely, the reason Extension is still viable after all these years is that its programs are quite different than they were 10, 20, 30 years ago. The probable reason for this continued viability is that through the advisory committee process that depends strongly on citizen involvement, the organization is working to solve those problems of today and isn't still working on those problems of 10 years ago. This is probably even more so in those counties that are themselves undergoing significant change. As program shifts are made, it is important to effectively communicate Extension's programs and resulting impacts to elected officials to avoid the possibility of confusing them as to our programs, or appearing to be a little of everything and the answer to everything that needs fixing.

Programs that produce real results among real people with the active involvement of those real people are the ones that gain the support of policy makers. Effectively communicating the impacts of those programs to the correct audiences should also be a major focus. To accomplish this, programs must be understood and appreciated. Sustainability of needs-based programs is an important component for gaining familiarity with, impacts from, and the support needed for Cooperative Extension.

Political change is in evitable in our society, and with political change, there are usually policy shifts that reflect the changing circumstances. As shown in the case studies presented in this paper, the changes can be of a threatening manner, or quite positive. Program relevance that is founded upon effective listening and responding to clientele continues to be the foundation to assuring that attacks can be positively deflected. Empowerment of Extension's programs by and with the people has been shown to be the most effective means for program accountability. A proactive effort must be implemented and continuously maintained in order to tell Extension's story and adequately deal with changed situations and policies. While questions of relevance and program viability may be expected to arise at times, an adroit accountability effort that is well-planned and implemented which explains Extension's program impacts can help to keep at least a step ahead of threatening situations or events.

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Lessons Learned on the Journey to "Team Management" in an Agricultural Communications Unit

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Background

In the last two decades many corporations have gone through fundamental organizational changes involving the introduction of different and innovative structures. Part of that structural change was an outgrowth of "total quality management" which includes the use of "quality" circles, whereby workers are asked to suggest and implement improvements to their own work processes. This led to crossfunctional production teams and ultimately to the notion that teams of employees in many different types of organizations would be more effective and productive if they managed their own work processes. Concurrently, "merger mania" and downsizing allowed for significant reductions of supervisory positions and supported the movement toward team structures. These restructured corporations became less hierarchical, more decentralized with empowered business units, sectors or regions, and more teamoriented than in the past. In the meantime, new companies, especially in the computer field, simply used selfdirected teams (including virtual teams) from the outset as a preferred management structure. The Center for the Study of Work Teams estimates that 80 percent of Fortune 500 organizations will have half of their employees on teams by the end of 2000.[1]

In universities, the use of teams is more likely seen in multidisciplinary scholarly and outreach/extension activities, specialized committees and task forces than in the formal administrative and departmental management structure.[2] Yet, some university units have had the latitude to adopt teambased management. That was the case for Agricultural Communications, a support unit of The Texas A&M University System Agriculture Program. This paper provides background on team management and offers our fiveyear experience at Texas A&M as a case study of applying team principles in an agricultural communications department.

Method

Defining the Terms: Teamwork, Teams and SelfManaged Teams

"Teamwork" can take place among people in any group. In an agricultural communications unit, teams may consist of two people working together on a task, to an ad hoc project group, appointed committees or an entire management subunit of the department.

Most communication units, regardless of how they are organized, have members engaged in

teamwork on a regular or occasional basis. Likewise, most units probably also have instances of "teamwork" in name only. Groups that function by having a leader make the decisions and delegate tasks to members are not teams. Nor are groups where one or two people "do all the work" by default (or inability to involve others). Teamwork can occur in a group with an appointed or elected leader, or in a socalled "leaderless" group. The fundamental criteria for teamwork are full participation by all members of the group, joint decisionmaking, and responsibility of ind ividuals for the success of the group.

"Selfmanaged" or "selfdirected" teams are specialized instances of teams because they assume some or all of the functions normally provided by supervisors or administrators. For example, in industries that have adopted this approach, selfmanaged teams have team mission statements and plans, hire and fire team members, handle their own budgets, establish their work processes and coordinate with other teams, among other tasks.[3] While our experience at Texas A&M has been with selfdirected teams, the principles involved apply broadly to teamwork situations, whether they include management tasks or not.

Why Teams?

Why adopt a team orientation or reorganize a unit to be teammanagedBespecially when you have an organization that has been functioning well under a supervisory system? One rationale is that in today's environment organizations are relying on teams as they discover that tradition al methods of problem solving, decision making, communication and implementation are not fast or flexible enough to respond to the challenges of the times.

Among the advantages commonly cited for teams are the following:

· Increased intelligence and innovation. A team has access to diverse people and information, so its members can make higher quality decisions. Freed from constraints of the hierarchy, teamwork leads to more innovation.

· Unity of purpose. Teamwork helps people with different backgrounds and perspectives focus on a common goal.

· Skill building. Participating on a team helps build a range of skills, such as a person's ability to communicate, coordinate, cooperate, and solve problems.

· Ownership and empowerment. Teams provide the stimulus for people to take responsibility for their own actions, rather than relying on supervisors for direction.[4]

While management experts caution against forming teams w ithout compelling business reasons, other less objective reasons may enter into the decision. Those include favorable attitudes of top management toward more democratic approaches in the workplace and a belief that it's "the right thing to do"; perceived problems with supervisors' ability to change and/or struggles for control and power between supervisors and employees; and a simple desire for dramatic action that will "free" up people and provide an impetus for needed improvement and innovation. These factors influenced the decision to move to team management in Agricultural Communications at Texas A&M.

Teamwork is not the most appropriate choice for every work task, nor is it appropriate for every managerial task. Much of the work done in agricultural communications units is accomplished by individual activity, such as a writer composing a news story, a graphic designer creating a page layout, or a videographer shooting footage. In general, however, teams ar e said to outperform individuals when:

· The task is complex
· Creativity is needed
· The path forward is unclear
· More efficient use of resources is required
· Fast learning is necessary
· High commitment is desirable
· The implementation of a plan requires the cooperation of others
· The task or process is crossfunctional[5]

Virtually all improvements in processes and procedures within a communications unit meet some or all of these criteria. The growing complexity of communications products produced, such as information campaigns involving multiple media, or the "reinvention" of products through technology (e.g., publications to web information) also require team approaches. Even mundane management tasks, such as budgeting or administrative reporting, relate to the efficient use of resources, and require commitment and cooperation in implementation of plans among those involved.

Stages of Team Growth

Perhaps the mo st frustrating aspect of working in teams is the almost universal expectation that the group can function effectively from the outset. That is seldom the case, as teams are not "born," but "made" over time. The stages of team growth have been researched and documented in a number of scholarly and popular publications. Among the best and most practical treatment is that provided by Scholtes, Joiner and Streibel in the 2nd edition of The Team Handbook.[6] This section outlines their description of team growth.

Teams are complicated entities. Team members have to deal with internal group needs which are as important as the group's task of solving problems, improving processes or completing daily work. A team goes through four fairly predictable stages in learning to cope with these group pressures and needs.

Stage 1: Forming. Individuals experience excitement or anticipation, may have tentative attachment to the team and yet also experience suspicion or an xiety about the job ahead. Behaviors include attempts to define the task; attempts to determine acceptable team behavior and how to deal with team problems; abstract discussions of concepts and issues, impatience with these abstract discussions; discussion of irrelevant items; complaints about the organization and barriers to the task. These initial distractions make progress toward goals very slow.

Stage 2: Storming. This is the most difficult stage, in that individuals are impatient about the lack of progress and often relying solely on their personal and professional experience, resisting the need for

collaboration with other team members. Behaviors include arguing, even when they agree on the real issue; defensiveness and competition; factions and choosing sides; establishing unrealistic goals, concern about excessive work; and creation of a perceived pecking order among members, thus creating disunity and increased tension.

Stage 3: Norming. Membe rs reconcile competing loyalties and responsibilities and accept the team and its norms. There is a sense of team cohesion and relief that it seems everything is going to work out. Behaviors include an attempt to achieve harmony by avoiding conflict, more friendliness, sharing of personal problems; a new ability to express constructive criticism; establishing and maintaining team ground rules and boundaries. As differences are worked out, team members start making significant progress in their work.

Stage 4: Performing. The team has settled its relationships and expectations. They can begin diagnosing and solving problems, implementing changes and innovating. Team members have discovered and accepted each other's strengths and weaknesses and learned what their roles are. Members are satisfied with the teams progress and have a close attachment to it. Behaviors include constructive selfchange and the ability to prevent or work through group problems.

The duration and intensity of these stages vary from team to team. A project team may go through the process once, or get stuck in the early stages and not succeed as a team. When the latter happens, the "team" usually evolves into something else with one or two people "getting the job done" to their satisfaction. An ongoing group, such as a selfmanaged work team, will experience the stages in cycles. New tasks or deadlines, the addition or loss of new members, or other changes can cause an ongoing team to slip back into an earlier stage and require working through the process again. Given this "up and down" process of developing teams, there are no guarantees of success.

Working effectively in teams is not an easy one, and teams sometimes do fail. The most common reasons cited for a team's failure include the following:
· It is incompatible with the hierarchical structure of its parent organization
· It lacks visible support and commitment from top manag ement
· Members focus on task activities to the exclusion of work on member relationships
· Members are unwilling to take responsibility for their own behavior and actions
· The team is too large and lacks the strong structure necessary to deal with a large team
· Members are unwilling to recognize and accept the stages of team process
· The team has experienced poor leadership within and/or outside the team
· The organization has failed to use team efforts in any meaningful way
· Members have received insufficient training.[7]

Recognizing both the factors of success and of failure is significant in making a team structure work effectively. However, our experiment at Texas A&M began in 1994, not with a clear understanding of the challenges, but with an optimism that this was an appropriate direction for our department to take.

Establishing Teams in Agricultural Communications at Texas A&M

A changing Agricultural Communications [8] department structure, perceived advantages of team management, and a variety of internal and external circumstances led to the shift from hierarchical to

a team management at Texas A&M.

Like many other communications units supporting land grant university agricultural colleges, our unit had been organized into sections led by variouslytitled supervisors who reported to the department head. The sections were organized by products, such as print news, video/radio, art, and separate Extension publications and Experiment Station publications. In the late 1980's a new department head reorganized the department to reflect current and emerging functions and to promote innovation. New sections were formed for educational media, news, and marketing. Each of these sections included writers or editors, video producers and graphic designers and each was managed by an assistant department head who supervised the individuals working in that section. The reorganization allowed us to create a marketing section as well as integrate Extension/Experiment Station publishing operations. That arrangement was modified as the video producers were placed in a separate group again for greater production efficiency and the group was enlarged to also include computer and multimedia specialists, who worked across news, educational media and marketing. By the early 1990s the department consisted of educational media, electronic media, marketing and news sections.

While the reorganization was deemed successful, the continuation of a system of section supervisors (assistant department heads) began to seem less than ideal. A variety of efforts in the total Agriculture Program of The Texas A&M System were promoting teamwork and greater faculty and professional staff involvement and leadership at all levels. Other contributing circumstances within the unit were, however, probably the deciding factors. Those included the retirement of one of the assistant d epartment heads which prompted reevaluation of the position, retreats conducted by an outside consultant to facilitate teamwork within two of the sections, and the department head's leadership and commitment. Initial steps toward team management began with one section in 1994 and by 1995, the assistant department head positions had been eliminated. The department administration consisted of a head, an associate head and "self-managed teams"replacing the sections.

Teams were charged with management of their own work processes (e.g., planning, scheduling, coordination internally and with clientele), a budget, team reporting, screening and making hiring recommendations and other matters. In fall, 1995 a "coordinator" was appointed for each team. Those individuals are members of their respective teams and have no supervisory duties. The primary role of the coordinator is to represent the team in the Team Council and to coordinate response to requests coming from the c ouncil or the head/associate head. Team members share or rotate management tasks such as monitoring budget, chairing meetings, keeping records, etc.

Results

Lessons Learned from the Process of Team Management

We have attempted to apply team management principles in Agricultural Communications since 1994-5 and learned a great deal in that time. Many of the practical problems and issues we encountered tend to support what the literature offers in theory. The following "lessons learned" reflect my perspective as unit head, although much of that perspective was formed from the input of members of the unit. I conducted two surveys to gauge the effectiveness of team functioning in fall of 1995 and 1999. Some results and representative comments from those surveys are included in this discussion.

Lesson 1: Team management does not change human nature. The "personality conflicts" that exist within any group do not cease when the organization turns to team management. In fact, they may increase for a period of time, as in many cases the former section supervisor mediated or had the authority to force compromises, which is how the group functioned in the past. Team management means the group has to "storm" through such issues. This can be extremely uncomfortable, especially when due to culture, habit or personal preference, people have tended to avoid conflict. In the work domain, a similar situation arises when team members do not want to "correct" or be critical of another's work or less than adequate contribution to the team. Over time, unresolved interpersonal or performance issues seriously impact team functioning and require outside intervention.

Lesson 2: Effective team performance requires training. Most staff members had little background in how to work in teams. Many professionals did not have experience with tasks formerly done by supervisors, such as chairing meetings or giving reports to groups, yet teams thrust them into those roles. We devote professional development time and budget to conferences or training that enhances our communications work. Yet, for effect ive team functioning, it is equally important that all staff have knowledge of group processes and individual roles, and improve skills in areas such as group problem solving methods, interpersonal communication and conflict management. At Texas A&M, we have done some (but not enough) training through unit and team meetings or retreats, but have mostly learned the hard way by trialanderror.

Lesson 3: Team management takes time. When people don't know much about how team processes work, they also have little understanding of how much time it can take. That was perhaps the greatest frustration early in the process and just now is beginning to be of less concern. Staff initially liked the idea of taking over many tasks handled by supervisors, such as budget management and screening new hires, but soon found that such tasks absorb a great deal of time, especially because they were new to these tasks. In the 1995 survey, people had complaints such as "Dealing with tea m process stuff has taken away time to focus on actual work," or "Too many meetings!" As the teams got more efficient at doing these chores that has become less of an issue. Most of the teams meet briefly every week to coordinate their work and monthly for management matters and discussion of issues. Some teams "retreat" periodically for brainstorming, planning or working out issues. The 1999 survey indicated that 98 percent of respondents thought team budgeting, discussion of workrelated problems and working on team plans and goals for the future were important to them personally and for their job effectiveness, and that their teams spent "about the right amount of time" dealing with team tasks.

Lesson 4: Teams do not equalize individuals. Individuals obviously vary in their job experience, skills and expertise, interests, discipline, motivation, energy and many other factors. Yet, as one staff member said in the 1995 survey, "we no longer work as a team where e veryone is equal." When people define teamwork as "equality" they are bound to be disappointed. In some cases, team members have had to learn that their key concern should not be that everyone is equal but that each person fills various roles that best use his or her capabilities. Of particular concern are new hires, both inexperienced and those with experience elsewhere who are new to our operation. We eventually started an informal mentorship program, pairing an experienced professional with the new employee to help him or her make the transition into the job and teams. At the opposite end of the spectrum, some of the units' highest performing individuals have had difficulty with the team concept, because

they feel they must often go back to more elementary levels to "bring people along." These top performers, who typically have a history of excelling as individuals, need to understand and be recognized by the unit administrator for the important roles they play as mento rs, role models and thought leaders in their teams. But they, like all members of the unit, must also have continued opportunities to excel as individuals in their central creative activities (e.g., writing, design) that are not team tasks. Balancing individual needs, interests, and agendas with those of the team is an ongoing issue.

Lesson 5: The quality of an individual's teamwork has to be communicated, evaluated and rewarded. Probably every person in our unit has, at times, felt there was little incentive for teamwork. Complaints would surface about individuals who didn't do their share or fully contribute, while others felt they had "done all the work" for which the team got "credit". Theoretically, the responsibility for evaluation and feedback about an individual's team performance is vested first in the team itself, and then with management. However, our teams typically did not engage in formal or informal evaluation of individual contributions. Our annua l performance appraisal system includes a category in which a supervisor can evaluate the person's skills in teamwork, cooperation or coordination. But without direct feedback from those with whom the person is working, that evaluation is relatively generic and probably of little help in changing behavior. In our 1999 survey, all but one member of our staff agreed that we should establish a system of team input about individuals' performance in and contributions to the team. An instrument and a system for collecting the information have been developed and used for the first time in December. (A copy of the instrument is included at the end of this paper.) Each member of the unit will receive ratings and comments from his or her fellow teammembers prior to an annual performance review at the beginning of the year and again at mid year. The team evaluations will become part of each person's performance review in an effort to provide feedback and evaluation and to reward peop le for effectiveness on that work dimension.

Lesson 6: Teams must be "empowered." Fundamentally, empowerment is about the distribution of power. In organizations, this is most obvious in decisionmaking authorityBwho has the power to make what kinds of decisions. Daniel Kim coined the term "lurking approver" to describe the role of a designated manager in trying to empower teams. It is a tricky role because it can look like the manager has "empowered" others to make decisions as long as they meet his or her approval. However, the reality is that this role is often needed when the team is not in a position either by experience or scope of responsibility to make a decision that will work in the larger organization. The "lurking approver" should have the knowledge to serve as the safety net in the process. [9] We (unit head and associate head) have tried to manage this role by being involved in general discussion with teams or individuals in the group prior to their d ecisionmaking on matters that extend outside of their full control, as well as informing them of state law, university policy or organizational considerations that must be taken into account. After that, team decisions and recommendations are taken seriously and modified or rejected by administration only for cause.

Lesson 7: Team management requires openness and communication, communication, communication. We have operated since 1995 with teams having access to their own operating budgets, and through their representatives to the Team Council, information about the total department operating budget as well as all other decisions affecting the unit, such as the status of filling positions. Much of that information is also provided to all staff by the unit head's (supposedly)

weekly electronic newsletter. Our 1999 survey indicated that some people felt they were not getting adequate information through their team coordinators and/or that they did not have enough k nowledge of or input into unitlevel decisionmaking that affected them and their teams. In the past year, further measures to keep everyone informed include increasing the frequency of the weekly newsletter by sharing the task between the head and associate head; adding two atlarge members to the Team Council and moving the meeting to a larger room so anyone can attend (typically five or six additional people come); posting Team Council notes and other unit documents to the Web. Perhaps most important, the Team Council went through a process of revising the unit's statement of operating procedures and making those as explicit as possible, especially regarding the roles and responsibilities of teams, team members and team coordinators. That draft document was issued to all staff members and discussed in the teams before being made final this fall. Team management is essentially a democratic process and requires frequent and open communication that supports the involvement of all.

Lesson 8: Don't replace one inflexible system with another. A team system needs to be flexible and dynamic. Very early in our process, we had to move two people to different teams and to reconstitute a video group. A "section mentality" can lead to the notion that teams must be composed of the same people operating together over long periods of time, but we have found otherwise. Changes in goals, services, clients, technology or human resources may make changes to team personnel necessary or desirable. We have moved people to different teams as vacancies have occurred and they desired new challenges or a better fit with their skills. We have split teams that were too large or divisive into smaller, morefocused teams, discovering (afterthefact) that the research on group processes shows a group of six people, plus or minus two, is optimum size for a work group. We will probably create a new team this year. Theoretically, far more flexibility should be one of the great strengths of a team management system and we have just begun to experience that.

Conclusions

The Net Effect of Teams

While many of the "lessons learned" at Texas A&M have negative aspects, the positives resulting from team management have been transforming for individuals and the unit as a whole. We have a far more open and flexible workplace than in the past. The teams take initiative for planning, brainstorming and innovating. There is more individual and team responsibility and less opportunity (or need) to blame others for problems or errors when they occur. For the most part, people try to see what's wrong in the system, fix it and move on. Our teams have been excellent managers of their fiscal resources, highly responsible in following human resource procedures and thoughtful in their hiring recommendations.

Team management has created leadership opportunities for almost all our staff, not just those who in the past would have been in supervisory or appointed leadership roles. Almost everyone can and has been in charge of something, wheth er it's leading a communications project team, spearheading a process improvement or handling daytoday team management tasks. Some individuals have stepped into new roles and accomplishments well beyond what they had done in the past.

We have learned how to work better in teams. Learning from the ongoing selfmanaged teams has

resulted in better performing ad hoc project groups and the unit's standing functional committees (e.g., technology, professional development) that bring together people from the different teams. Our most significant accomplishments both in terms of communications projects and the effectiveness and efficiency of our work processes, have come as a result of teams.

The level of commitment to selfmanaged teams is stronger. Sample comments from the 1995 survey, included those calling for "...a supervisory leader," or for the head to "appoint a team leader who will run meetings, make daytoday decisions, assign work, manage the budget a nd make evaluation recommendations." While these kinds of comments were in the minority, they indicated a sentiment still held by a few people who are more comfortable under a direct supervisory system. Nonetheless, the 1999 survey indicates overall satisfaction with selfdirected teams, with most criticism and suggestions being directed toward unitlevel issues.

Changes in structure and management seem to become easier with time, as they become the norm. Personnel changes also contribute to promoting a team culture, as people hired into positions are also opting into this management system at the outset. However, we are not through learning about how to effectively utilize selfdirected teams in our unit. In particular, the unit needs to develop a continuous training program, enhance team accountability for outcomes, and find ways to better reward team accomplishments.

The Future of Teams and Unit Structures in a New Era of Communications
In her 1989 study of the organizational structure of corporate public relations departments, Larissa Gruing stated, "There is no organizational structure for the public relations function that will be ideal for all organizations and all environments." [10] While her statement is probably true, it seems equally evident that how a communications unit is organized will determine the management options available. Very little research had been conducted on the organizational structure of public relations or communications departments at the time of Grunig's review, and the same could be said today. Although some survey data has likely been presented at professional meetings, published information about the structure and management of agricultural communication units is also lacking.

Certainly many agricultural communications units have looked to teamwork, if not team management, to help them meet the demands of new technology, clients and services. Yet even our notions of tea ms and teamwork may be challenged and redefined by larger organizational changes. Fraser Likely, writing in Strategic Communication Management drew on a number of surveys and reports to develop a structural design continuum of corporate models for a public relations/communication function. He describes ten models, beginning with "traditional central department" models of the service center, center of expertise, and account executive models. Toward the middle of the spectrum are three models that mark a transition from centralized to distributed services and involve units structured as cost or profit centers. At the other end of the spectrum are models growing out of the new decentralized organizations, including those for shared services, insourcing and outsourcing.[11] While the applicability of corporate models to the university world is often limited, we can see elements of these structural changes in the shift of publications editors into department clusters at the Uni versities of Illinois and Florida. [12]

Selfmanaged teams are certainly not the only way to manage and structure a department, but based on

our experience at Texas A&M, they seem to offer a viable approach. To the extent that team management creates the advantages of enhanced unity of purpose and ownership, innovation, and flexibility, it should better equip us to meet the challenges of the future.

Notes

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1. Carla Joinson, "Teams at Work," HRMagazine, vol. 44, no. 5, May, 1999, p. 30

2. Critics are quick to point to the structure of higher education as one of its problems or drawbacks. In one effort at change, the Texas A&M University System Agriculture Program received funding from the W.K. Kellogg Foundation to promote "collective leadership" and team approaches among faculty to achieve mutual goals and innovate i n developing new programs.

3. Milan Moravec, Odd Jan Johannessen and Thor A. Hjelmas, "The Well Managed SMT," Management Review, vol. 87, no. 6, June, 1998.

4. Michele L. Bechtell, Untangling Organizational Gridlock, ASQC Quality Press, 1993, p.87.

5. Peter R. Scholtes, Brian L. Joiner, Barbara J. Streibel, The Team Handbook, 2nd ed., Oriel, 1996, p. 11.

6. Scholes, Joiner and Streibel, pp. 64 69.

7. The Team Building Tool Kit, p. 22.

8. The Agricultural Communications unit of The Texas A&M University System Agriculture Program employs approximately 40 people. Eight staff members are field staff, located primarily at regional research and extension centers throughout the state. While there is a "field team," it is of necessity a different type of entity than the campuslocated teams that are the subject of discussion in this section. The shift to a team management system was begun under Barry Jones, former department hea d, and continued after he left Texas A&M in 1995.

9. Daniel H. Kim, "Decision-Making: The Empowerment Challenge," The Systems Thinker, vol. 6, no. 7, Sept., 1995.

10. David M. Dozier and Larissa A. Grunig, "The Organization of the Public Relations Function," Excellence in Public Relations and Communication Management, James E. Grunig, ed., Erlbaum, 1992, p. 402.

11. Fraser Likely, "Reorganize Your Communication Function: Ten Structural Models for the New Look Organization," Strategic Communication Management, Issue 11, August/Sept., 1998, pp. 2833.
12. Anita A. Povich and Gary L. Rolfe, "Strategies for Building Communications Performance in a More Demanding Administrative Environment," paper presented at the ACE/NETC Conference, July

1519, Burlington, Vt. Also, personal conversation with Ashley Wood, director of Educational Media and Services, IFAS, Univ. of Florida.

Team Member Feedback Form

Your Name _____ _____

The following ratings should reflect your personal experiences with the other members of your team. For any question where you have no basis for giving a rating or offering a suggestion for improvement, please leave it blank. If you offer suggestions, please make them specific and constructive.

Member Name _____ Always Usually Sometimes Rarely

1. Participates fully in team meetings, activities and decisions, 1 2 3 4
makes a contribution to the team's success.
Suggestions for improvement:

2. Effectively handles his/her fair share of team tasks (e.g., budget,
recordkeeping, clips, reports, notetaking, other team tasks.) 1 2 3 4
Suggestions:

3. Is a cooperative colleague, good to work with on joint
projects or activities. 1 2 3 4
Suggestio ns:

4. Honors the team and unit work norms (e.g. quality/quantity of work,
meeting deadlines, attendance at meetings, time at work, etc.) 1 2 3 4
Suggestions:

5. Communicates clearly in an open, honest and appropriate manner. 1 2 3 4
Suggestions:

Optional comments:
I think this person deserves a compliment for:

To improve his/her team contributions or work in the next six months, I suggestion this person work on:

Other comments:
Ground Rules for the Team Member Evaluation System

· You must put your name on the form, although names will not be attached to ratings or comments. "Anonymous" forms will be discarded and not considered.
· The overall goal is to give people feedback about how they have been performing as a team member over the last six months. If you have no opinio n or not enough recent experience with someone to make an evaluation about an item, please leave the question blank or mark it NA for Anot applicable. You do not have to fill out each item for each person every time.
· There is space for you to write comments below each item and also at the bottom on the back of the page. Writing comments is optional. If you make negative comments they should be specific and constructive so people will know how they can improve. Specific positive comments will also help people understand what they're doing right.
· Each team member will receive a tally of responses to each item and a typewritten page of the comments made by his/her fellow team members.

Firefighter Public Information Officers' Communication Effectiveness with the Media During the 1998 Florida Wildfires

A Paper Presented to the Southern Association of Agricultural Scientists
Agricultural Communications Section
Lexington, KY
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Background

Introduction
Between May 25 and July 20, 1998, nearly 2,300 wildfires raged in Florida, burning half a million acres. The firestorm, caused by severe heat, drought and lightning strikes, was one of the worst wildfire disasters in the state's history. More than 300 homes were damaged or destroyed, and timber losses exceeded $300 million. More than 10,000 firefighters, representing 47 states, and 150 aircraft were called in to battle the blazes (Governor's Wildfire Response and Mitigation Review Committee, 1998). As the wildfires became more severe, local, national, and international reporters descended on Florida to cover the story.

Media coverage of wildfires is common. When more than 1.4 million acres burned in wildfires in the Greater Yellowstone Area in 1988, the media reported that the Yellowstone National Park had been destroyed (Elfring, 1989). However, Elfring and other researchers and fire officials (Buck, 1989; Reid, 1989) noted that the media's coverage of the Yellowstone fires was "superficial and stereotypical," according to Conrad Smith, a journalism professor at The Ohio State University who studied the media coverage (in Elfring, 1989). Smith stated that reporters' stories led people to believe that the entire park had been destroyed. As T.R. Reid, the Washington Post's Rocky Mountain Bureau Chief, wrote: "A forest engulfed by a horrendous raging storm of smoke and fire is not only news, it is news that produces stunning color pictures" (1989, p. 37).

Following the 1998 wildfires, Florida Governor Lawton Chiles appointed the Wildfire Response and Mitigation Review Committee, a group of state government officials, technical experts, members of the public and other stakeholders to assess the wildfires and to formulate recommendations on how Florida could better manage its wildfire risk. The Governor's Wildfire Response and Mitigation Review Committee (1998) recognized that "communication during a major disaster has not been adequately improved and remains a critical issue requiring additional effort" (p. 7). Local fire departments also conducted their own assessment of their communication effectiveness (Alachua County Fire Rescue, 1998). Recommendations that the governor's committee (1998) made pertaining specifically to improving information dissemination included:

· Better utilizing the state's public information network system - made up of public information officers from state and local emergency response agencies - to maintain contact with county public information officers during crises,
· Establishing experience-based classification levels for public information officers in the various emergency response agencies, and
· Being informed of the skill level and experience of public information officers dispatched in impacted areas.

Many studies have examined the mass media's role to the public during natural and manmade disasters (Burkhart, 1991; Ledingham & Walters, 1989; National Research Council, Committee on Disasters and the Mass Media, 1980; Ploughman, 1997; Wenger & Quarantelli, 1989). Research has shown that the mass media contribute to emergency management in several ways, including relaying information to citizens about potential hazards and giving citizens information about what local emergency management organizations do (Burkhart, 1991). During disaster news coverage, print and broadcast media play different roles, though, due to their technology, method of transmission, and style of newsgathering (Wenger & Quarantelli, 1989). In an analysis of 15 field studies of natural and technological disasters, Wenger and Quarantelli found that broadcast media are the primary distributors of immediate news, while newspapers were "more dominant during the post-impact period" (p. 27).

However, because the research base of "disaster studies" in communication is relatively new (Walters, Wilkins & Walters, 1989, p. xi), little research was found about the role and effectiveness of persons who provide information to the media -- public information officers (PIOs) -- during wildfires or other disasters. According to the student manual of the National Fire Academy's Executive Fire Officers Course, the organization which trains command officials involved in fire-fighting, PIOs have the role during a disaster to report directly to the Incident Command System commander (the person in charge of an emergency scene) and to provide accurate and concise information to citizens, so they can make decisions affecting their lives (1998). Several state-supported fire training schools, such as the Florida State Fire College (1999), and the federal Emergency Management Institute (1993, 1994) conduct public information officer training sessions. However, no national standards for PIO operations exist because "the public information function generally reflects the standards and operations of the media and the governmental agencies of any given community" (Westbrook, 1999, p. 14). The purpose of this study, therefore, was to assess how Florida's firefighter public information officers perceived their effectiveness as they communicated with the media during the 1998 Florida wildfires.

Forestry is an agricultural industry. Therefore, findings, recommendations, and conclusions from this study are appropriate for an audience concerned with agricultural communication issues. Also the results may prove applicable to agricultural communicators who communicate with the media during crisis and natural disaster situations.

Method

A questionnaire was mailed to every member of the Florida Fire Chiefs' Association's Public Information Officer Section. Because the group was relatively small -- 99 members -- it was decided to send a questionnaire to each person. Therefore, the study was not a random sample. The questionnaire was mailed to the PIOs in early March 1999; a follow-up questionnaire was sent to

nonrespondents in early April. Forty-nine responded, representing forty-nine different fire-fighting departments; in addition, three questionnaires were returned undelivered.

A separate survey was sent to a total of 50 newswire agencies, newspapers and television and radio stations that were in areas impacted by the Florida wildfires. The surveys were distributed in early March, with a follow-up in early April. However, after the second mailing, only 12 responses -- from television, newswire, and newspaper reporters -- were received (24 percent response rate). Each respondent was from a different media organization. Because of the low response rate, results and reporters' comments presented should not be generalized beyond this study; however, the results and their comments provide insight into the overall communication effectiveness of Florida firefighter PIOs during the wildfires.

Results

Firefighter Public Information Officer Demographics
Firefighter PIO respondents worked in fire departments that employed an average of 100 firefighters. Respondents had been employed an average of 18.7 years as a firefighter, with a high of 38 years and a low of five years. Prior to the wildfire outbreaks, respondents had served in a PIO capacity for an average of 6.8 years, with a high of 22 years and a low of three months. Fifty-eight percent were employed in a city fire department, 22 percent were employed in a county fire department, and 20 percent in another job area. Most employed in "another job area" were volunteer firefighters.

Fifty-five percent worked in departments where they were the sole PIO; 30 percent worked with another staff PIO; 9 percent were one of three PIOs on staff; and 2 percent each (one response each) were employed in departments with a total of 4, 6 and 14 PIOs. Thirty-two percent were employed full-time as a PIO; 40 percent were employed part-time as a PIO or were employed in another capacity, such as fire chief and battalion chief, at their fire departments but served in a PIO role; and 28 percent were volunteer PIOs.

Communication Efforts and Resources at Wildfire Command Centers
PIO respondents said that during the most serious or threatening wildfire outbreaks, their command centers held news conferences weekly (8 respondents), once a day (6 respondents), several times a day (11 respondents) or never (2 respondents). Of those who said news conferences were held "several times a day," the average number of times news conferences were held per day was four. Respondents said command centers decided to hold news conferences based on the following considerations: 1) to release important information immediately when it was available and 2) to meet reporters' deadlines. One respondent said, "We held news conferences at 10 a.m., 3 p.m. and 9 p.m., based on the media 's deadlines."

Fifty-five percent said their command centers did not maintain an ongoing record of wildfire-related newspaper or television stories. Only 14 percent said a record was maintained, with 31 percent not sure if an ongoing record was maintained. Respondents indicated that less than half of the command centers evaluated or planned to evaluate their communication effectiveness with reporters. Respondents also noted that more resources, including personnel and material resources, such as

laptop computers and cellular telephones, were needed to communicate with the media during a wildfire outbreak as large and widespread as the one in 1998.

Media Relations of Command Centers During the Wildfires

PIO respondents were almost unanimous in their belief that having reporters present at a wildfire command center did not affect how firefighters battled the blazes. Twenty-three of 30 respondents said reporters did not endanger themselves in the pursuit of a story. Suggestions respondents gave to protect reporters from endangering themselves in the future included providing "safe areas" for the media, with an on-site, designated PIO; providing guided tours of wildfire areas; and having good stories for the media. Individual respondents wrote:

· "We set up a media pool. We should have done this earlier. We would take a group of four at a time to areas for photos and interviews."

· "Our policy of constant availability and in some cases transporting news crews into safe areas for 'photo opportunities' proved quite successful."

· "If reporters are given opportunities to get stories safely, they will take it. PIOs should create stories and safe ways for media to get the story."

Every PIO respondent said having reporters on the wildfire scenes was beneficial. The media's presence provided timely, important information to the public, and presented firefighters' eff orts positively. "We always want reporters at our emergencies," one respondent wrote. "They document our work, help with department public relations efforts, and provide a good way to get accurate information (and education) to citizens in the community."

In a self-evaluation, firefighter PIOs were asked to rate how accessible, helpful and effective they thought they were, in a variety of communication-related areas. (See Table 1.) Most believed PIOs did an above-average job communicating effectively with the media. PIOs then were asked to indicate how they thought reporters would rate the same statements. (See Table 2.) Here, the response averages were slightly lower, overall.

Table 1. PIOs' perception of their communication accessibility, helpfulness and effectiveness with reporters during wildfire outbreaks

	Mean	**SD**
Reporters'/photographers' accessibility to spokesperson or PIO.	4.00	.18
Reporters'/photographers' accessibility to information.	4.04	.17
Reporters'/photographers' accessibility to wildfire areas.	3.74	.14
News conference content's helpfulness.	3.77	.21
Public information officer's/spokesperson's overall helpfulness.	4.00	.15
Public information officer's/spokesperson's overall communication effectiveness.	3.88	.17
The media's ability to get wildfire-related information to the public.	4.32	.15
1 = poor; 5 = excellent		

Table 2. PIOs' perception of how they think reporters would rate communication accessibility, helpfulness and effectiveness during wildfire outbreaks

	Mean	SD
Reporters'/photographers' accessibility to spokesperson or PIO.	3.60	.19
Reporters'/photographers' accessibility to information.	3.64	.18
Reporters'/photographers' accessibility to wildfire areas.	3.18	.17
News conference content's helpfulness.	3.47	.19
Public information officer's/spokesperson's overall helpfulness.	3.57	.18
Public information officer's/spokesperson's overall communication effectiveness.	3.42	.17
The media's ability to get wildfire-related information to the public.	3.91	.15
1 = poor; 5 = excellent		

Respondents commented about how they could make a reporter's job more effective during news coverage of fires. Their responses fell into three categories: PIOs should serve as chaperones for the media into f ire-ravaged areas; PIOs should be accessible as much as possible to the media; and PIOs must provide accurate information to the media. Only one person mentioned the need to provide online information to reporters.

Respondents also mentioned ways reporters could make PIOs' jobs more effective during wildfire coverage. They suggested that reporters should work with PIOs to get story information and not to go "around" them, reporters should not go alone into wildfire areas, and reporters should coordinate communication more closely within their own news organizations. One PIO wrote: "We didn't have too much problem with TV reporters. The problem was with the assignments editors. We received multiple phone calls from different people at the same stations, requesting the same information. People there weren't talking to each other."

Principal Spokesperson Duties at Command Centers and Communication Training Needs
Forty-eight percent of PIO respondents said they were the principal spokesperson or shared principal spokesperson duties at their location. The remaining 52 percent said the local fire chief or another person -- usually a county emergency relief agency representative -- served as principal spokesperson during the fires. Respondents said the principal spokesperson communicated equally with reporters through individual interviews, and interviews combined with news conferences. Table 3 indicates the methods the principal spokespersons used to communicate with reporters.

Table 3. Principal spokesperson's primary communication method with reporters

	Percent	n
News conferences/question and answer sessions	7.7	2
Individual interviews	42.3	11

Both equally (news conferences/question and answer sessions and individual interviews)	42.3	11
Don't know	7.7	2
Total	**100%**	**26**

Approximately 70 percent of the principal spokespersons had media relations or media interview training, respondents said. Respondents were asked how prepared they thought the principal spokesperson was in terms of media interview training, on a scale of one to five, with one being "extremely unprepared" and five being "extremely prepared," to communicate with reporters. The a verage was 3.54, with a standard deviation of .21.

Respondents provided insight about the scope of communications-related training they thought all firefighter PIOs should have had to better prepare them for communicating with the media during the wildfire outbreak. Most respondents said they had received communications training, either through previous jobs they had in which they dealt with the media or through courses offered at state or national fire "colleges." Many of those who had not received communications training on the job had graduated with degrees in public relations or journalism. Although PIOs said they had adequate communication training and/or experience, they noted that they wish they would have had more comprehensive training before the wildfires in the following four areas: hands-on media relations training (including crisis communication), news release writing, public speaking and interviewing skills, and technology/computer training. PI Os wrote that communication training should include topics listed in Table 4.

Table 4. Topics PIOs said should be included in PIO communication training

Disaster scene preparedness and crisis communication
Media relations, including how the media work
Computer skills
Interviewing/public speaking/verbal communication skills
Written (news writing)
Information gathering

Twenty-eight out of 30 respondents said every fire department should have a trained PIO on staff. On this topic, respondents wrote:
· "You cannot throw an untrained, inexperienced person to the media. They'll eat that person alive. The untrained person will make your department look inept."
· "A designated PIO establishes a relationship with the news media prior to a crisis."
· "Every fire department should have a PIO on staff not only to deal with the media, but also to promote the fire department in non-incident times. Fire departments are public relations businesses. We must sell our service."

Reporters' Demographics
The average age of reporters who responded in the media survey was 33 years. Reporters had worked an average of 10.5 years in the media, with six working less than 10 years, four working 11 to 20 years, and two working more than 20 years. Six worked for newspapers or newswire agencies, and six worked for television stations.

Reporters Ratings of PIOs' Communication Effectiveness
Reporters were asked to rate the accessibility, helpfulness and effectiveness of various communication areas and issues during the wildfire outbreaks. (See Table 5.) Ratings provided by television reporters were higher than those given by newspaper reporters. Answers given by television reporters ranged from 3.6 to 3.8, while responses from newspaper reporters were from 2.6 to 3.1. Answers, overall, were lower than those provided by PIOs (see Table 2) when they were asked to indicate how they thought reporters would rate the PIOs' efforts.

Table 5. Reporters perception of communication accessibility, helpfulness^ and effectiveness during wildfire outbreaks ^

	Mean	**SD**
Reporters'/photographers' accessibility to spokesperson or PIO.	3.09	.31
Reporters'/photographers' accessibility to information.	3.36	.34
Reporters'/photographers' accessibility to wildfire areas.	3.09	.39
News conference content's helpfulness.	3.00	.27
Public information officer's/spokesperson's overall helpfulness.	3.18	.35
Public information officer's/spokesperson's overall communication effectiveness.	3.00	.35
The media's ability to get wildfire-related information to the public.	3.72	.27
1 = poor; 5 = excellent		

Several reporters mentioned that they believed PIOs catered more to national media reporters than to local reporters. One stated: "(PIOs) need to help local media first, before trying to help state/national media. We're the ones giving important local public safety information."

Television reporters said firefighters should provide more "pool coverage" of video feeds, resulting in fewer videographers needing to be escorted into impacted areas. Several television and newspaper/newswire reporters stressed the need to integrate online information in future wildfire coverage. One reporter said, "Put as much information as possible out on the Web." Another said, "Volusia County was most effective in getting information out because they put all their information on their Website." Only one firefighter PIO mentioned the need for using online information.

Reporters also highlighted their need to be close to the fires. Several said photographers had trouble getting to fire scenes when areas were blocked. One reporter, with 24 years of media experience, went so far as to say that well-equipped veteran reporters sho uld be left on their own. "Veteran reporters can fend for themselves in the field. When I tell my PIO I have a 4-by-4 (vehicle), water and a cell-phone, that means they don't have to hold my hand through the fire." However, other reporters said they understood the need to work "within the system" and to be escorted.

Conclusions

Overall, Florida firefighter PIOs perceived that they effectively communicated with the media during the 1998 wildfires. They also thought the media would say they performed their jobs effectively. Reporters, overall, were slightly less favorable with PIOs' communications efforts, and newspaper reporters, particularly, were critical of PIOs. This may be a result of their perception that PIOs catered more to the "10, a.m., 3 p.m. and 9 p.m." deadlines of television reporters for the noon, 5 p.m. and 11 p.m. newscasts. This finding is supported by Wenger and Quarantelli (1989) who stated that broadcast media are the primary distributor of immediate news during a disaster. It would follow, then, that PIOs may spend more time with media that would provide immediate news to local citizens.

Local reporters said that PIOs spent more time helping national reporters, when more should have been done to assist the local journalists in providing immediate information t o area residents. A PIO mentioned that the "out-of-town" media were more demanding than local reporters. Many PIOs said that part of their job during crises is public relations: showing fire-fighting efforts in action. Providing communications support to local reporters would promote this public relations effort in the communities where local and state tax money are used to support firefighters.

Many PIOs had media communication training, experience, or education. Yet, they said they should have had more to better prepare them for the 1998 wildfires. This belief coincides with the recommendations from the report of the Governor's Wildfire Response and Mitigation Review Committee (1998). The report noted: "There is a need for comprehensive emergency public information officer training at the state and county level, in cooperation with associations that are capable of dispatching public information officers during an emergency event" (p. 21). One are a that could be stressed in training sessions is the need for immediate online information. Although only one PIO mentioned the need for online wildfire-related information, several reporters mentioned its need.

This study indicates specific communications-related recommendations, in the event of future wildfires, which are as follows:
· Designate a PIO in each fire department and/or command center. This recommendation was supported almost unanimously by respondents in the study.
· Provide communications-related training opportunities to all PIOs. And emphasize topics PIOs believe to be important when communicating with the media. (See Table 5.) It is not enough to have a designated PIO on staff; that PIO should be properly trained in communication methods.
· Cater to local media before national media. Local reporters will provide immediate, important information to area constituents.
· Don't overlook newspaper reporters. The immediacy of television coverage may have caused PIOs in this study to provide more resources to television reporters and videographers. However, newspaper

reporters and photographers' needs also should be provided for during wildfire coverage.
· Consider "media pool coverage," especially of video footage, and/or media tours to fire-damaged areas. This should be a standard feature at all wildfire command center sites and not change from site to site.
· Be accessible or designate someone to be accessible to the media at all times. Reporters should have a contact person's telephone number, cellular phone number, fax number and electronic mail address for around-the-clock contact.
· Provide necessary resources (cellular phones, laptop computers) to PIOs in the field.
· Initiate World Wide Web page development training for PIOs or someone else on staff.
· Provide wildfire information to the public and media on the Web.
· Provide other automated services, such as a 24-ho ur telephone hotline, for the public to use for wildfire updates.

The scope of the 1998 wildfires stretched the Florida fire-fighting effort to an extreme. As a result, firefighter PIOs also felt the pinch of a lack of resources, materials and personnel. As firefighters fought the blazes at many fronts throughout the state, PIOs at numerous command centers tried their best to provide information to the media. As one respondent wrote: "We try to control as much information as possible by having field PIOs on the scenes, but these fires were too widespread and media presence was too large to handle this. We needed to be better prepared."

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A Working Strategy to Inform Urban Opinion Leaders about Agribusiness and its Impact on Economic Development: A Case Study

A Paper Presented to the Southern Association of Agricultural Scientists
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Background

Introduction

The State of Texas relies heavily on the health of it's second largest industry, agribusiness. This industry includes, but is not limited to traditional farm-based agricultural businesses (producers), suppliers, processors, wholesalers and retailers of the food, fiber and forestry products. These industry sectors have a sizable impact on the state's rural and urban regions in the form of employment, commerce, and economic development. Specialization has contributed to distancing agricultural producers from other industrial segments, and ultimately agricultural consumers. This is so evident, that agricultural consumers, especially those with no direct roots to the farm, do not recognize themselves as agricultural consumers at all, rather, they claim allegiance to name brand products and retailers, and often fail to make any connection to agriculture (Vestal, 1996).

The evolution of the agricultural system du ring the past century has yielded urban opinion leaders who are generations removed from their roots to the land, and unfamiliar with what it takes to make agriculture function to meet human and environmental needs. These urban constituents, who represent the overwhelming majority of our population, shape the future through public policy and economic development. These people support those industrial segments that they visualize as futuristic, growing, and advantageous to the urban portfolio of economic development.

During the 1980s, scores of metropolitan chambers of commerce dissolved long active committees for agriculture and agribusiness. To add to this growing demise of agricultural awareness in our cities, print media, as well as radio and television stations, dropped regularly scheduled columns and programming about agricultural happenings. Agricultural media coverage for the most part has been limited to crop disaster coverage, food safety and environmen tal awareness, and negative farm

subsidy stories (Vestal, 1996).

A century ago, the word agriculture by definition included a farm family not only raising crops and livestock, but also producing their own farm supplies (seeds, tools, draft animals, etc.), processing their commodities, and distributing them in the community (Davis & Goldberg, 1957). In that time, storing and merchandising food, fiber, and forestry products became a function of the farm. With these operations administered by the farmer and his family, it was appropriate, then, to consider them within the context of the word, "agriculture."

During this century, these operations became specialized industrial segments, but the interdependency remains. The "agriculture" and "business" segments are most often thought of as two separate entities. Dr. John H. Davis of Harvard School of Business Administration discovered there was no term to describe the interrelated function of agriculture and business. As a result Davis coined the term, agribusiness defined as follows:

"Agribusiness is a concept of economics which includes the sum total of all operations involved in the manufacturing and distribution of farm supplies; production operation on the farm; and the storage, processing and distribution of farm commodities and items made from them."
(Davis & Goldberg, 1957)

Davis' term and its definition form the basis for the economic research that is utilized today to inform urban opinion leaders about agribusiness.

The Texas Agricultural Extension Service has employed a limited approach to relating agribusiness to urban opinion leaders (Vestal, 1996). Impact of Agribusiness brochures are currently one method by which the Texas Agricultural Extension Service is attempting to educate the state's urban opinion leaders about the importance of agribusiness in urban economies. Coupled with the publication are agribusiness luncheons, press conferences, distribution of publications, and public speaking initiatives orchestrated in an effort to inform the target audience.

The purpose of this study is to find the most effective methods to inform opinion leaders about the impact agribusiness and value-added industries have on economic development in urban Texas. The recommendations developed from this study can be utilized by the Texas Agricultural Extension Service to create a marketing strategy aimed at generating interest in value-added agribusiness among opinion leaders. A successful marketing strategy may motivate opinion leaders to incorporate agribusiness into the future economic development of their communities and spur economic growth in their respective regions.

The Impact of Agribusiness publications emphasize the importance of featuring agribusiness investment, especially food, textile, cold storage, and distribution businesses, as viable parts of the economic development portfolio of an urban community and generate greater awareness and understanding so that urban consumers and opinion leaders recognize themselves as agricultural consumers who need to make wise decisions regarding public policy that affects agriculture and

agribusiness.

Historical Account of Impact of Agribusiness Publications in Texas

At the time of this study six regions had published Impact of Agribusiness brochures: San Antonio, Amarillo, Austin, San Angelo, Bryan/College Station, and Fort Worth. Each publication features data on six economic sectors - from the consumer back to the land where the products originated - as follows:
a) Retail: building materials and garden supplies, food stores, eating establishments, miscellaneous retail (luggage, leather goods, florists),
b) Wholesale trade, c) Manufacturing: food and kindred products, apparel and other textile products, lumber and wood products, manufa cturing furniture and fixtures, paper and allied products, chemicals and allied products, leather and leather products, d) Transportation and Public Utilities: firms involved with transporting and warehousing agricultural products and commodities,
e) Agricultural Services: veterinarian and agricultural services, farm labor, crop and livestock management services, landscape and horticultural services, forestry, fishing, hunting, trapping, f) Agricultural Cash Receipts: prices received for commodities.

According to Steve Wheeless (personal interview, October 12, 1995), County Extension Agent-Emeritus, of the Dallas County office of the Texas Agricultural Extension Service, Charlie Ball, editor of the Farm Journal magazine and the Dallas Agricultural Club published their first Impact of Agribusiness brochure in 1955. Wheeless discovered the 1955 report during his first year in the Dallas County position, 1968. Wheeless said, "It was an excellent report, but out of date." He recalled setting a personal goal of updating this report during his tenure as County Extension Agent.

His first challenge was to develop a method to assess the impact of agribusiness on a metropolitan area. The task should involve farming, ranching, farm and ranch supplies, manufacturing and distribution, transportation of commodities and consumer goods, commodity and cold storage, food processing and manufacturing, timber, wood and paper products manufacturing, textile manufacturing, wholesale and retail distribution and other related agribusiness. Agricultural income, agribusiness employment, payrolls, and value-added economics were all considerations, but he was concerned about how to acquire this information.

Wheeless, with determination, continued the quest to fulfill his goal. By the mid-1980s, the importance of agriculture in Dallas County was slipping and something needed to be done. He solicited financial support from the Dallas Ag ricultural Club, T.U. Electric, and Dr. Zerle Carpenter, Director of the Texas Agricultural Extension Service. Carpenter commissioned Extension Economist, Dr. Richard Edwards, at Texas A&M University, to establish a sound method, using state of the art computer software to assess the impact of agribusiness in Dallas County. The Texas Agricultural Extension Service published the Impact of Agribusiness in Dallas County in 1989. The report documented more than 140,000 agribusiness employees, with an annual payroll of $2 billion (Wheeless, 1989).

The Dallas Agricultural Club hosted a luncheon that featured the publication. Wheeless reported no significant response to press releases, although The Dallas Morning News did publish one article,

written by Wheeless. Wheeless said the publication did not reach its potential impact because of the failure to reach the press and lack of acceptance by local business executives.

The next Impact of Agribusiness brochure was published when Jim Smith, County Extension Agent in Amarillo, teamed up with the Amarillo Chamber of Commerce, the City of Amarillo, and Southwestern Public Service Company in 1989. The Impact of Agribusiness in the Texas High Plains Trade Area received expert journalistic attention from Kay Ledbetter, agribusiness editor for the Amarillo Globe News, Dr. Dick Edwards at Texas A&M, and Dr. Steve Amosson, Extension Economist for the Texas High Plains. This publication was the first of its kind to feature full color photography on high gloss paper to enhance attractiveness. Distribution and publicity was a joint effort by the Amarillo Globe News, City of Amarillo, Southwestern Public Service Company, Amarillo Chamber of Commerce and the Texas Agricultural Extension Service. Response was very favorable in this heavy agriculture dependent economy.

Although many people believe the brochures to be somewhat effective at informing urban opinion leaders, these brochure s may not be realizing their potential; therefore, this study focused on the effectiveness of the Impact of Agribusiness brochures at informing opinion leaders. Opinion leaders are the members of the community including leaders from chambers of commerce, mass media, elected officials, and business leaders who have power and influence regarding economic development. Opinion leaders have the potential to shape the future of public policies and economic development as they relate to agribusiness.

For the purpose of this study it was hypothesized that while the brochures provide information to the urban populace, they may not be targeting the right audience with the right information. In order to create a marketing plan to inform public policy decision-makers and attract value-added industry, the effectiveness of Extension's Impact of Agribusiness brochures must be evaluated and communicated to people who are challenged to communicate the economic impact of agribusi ness in urban Texas.

In this study the following questions were addressed in order to find the most effective way to inform opinion leaders of the current and potential value of agribusiness to urban economic development.
1. What information is necessary to influence and empower opinion leaders?
2. How has agribusiness been marketed in other states?
3. What is the most effective medium for communicating information to opinion leaders?
4. How effective are the current methods of informing opinion leaders?

Method

Methods/Procedures

The inductive nature of this project requires the use of qualitative analysis. Qualitative research is research through observation, either external or internal to the environment, with the goal of understanding the object's behavior (thoughts) from its point of view (Gorman & Clayton, 1997). Qualitative research uses a "bottom-up" approach to forming a hypothesis in contrast to quantitative research, which requires a hypothesis before any data is collected. Due to the complexity of variables

and the difficulty in measuring them, a large data set would detract from the quality of data analysis.

Data collection began with a thorough literature review of the term agribusiness and its economic importance in Texas. Case studies were initiated to evaluate Texas' and other states' efforts to address issues similar to the research questions in this study. Then finally, Extension agents in the six counties wher e Impact of Agribusiness brochures had been developed during the 1996-1998 time frame provided names of four to six opinion leaders in their respective county. Although telephone surveys involved a diverse group of opinion leaders, those responding can be grouped into four categories as follows: a) those involved in banking, b) local government, c) private business, and d) chamber of commerce members. Too, the Extension agents provided a list of survey questions to be considered prior to interviewing selected opinion leaders.

Survey questions for this type of research need to be worded carefully to avoid bias and ambiguity (Kaplan, 1964; Frey, 1989); therefore, a panel of experts in questionnaire design and research methods evaluated the agribusiness survey. The panel helped to organize the questions into four categories: awareness of agriculture, impact of agriculture on the community, how to improve awareness, and evaluation of current agricultural awareness effo rts. This helped to categorize the data and aided in the formulation of the marketing recommendations.

After questions and names of opinion leaders were collected, each opinion leader was called by trained interviewers who asked scripted questions (Kvale, 1996). The interviewer began with a personal introduction then inquired to find out if the opinion leader had time to answer some questions (Table 1). The following points guided the structured interviewing process: a) interviewing with pre-established questions with limited response categories, b) established codes for recording responses, c) following the questionnaire like a script, and d) giving a short explanation of the study, e) no suggesting or disagreeing with answers (Frey, 1989). In order to prevent bias, care was taken to collect only an amount of data that could be analyzed in depth (Kvale, 1998).

Table 1. Survey Questions asked of Twenty-five Texas Opinion Leaders Regarding Imp act of Agribusiness Brochures.

1. Have you been involved with bringing value-added agribusiness to your region? Y or N; Give examples:
2. Where did you learn about value-added agribusiness?
3. Do you consider value-added agribusiness an important part of your community's economic future? Y or N; Why?
4. What types of organizations or businesses have the power to influence future economic development in your region?
5. What information about value-added products/processing/distributing would be useful to economic development in your region?
6. How should value-added agribusiness information be communicated to opinion leaders?
7. Are you familiar with the Impact of Agribusiness brochure in your region? Y or N
8. Do you believe the Impact of Agribusiness brochures have been effective toward their purpose?

9. Who do you think the publications should target?

Researchers had to reduce the findings into themes, data summaries, and code interview answers to sufficiently analyze the data (Frey, 1989). Extracting data from people who do not fit in one easily categorized group involves cross-case analysis. This enhances the ability to generalize conclusions, and extends external validity. However, such an approach makes interpreting the data more complicated. Researchers should avoid neglecting differences among subjects in order to prevent themselves from forming superficial conclusions. Specific cases must only be grouped with others that share critical components (Denzin, 1989).

Finally, researchers must verify conclusions. Many factors such as data overload, overconfidence, salience of first impressions, and poor sources can threaten the validity of analysis. In order to avoid such pitfalls an external auditor should systematically review the study (Schwandt & Halpern, 1988). In this study two faculty members in the Department of Agricultural Education at Texas A&M University served as auditors to the Eisenhower Leadership Studies Team.

Results

Results/Findings
Case Studies

The findings related to the research questions are best described in the text of a) each individual case study, b) a literature review on communications and advertising, and c) the findings of the survey of Texas opinion leaders regarding the effectiveness of Impact of Agribusiness brochures completed during 1996-1998.

State Regional Educational Initiative - Case Study

In 1993, a study done by the Colorado State University Cooperative Extension Service identified value-added enterprises as a key area that must be targeted to ensure future agricultural viability. Colorado soon combined with neighboring states (Arizona, New Mexico and Utah) to develop a strong regional focus on value-added opportunities. To date, there have been four major results of the Four-State Regional Education Initiative: a) compilation of a Value-Added Resource Kit, b) publication of A Guide to Value-A dded Agriculture and Forestry Enterprises, c) March 1995 symposium at San Juan College in Farmington, New Mexico, d) March 1997 symposium at San Juan College in Farmington, New Mexico (Guide to Value-Added, 1997).

The "Guide to Value-Added Agriculture and Forestry Enterprises" was written for the March 1997 symposium. Its primary objective was to serve as a resource in aiding farmers or aspiring entrepreneurs in taking advantage of value-added opportunities. While the focus of this project centered on creating new value-added activities in rural areas, there are many ideas that can be applied to the urban sector. The importance of value-added agriculture is continually increasing. While the farm value of consumer food expenditures has remained relatively steady, the value-added expenditures have increased dramatically (Guide to Value-Added, 1997).

It is also interesting to note, however, that the actual contribution by farmers for each dollar spent on fo od has declined from $0.162 in 1950 to $0.035 in 1990 (Guide to Value-Added, 1997). The main cause of this unexpected decline is increased production efficiency. In the Guide to Value-Added (1997) data shows that increasing raw product production does not increase the total farm value received. To increase total farm value received is to invest in value-added and increase it's effectiveness at raising the value of farm commodities.

Identification of possible new value-added activities involves collaboration and information gathering from a wide array of sources within the community including producers, processors, retailers, lenders, local government, community leadership, area youth, economic development groups, colleges/universities, state/federal agencies, and non-profit groups (Guide to Value-Added, 1997). Specifically, it is suggested that information be gathered about the following: a) the availability of raw products, natural and human resources, b) the cur rent goals of area producers, businesses, and communities, and c) the local/regional infrastructure-investment capital, transportation, communications, water, waste disposal (Guide to Value-Added, 1997).

Many aspects of the Four Corners Region's value-added educational efforts may be applied to the task of promoting awareness of opinion leaders about agribusiness in urban Texas. Value-added efforts can and should benefit all parties involved: agriculture, business, and the regions in which they are undertaken. Information and education is essential to empowering local and state leaders, and continual evaluation must occur to keep the entire effort on track.

Economic Development Initiatives in Austin Texas - Case Study

An example of an industry successfully brought to a community can be seen in Austin, Texas. Austin has one of the fastest growing economies in the country. The main reason for this is that the city is very business-friendly. A leader in the high-tech industry, Austin supports its business base through reasonable tax structure, a well-educated workforce, good schools and a fairly low cost of living. All of these factors make Austin a welcome place to build a strong business presence (North America's Most Improved Cities, 1997).

Historically, however, the majority of Austin's economic base has been the University of Texas and the state government. These are no longer the only enterprises; the city's economy has taken off like its most famous homegrown success story, Dell Computer. Dell is now the region's largest private employer, adding 100 to 200 jobs per week nationally. Sixty-five percent of these new jobs are at the Austin headquarters.

Attracting businesses looking to relocate is Austin's economic goal. The city's highest economic development priority over the next several years is to more fully develop its evolving cluster economy. Economic clusters are geographic conc entrations of producer and supplier industries linked together in buyer-supplier relationships and supported by public and private sector institutions whose services are designed to make cluster firms competitive. Two types of clusters exist. The core clusters drive economic growth and continue to expand and diversify into higher value-added areas. The

regional economy is composed of three core clusters: a) semiconductors and electronics, b) computers and peripherals, and c) software. The second is the emerging cluster, which contains new industries. There are seven emerging industries that have the potential to become core clusters as follows: a) biomedical products, b) logistics and distribution, c) film, d) music, e) multimedia, f) telecommunications, and transaction services. The city's goal for these clusters is to spur innovation and improve production by encouraging geographic proximity between similar industries (North America's Most Improved Cities, 1997).

Austin can stand as a model of the impact informed opinion leaders can have on a particular industry. However, opinion leaders must be convinced of the importance of an industry before they are willing to devote energy to promote it through entities such as economic development corporations.

Building the Future of North Dakota Agriculture - Case Study

In 1997, North Dakota Agriculture Commissioner Roger Johnson initiated a discussion about the future of the state's agriculture industry. He called together representatives from the Farm Bureau, Farmers Union, North Dakota Association of Rural Electric Cooperatives, and North Dakota State University. Members from these organizations formed a steering committee that recognized the important impact agriculture has on the state. In November of that year, a 15-member working group was formed and over the next seven months addressed two central questions: a) What do we want North Dakota agriculture to look like in the future? b) What are we going to do to get there? (Building the Future of North Dakota Agriculture, 1998).

The Commission on the Future of Agriculture (COFA), composed of over 60 agricultural and rural organizations, was then formed in early 1998. The Commission held public forums around the state to allow for citizens to become active participants in the discussion. The Commission identified its mission to raise net farm income, enhance the quality of rural life, and increase North Dakota's rural jobs (Building the Future of North Dakota Agriculture, 1998).

The Commission hoped to establish policies such as tax incentives for investors in value-added agriculture, funding sources for value-added research, equity investments in value-added agricultural ventures, a mutual fund capital pool, and appropriated funds for the already present state supported Partnership in Assisting Community Expansion program with lower matching requirements for v alue-added processing projects.

In order for any of these objectives or goals to be reached, however, the suggestions of the Commission must be implemented. With its educational brochure, Building the Future of North Dakota Agriculture, the Commission hoped to raise the agribusiness awareness of the citizens of North Dakota and call them to action. According to COFA Coordinator James Moench, the state needs to find the political will and money to make the Commission's vision a reality.
Much can be learned from North Dakota's experience that may be applied to the current project of promoting agribusiness in urban Texas. The Commission chose to employ the people involved in agriculture to come up with recommendations through their statewide forums. This lends support to an idea of educating opinion leaders and then allowing them to take the next step in implementing

solutions. Additionally, the objectives identified to achieve the goal of increasing value-added processing provide a vision into what types of action should take place. Targeting opinion leaders that actually have the power to make changes in areas such as investment financing could make a vast difference in the success of any educational initiative.

Agricultural Development Profile and Marketing Strategy for Southeastern Arizona - Case Study

The Southeastern Arizona Cooperative Extension took another approach to attract value-added industries to their communities, and developed a 98-page report entitled "Agricultural Development Profile and Marketing Strategy for Southeastern Arizona." The report identifies over 100 possible value-added agriculture opportunities in the region and gives details about the natural and human resources available to support such activities (Value-Added Newsletter, 1998). A $42,000 USDA grant was also obtained in 1998 to establish a center for agribusiness development in the area.

The six primary objective s for the center were to: a) recruit businesses that will provide an end use for locally grown agricultural products, b) help local producers develop markets, diversify and expand production opportunities, c) work with agribusiness prospects, d) facilitate the development of farms and ranches, recreation and agricultural tourism, e) maintain up-to-date resource data that can substantiate development opportunities, and f) generate positive publicity for agriculture in the region. Additionally, four regional agribusiness conference/tours were funded by the Agribusiness Council of Arizona to familiarize local and state officials on the agricultural resources of the area. Arizona Cooperative Extension received an "Innovation Award" from the National Association of Development Organizations for the report.

Communications and Advertising

Information about agribusiness is effective only if it is communicated to its target audience (Belch, 1998). A thorough l iterature review on the effectiveness of television, radio, magazines, newspapers, outdoor advertising, and conferences/seminars aimed at informing opinion leaders and the public on specific topics revealed that there are several mediums available, each with its own set of advantages and disadvantages (Schoell & Giltinan, 1995).

The literature revealed that conferences and seminars are more appropriate mediums for communicating the concept of agribusiness to small, specialized groups of professionals. Studies of group interaction demonstrate a greater commitment to decisions when responsibility for decisions is spread as widely as possible. These studies also demonstrated synergistic effects of communication that lead to performance levels surpassing the level of performance expected on the basis of individual knowledge, skills, and abilities (Poole & Hirokawa, 1986). Synergistic effects can be expected to surpass individual performance when: a) members interact and work interdependently, b) there is no clearly defined "best answer" for assessing the correctness of the decision, and c) decision making situations involve high levels of ambiguity (uncertainty, complexity, and irreversibility) (Fandt, 1991).

Survey Measure of the Effectiveness of Impact of Agribusiness Brochures

Due to the small sample size (25 urban Texas opinion leaders surveyed) the data presented does not have statistical significance and is presented from a qualitative standpoint. The conclusions drawn from the data are drawn not only from totaled answers but forcefulness of views and context of questions. Although surveys were given to a diverse group of opinion leaders, those responding can be grouped into four categories as follows: a) those involved in banking, b) local government, c) private business, and d) chamber of commerce members. These categories are not intended to be mutually exclusive, as respondents may fit into more than one. The following subtitles reflect the survey questions that respondents were asked.

Survey responses indicate that opinion leaders who do not have immediate ties to production agriculture do not understand the significance of value-added agribusiness. The survey revealed that respondents representing private business and local government were particularly unfamiliar with agribusiness. Most respondents had learned about agribusiness and value-added agriculture through their employment. The respondents considered conventions and seminars as the best method to inform opinion leaders about the potential benefits of fostering value-added agriculture.

The respondents stated that chambers of commerce and economic development councils are the organizations most capable of bringing value-added industry into an area. Although about half of the respondents felt they were instrumental in bringing value-added agriculture to their respective communities only a t hird of the chamber of commerce members shared the view.

When asked what information should be shared in the Impact of Agribusiness brochures the respondents requested information regarding the present importance of agribusiness and a market analysis for their region as well as the present information in the document. Respondents who were familiar with the Impact of Agribusiness publications believed they did not target the right audience. The respondents said that the publications should target opinion leaders within the chambers of commerce, economic development boards, and the general public.

Assessment of Sources of Agribusiness/Value-added Information

The predominant means by which respondents had learned about agribusiness was through their jobs and family businesses. Respondents in general considered their business required them to understand agribusiness to compete in today's market. They considered professional conferences and sem inars the most appropriate method of informing opinion leaders.

Twenty-six percent of the respondents had learned about value-added products through traditional forms of mass media. Twenty-five percent of the respondents received information about the impact that agribusiness has in their region from Texas A&M or the Texas Agricultural Extension Service. Because several of the respondents served on Extension committees to produce the Impact of Agribusiness publications, the data may over-represent the true portion of opinion leaders learning about agribusiness and value-added products from these sources. Almost 15% had learned about the value-added agribusiness through reading agribusiness publications.

Assessment of Proposed Methods for Informing Opinion Leaders

The respondents proposed several means of communicating information regarding the importance of agribusiness in urban areas to opinion leaders. Those who learned about agribusiness from the Extension service and agribusiness publications felt that these methods would be the best suited for informing opinion leaders. Twenty-eight percent of the respondents advocated the use of television, radio, and newspapers, although only 6% of the respondents learned about value-added products through these mass media. By far, the largest portion, 36% of the respondents, believed that conventions and seminars would the most effective means to educate urban opinion leaders about agribusiness and value-added concepts. Because conventions are usually sponsored by the organization employing those who attend, this suggestion correlates with the survey data indicating that most of those interviewed learned about agribusiness through work.

Assessment of Economic Importance of Agribusiness and Value-Added Products

The respondents to the survey considered agribusiness and value-added products were important to their communities' economic futures. A lthough a majority of the respondents from each category considered agribusiness value-added products as part of their communities' economic future, 33% of the local government officials did not. Sixty percent of the respondents believed agribusiness was important to their communities' economic future because it would drive economic growth.

Respondents from San Antonio saw their link to Mexican agribusiness as a driving force in their future economy. Twenty percent considered that because the demand for food is steady and always growing, agribusiness was important to the future of their communities. Eight percent considered that agribusiness was valuable for their future because it could increase employment. Leaders in Arlington and Austin felt agribusiness was not important to their community's economic future because industries such as electronics were already the driving force in their economy.

Assessment of Organizations Capable of Directing Economic Development

When asked which organizations had the power to influence economic development in their region the respondents held diverse views. Almost all of them mentioned the chamber of commerce and economic development councils. Universities, Extension agents, private industry, and local government were also considered important. Agricultural trade groups, banks, and their respective communities were rarely mentioned.

Assessment of Involvement in Agribusiness and Value-Added Agriculture

Fifty-five percent of the respondents were involved in bringing value-added products into their respective communities. About half of the bankers and local government officials responded that they

had been instrumental in bringing value-added business into their region. A clear majority of the respondents representing private business responded that they had helped to attract value-added industry into their community. This data may be indicative of the fact that most of the respondents representing business represented agricultural businesses, which are by definition involved in value-added agribusiness. Interestingly, only 33% of the chamber of commerce members felt that they were responsible for bringing value-added business into their community.

This data is significant because most of the respondents said that chambers of commerce are the most influential organizations for bringing value-added industry into a community. This indicates that either chambers of commerce are not realizing their potential regarding value-added products or the survey's responding opinion leaders misunderstand the process involved in bringing agribusiness into a community. Although few of the respondents believed that local government and bankers have influence in bringing value-added industry into an area half of the respondents from these groups had been involved in just such a process.

Assessment of Informa tion Useful to Opinion Leaders

Although respondents suggested several types of information about agribusiness that would be useful to the organizations capable of bringing value-added industry into an area, two suggestions predominated. Fifty-five percent suggested information about the present impact of agribusiness in the region, while 31% of the respondents suggested some form of market analysis. The survey responses indicated that those wanting information about the present impact of agribusiness in their region wanted precisely the type of information found in the Impact of Agribusiness publications.

Those who suggested market analysis had several recommendations. They desired to review the impact of processing agricultural products locally as opposed to exporting them. They also requested information that would inform owners of entrepreneurial businesses of the benefits of small-scale value-added ventures. Finally, the respondents suggested this inf ormation be supported by cost-benefit analysis based on similar ventures in other regions.

Impact of Agribusiness Publications

Fifty-seven percent of the respondents were familiar with Impact of Agribusiness publications, but the methods of selecting interview candidates may over-represent the proportion of opinion leaders in the state aware of the publications. A majority of respondents representing private business were not familiar with the publications. Unfortunately, the fact that many respondents who were familiar with the Impact of Agribusiness publications had also assisted in their production leaves us with an unanswered dilemma, the researchers were unable to postulate what influence the methods of dissemination, informational content, or presentational style may have had; and thus, participation in the production process may account for differences in familiarity.

Sixty-two percent of those familiar with the brochures considered t hem effective but the majority did not feel that the publications reached the desired level of effectiveness. They claimed the publications

targeted the wrong group. They believed that the publications "preach to the choir." The respondents that were indecisive regarding the effectiveness of the publications also believed they only appealed to readers already involved in agribusiness. One respondent suggested that the publications did target opinion leaders, but only those involved in agriculture. Opinion leaders who considered that the publications were effective used the data in presentations, and praised their content. Overall, the respondents were uncertain of the target audience for the publications and accordingly were less than satisfied with their current level of effectiveness.

The respondents held divergent views as to the best target audience for the publications. Thirty-eight percent of the respondents did not know whom the publications should targe t. Twenty-six percent believed the publications should target chambers of commerce and economic development boards. This recommendation may stem from the respondents' belief that these organizations were most capable of bringing agribusiness into a region. The most common single response to the question regarding the appropriate target audience was to target the general public. The respondents did not feel that the public was capable of bringing value-added industry into a region, so the response may seem strange. However some of the respondents believed that opinion leaders already understood the importance of agribusiness. From such a viewpoint the public would be the next logical group to inform, because public support is needed if decision-makers are to be successful at bringing value-added agriculture into their communities.

Conclusions

Conclusions

The potential of agribusiness and value-added industry is important not only in economic terms, but to ensure future agricultural viability. North Dakota recognized this fact and formed a commission made up of representatives from the Farm Bureau, Farmers Union, North Dakota Association of Rural Electric Cooperatives, and North Dakota State University to determine what agriculture would look like in the future and how they would help to get it there. By making sure value-added agribusiness finds its niche in a community's economy, jobs will ultimately be created and the economy will prosper. The largest obstacle for a community is to move agribusiness into a new era with a broader definition of agribusiness and a greater awareness of its economic impact. By utilizing the most effective method of informing opinion leaders about pertinent information this obstacle may be overcome.

The current method of infor ming the urban opinion leaders about agribusiness, the Impact of Agribusiness brochures, may alone, not be the most effective method to inform opinion leaders. Respondents who were currently aware of the importance of agribusiness had been exposed to the brochures. Respondents who were not directly involved in agribusiness or did not understand agribusiness were unaware of the brochures. The respondents exposed to the brochures believed they targeted an audience already aware of the importance of agribusiness. The information within the brochures could be utilized in a marketing plan to provide opinion leaders who are heavily involved in promoting agribusiness with the evidence necessary to convince peers of the value of agribusiness to their community.

According to the respondents, chambers of commerce and the economic development corporations have the greatest potential to influence economic development. However, two of the three chamber of commerce members int erviewed had never been involved in bringing a value-added industry into their community. Because they are influential, yet least involved, informing chamber of commerce members of the potential economic benefits of agribusiness and value-added industries may stimulate growth in the agribusiness sector. These opinion leaders have the power to help shape future efforts applied to value-added industry (Guide to Value-Added, 1997). Targeting opinion leaders that actually have the power to influence changes may make a vast difference in the success of any educational initiative.

On the other hand, the relatively small number of local government officials who have been involved in bringing value-added agriculture into their communities are more effective than equally knowledgeable members of the other more aware groups. This indicates that it would be valuable to educate opinion leaders in local government. One point to consider is to transfer the funds used to creat e the brochures and concentrate this funding towards informing the economic development corporations about value-added industries.

The respondents to the survey conveyed the kind of economic impact information that would be most valuable. In general, they considered some form of a market analysis as most important. This information may be an assessment of the impact of processing local agricultural products as opposed to exporting them, or inform owners of entrepreneurial businesses the benefits of small-scale valued-added ventures.

The case studies should be followed to their fruition to evaluate the actual effectiveness of the methods employed to educate opinion leaders in other states. An interview survey similar to the one conducted in this study should be conducted with a larger sample size in order to give the results greater reliability. The interviews and case studies indicate that market analysis should be obtained. The analysis should include a regional tally of resources available to potential value-added agriculture, and projections of the value of processing agricultural products within the various regions of Texas as opposed to merely exporting the raw products.

The Impact of Agribusiness brochures should be distributed to leaders within the agribusiness community as a tool to educate their business peers. The market analysis information and the data in the brochures regarding the present impact of agribusiness should be featured during professional conferences and seminars. The conferences should be structured in a manner to allow opinion leaders an opportunity to interact and discuss the material presented. Initially these conferences should target members of local government and chamber of commerce members.

The medium to supply the above information to opinion leaders is important. Opinion leaders must be informed effectively in order to promote agribusiness. The suggested media was fairly consistent in the survey responses. Most of the responding opinion leaders believed that conventions and seminars are the most effective means to educate other opinion leaders about the agribusiness and value-added industry. Because conventions are usually sponsored by the organization employing those who attend, this suggestion correlates with the data indicating that most of those interviewed learned about agribusiness through work.

This exploratory study to enhance methods to inform opinion leaders about the importance of agribusiness has produced several possible courses of action. The survey responses indicate several important trends in the awareness of agribusiness among opinion leaders in Texas; however, the sample size was too small to give statistical significance to the conclusions. Therefore, the suggestions proposed by this study should be tested with a larger sampling population.

The marketing plans of other states demonstrated t hat good ideas of how to create an increased awareness of agribusiness and its importance, but due to the novelty of valued-added agribusiness the effectiveness of such programs has not yet been ascertained.

Recommendations

The authors formulated several recommendations for successfully creating a marketing plan to inform opinion leaders about agribusiness based on case studies, literature reviewed, and the interviews performed in this study.

1. The case studies should be followed to their fruition to evaluate the actual effectiveness of the methods employed to educate opinion leaders in other states.
2. An interview similar to the one conducted in this study should be conducted with a larger sample size in order to give the results statistical significance.
3. The interviews and case studies indicate that market analysis should be provided. The analysis should include a regional tally of resources available to potential value-added industry, an estimation of potential profits for specific ventures into value-added agriculture, and projections of the value of processing agricultural products within the various regions of Texas as opposed to merely exporting the raw products.
4. The Impact of Agribusiness brochures should be distributed to leaders within the agribusiness community as a tool to educate their business peers.
5. A market analysis and the present economic impact of agribusiness should be communicated to opinion leaders via seminars and conferences. The conferences should be structured in a manner to allow opinion leaders opportunity to interact and discuss the material presented. Initially these conferences should target members of local government and chambers of commerce.

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Characteristics of Southern Agricultural Communications Undergraduate Programs

A Paper Presented to the Southern Association of Agricultural Scientists
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Background

Introduction

The first agricultural communications programs were developed primarily to help disseminate information discovered and created at the experiment stations of land-grant universities (Duley, Jensen & O'Brien, 1984). Iowa State College was the first to offer a Bachelor of Science degree in Agricultural Journalism in 1920. By 1928, there were a total of seven colleges offering courses in agricultural journalism. During the 1960s, agricultural journalism programs had another era of significant growth (Duley, Jensen & O'Brien, 1984). By 1975, most programs were called "agricultural communications" rather than "agricultural journalism" to define themselves (Evans, 1975). As of 1991, there were more than 30 agricultural communications programs at colleges and universities across the United States (Doerfert & Cepica, 1991).

Several studies have been conducted within the past decade pertaining to undergraduate agricultural communi cations programs at U.S. universities. Reisner (1990) found that 26 institutions nationwide taught agricultural communications classes and that the curriculum at these institutions varied widely. Sprecker and Rudd (1998) found that practitioners emphasized a need for students to build firm communication skills in an array of areas, particularly the ability to write. Bailey-Evans (1994) suggested a model curriculum be developed that new or developing agricultural communications programs could use as a guide to meet the needs of the industry and future professionals. She recommended this model be based on disciplines and competencies identified in her research, which surveyed leaders in agricultural communications (Bailey-Evans, 1994). Terry et al. (1994) recommended that future research identify a core curriculum as the basis of agricultural communications degree programs.

Reisner's (1990) study examined undergraduate program structure and curricular requirements in a gricultural communications programs and found that the programs' most predominant characteristic

was variety. Specifically, Reisner (1990) stated that agricultural communications curricula were lacking because "agricultural communication students are not required to take courses specifically designed to teach cross-cultural global perspectives, agricultural systems analysis, values and ethics in agriculture, public policy, or leadership" (p. 15). Terry et al. (1994) noted that it would be impossible to complete each instructional objective contained in the research in a typical four-year bachelor's degree program. Therefore, agricultural communications curricula should be flexible with opportunities for students to specialize in specific areas of agriculture and communications in their upper division course work (Terry et al., 1994).

Because of this variability in programs, ag communications faculty may be facing some of the same academic issues shared by c olleagues in other nascent fields, such as women's studies, popular culture, film studies or, closer to home, natural resources conservation management. What is the current status of this emerging field, especially since it is housed in long-established colleges of agriculture? How is it faring in terms of support (funding, space, personnel)? Finally, what directions are these programs taking?

The purposes of this study are to examine current undergraduate agricultural communications programs in the southern United States and to identify their baseline characteristics. Specific objectives are to: 1) compile a list of colleges/universities with agricultural communications programs; 2) identify their current major programmatic areas as perceived by agricultural communications faculty; and 3) identify future trends for agricultural communications undergraduate programs as perceived by agricultural communications faculty.

Method

Methods
This research surveyed all undergraduate agricultural communications programs in the 13-state southern region. A 43-question survey was sent via electronic mail to the primary advisers for chapters of Agricultural Communicators of Tomorrow as well as land-grant agricultural communications professionals who teach agricultural communications courses or had expressed interest to the National ACT faculty adviser in starting an agricultural communications program at their universities. A total of 13 surveys were distributed. All nine agricultural communications programs responded; four others had no current program. The surveys were returned to the researchers via e-mail, and answers were tabulated.

Results

Findings
We started our survey with a pretty easy question. In which college does your program reside? All nine programs responding indicated that their program was affiliated with the college of agriculture. Even though several had names somewhat different from that, all colleges mentioned had agriculture in the title. Similarly, all the degree programs were called either agricultural communications or agricultural journalism.

About the department that houses their program: the predominant response (4) was part of another

academic department; two each were either aligned with an affiliated program or unit or were in a stand alone program; one was part of an agricultural communications service unit. Just over two-thirds were part of an ag education or extension education department. One program was simply part of the college of agriculture. (This last one appears to be a topical major offered by the college, in that no agricultural communications courses are t aught.)

The number of students majoring in agricultural communications varied widely, from 9 students to 115 students. (One respondent didn't reply to the question.) The mean number of students for departments was 32 students.

Eight of the nine respondents indicated that their enrollment had increased during the past five years, with one indicating that enrollment remained steady. Further, six respondents indicated that their enrollment would grow in the next five years; three indicated that they anticipated that enrollment would remain steady. No respondent believed their program's enrollment was likely to decrease.

How many students graduated from agricultural communications programs last year? The range was fairly substantial with from none graduated from the new program, according to the respondent, to 40 students. The mean was 11.5, with most programs falling within the 8 to 12 range.

What has happened to the students who graduate d last year? We asked to see how many of the agricultural communications graduates from last year were now employed within the field. Of the total of 92 students graduated by all agricultural communications programs last year, 41 are now employed in agricultural communications work; 19 had accepted jobs in some other aspect of agriculture. Slightly less, 16, had applied or been accepted into graduate school. And 14 of the 92 found employment outside both agriculture and communications. (The number of graduates according to respondents when summed came to 92; when respondents were asked to account for them, they reported 90. We can probably live with this discrepancy.)

We asked our respondents how they would characterize their program's preparation of students. We gave them four choices: program focuses primarily on teaching professional skills; program primarily teaches broad-based critical thinking skills; an equal combination of both professional and critical thin king skills; and other. The respondents fell nearly equally into the professional skills category (5) and into the both professional skills and critical thinking skills category (4).

When we asked how many agricultural courses are taught within each program, we had a variety of responses from none to ten, with the mean just under five. In response to the companion question "How many different instructors teach these courses?," we had a more narrow range of responses from 1 to 4, with the predominant response as 2. The mean was just under 2.

We also asked in the survey how many full-time equivalent faculty members teach in the agricultural communications program. Responses ranged from .5 faculty members to 2.6, with most programs having one or two faculty members teaching. Clearly, then, all programs depend on a small number of faculty members and it wasn't unusual to have faculty members' teaching appointments fractionalized. The question we migh t ask from these responses is, how well can these faculty members teach courses when the demands for teaching are high but the FTE's allocated for teaching are so low?

In terms of academic preparation and faculty standings, perhaps a listing of faculty members is more telling than collapsing data. Thirteen faculty members were listed as teaching agricultural communications. Of those, two are full professors, with doctorates in education; four are associate professors with Ph.D.'s; four are assistant professors with Ph.D.'s and three are called instructors with master's degrees. It is startling, perhaps, to see how many associate professors and below are teaching agricultural communications. The two who are full professors seem to have been trained in vocational education and their appointments may reflect the status of agricultural communications programs in jointly-titled departments.

Respondents were asked how well their programs prepare graduates in thre e areas: applied professional skills, critical thinking skills, and for graduate or professional school. The applied professional skills area received the highest ranking, with six schools indicating they prepared students "very well" and two more indicating they prepared students "well." Given the kinds of courses that the programs require, this is not surprising. The programs place a heavy emphasis on such courses as beginning reporting, beginning broadcasting, and public relations, all of which fall into the professional skills area. Six schools said they prepared students "well" in critical thinking skills, and one program prepares students "very well" in this area. This finding is unexpected, however, since the programs require few courses which teach critical thinking, such as communications theory or media law. Finally, seven schools also said they prepared students either "very well" or "well" for graduate or professional school. Since nearly one out of five ag communications graduates lands in advanced programs, the faculty are aware of their responsibilities in this area.

When asked to describe the support (collectively defined as funding, space, personnel) their program receives relative to other academic programs in their college, seven respondents indicated that their program was in the bottom 50 percent; five of those seven were in the bottom 25 percent. That only one program of all of those surveyed considers itself to be in the top half of programs at its institution, relative to other programs, is very telling. The need for accreditation (discussed below), the need for support of all kinds, and the "lack of understanding about what ag communications is as a field" (cited as a national challenge), are all related to the perceived low standing of agricultural communications programs in colleges of agriculture.

To improve their programs, responde nts would like to see increased support across the board; each of the seven identified areas in the survey were checked off, and additional choices were identified in the blank "other" area. Overwhelmingly, ag communications programs need more faculty and increased program enrichment funds. Like Aretha Franklin, they also need R-E-S-P-E-C-T, as well as technology support and more funding for travel and professional development. The need for more scholarship dollars also was noted, which might help with another need: more students.

Although ag communications programs' support was rated low relative to other programs in their colleges, the faculty were largely unsure of their relative salaries. Most don't know where they stand in relation to how much animal scientists or agricultural economists are paid at their institutions; or perhaps, given their low program status, they prefer not to know about the relative size of their paychecks.

Given the em erging qualities of ag communications programs, we asked respondents about accreditation of programs. Two-thirds of the respondents agree that a national agricultural communications accreditation process would benefit their program. They believe that accreditation would do the following: "provide leverage with the administration" in garnering much-needed support; "bolster the image" of ag communications vis-a`-vis journalism and communications programs on campus; "improve the identity" of ag communications within the college; "provide respect and esteem" to the field through the establishment of standards.

Issues cited in open-ended questions at the end of the survey ^Ö what are the biggest challenges facing your program? the challenges facing ag communications programs nationally? and where do you see your program five years from now ^Ö were interesting. Comments such as "lack of understanding about what ag communications i s," "the image problem,"and "poor attitudes of journalism faculty and students toward ag communications" could be addressed by national accreditation. Challenges that programs face individually ^Ö administration turf battles, understaffing, student recruitment, wearing too many hats as faculty members ^Ö might also be ameliorated by national standards in such areas as appropriate funding levels for curriculum and professional development and faculty : student ratios, for example.

Since a majority of agricultural communications programs in the southern states see themselves as increasing in size over the next five years, faculty find themselves challenged by all of the issues related to that growth. From simple concerns, such as identifying good textbooks and making contacts for internships and job placement, to complex issues such as increased funding for technology and maintaining critical thinking skills, ag communications faculty will face p erhaps their most challenging decade since the inception of the field.

Conclusions

Conclusions

This study has suggested that the undergraduate ag communications programs throughout the southern United States are growing and are expected to continue to grow for at least the next five years. Faculty members are frustrated by the perceived low status of their programs as well as actual low levels of support (funding, space, personnel), recognition, and respect. They also indicate that a national accreditation process might help them increase funding, improve the image of the field, and a provide stronger identity in colleges of agriculture. Because this survey studied only the southern states, a national survey is necessary to ascertain whether a consensus of ag communications faculty supports accreditation. Should such a survey indicate national support for an accreditation process, then additional research focusing solely on standards needs to be conducted.

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May I Take Your Order? Marketing Extension Information in the Commercial World

A Paper Presented to the Southern Association of Agricultural Scientists
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Background

This is the story of how a team of editors, artists and typesetters in Texas A&M University's Agricultural Communications unit produced and successfully marketed an educational product for the retail market. While we are certainly experienced in editing and designing publications to appeal to lay audiences, we were novices both at retail product design and at marketing.

When we began talking about such a project, we were motivated by the desire to:

- get Extension information into new markets and broaden the general awareness of Extension as a source of educational information;
- stretch our creative muscles to present educational information in a more exciting way than is usually possible with our publications; and
- make money

Our plan was to choose a subject with wide appeal, design a product that would lend itself to retail sales, and then figure out how to sell it.

Designing the Product

After several brainstorming sessions, we settled on the subject of butterflies and butterfly identification. Then we considered various product options, such as posters, booklets and note cards. We thought it would be a good idea to know what kinds of butterfly products were already in the marketplace, so we did some market research by visiting the gift shop managers at the Brazos Valley Museum (a small, local natural history museum) and at the Houston Museum of Natural Science, where there is a famous butterfly center. They were most helpful. In Houston we learned how the manager makes buying decisions from the hundreds of samples, order forms and descriptions of products he receives in the mail. On a tour through the gift shop he pointed out products that sell well and products that don't, explained the importance of packaging, and gave us some tips on how to price our product to appeal both to the wholesale buyer and the retail customer.

The research confirmed our belief that the commercial marketplace is a natural outlet for Extension information, so long as we produce retail products that are attractive, educational, accurate, and reflect Extension's reputation for high quality.

We still weren't sure what kind of product to create. At first we considered a poster, but there are a number of butterfly posters on the market and we worried about the competition, as well the difficulties of retail display and the costs of mailing posters. There are also a lot of butterfly field guides -- far more comprehensive and expensive items than we could afford to produce. Then one of our team members spotted a hummingbird identification wheel in the catalog of the Texas Parks and Wildlife Department and ordered one for us to look at. We liked it immediately, and decided to use it as the model for a butterfly wheel. The design of the wheel makes it easy to showcase a number of common butterflies and identify them easily. It's colorful and interactive, with a die-cut opening to show each butterfly's larva and larval food plants. The back contains a wealth of information in a small space. We felt the design would fit well in the niche market we were trying to reach, and that the wheel would appeal to folks of all ages who are interested in nature, gardening, and the outdoors.

Into Production

In the fall of 1998 we got to work on a preliminary design, and once we had that we were ready to find a manufacturer and get bids. We tracked down the company that had produced the hummingbird wheel and a couple of other companies doing similar products. When the bids came in, however, they were far higher than we could afford -- about $15,000. As a long shot, we decided to send bid requests to the five or six printers who print most of our regular publications. Although this product is far different from most of the work they do, three of those printers were willing to produce a wheel and returned bids. This time the price was acceptable. The low bid was $3300 for 1,000 copies.

To capitalize on the reputation of the Extension Service as a source of solid, research-based information, and to make sure the information on our wheel was technically correct, we asked an Extension entomologist to be our technical adviser on the project. He selected the 16 common species he thought we should work with, and arranged for us to photograph specimens in Texas A&M's collection. He also provided the resources we used in developing the text, and helped us with proofing.

The production work on the wheel had to be done as time permitted. With about 300 publications in our production schedule each year, there were often long stretches when no one had time to do much about the wheel project. But we kept it going as best we could by having almost everyone on the team involved. All the editors and artists contributed, so that whoever had a little time could work on it. By late summer of 1999, we were ready to go to press.

The Marketing Plan

During this time the team continued brainstorming about the product itself and how to market it. A lot of synergy, enthusiasm and great ideas came from these discussions. But enthusiasm is no substitute for knowing what you're doing. No one in our Agricultural Communications unit had experience with product marketing, so we were on our own to learn how. Our unit head encouraged us to write a formal marketing plan as a guide. We didn't even know how to do that until we'd first done some research. Eventually, though, we put together a very ambitious plan.

The plan defines our sales objective, which was to break even within one year. We divided our sales

efforts into two tiers. In the first tier we would spend as little money as possible on marketing. We would sell either in person or by mail to wholesale outlets such as gift shops in museums, zoos, botanical gardens and state parks; and to retail shops such as Wild Birds Unlimited, local Hallmark stores and book stores, and the local Producer's Co-op. To stimulate individual retail sales, we would rely heavily on press releases to state newspapers and our own Web site. We would send order forms to county Extension offices and ask agents to let their clients know about the wheel. To get as much free publicity as possible, we planned to send a copy of the wheel to the garden editors of the three largest newspapers in the state, and to Neil Sperry's Gardens magazine. We planned to ask one of our Extension horticulturists to give it a plug on his early morning TV show. We also planned to have order forms in a booth at the state science teachers' conference, and to sell the wheels at the annual butterfly festival in Mission, Texas.

In the second tier marketing effort, we would have to incur greater costs. We planned to include the wheel, along with other publications, in a special catalog mailed to school teachers. We also planned to purchase mailing lists of appropriate gift shops from the state Department of Economic Development (at a cost of $50 to $200, depending on the size of the lists). We didn't want to incur any marketing or advertising costs beyond these, so we passed on the idea of paid advertising and the opportunity to have our product displayed on the major butterfly Web site (which would have cost $250 per year).

In our marketing plan we also addressed merchandising and pricing. The packaging we chose is for easy display on peg racks in shops. Luckily, the product itself is colorful enough to attract shoppers, so our packaging could be a simple clear bag with a punched tent tag. We set the retail price of the wheel at $10.95, based on advice from the Houston museum shop manager and the price of the similar hummingbird wheel. The wholesale price is $5.50, or $4.95 for orders of twelve or more.

By this time we knew that our production costs were going to be $3.28 each for 1,000 copies of the wheel, and that postage would be $0.77 to mail one copy and $1.58 to mail twelve. We had to purchase six of the larvae photos, at a cost of $300. Other expenses would include printing small order forms, postage for direct mail sales, and travel costs for personal sales calls. In all, we had about $4,000 invested in the project.

If the entire stock sold, we estimated our net income would be between $2,200 and $7,600, excluding marketing costs.

Into High Gear

The third week of September the butterfly wheel arrived from the printer and it was time for us to "hit the streets" with it, so to speak. It was a little frightening to realize we'd made quite an investment and now it was up to us to turn that into profit. But with the marketing plan as our guide, we simply divided up responsibility and plunged in. Some of us took samples and order forms and began to call on local businesses, as well as gift shops at museums, zoos and botanical gardens within a 100-mile radius. We planned informal "scripts" ahead of time so we'd be sure to cover important selling points. A press release was posted on our Ag N More Web site and picked up by newspapers across the state. A butterfly wheel page went up on our Web site, complete with order form. The Texas Parks and Wildlife Department had provided us with a list of all state park gift shops, so a mailing went out to

them. A sample was sent to the producer of the Texas Parks and Wildlife catalog, which has statewide circulation, and he agreed to put the wheel in the spring 2000 catalog. In addition, the wheel was featured in several local newsletters and will be in a future issue of Texas Aggie, a quarterly university magazine.

During October and November things happened very quickly. Newspapers were calling for more information and requesting photographs to use with features about the wheel. Stores were buying wholesale quantities, and individual sales were increasing as people saw the news stories or found our Web site. A week before the butterfly festival we'd planned to attend, an order for 200 wheels came from a man in that part of the state. On a hunch, we called him to see why he wanted so many. As we'd guessed, he was planning to sell the wheels at the festival. We were happy to sell that many copies at wholesale and save ourselves the travel costs.

Little by little the orders picked up until there was a daily deluge. When the Houston Chronicle ran a feature with color picture early in December, orders started coming in at a rate of 50 or so each day. We were in constant contact with the folks in our distribution warehouse, apologizing for the tremendous increase in their workload and keeping a close eye on remaining inventory.

By mid-December we had sold 274 copies at the wholesale price to 16 different stores, and 457 individual copies at the retail price. It was clear we'd have to reprint very quickly in order to keep up with demand.

But we didn't want to just reprint -- we wanted to revise the wheel to make it even better. With every sales call we were getting feedback about ways to improve it. Many individuals who purchased wheels returned reader reply cards suggesting other information they'd like to have on the wheel. We thought laminating the wheel would make it sturdier. We'd also found a source of better butterfly photos, and decided to use them instead of the originals. So we raced to make revisions before the entire stock was gone. The second printing was completed in early January, paid for with income from the first printing. Cost of the second printing was just $2.77 per copy because the printer already had the die cuts and was familiar with the product.

What We've Learned

This has been a true learning experience for a team of people who had never before produced and marketed their own product. Here are some of most important things we learned.

- A retail product has to stand out among the competition. It should offer something new and be more appealing than other items customers could choose. Research the market ahead of time to find out whether your product can compete.
- Develop a product that weds Extension educational information with consumer-oriented design.
- When selling, capitalize on the credibility of the Extension Service and the value of the educational material you have to offer.
- Pay attention to what customers want -- both wholesale buyers and individual customers. You have to satisfy both.
- Price is critical. Make sure your product is neither over- nor under-priced.
- Don't expect unrealistic sales. Our initial sales were beyond our wildest dreams, but we know

that they aren't likely to continue at that pace. Be prepared to wait awhile for your investment to pay off.
- Aim for the highest quality you can afford. Quality counts in the marketplace.
- If the first production cost estimates are too high, keep at it until you find a vendor who can do what you want at an affordable price.
- Use every marketing channel that seems reasonable -- especially those that are free.
- Be prepared for the time and labor involved in selling your product.
- Be prepared for the unexpected costs associated with marketing.
- When you have a good idea and want to invest in your own creativity, go for it.
- Think about how you'll handle customer feedback. One person who ordered by mail sent back a card saying he thought our product was a rip-off, largely because the copy he received had been assembled off-center. We promptly sent him a new wheel, a refund check, and a stamped, self-addressed envelope so that he could return one or both wheels. He kept the new wheel and sent back the bad one and the check. From that encounter we learned to check each wheel before mailing. About 30 more badly assembled ones were discovered, so that one reply saved us from having 30 more unhappy customers.
- Keep a file of comments on what customers like and dislike about your product.
- Plan how you will track your sales. We have the distribution warehouse send us copies of all the order forms they receive and we enter customer information into a database. We stamp different identifying marks on batches of order forms going out to particular events, to county offices, etc., so that we can associate an order with a specific promotional effort.
- Make sure your information is accurate, and don't rely on just one subject matter expert. We lost one sale to a botanical garden because the scientist there saw that one of the larva host plants on the wheel was incorrect. Our entomology advisor had given us the wrong information.
- Capitalize on the resources at hand. At Texas A&M there is a wealth of information about butterflies and we had easy access to it. And, your own expertise in writing and designing material for the general public is one of your most important resources.

What the Future Will Bring

Other states are much further into the area of publication marketing than Texas. New York, Florida, Minnesota, Colorado, California and Alaska are actively marketing some or all of their publications, and there may be others. There certainly is widespread interest in publication marketing. At the 1998 ACE conference in California, a day-long workshop on marketing Extension publications drew a record crowd.

However, few states are producing and marketing true "consumer" products developed primarily for the retail trade. With the exception of Alaska, perhaps, none of us has much experience in this arena. We're learning by doing, and by sharing ideas with each other. It seems clear that with the new emphasis on fee-based programming and the generation of earned income that is taking hold in Extension across the country, the marketing of our educational products may be the norm in the future. The potential for creating consumer products from Extension information is great, if we can reshape that information to compete in the commercial world. I believe the creativity within our communication staffs is the catalyst we need for success.

In Texas, we've gained confidence from this first successful venture. Investing in our own creativity

has paid off. Will we do it again? Definitely The fire of entrepreneurism has taken hold, and we're already dreaming up our next best seller.