MOST EFFECTIVE COMMUNICATIONS STRATEGIES TO INTRODUCE CAMPUS SOLUTIONS SYSTEMS TO COLLEGE/UNIVERSITY CAMPUSES

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The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

MOST EFFECTIVE COMMUNICATIONS STRATEGIES TO INTRODUCE

CAMPUS SOLUTIONS SYSTEMS TO COLLEGE/UNIVERSITY CAMPUSES

presented by Kent Sipes,

a candidate for the degree of master of Strategic Communications

and hereby certify that, in their opinion, it is worthy of acceptance.

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TABLE OF CONTENTS

Introduction

The examination of real-time transactional systems has been done since the time the airlines pioneered electronic reservation systems in the 1980s. However, the speed at which these systems are adopted, specifically by the main constituencies of a college/university campus, has not been adequately studied. Using Diffusion of Innovations theory, pioneered by Everett Rogers in the 1960s, this paper studies the research question, "Have public colleges/universities implementing the PeopleSoft Campus Solutions system seen improvements in the rate at which their main constituencies adopt the new system related to their use of the principles of Diffusion of Innovations?".

In today's fast-paced transactional environment, educational organizations need and expect to communicate with their constituencies and update data instantly, at any time. This means they must implement a relational database that can be accessed via Internet connection by any of their constituencies, allowing these constituencies to input, view, report, and act upon on information contained in that database (O'Callaghan, Kauffman, & Konsynski, 1992). The most popular of these student systems (especially for the larger institutions) is PeopleSoft Campus Solutions,

the system on which the University of Missouri's myZou system is built.

This paper analyzes the targeting of three main constituencies on twenty college/university campuses; students, staff, and instructors, to determine whether application of the principles of Diffusion of Innovations theory pertaining to message, targeting, and opinion leaders improved the speed at which the new Campus Solutions system was adopted by all constituencies (Rogers, 1983), then contrasts their reported efforts with those most likely to be effective, based on Everett M. Rogers' foundational text Diffusion of Innovations and the research done on the introduction of other electronic communication systems to similar groups.

Contribution to the Field

Resources needed for the implementation of a PeopleSoft Campus Solutions system are huge. The time necessary to implement most CS systems is measured in years: at least two years is necessary from start to finish of a simple implementation, including planning, mapping of current business processes, data conversion, testing, and training. In fact, two years is a short estimate: the selection of PeopleSoft Campus Solutions as the ERP (Enterprise Resource Planning) system of choice, the

selection of a consulting firm (it is unheard of for an institution to implement an ERP system without help), project planning, system analysis, assembling project teams, delivering communications and training, and other implementation steps mentioned above can take four to five years.

Financial costs of up to $40M (in 2002) for a large campus to implement a new CS system are not uncommon (Hutchinson, 2007). The cost of the application itself, added to the cost of consulting services to help with implementation, demand that user acceptance be maximized.

Universal (or near-universal) and rapid adoption are expected and are, in fact, crucial to the justification of the huge cost in time and other resources necessary to successfully implement a Campus Solutions system. One way to make user acceptance more likely is to effectively publicize the new system. This is especially true for students, who rarely require training in use of a new student system, but must know the basics of how to access it in order to learn how to use it effectively, and must see the advantages of learning to use this new system (O'Callaghan, Kaufmann, & Konsynski, 1992).

Most institutions implementing the CS system allocate some of their implementation budget to communications

efforts, and have some written plans detailing how that communication should proceed. Their aim is that a uniformly positive image of the new system and their progress toward its full implementation be communicated. However, the messages sent to the various constituencies and the use of opinion leaders to reach those constituencies greatly impact the receptivity of those whom the institution wishes to use the new system, and may send an undesirable message to the constituents.

Study Significance

After completion of this Thesis (and upon its acceptance by this Committee), the information generated will improve the communications efforts of many institutions implementing the PeopleSoft Campus Solutions system (and other student systems routinely adopted by higher education institutions), by helping them publicize their new systems more effectively. Findings will also be published on PeopleSoft-centric websites and presented at PeopleSoft user conferences, and possibly user group conferences for other student systems (such as Banner). Selected excerpts may also be published in less academically-rigorous print and electronic media.

The conclusions reached may also enable the author to consult on broader publicity efforts performed by

educational institutions, in order to assist them in improving those efforts' effectiveness. The results of this research will also be shared with participating institutions. The idea of sharing this information with the peer institutions of respondents is beneficial in encouraging response to this request for information, since many organizations have seen the importance to their continuous improvement of benchmarking with organizations with which they share common interests. This type of incentive, and the reasons it should improve organizational response, is outlined in an article by "Exploring a New Establishment Survey Incentive to Improve Response Rates" (Luo & White, 2009).

Besides adding to the body of knowledge on the promotion of electronic transactional systems, it is hoped this study will contribute to the ability of institutions to effectively promote their new student systems by specifically targeting constituencies with specific messages outlining the benefits for each constituency, and targeting those constituencies by using opinion leaders. It may also show new applications for Diffusion of Innovations theory on the advisability of using specific classes of opinion leaders influential for each constituency. This research may benefit institutions implementing a new CS

system (and those institutions implementing other student systems, such as the Banner system, often used by smaller institutions) by improving the likelihood of success in their efforts to publicize their new systems to the three major constituencies of users (students, staff, and instructors).

While most of these institutions make extensive efforts aimed at announcing their new systems and encouraging users to try them, these efforts are often less effective than they might be. This may be due to a less-than-optimal pairing of carrier and message geared toward each constituency, and/or a lack of attention paid to the importance of opinion leaders in delivering the message of CS advantages.

Since colleges and universities devote so many resources to the implementation of Campus Solutions systems and some percentage of those resources in publicizing the new systems, promoting them more effectively would help to justify those resources by showing a shortened time to full adoption of the new systems. The institutions would also benefit by more rapidly building real-time data from the Campus Solutions system, which can easily be mined for many research and marketing purposes. The constituencies studied

would benefit in being able to take advantage of the new systems more quickly.

Purpose

The purpose of this study is to evaluate the publicity measures used in previous Campus Solutions implementations and make recommendations for how such efforts might be improved. This evaluation is done by comparing the reported communications actions taken with the reported time to full adoption by all constituencies. Such reporting is done with a list of in-depth interview questions sent to members of the Higher Education Users Group (HEUG) whose campuses implemented PeopleSoft Campus Solutions within the last 10 years, and who had in-depth knowledge of the publicity efforts made as part of that implementation. Prior to 2001, PeopleSoft was not web-based, and therefore not as easily accessible by all three constituencies, especially students (thus changing the nature of the innovation significantly), therefore, implementations prior to that time were not included in that study.

Definition of Terms

Constituencies are defined as the major groups with which each type of organization routinely communicates. For educational institutions, these constituencies can include:

- Students

- Prospective students
- Alumni
- Parents
- Staff
- Prospective employees
- Instructors
- Government agencies
- Suppliers
- General public

(Crisis Communication Plan – Washington State University, 2008)

However, for the purposes of this study, only communications with staff, students, and instructors are examined, in order to narrow the focus of the study. These are the groups most likely to interact with such a system, and therefore, the most likely to require a publicity effort by the institution (Calder, 1981).

Roadmap for Further Chapters

This paper reviews the applicable literature on the adoption of electronic transactional systems, outlines the methods used to study the use of Diffusion of Innovations principles in publicity for CS systems, and contrasts the use of targeting and opinion leaders with the length of

time reported for each constituency to fully adopt the new CS system. Recommendations are then made based on these findings and the applicable theoretical research.

Literature Review

Linking Theory: Diffusion of Innovations

The first edition of *Diffusion of Innovations* was published by Dr. Everett Rogers in 1962, and was soon recognized as an important work in communications research. Later editions added to the theory by broadening the areas it examined, especially as new media came on the scene. This was especially true for the fifth edition in 2003, in which the diffusion of Internet technology was analyzed. Indeed, Internet technology led to the research question selected for this study: "Do the reported uses of selected principles of Diffusion of Innovations theory in publicity campaigns for new Campus Solutions systems positively affect the reported rate at which those systems are fully adopted by all constituencies?".

But while Diffusion of Innovations theory helps to explain the way a new CS system is publicized, it does not account for the fact that all constituencies are required to use the new system by a certain date, commonly referred to as the "cutover". On that date (or on successive dates, in a "phased cutover"), the old system (or a part of it) is turned off and the new system turned on. From that time on, students registering for classes, staff issuing transcripts, and instructors entering grades must all use

the new system. The impact that application of Diffusion of Innovations techniques has on the ready adoption of the new system by students, staff, and instructors is the basis of this study.

Diffusion of Innovations was selected as the theory on which this study was based because it offers the most direct approach to the study of the means by which a new system such as Campus Solutions is publicized (Rogers, 1983). It allows for the breakdown of specific components in the communication effort, such as targeting of messages by audience and the use of opinion leaders.

The main components of Diffusion of Innovation theory (Rogers, 1983) include the nature of the innovation, the time over which the innovation is introduced, the direction of the innovation, the message, the carrier, and the use of opinion leaders (Rogers, 1983). This paper examines the targeting of three audiences (constituencies): students, staff, and instructors, whether opinion leaders were used to target them, and the perceived effects of such targeting.

Targeting of Constituencies

While some research has been done on the targeting of individual constituencies within higher education institutions (Kreuter, Farrell, Routledge 2000; Liu, 2009;

Medlin, 2001; Park, Lee, Cheong, 2008; Rabinowitz, Blumberg, Everson, 2004; Sirvanci, 2001; Tsang-Kosma, 2010; Vaughn (n.d.), only individual constituencies were targeted. This study asks, among other questions, about whether a combination of constituencies was targeted and seeks to understand whether a focus on a combination of those groups made a difference to the speed of adoption by any constituency.

Use of Opinion Leaders

Effective use of opinion leaders is also a key component of Diffusion of Innovations research. Though some of the research cited studied the use of opinion leaders in higher education institutions (Leadership For A Healthy Campus; Medlin, 2001; Park, Lee, Cheong, 2008; Tsang-Kosma, 2010), none analyzed the perceived effectiveness of using them to target constituencies. Only anecdotal remarks that particular individuals or those in certain roles had been or were thought to be effective were made.

Previous Studies

This literature review covers the material written on the most effective means of communicating the introduction of a new student system to the major college or university constituencies. In short, there has not been much research done on effective means of communicating new databases

(although a few are referenced); however, there have been many efforts to publicize other electronic communication/commerce tools. Therefore, this study was broadened to include studies of efforts made by institutions of higher education, public agencies, and businesses to publicize new means of communication with their various constituencies. For the purpose of the current paper, these constituencies include staff, students, and instructors.

Although research has been done on the promotion of other systems for electronic communication, there is little research on the introduction of a new student system. One such research study, interestingly enough, centers on influential factors in the adoption of Student Information System (SIS) technology by a group of university staffers (Tsang-Kosma, 2010). SIS is a mainframe system, requiring either dedicated terminals or a customization to office PCs to allow for interaction by staff or instructors. Student interaction with the system is only accomplished through intermediary systems, whose input is then translated and sent to the SIS system overnight. No focus on student adoption was studied by Tsang-Kosma, but his study did help to inform the current study with its focus on electronic transactional systems' adoption by university staff.

The scholarly articles that specifically mention databases, academic environments, or customer relationships were most important to this literature review (Allen, Kern, & Havenhand, 2002; Baronas & Louis, 1988; Hellens, Nielsen, & Beekhuyzen, 2005; Ilnicki, 2003; McDonald, Sears, & Mitchell, 2001; Medlin, 2001; O'Callaghan, Kaufmann, & Konsynski, 1992; Park, Lee, & Cheong, 2008; Petruzzelli, 2005; Rabinowitz, Blumberg, & Everson, 2004; Tsang-Kosma, 2010). The Allen, Kern, & Havenhand (2002) and the Hellens, Nielsen, & Beekhuyzen (2005) studies focused on the critical factors that influence typical ERP implementations (ERP - Enterprise Resource Planning, the general name for the family of computer applications under which systems like Campus Solutions are categorized), including the communication of such systems to potential users. The Baronas & Louis (1988) study indicated that user involvement was important to the success of any new electronic system.

The Ilnicki (2003) study focused on a much earlier technological innovation, the ATM network in Poland, while McDonald, Sears, & Mitchell studied the publicity effort used for a library database service. Medlin (2001), as well as Park, Lee, & Cheong (2008) studied the factors influencing instructors to adopt electronic instructional

systems. O'Callaghan, Kaufmann, & Konsynski (1992) focused on electronic data interchange systems (the sharing of data systems, usually between related businesses).

Petruzelli (2005) studied marketing strategies for libraries on college campuses, mostly centering on promotion to student populations, and Rabinowitz, Blumberg, & Everson (2004) studied instructional design, also focused on reaching students. The most applicable study, that of Tsang-Kosma (2010), was in the promotion of an SIS system, focusing on factors that influenced staff and instructors adoption.

Correlations were found between student systems and the publicity for other recently-introduced means of electronic communication between organizations and their constituencies, such as the cellular telephone emergency notification systems implemented by colleges and universities for their students, and the promotion, in the early 1990's, by large corporations of their brand-new websites (Leiner et al, 2009). The implementation of a new student system (such as Campus Solutions) shares some characteristics with the introduction of other communication systems, such as those already mentioned and the wide adoption of the Internet (Calder, 1981).

The article by Leiner et al (2009) is more a history of the newly-emergent Internet; its evolution from divergent networks among a few higher education centers to broader (and finally, nearly universal) adoption. The factors that caused greater numbers of users to become interested and invested in the new system is mentioned as an aside. The current study, while concerned somewhat with the newest features available to users that make Campus Solutions more attractive to constituents, uses more in-depth analysis of key factors influencing the diffusion of innovations. Taken together, the previous studies helped to formulate the Research Question that guided the study: Did the use of Diffusion of Innovations principles (targeted messages and use of opinion leaders) shorten the reported time to full adoption of a new Campus Solutions system?

The previous studies also framed the current study by providing boundaries between what had and had not been researched regarding publicity in the implementation of ERP systems. For, while various constituencies had been the focus of publicity efforts for many systems aimed at higher education, none of those studies examined the combined effect of targeting more than one constituency.

Earlier Technology Relating to this Study

Prior to the wide acceptance of Internet technology, on which the Campus Solutions system is based, other real-time electronic transactional systems had been introduced. Since this study encompasses most of the ten years during which Campus Solutions was available via the Internet, correlations were sought with similar, earlier systems, such as those used by airlines and travel agencies.

Airline and reservation systems were used by travel agents on dedicated networks which were closed to the general public, and the introduction of Automated Teller Machines (ATMs) occurred around that same time. Soon after the introduction of pushbutton telephones, two-way electronic communication via telephone menu input for call routing became to be commonly used by customer service offices ("Your call is very important to us, but not so much that we care to provide an actual human to communicate with you".) Many organizations assumed that users would automatically see the advantages of using these systems.

Indeed, many large business interests simply made the systems available to constituents and waited for people to adopt them. Consequently, many of these organizations were disappointed at the level of user adoption enjoyed by these systems. The article "Automated Teller Machine As a New Service - Poland Case Study" (Ilnicki, 2003), also mentions

the impact of a lack of promotion on user adoption of such systems.

Just as with commercial systems, libraries introducing interactive databases to their patrons initially discounted the necessity of promoting them, as mentioned in "Going Live" (Coffman et al, 2003.). However, even librarians are beginning to see the need to market their reference database services to the general public, because public libraries are constantly fighting to maintain or increase their funding, and such funding depends greatly on the public perception of the value they offer.

Research has been done on the need to publicize emergency-notification networks, such as in the KAMEDO Report of the European Union Summit in Götebor (Fellenius, Lindberg, Hedelin, & Örtenwall, 2001), and other informal studies done by businesses promoting their own emergency notification systems. However, little scholarly research appears to have been done on targeted promotion of such communication and commerce systems.

There has been some research done on opinion leaders - which campus groups are most influential in student behavior and instructor behavior (Medlin, 2001). One study on the adoption of SIS systems (Tsang-Kosma, 2010) also references the factors that influence staff acceptance, and

several studies of instructor use of new systems have been undertaken (Allen, Kern, & Havenhand, 2002; Medlin, 2001; Park & Cheong, 2008).

The Medlin (2001) study uses a somewhat similar approach to the current study in analyzing the factors that determine the likelihood that an instructor will adopt electronic teaching tools. This study uses some of the factors important in Diffusion of Innovations theory, while not based solely on that field of research. Medlin also analyzes personality and career influences that may cause someone to adopt/reject a new technology.

Tsang-Kosma (2010) takes perhaps the closest approach to the current study, which is fitting, since the CIS system whose adoption he studied was the precursor to Campus Solutions for many colleges and universities. That study used in-depth interviews and separated the respondents (and responses) into subgroups that seemed to present themselves. Such an approach was considered for the current study, but seems to require the physical presence of the researcher near the population being studied, or at least very intrusive access to prospective subjects.

The Tsang-Kosma (2010) study focuses on the factors influencing the adoption of the SIS system by staff and instructors, but not on the targeting of those groups in

publicity efforts. While he does mention the relative effectiveness of some opinion leaders for staff, Tsang-Kosma does not analyze those to determine relative effectiveness, nor does that researcher mention the mandatory cutover to the new system.

To reiterate, Diffusion of Innovations is limited by the mandatory nature of the new CS system being communicated – all constituencies are required to use the new system past a certain "cutover" date, as a condition of either employment or scholarship.

Topic Background

There is today a general consensus among organizations that new electronic transactional systems must be promoted to potential users, but many of the organizations are confused about the best way to do so. One means of promoting communications systems is to involve constituents in the development of the system, as noted in "Creating Competitive Advantage With Inter-organizational Information Systems" (Johnson & Vitale, 1988). Once they become involved in the development of the system, potential users are invested in its success. However, even early adopters (Rogers, 1983) must somehow be made aware of such a system in order to become involved, and one of the ways this is

most effective is in communications directed at the needs and concerns of each constituency.

From this researcher's experience in working with colleges and universities implementing the PeopleSoft Campus Solutions system, the idea formed that most institutions do not target messages for each constituency, preferring to advertise the same advantages to each. Nor do institutions pay much attention to the use of influential spokespersons or groups, though such certainly exist on most campuses (Leadership for a Healthy Campus, 2004) This study examines the targeting of constituencies and use of opinion leaders by twenty institutions around the USA. The majority of prior research used in this study comes either directly from Everett Rogers' Diffusion of Innovations or from other researchers' use of the principles of Diffusion of Innovations theory.

This study compares the results of completed questionnaires received to the combinations of targeting and message believed to be most effective for populations analogous to the above-mentioned constituencies, based on research done on the promotion of other electronic communication systems.

Methods

Research Question

The research question which guides the current study is: Did the use of targeting and opinion leaders according to Diffusion of Innovations principles shorten the reported time to full adoption of a new Campus Solutions system? This question is critical to major educational institutions implementing a CS system, since this system is so widely used, each implementation involves a major resource commitment, and user adoption is necessary to justify the high overall cost. Maximizing the effectiveness of communications announcing a new student system is critical for user acceptance (Vaughn,n.d.).

To accomplish this, the study analyzes the responses received from a questionnaire sent to twenty public colleges/universities that implemented PeopleSoft Campus Solutions within the last ten years to determine whether they targeted any/all of their main constituencies (students, staff, instructors), and whether they sought to use opinion leaders in this targeting. These schools were selected due to their contacts with the researcher and willingness to answer the questionnaire.

This study uses qualitative analysis of open-ended questionnaires sent to selected college/university staff.

Since little of this research has been done for this type of transactional electronic communication system on university students, staff, and faculty, this study will seek to explore the relationships between student database implementations and systems designed to facilitate other consumer relationships, such as ATMs (Calder, 1981).

Research Design

The research consisted of semi-structured in-depth interviews (using a questionnaire), asking mostly open-ended questions about the publicity programs employed to communicate new Campus Solutions systems and the speed of adoption for specific constituencies. The responses were then compared with listed actions based on Diffusion of Innovations theory (Rogers, 1962). A small number of schools were chosen (20 schools out of approximately 100, per Oracle representative, that have implemented PeopleSoft Campus Solutions within the past 10 years) to participate in the interviews. Given that the nature of this qualitative study is to explore and not generalize, this number represents an adequate number of interviews, given the relatively small number of higher education institutions with the necessary resources for implementation of Campus Solutions, and allowed the study to glean ideas about the effectiveness of the publicity

efforts being studied. Results of qualitative research are not generalizable; however, quantitative analysis would be difficult, if not impossible, given the small number and homogeneous nature of the schools which implement the CS system. Due to the enormous cost of a PeopleSoft implementation in software, consulting services, and possible hardware upgrades, most of the institutions studied are relatively large, or are branch campuses of large college systems.

The researcher then examined the answers to open-ended questions against the reported amount of time each constituency took to universally (again, absolute universality was not assumed) adopt the new CS system. The targeting of each constituency and the use of opinion leaders to target them were areas of special consideration. Responses to open-ended questions about effective and ineffective publicity methods, constituencies that adopted CS more or less readily, and which segments of each constituency adopted CS more or less readily are descriptively categorized, in order to help discern response patterns.

Instrumentation

The Questionnaire (Appendix A) asks those who were involved in or have special knowledge of the effort to

publicize a PeopleSoft Campus Solutions system implemented at their college/university to report the focus of the publicity efforts used to reach each of their three main constituencies (students, staff, and instructors), and how effective they believe their communication efforts were in reaching each group (Tavakol, Torabi, Lyne, & Zeinaloo, 2005).

The information from each completed questionnaire is analyzed to determine the targeting of each constituency and its effectiveness, and any other patterns which present themselves. The information garnered from the schools questioned is then compared to the targeting and use of opinion leaders predicted to give the best chance of success in publicizing an electronic communication system to each constituency, and recommendations are made.

Questions

The questions asked in this study include a focus on one or more specific constituencies and the use of opinion leaders to target those constituencies. Most questions are free-form, to allow respondents more leeway to indicate what they believed was more/less effective in their Campus Solutions publicity efforts.

As detailed in "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches" (Creswell,

2008), the research design stems from the assumptions held by the researcher. Based on this researcher's experiences in the various ways organizations have chosen to publicize their new means of electronic communication with their constituencies, the questionnaire asks for responses that match one or more of the targeting approaches commonly used. There is also a space for freeform response, allowing feedback on approaches not previously considered. In this way, the study fulfills Creswell's (2008) recommendation to "let the research be guided by the data".

The questionnaire used in this study asks about the use of targeting for constituencies, and the use of opinion leaders in targeting them. Based on the results of the questionnaire compared to the theoretical research on the most effective processes in communicating the introductions of a new means of electronic communication with the largest constituency groups, this study evaluates the effectiveness of respondents' reported publicity efforts and recommends the changes, if any, that should improve their communications with those constituencies in future campaigns.

The first question asked is perhaps the most open-ended: "What did you believe worked well in your publicity effort?". This gives respondents a chance to respond with

little expectation or structure, before becoming more specific. As Brace (2008, p. 123) says, it is usually best to begin with more open-ended questions.

The second question asks for further information on that same question: "To what do you attribute this success?". The next question flips the first: "What could have worked better?", followed by a request for more detail on that, "To what do you attribute these challenges?".

The questionnaire then becomes more specific, asking respondents to think about each of the constituencies separately and give an opinion about whether one group adopted the new system more or less readily than the others? Thus it begins to ask the first research question – if the respondent does not know whether one group responded differently than the other two, perhaps there was no focus on any particular group.

The next question becomes slightly more specific, asking about segments of a constituency. This intends to find out whether staff at different levels, more senior instructors, or more seasoned students were more/less responsive.

The next three questions then begin to ask about influential groups, trying to determine if a strategy of winning over opinion leaders in order to use their

influence was used. This focus on winning and using opinion leaders fits Rogers' (1962) emphasis on the importance of opinion leaders as a major tool in the drive to convert users to an innovation. Opinion leaders in higher education institutions are also explored in Leadership For A Healthy Campus (2004), Medlin (2001), Park, Lee, & Cheong (2008) and Tsang-Kosma (2010).

The questionnaire nears completion with a request for an estimate of the time elapsed from the date the full CS system was available until full adoption by each constituency was achieved. This was the main determinant of relative success, when compared with the focus and use of opinion leaders reflected in the prior questions. The questionnaire closes with another general question, giving respondents the opportunity to include any information on their publicity effort that they did not previously include (whether or not that information fit into the questionnaire framework). There is then a space for totally open-ended comments.

Procedure

Questionnaires were sent to contacts at colleges and universities, based on referrals by other university/college staff with whom the researcher is acquainted, sources at Oracle (the parent company of

PeopleSoft), and the (PeopleSoft) Higher Education Users Group (www.heug.org), of which this researcher is a member. All human-centered research was approved (as "Exempt") by the Institutional Research Board of the University of Missouri. Responses were sent beginning in May 2010, continuing through March, 2011, and all responses had been received by April, 2011. Themes were developed based on patterns of responses, as these became evident.

While in-depth interview will not answer every question, such an approach is best to gain clues to what was/was not effective in such a small group of implementing institutions. It is not expected that the methods that are most effective in publicizing a new system for one constituency will be equally effective for all. The approach is based on this researcher's judgment of the most effective means to garner the information needed, although other research perspectives were considered.

In-depth interviews of selected subjects from college/university staff members who had been deeply involved in the communications effort associated with the introduction of a new Campus Solutions system at their institution were considered. In this approach, subjects would be pre-screened for eligibility, narrowed down to a select group, then interviewed to determine their knowledge

of the messages delivered to each constituency as part of the overall publicity effort at their institution and their subjective perception of those messages' effectiveness.

However, that subjective opinion of the communication effort's success might be less than dependable, given the length of time (up to ten years) that has passed between some of the implementations and the time of this study. Likewise, their memories of the emphases of each of the communication methods used (print, e-mail, in-person, video) might also be suspect. Finally, their memories of which methods were even used might be fuzzy or non-existent. A pilot questionnaire confirmed this opinion – few could answer questions about the media used, the constituency targeted, or the benefits cited.

Results

Questionnaire Responses

Responses to the first question ("What worked well?") varied widely, including a combination of many kinds of communication (events, print, meetings), beginning the publicity effort early, seeking broad involvement, and offering training. Other responses included executive support, colorful brochures, and an informative project home page. A few answers were repeated, including an early start to publicity efforts and seeking buy-in from a broad base.

This wide variance fits the character of the rest of the answers given, making it difficult to determine a pattern of effective/ineffective publicity efforts. And, as might be expected, the details given in Question 2 responses about why particular efforts worked well were even more varied, including, "good communications", "people knew where to go for training", "tiered implementation team structure", "campus community is accustomed to get information via this (home page method", and (the brochures) "stimulated a sense of modernization".

When asked, in Question 3, "What could have worked better", answers also varied widely, including "did as good a job as could be expected", "management of expectations",

"many older staff left", "pre-training was too elementary", and "executive understanding of the new system". The only answers repeated more than once were some form of "I don't know" or "did not follow our communication plan". "Not enough faculty buy-in", "needed broader involvement", "more executive support" and "ineffective change management resource" were also mentioned.

Question 3 responses were slightly more informative than their opposites from Question 1, in that there was more consistency in the pattern of answers given. As with Question 2, Question 4 responses giving more detail on the reasons given for the difficulties mentioned in Question 3 varied widely. Explanations for why parts of the publicity system could have been more effective included "Executive leadership didn't understand the CS system", "Trainers spoke ill of the CS system", "we were inexperienced in such a large implementation", and "no dedicated communications resource". As in Question 3, some form of "don't know" was the only answer repeated more than once.

Answers to Question 5 ("Did one constituency more/less readily adopt the new system?") were even more informative, with many responding that students were the most ready to use the new system. The reason most frequently given for

this was that students adapt better to new technology than do older staff and faculty. One respondent wrote that

Students adopted the new system very quickly. They loved the Student Center and their ability to see all of their academic information in one place. They were eager to look around the system and learn how to use the many available features.

Of those who wrote that one group was less ready to adopt the new system, instructors were most often mentioned, though a few respondents answered that "long-term staff and older faculty" were resistant. Reasons given included "faculty felt they weren't being paid for training they attended" and "Staff and Faculty tended to be more reserved and worried about what they were doing within the system." Also mentioned was "staff felt they had no choice".

Question 6 asked about the readiness of segments of constituencies to adopt the new CS system. A few of those who answered the questionnaire had no response to this, possibly because they did not understand the question. However, those who did respond most often wrote that "Younger staff and faculty took to the new system best." Some respondents also noted that those staff and faculty

members who had spent more time with the old system were less ready to adopt the new one.

Question 7 asked about targeting of specific constituencies. Answers to this question were widely divergent and split between individual constituencies and different combinations of constituencies. Question 8 asked whether opinion leaders were used to reach the targeted constituencies, and many indicated that they had done so, though some gave specifics in this answer and others in their answers to Question 9 ("If specific groups were targeted using opinion leaders, which did you choose to target each constituency?"). The opinion leaders selected included "Champions", "selected early adopters", and "those in influential roles". Some also mentioned that the implementation team was built from opinion leaders.

Question 10 was the standard by which the effectiveness of their publicity efforts was judged. Estimates of time to "full adoption" ranged from a few months to four years, and did not show any relation to targeting of constituencies. Some respondents apparently did not understand this question, and provided answers about the technical usability of their CS systems.

Question 11 was very open-ended, asking if there was anything else that especially helped/hindered their

implementation, and then respondents were given a totally free-form "Comments" section. Answers to Question 11 included "I would have preferred to provide more information earlier", "Lack of adequate personnel on the implementation team", and "Though there were online job aids, their existence was not well publicized." It appears that all of these were perceived to have hurt the implementation efforts, though respondents did not indicate so directly.

The comments section provided interesting information and opinions, such as "Really has to be the very top of the administration that has to 'stomp' on naysayers." Other respondents wrote that "Without … support from the highest administrative level, this implementation would not have been possible", and "Getting executive support is crucial to the success of a major ERP implementation."

Response Analysis

Analysis of completed Questionnaires revealed that 85% of the Campus Solutions communication efforts in this study attempted to target at least one of their constituencies, with mixed levels of success. The largest number of institutions targeted all three constituencies, with the second-largest number tied between no targeting and targeting of students and faculty.

Success, as measured in shortened adoption times reported, was no different between institutions that targeted specific groups and those that did not. Each saw an average adoption time of less than six months for all constituencies. No institution reported targeting only students or staff, and only one institution each reported targeting students and staff or staff and faculty. It appears that both students and staff were only targeted in publicity efforts that also targeted one or more of the other constituencies. Surprisingly, the only institution reporting a result of longer than two years (reported that all had not adopted the new system within four years), targeted only faculty in their publicity efforts.

Staff were the least-targeted constituency (50% of the schools reported targeting staff, in conjunction with instructors and/or students). This may be further strengthened by the comment of some respondents that staff "had no choice" but to adopt the new CS system. Results were slightly better in those institutions reporting the use of influential groups to target specific constituencies.

Uniformly, the student constituency was reported to be the most easily converted to the new Campus Solutions system (50% of those reporting one group as more easily

converted), although the reported adoption times do not support this belief. According to many respondents, all that was required was to direct students to the new portal for access and provide login/password combinations for that portal, as predicted by this researcher's experience and theoretical research.

Communications to staff revealed mixed results, depending on the age, length of service, and technical prowess of the staff. The greatest effectiveness was reported for in-person meetings, and staff newer to their institutions were more likely to readily adopt the new system. Presumably, this is because newer employees are less likely to be tied to legacy student systems. The reported opinion leaders used to target staff, as expected, were other staff members, particularly those in a direct line of authority above the staff members being targeted, although effectiveness was also reported using staff members specifically designated as "staff liaisons". Overall, the involvement of staff members in the implementation effort, as expected, was reported as a key to positive communications, as was the accessibility of regular training, geared to staff needs, throughout the implementation.

Institutional leaders were also reported as effective opinion leaders, by virtue of their well-publicized support for the implementation project. However, one institution reported confusing messages communicated by upper administration about the capabilities of the new student system, which negatively impacted staff attitudes. Lack of resources allocated to the implementation effort also negatively impacted staff attitudes. Staff in one of the projects were expected to perform their regular job tasks and lead the implementation effort, due to a lack of backfill for their regular positions.

The effort to target the faculty constituency was reported to also show mixed effectiveness, although instructors were mentioned least as either a difficult or receptive audience for messages about the new CS system. Faculty who were younger, more technically proficient, and/or newer to the institution showed greater willingness to adopt the new Campus Solutions system than those who were older, less technically proficient, and/or more used to the legacy student systems. In-person meetings were the most commonly-reported means of communicating the new system to instructors.

Since a focus on either one constituency, a combination of two constituencies, or all three

constituencies showed no advantage in terms of reported speed of adoption by the group(s) targeted, no conclusion can be drawn as to the benefits of targeting for Campus Solutions. Though Diffusion of Innovations theory suggests that improvements in adoption should come with focus on a particular group, strategically using opinion leaders, no relation can be found in the results of this study. Part of the reason for this might be the haphazard way in which Diffusion of Innovations principles were applied.

Conclusions

Review of Research Question

The Research Question being studied was: Did the use of Diffusion of Innovations principles (targeted messages and use of opinion leaders) shorten the reported time to full adoption of a new Campus Solutions system?

Strong recommendations cannot be made on the basis of the results generated by this study, since there was no compelling evidence to suggest that improvement in the speed of adoption by any constituency was greatly improved by a focus on that group in publicity efforts. Although theory supports the idea that focus on messages important to a constituency should improve the effectiveness of those messages, reported results (based on months to full adoption) do not.

Face validity (the likelihood that a question will be misunderstood or misinterpreted) has been tested by a pretest sample of university respondents who have worked in the publicity effort for the implementation of a PeopleSoft database at a different institution (the University of South Florida) than those to whom questionnaires were sent. Content validity (whether an instrument provides adequate coverage of a topic) has been established by literature searches and researcher work experience in helping

universities and colleges to implement this system. Construct validity (the theoretical foundations underlying a particular scale or measurement) may be weak, since much of the measure of effectiveness is based on respondents' memory about, involvement in, and perceptions of the publicity tools and strategies used.

While some improvement in overall adoption speed was shown by the use of influential groups to target specific constituencies, the research question that targeting of constituencies overall would improve adoption speed was not proven. A nearly equal time of adoption by each constituency was reported by those institutions who did and did not target constituencies. However, this may only be a weakness in the sample of schools responding, the memory of the respondents, and/or the survey instrument.

While students were mentioned most frequently as the most ready to adopt the new CS system, opinions about why students were more easily convinced (if any answer was given) varied – a sample of answers given includes "had no choice", "got the chance to poke around" (trialability), and "web-based". Staff were also mentioned as the most ready to adopt the new system (20% of the number that mentioned students mentioned staff as the most ready

adopters), and reasons given included "had no choice" and "early training".

Staff and faculty were reported as less ready than students to adopt the new CS system, and the reasons given included "resistant to change", "didn't attend publicity events", and "saw only barriers".

Neither size of school surveyed nor region of the country in which the school was located appeared to affect the speed of full adoption by any constituency.

Limitations of This Study

This study assumes that university staff responsible for communications have records (or some institutional memory) of the media/messages employed in their system implementation, that they will freely share the information on what media/message they used, and that they have objective standards for measuring the effectiveness of their publicity efforts. It also assumes that their perceptions of the time necessary for each constituency to adopt the new system are accurate. This is seemingly impossible to test.

The study also assumes that respondents will understand the terms used (opinion leader, adoption), and that terms such as "instructor" are generally understood to cover professors, adjuncts, teaching assistants, and those

using the actual instructor title. It is believed that "students" and "staff" are easily understood, though there is sometimes blurring between these two, such as in the case of student workers who might do data entry or otherwise serve their peers.

Another limitation was that no personal interviews were conducted; all interviews were done by questionnaire. More useful information might have been gained by personal interviews. However, an earlier effort to use personal interviews garnered an unsatisfactory number of responses.

This researcher's belief that institutions are unlikely to retain artifacts from old publicity campaigns also influenced the choice not to use content analysis as the basis of this study. Likewise, this researcher's experience has been that institutions are resistant to being studied as an "unsuccessful" or "challenged" implementation case study, making the case study approach quite problematic.

It seems positive that many of the schools reported using some of the principles of Diffusion of Innovations, though evidence of its effectiveness is mixed. The schools at least seem to understand that they do have separate constituencies, which they often targeted. Most also seem

to know who are some of their key opinion leaders, and have recruited them to aid their publicity efforts.

Ideally, students, instructors, and staff who had been targeted by the institutions implementing Campus Solutions would be surveyed to contrast their reception of the messages sent by the team responsible for publicity about the new system. However, institutions are reluctant to divulge contact information for instructors and past students, unless those students are now voluntarily involved in alumni organizations. Staff who were exposed to the publicity campaigns might have difficulty remembering which messages impacted them more than others, especially given the length of time that may have elapsed (up to 10 years) since the implementation.

This study is also limited by the lack of objective analysis done concerning the effectiveness of the publicity efforts the surveyed institutions have used, and some resistance may also be encountered from the institutions in sharing their information, especially if those efforts were not as successful as they might have hoped (Petruzzelli, 2005).

Areas for Further Research

Future research should focus on Diffusion of Innovations theory, since most previous research into these

systems, as noted, has been based on U&G theory. For, while U&G theory helps to explain the logical reasoning behind users' decision to adopt or reject a new transactional system, little insight into the publicity used to communicate that system to potential users is gained. Alternatively, a more in-depth combination of Diffusion of Innovations theory, linked with U&G theory, might provide an effective means of studying the innovation message and its carrier in tandem.

A study using this type of questionnaire involving a greater number of institutions would be helpful; however, the number of institutions implementing the CS system each year is not large, due to the immense investments necessary. Personal interviews might also have generated higher-quality information, especially in exploring the use of opinion leaders. Respondents to the questionnaire used in this study might not have understood who were their opinion leaders, who can greatly influence adoption of innovations.

If institutions were willing to share samples of their publicity materials (video, web pages, e-mail messages, print, etc.), these might be more effectively studied using content analysis. However, such samples are often not

retained in any organized manner, and it may be difficult to gain access to samples if they have been saved.

Appendix A: Questionnaire

Diffusion of Innovation Questionnaire – PeopleSoft Implementations

Think about the publicity efforts your school made to introduce your new PeopleSoft system to students, staff, and instructors. Then please answer the following questions as fully as possible, taking as much room as necessary. When completed, please return this survey as an attachment to kws976@missouri.edu, or you may simply paste the text into the body of your e-mail message.

This information will be kept confidential, and will be analyzed along with information from other higher education institutions to determine how schools might improve the effectiveness of their future PeopleSoft publicity efforts.

This questionnaire is part of the research required for the Masters Thesis in Strategic Communication by Kent Sipes, a Graduate student in the University of Missouri Journalism department.

This Thesis is built on the theory of Diffusion of Innovations (Rogers, 1962). Diffusion of Innovations studies how new behaviors, attitudes, and technologies are spread throughout societies by influential persons and/or groups. This Thesis concentrates on the diffusion of information about, positive attitudes toward, and full implementation of a new PeopleSoft Campus Solutions system among the three main constituencies of an institution of Higher Education. Those three constituencies are students, staff, and instructors.

Thank you for your cooperation!

Respondent Information
Name of Higher Education Institution/System _____
Name of Respondent (confidential; for validation only) _____
Date of PeopleSoft Campus Solutions implementation _____
Permission to contact you for clarification of answers? (Yes ____) (No____)
If 'Yes', please provide preferred contact information _____
_____

Questions:

1. What did you believe worked well in your publicity effort to introduce your new PeopleSoft system?

2. To what do you attribute this success? (spokesperson, media/materials used, message, other)

3. What did you believe could have worked better in your publicity effort to introduce your new PeopleSoft system?

4. To what do you attribute these challenges? (spokesperson, media/materials used, message, other)

5. Did one constituency (students/staff/faculty) more/less readily adopt the new system than did others?

6. Were there segments of any constituency that more/less readily adopted the new system than did others?

7. Did you target specific constituencies (students, staff, faculty) in publicity efforts?

8. If you targeted constituencies, did you use influential groups or individual opinion leaders in your communication(s) to those constituencies?

9. If influential groups/individuals were targeted using influential groups or individuals, which did you choose to target each constituency?

10. If influential groups/individuals were targeted, how did you choose which to target?

11. If influential groups/individuals were targeted, what method was used to reach each group?

12. How much time elapsed from the date your new PeopleSoft system was made available to each constituency and the date you believe it was fully utilized?

13. Was there anything else in your communications effort that you believe helped/hindered the successful introduction of your PeopleSoft system?

Comments:_____
_____

Please return completed questionnaire to Kent Sipes at kws976@mizzou.edu. Alternatively, you can respond by postal mail to: Kent Sipes, 2551 Turpin Ln., Evansville, IN 47712 – the cost of postage will be reimbursed. Once again, thank you!

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