**THE POTENTIAL USE OF THE WEB
FOR CONDUCTING SURVEYS**

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ABSTRACT

This Technical Report evaluates the potential use of the UCF 21 Website for collecting survey information. A prototype data collection form that includes selected demographic data and a text comment box was implemented using Microsoft *FrontPage 98* software. The implemented form send text data to the web address but it is not in a format easily translatable to a database for analysis. The report evaluates the capabilities and costs of two additional software packages: *TeleForm Internet Solution* developed by Cardiff Software, and *Omniform Internet Suite* developed by Caere Software. Both software packages to have the ability to easily translate the returned form information into a database format. The report also reviews several web-based survey issues including confidentiality, ease of use, and translatability of returned data. Various process requirements are also discussed, including the use of the check box, radio button, text box, drop-down box, submit button, and reset button.

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1.0   INTRODUCTION

The University of Central Florida currently serves a diverse student body population of over 28,000 students. The main campus and the branch campuses at Brevard and Daytona Beach serve a primarily commuter student population. To link all of the students of UCF together and allow easy access to information about UCF regardless of the student's location, a UCF World Wide website has been established. This website serves to provide information about student services, various colleges, student records, registration and more. The use of the World Wide Web has the potential to be a powerful way to connect students to needed information. The "webification" of student information and university functions is one of the important short term goals of the university. With the ultimate aim of the UCF 21 project being to improve student services, the creation of a UCF 21 website will serve as an important aspect of information collection and exchange to facilitate the project goal with the use of online surveys and student service search facilitating that information collection and exchange.

The University, as part of its Strategic Planning Initiative, has provided funding to support the University's Customer Focus for the 21st Century (UCF 21) project to address this need for a systems level study of student services. The primary goals of the UCF 21 project are to: 1) develop a systems level view of student services and their interactions by documenting all critical student service processes and their interrelationships; 2) identify systems level improvement opportunities, including re-engineering; 3) recommend changes and/or in-depth studies; and 4) develop implementation plans for changes and /or in-depth studies. The use of web-based surveys via the implementation of a UCF 21 website will serve to supplement all four of these goals.

2.0   OBJECTIVE

The UCF 21 website serves as the virtual office of the UCF 21 project. From virtually any computer terminal throughout the world, the purpose, results and information available about the UCF 21 project is easily accessible. A website provides a virtual office that is available 24 hours a day, 7 days a week to answer questions, gather information and provide direction. The website is a non labor-intensive way for the UCF 21 project to collect valuable information for use by UCF 21 systems and process analysts.

Online surveys, that can be accessed through the UCF 21 website, serve to gather information on various topics of interest to the UCF 21 project. Unlike with paper-based surveys, changes to the survey can be done quickly with minimum labor, and results are readily available to be disseminated by anyone on the UCF 21 project.

3.0　PURPOSE

When users browse the web, they are looking for information and a means to communicate the need for more information or to provide feedback. With the prevalence of computers on campus and the virtual assured anonymity, valuable data and comments with respect to students, faculty and staff can be ascertained through the website. Even those students who matriculate at satellite campuses like Brevard and Daytona Beach will have a way to communicate their comments about student services at UCF, and feel as if they are truly able to make a contribution.

Gathering survey data either over the phone or in person requires much more labor than the use of an online survey. In addition, a survey online can gather data 24 hours a day, 7 days a week, regardless of where the student may physically be. If the student cannot fill out the survey online at that time, they can always print it out and return it to the UCF 21 office at their convenience.

4.0　WEB-BASED SURVEYS

Each survey posted onto the UCF 21 website is composed of several form attributes. These attributes determine the aesthetic format and values that are returned to the UCF 21 project when the responses to the survey are received. When the survey information is submitted to the UCF 21 project, the form needs to be handled and the data properly translated in order for the information received to be disseminated by those members of the UCF 21 project. There is software currently on the market that will aid in the development, construction and maintenance of surveys to be placed on the website. Without using this software, many labor hours would be spent learning the programming language necessary to process forms. Software that handles form processing was developed in response to this situation. This software varies with respect to capabilities, ease of use, and cost. The main purpose of this software is to facilitate translation of returned form data from web-posted surveys in a timely manner with minimal to no amount of programming.

4.1　Software Capabilities and Cost

4.1.1　Microsoft's *FrontPage*

Microsoft's web management software, *FrontPage*, is currently being used by the UCF 21 Webmaster for development, construction and management of the UCF 21 Website. In addition, *FrontPage* also has the capability for developing surveys via available form attributes. These attributes are discussed in the Process Requirements section that follows. Constructing a survey using *FrontPage* requires that the designer know the exact specifications (e.g., a drop box, check boxes) desired for the survey. In addition, *FrontPage* requires that the designer knows how to position the form attributes so that the form behaves properly as a whole. Although *FrontPage* does not require the designer to know HTML or CGI (Common Gateway Interface) scripting, it does require the designer to know how form attributes are put together in order to function as a whole form.

FrontPage also offers the capability to publish a database on the Web, and create an on-line discussion group. In database publishing, users can submit queries to the database(s) available on the UCF 21 Website. However, *FrontPage* does not have the capability to build a database from the information ascertained from processing a form. For an on-line discussion group, users can post their questions and view answers or queries to their questions right on the UCF 21 Website. Microsoft *FrontPage* currently retails for around $100 (MSRP). The software can be installed and run on a PC platform. Technical support is limited to call-in and web-posted information. Further product information is shown in Appendix A.

4.1.2   Cardiff Software's *TeleForm Internet Solution*

Unlike with Microsoft's *FrontPage*, Cardiff Software's *Teleform Internet Solution* is a very user-friendly and powerful software package that not only creates web-based surveys via form attributes, but also can translate hand-written or typewritten answers to surveys. This way, paper-based survey forms can also be incorporated and translated. In addition, sections of forms which require calculation can be automatically calculated and verified using *TeleForm Internet Solution*. Other features include a fax-back capability. Unlike with Microsoft *FrontPage*, no knowledge of the integration of form attributes is necessary. Major corporations such as Intel and AT&T and major universities like Harvard University and the University of Michigan also use *TeleForm Internet Solution*.

Training is required in order to become proficient at utilizing *TeleForm Internet Solution*, and is included in the price of the software. Training is also given on-site as well as at regional offices and through authorized resellers (e.g., Information Access Systems in Winter Park, FL). The software can be installed and run on a PC platform running Windows 95 or Windows NT. Technical support on-site is given as well as detailed training. Use of *TeleForm Internet Solution* requires the purchase of TeleForm Elite (which enables the translation of paper-based forms that are either scanned or faxed in). Base price for *TeleForm Internet Solution*, including the cost of TeleForm Elite is $7,490. Further product information including total cost breakdown is shown in Appendix B.

4.1.3   Caere Software's *Omniform Internet Suite*

Caere Software's *Omniform Internet Suite* is somewhat more expensive than Microsoft's *FrontPage*, but much more affordable than Cardiff's *TeleForm Internet Solution*. Caere Software's version performs more functions than Microsoft's Front Page, but is not as all-encompassing as Cardiff's software. For a smaller department or a more extensive pilot study, Caere's *Omniform Internet Suite* may be a better choice.

With this software, an existing paper form can be scanned into the computer, and a Web-ready version of the form is instantly created. When *OmniForm Internet Suite* converts the form, the original look and feel is retained. Forms that are filled in by hand can be scanned in and printed just like the originals. *OmniForm Internet Suite* also allows the generation of an instant database connectivity to the form through a

three-step wizard. Once the paper form has been converted to an OmniForm web form, a wizard builds the database and an ODBC source for that form. Calculations are automatically performed without the use of CGI, Java/Javascript or WebBots. *OmniForm Internet Suite* currently retails for about $700 and can be loaded on a Windows NT server running IIS for an Internet site or run on a PC running Windows 95 to host an Intranet site.

4.2   Benefits/Costs

Table 1 displays the costs and benefits of the types of software available to process forms

Table 1: Cost/Benefit Analysis of various forms software.

Vendor	Software Product	Training Needed	On-Site Support	Database Generation Capability	Automatic Calculation Capability	Additional Software Needed	Runs on Windows NT/95 Platform	Retail Price for One (1) Copy
Microsoft	FrontPage	No	No	No	No	No	Yes	$100.00
Cardiff Software	TeleForm Internet Solution	Yes	Yes	Yes	Yes	Yes	Yes	$7,490.00
Caere Software	Omniform Internet Publisher	No	Yes	Yes	Yes	No	Yes	$700.00

5.0   SIMPLE PROTOTYPE

Utilizing Microsoft *FrontPage*, a prototype survey was constructed that is currently available to all users on the UCF 21 website. When a user follows the "Communicate With UCF 21" link, there is an option to submit comments. This comment form is actually a form attribute that returns what the user typed to the UCF 21 website server. After sending the comments, the user is sent an acknowledgment via the UCF 21 website that the comments were received, and is given the option to answer further questions based on willingness to cooperate and classification (e.g., student, faculty). After selecting the appropriate classification, the user is presented with the appropriate survey which is composed of more form attributes. After submitting the survey information to UCF 21, the user is again given an acknowledgment of receipt. The information is stored in a text file on the UCF 21 website server. All prototype forms are shown in Appendices D through G with example input and output.

5.1   Web-Based Survey Issues

There are several issues that must be taken into account before constructing surveys for use on the Web if the information ascertained is to be useful. When these issues are addressed before the construction of any survey, less time can be put into retooling the survey.

5.1.1   Confidentiality

One of the topics that most concerns users when utilizing the Internet to conduct any transaction, whether it be one of commerce or information, is that of confidentiality. Users are concerned that the data that they transmit may be visible to a third party

during the transmission. Because some users may not want any data identifying who they are, surveys need to be constructed in order to assure anonymity.

5.1.2   Ease of Use

As with paper and pencil surveys, web-based surveys need to be intuitive to the user filling it out. This means that the survey needs to make intuitive sense before posting it to the UCF 21 website. The "reset" button acts like an eraser to undo *all* responses in case the user has made a mistake.

5.1.3   Translatability of Returned Data

In order to be useful, the data returned when a survey form is submitted needs to be in a format useful to the UCF 21 Process and Systems Analysts. Unlike a layperson, a trained HTML programmer can easily disseminate the responses from the coded data. The data needs to be returned in a format not only that the UCF 21 personnel can understand, but can also be easily translated into a database for analysis. The data returned from the prototype is shown in the respective appendices for each form.

5.2   Process Requirements

Surveys are put together using various form attributes which are coded in HTML (HyperText Markup Language). The form attributes used are the check box, radio button, text box, drop-down box, submit and reset buttons. Upon submitting the survey information, the user will receive confirmation from the UCF 21 website that the survey information has been received. It is important that the survey designer aid in the concurrent development of the on-line survey.

5.2.1   Check Box

The Check Box form attribute allows a user to select multiple items. For example, if in a survey one asks to "check all that apply", the user can check all of the options that apply, and the values that were checked will be returned upon selecting the "submit" button. A user can also uncheck any item that the user does not want submitted if there is a change of mind.

5.2.2   Radio Button

The Radio Button form attribute allows a user to select only one item from a list of items. For example, if the survey asks the participant to "choose one of the following", the radio button form attribute will only allow the participant to choose one of the selections.

5.2.3   Text Box

The Text Box allows the user to type in information to be returned. The size of the box can be scaled depending on the aesthetics desired. Limits can be placed on

how much information is put in the text box; however, only those users using Microsoft Internet Explorer will experience this limitation.

5.2.4   Drop-Down Box

Like with the Radio Button, the Drop-Down Box form attribute allows a user to select one of the options given. When a user wants to see the other options, he/she clicks on the arrow next to the box and a list of selections "pop" up. The selected value will then show in the box area. The Drop-Down box is an excellent choice when there are space limitations, or when it is preferred to a Radio Button due to aesthetic reasons.

5.2.5   Submit Button

This form attribute sends all of the data entered in the survey to the batch collection file. The data can then be disseminated by any of the Analysts on the UCF 21 project.

5.2.6   Reset Button

Clears the survey of all the previously entered attributes. If a user wants to start over with the survey, clicking the reset clears the form and sets all form attributes back to their default states.

5.3   Development Tools

As with the UCF 21 Website, Microsoft's *FrontPage* was utilized as the development tool for producing surveys. Other software are available for producing forms, but the expertise of the UCF 21 Webmaster along with *FrontPage*'s ability to produce form attributes proved more cost-effective at this time. Looking ahead towards future expansion, more advanced software may be needed.

5.4   Usability and Access

All surveys are constructed with usability aspects in mind. Design of the surveys are the domain of the respective Systems or Process Analyst who wishes to devise one, while either the Webmaster, Systems Technician or other Web Consultants under the Webmaster are responsible for the actual coding of the survey using *FrontPage*. Uploading of the survey to the UCF 21 Website is to be done by either the Webmaster or the Systems Technician.

5.5   Website Implementation

As stated earlier, the complete survey can be accessed via the UCF 21 Website at http://ie.engr.ucf.edu/ucf21/communicate.html. Feedback received through this survey will be used in the construction and implementation of more surveys for the UCF 21 project.

5.6   Future Survey Development

Obviously, forms software can be used to handle more than just surveys. Hand-written forms such as Application for Admissions, Health Center Records, and even Timecards can be processed using forms software. Technology transfer from the use of surveys on the web can easily be applied to other areas of benefit to the student body and the university. The type of software selected needs to be based on the types of forms being processed, volume of processed forms, computer platform and available funds.

6.0 CONCLUSIONS

The UCF 21 Website is an important part of the UCF 21 project, serving as its "Virtual Office" for the gathering of information and dissemination of valuable information. The use of surveys on the website has virtually unlimited potential for gathering information in such areas as usability, intuitive website construction, and technology transfer to such applications as applications forms processing, timecard processing and improvement of the current University of Central Florida website.

APPENDIX A

Product Information for Microsoft's *FrontPage*

APPENDIX B

Product Information and Pricing for Cardiff Software's *TeleForm Internet Solution*

APPENDIX C

Product and Pricing Information for Caere Software's *OmniForm Internet Suite*