FINAL REPORT
UCF 21 PHASE 1

Julia Pet-Edwards, UCF 21 Project Director
Robert L. Armacost, Systems Manager
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UCF 21 Team Members

UCF 21-TR-98-016
June 1998

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ABSTRACT

This Technical Report summarizes the main findings and activities of Phase 1 of the UCF 21 (University's Customer Focus for the 21st Century) Operational Excellence Initiative initiated by Provost Whitehouse. A team of three faculty and six graduate students from the Industrial Engineering and Management Systems Department conducted a systems analysis of student services at the University of Central Florida during the period of mid-August 1997 to mid-June 1998. The study was focused in three major areas: (a) assessment of student perceptions, (b) information about and for students, and (c) services that enhance the students' experience at UCF. This report summarizes what UCF is doing in each of these three areas, how well UCF in performing these functions, and where improvement is needed. The results of the study are documented in 20 Technical Reports prepared between October 1997 and June 1998. The systems analysis described in these reports has demonstrated a critical need for accurate, consistent, and timely student services information and the need for providing student services offices with assistance in performing assessments and process and systems analyses.

Acknowledgments

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FINAL REPORT
UCF 21 PHASE 1

1.0   INTRODUCTION AND SCOPE

The University of Central Florida currently serves a diverse student body population of more than 28,000 students. One of its primary objectives has been and continues to be to improve the quality of institutional services. The UCF Strategic Plan, *Charting the Course 1996-2001*, identified "achieve operational excellence" as one of the four strategic directions for the university. The plan emphasized that the University of Central Florida continues to experience rapid growth and a significant annual increase in the number of students to be served on campus. Several offices (e.g., Office of Student Affairs and the Quality Initiatives office) have administered surveys to obtain an index of student satisfaction. The various surveys and other indicators suggest that satisfaction with student services has not kept pace with satisfaction with academic services. Their findings show a relatively high student approval rating with respect to most academic issues, in contrast to a lower approval rating with respect to those issues generally classified as "student services." The Quality Initiatives office has worked closely with some process owners to improve their processes. Their approach has helped to enhance communication and understanding within various organizational functions and improve processes. There appeared a need, however, to identify and address systemic issues that cross organizational boundaries and involve multiple process owners.

During the 1997-1998 Academic Year, the Provost established a research project titled "UCF 21--University's Customer Focus for the 21st Century" as part of the President's Operational Excellence Initiative to establish the broader systems view of student services. The primary goals of the first year of the UCF 21 project were to:
- develop a systems level view of student services and their interactions by documenting all critical student services and their interrelationships;
- identify systems level improvement opportunities, including reengineering;
- recommend changes and/or in-depth studies; and
- develop implementation plans for changes and /or in-depth studies.

The UCF 21 Project was directed by a faculty member from the Industrial Engineering and Management Systems Department and currently consists of a team of three faculty, six graduate students, and three undergraduate students. The UCF 21 team's focus during Phase 1 was in three specific areas: (a) assessment of student perceptions, (b) information for and about students, and (c) services that enhance the students' experience at UCF. The systems analysis evaluated what UCF is doing in each of these three areas, how well UCF is performing these functions, and where improvement or changes are needed.

The University of Central Florida provides and supports over 100 different significant products, activities, and processes that enhance the students' educational and campus experience. A major thrust of Phase 1 of the UCF 21 effort was to identify and document the activities, processes, and products that lead to a successful UCF experience, develop an inventory of the services that UCF currently provides, and

determine what is missing. In addition, UCF 21 performed a more in-depth study of selected parts of the walk-by registration processes used at UCF with a particular focus on Arts and Sciences.

Students' perceptions about the importance of each of the services and how well the service is provided are essential information when evaluating where improvements are required. Many of the UCF offices conduct surveys and assessments of their services and university-wide satisfaction surveys (e.g., Cycles survey and the Student Services Inventory) are also conducted. In Phase 1 of the UCF 21 project, an inventory of the surveys that have been conducted was developed and the content and quality of the surveys was evaluated in order to determine what can be reliably concluded about the quality of the services provided. UCF 21 also performed surveys of student perceptions during the regular Fall 1997 registration period (immediately prior to the start of classes) and also during Summer 1998 early registration period.

The student information focus area of the UCF 21 project involved determining the accuracy, consistency, and timeliness of information (both electronic and non-electronic) provided to students and about student services. This study included the development of an inventory of the information systems currently in use at UCF, an evaluation of the timeliness and accuracy of information provided by these systems, an inventory and evaluation of the non-electronic communication media provided by student services offices at UCF, an evaluation of the student services information contained in the major catalogs used by UCF students, and an evaluation of student services content in the UCF Website and the Kiosks.

In addition to the UCF 21 project, the UCF administration has initiated two other efforts that are assisting in addressing student service concerns: (1) the implementation of new information technologies and (2) the establishment of focused Student Service Improvement Teams (SSIT). The Leading Edge Administration Project (LEAP) was established to provide the leadership and mechanism for the implementation of new information technologies using the PeopleSoft software system. With this system, there is a need to "fit" existing processes to the system, at least in terms of information requirements. Cross-functional teams are used in these fit sessions to identify the essential information required for their respective processes. SSIT teams have been established in four areas: Non-Curricular Information, Orientation, Academic Advising, and Student Holds. These areas cross different organizational functions. The SSIT teams are being led by key individuals in each of the areas and facilitated by the Quality Initiatives office.

The UCF 21 project team is performing an integrative function among the major projects. The assessment of information needs and relationships by UCF 21 were used by LEAP in its initial fit analyses. In addition, the LEAP analyses are providing information to UCF 21 regarding the relationships among the various information systems and requirements. The several SSIT teams include members from the UCF 21 project who are functioning primarily as observers, but are also providing technical guidance for process examination and a communication link among SSIT projects. The two-way communication among the projects and the frequent interaction with various administrative personnel provide an opportunity for user "buy-in" regarding process change. This approach combines the advantage of a top-down approach while heavily

involving the user and process owners. It is expected that this will lead to greater ownership of the outcomes. UCF 21 has also had some involvement in other related efforts including the implementation of the SSI (Student Services Inventory) survey, the Student Affairs Exploration Committee, and the University Strategic Planning cross functional team for Operational Excellence.

At the conclusion of Phase 1 of the UCF 21 project, a wealth of information has been compiled and documented regarding student services at UCF. The top-down view has identified 107 distinct student services as described in the various catalogs, guides, and the UCF Website. Importantly, organizational and some functional relationships among these student services, including an estimate of the customer population, are still being identified. The information systems used and requirements necessary to support these services have been identified, providing further insight into the relationships among the various services. Various methods to assess student satisfaction have been identified and evaluated. A critical review of the numerous surveys that have been administered, and the analysis and use of the responses has been documented as well.

The principal finding of the work to date is the *critical need for accurate and timely student services information* and improved execution of student service transactions in some key areas. With few exceptions, personnel involved in student service functions are highly motivated and are working hard to provide quality service within the limits of available resources. However, there are several areas where there is an indicated need for assistance:

- *Information*—There is an urgent need for a Student Services Information Directory, led by an "Information Czar" or an equivalent function that will serve as a central repository of current information about particular student services. This repository should be the point of information to be used by all UCF elements. While UCF 21 focused solely on student services, the need for consistent, accurate, and timely information (particularly in the communication media) is apparent beyond student services (e.g., research policies).

- *Process Analysis Capability*—Although student-service personnel are constantly trying to improve their operation, they are often too close to the action to see alternative methods of providing that service. Frequently, many of those methods are technology dependent, and the offices generally do not have sufficient resources to both operate the current system and simultaneously study ways to improve it. The PeopleSoft implementation (through the LEAP project) provides an opportunity and perhaps a requirement for reengineering processes that deliver student services. Student services personnel are in need of assistance to accomplish these types of analyses.

- *Survey and Assessment Capability*—The UCF 21 inventory and evaluation of student surveys and assessments indicated that most were undertaken in association with the recent SACS evaluation. There is great variance in the design, administration and analysis of the surveys, and most appear to have

had little effect on student service operations. The various offices strongly indicated a need for assistance in developing and analyzing these satisfaction surveys.

This Technical Report summarizes the main findings and activities of the UCF 21 project from August 1997 through June 1998. Details are provided in 19 other Technical Reports. Section 2 describes the findings on *student services and organization.* In Section 2.1, the inventory of student services that was compiled by UCF 21 is described, Section 2.2 discusses the current organization of and the relationships among student services, and Section 2.3 describes the results from the study of selected parts of the registration process. Section 3 describes the UCF 21 activities and findings on *assessment of student perceptions.* Section 3.1 discusses the results of the Fall 1997 UCF 21 survey, an inventory of surveys in summarized in Section 3.2, the findings from an evaluation of the surveys conducted at UCF is given in Section 3.3, and the preliminary results from a survey conducted in Summer 1998 are given in Section 3.4. The findings on *information for and about students* is summarized in Section 4 which is divided into 4 subsections: Section 4.1 summarizes an inventory and evaluation of information systems at UCF, Section 4.2 presents the findings from an evaluation of the UCF Website, Section 4.3 describes the current state of non-electronic communication media, and Section 4.4 summarizes an evaluation of the major UCF Catalogs and Kiosks with respect to information about student services*.* The several UCF 21 Communications Initiatives are described in Section 5.0. Specifically, Section 5.1 describes the UCF 21 Website, Section 5.2 includes an evaluation of using the web for conducting surveys, Section 5.3 describes a prototype web-based information system for student services, and Section 5.4 includes the UCF 21 Public Relations efforts. Additional UCF 21 activities that were related to Operational Excellence but were not directly part of the systems analysis are summarized in Section 6. Conclusions and specific recommendations are given in Section 7.

2.0   STUDENT SERVICES AT THE UNIVERSITY OF CENTRAL FLORIDA

For the purposes of the UCF 21 project, student services was defined to include all services, products, and activities that are supported and provided by UCF to enhance and support the student's experience (both academic and campus life enhancing) at UCF. Based on this broad definition of student services, the University of Central Florida provides and supports more than 100 different student services. These "services" span from activities, processes and products with the primary focus on academic issues (e.g., academic advising, registration, and library facilities) to "services" whose primary focus is on enhancing the student's campus life experience (e.g., clubs, health services, and counseling). At the start of the UCF 21 project, there did not exist a comprehensive list of the services for students. This section describes the activities and findings of an analysis by the UCF 21 team aimed at identifying, summarizing, and evaluating the existing student services at UCF.

2.1   An Inventory of Student Services

In order to perform a systems analysis of student services, it was necessary to obtain a comprehensive view of all of the student services at UCF. An initial activity of the UCF 21 project was to compile a list of the student services offered by UCF. An initial list of approximately 60 different services was provided by Dan Coleman and Sabrina Andrews in Institutional Research and Planning Support. The UCF 21 team then performed an examination of existing brochures and catalogs, the UCF Website, the Kiosks, and walkthroughs of the University grounds to supplement this list to a total of 107 unique services and products provided to students. Based on the existing information sources, an initial description of each of the services was developed including a brief description of the service, information about how to access the service, and a reference to the source of the information about the service. These descriptions were sent to each of the offices providing the service for verification and modification. The result of this effort is summarized in Technical Report UCF 21-TR-98-003.

Based on this compilation and follow-up verification, a number of observations can be made. It was noted that the primary access for almost all of the services is by walk-in during daytime hours in on-campus offices, and that phone, email, or the Web provide access to a limited number of services. In general, the UCF Website provides information about many of the services, but does not provide access to most services. There is limited access to some of the services for evening and weekend students, or students that are located at off-campus locations. While the Office of Weekend and Evening Student Services does a good job to provide these students with many of the essential services, a large variety of services that are available to daytime students remain unavailable to the population of evening students.

The locations of the offices providing the services are spread across campus. In some cases, two geographically separated offices provide similar or related services. In addition, it was noted that the information sources that were consulted to develop the initial descriptions were inconsistent in the information content. Some services were listed in all sources, while some were not. The listed locations, descriptions of services, and access and contact information were sometimes out-of-date, inaccurate, or incomplete. While the UCF Website provides information about most services, an

interested student would have to know about the service and perform a keyword search to find that service. There is a need to provide information about services in a more "student friendly" fashion.

These observations led to a more detailed evaluation of the organization and relationships among student services (see Section 2.2), an evaluation of the UCF Website (see Section 4.2), as well as an evaluation of the primary information sources that contain descriptions of student services (see Section 4.4).

2.2   Organization and Relationships Among Student Services

The 104 services described in Technical Report UCF 21-TR-98-003 are offered through more than 70 organizational units across campus (an additional three services have been identified since the report was prepared). The identified student services are listed in Table 1.

A clear picture of the distribution, location, and organization of the services, and the relationships among the services was not available. The UCF 21 team began by developing organizational charts for each organizational unit at UCF, as well as descriptions of the mission of each office, a summary of the services provided, access information, a list of the types of users of the services provided, the databases that support the unit, surveys that have been performed, and the physical location of the office. These descriptions were developed from existing UCF documents and then sent to the offices for verification.

Maps of UCF grounds were used to graphically depict the locations of key student services that are used during critical time periods (e.g., registration), indicating a need for co-location to better serve students (reduce "run-around"). Tables were developed to summarize the relationships among the offices in terms of types of users and the commonality in usage of information systems. A current depiction of the organization charts and this analysis of relationships among the organizational units at UCF can be found in Technical Report UCF 21-TR-98-009. These results should provide useful data to support potential investigations into organizational and location changes. The organizational units that are directly or indirectly responsible for student services are identified in Table 2. Continuing reorganizations demonstrate that the organization is dynamic. It should be noted that the organizations in Table 2 were as of March 1998; the major reorganization resulting in the formation of the office of Student Development and Enrollment Services is not reflected in this analysis.

An ongoing activity involves collecting some additional information from each of the offices. The initial drafts for each organizational unit were sent to each office for verification. In addition, each unit was requested to indicate a list of their primary types of users, the approximate number of current and potential users, current resource (computers, office space, and personnel) usage, needs for additional resources, training needs, and critical factors in providing their service. In addition, questions about holds were included to help support the SSIT team's efforts. The results of these inquiries are being summarized in Technical Report UCF 21-TR-98-012.

Table 1: Identified Student Services

Academic Advising Services	Academic Calendar
Academic Clubs	Academic Development and Retention
Academic Exploration Program	Academic Services for Student-Athletes
All-Campus Card	Alumni Association
Amateur Radio Club	Area Campuses
Arena	Articulation and Community College Relations
Athletic Events	Automatic Teller Stand
Bike Storage	Bookstore
Business Services	Career Resource Center
Center for Professional Development	Check Cashing
Collections	College Work Study
Commons	Computer Facilities and Services
Continuing Education	Cooperative Education
Counseling and Testing Center	Creative School for Children
Credit Union	Dispute Resolution Services
Distributed Learning	Diversity Initiatives
Dual Enrollment	Early Admissions
Early Childhood Center	E-mail (electronic mail, computers, and Internet access)
English for Speakers of Other Languages (ESOL)	Evening Student Services
Faculty Center for Teaching & Learning	Fee Appeals/Waiver/Refunds
FEEDS	First Year Advising and Information Services
Food Services	Graduate Admission
Greek Affairs	Holds
Honor Societies	Honors Program
Housing and Residence Life	Information Services (KIOSK's)
Instructional Resources	International student Services
Job Placement	LEAD Scholars Program
Leadership Development	Learning Institute for Elders at UCF, Inc.
Legal Services	Library Facilities
Library Fines	Ministries
Multicultural Students Services	Multilingual Multicultural Services
Ombuds Office	On Campus Recruitment
Orientation Office	Parking Fines
Parking Services	Polaris
Police Department	Print Shop
Public Relations	Quality Initiatives
Quick Copy Center	Recreational Services
Registrar's Office	Registration
Rehearsal Hall	Residence halls
SASS Audit	Short Term Loans
Small Business Development Center	Special Programs (Student Outreach)
Student Academic Resource Center	Student Accounts
Student Activities	Student Activities Center
Student Disability Services	Student Employment
Student Financial Assistance	Student Government
Student Health Services	Student Organizations
Student Resource Center	Student Union
Telephones	Third Party Billing
Transcript Requests	Transportation
Tuition Receipts	Undergraduate Admissions
Veteran Affairs	Victim Services
Visitor Information Center	Volunteer Services/ Service Learning Opportunities
Weekend Student Services	Writing Center
ZIP + 4 (Postal Service)	

2.3   An Examination of Selected Parts of the Registration Process

The registration process is an important service that is provided to all students at UCF. It is important that this service be provided in a timely and "student friendly" fashion. Returning students have several different options for registration, including Polaris (which became available Spring 1998), touch tone telephone, and walk-by. These systems may be used during the Early, Regular, or Late registration periods. Newly admitted students are required to attend an orientation session prior to being allowed to register. Orientations occur several times before the start of classes allowing these students to register early. For a large number of students, touch tone and Polaris serve their needs very well unless the student has a hold on registration. There are many types of holds, including, for example, financial obligations, orientation, advising, insurance, incomplete file, and patent policy to name a few. When that occurs, the student cannot register until the hold is cleared. Despite many opportunities to register during the Early registration period, there are still a large number of students that register during the Regular registration process immediately prior to the start of classes and who must determine how to clear their holds before registration can be accomplished.

Because registration is such an important process and affects all students within the University, it was chosen as the first process for in-depth study at the beginning of Phase 1 and provided an opportunity for the new student analysts on the UCF 21 project to become more familiar with UCF 21 procedures and methods. In particular, the walk-by registration process during the Regular and Add/Drop registration periods was examined. Observations took place by UCF 21 team members in each of the five registration areas (colleges) during the first week of classes of Fall 1997. The process used by each of the colleges was documented, a sketch of the layout of each of the registration offices was developed, line lengths were recorded, and any problems and potential solutions were noted. The descriptions for each of the registration processes were sent to the respective offices for verification. The results of this study are documented in Technical Report UCF 21-TR-97-004.

A comparative evaluation of the observations indicates that the regular walk-by registration processes among the five colleges are quite similar, although the Registrar's Office conducts the registration for Arts and Sciences. In general, students wait in line for an available process terminal, when available they present their picture ID and social security number, they present Key Codes and course numbers, and then pick up their fee invoice as they leave. In some cases (e.g., College of Business Administration), students cannot register without showing their SASS degree audit and a plan of study (ensuring that the student sees an advisor prior to registration). In a few cases (e.g., Electrical and Computer Engineering), departments will place students on hold until they have received advising.

The number of computer terminals available for registration differed between the various colleges and did not appear to be related to the number of students to be processed.   Both students from the College of Arts and Sciences as well as the College of Business Administration experienced long lines during the periods that UCF 21 team members observed the registration process. The offices that included advising

as part of registration also experienced longer lines. Students that found out that they were on hold as they attempted to register also produced delays.

Table 2: Identified Student Services Providers

Enrollment and Academic Services	Student Information & Evening/ Weekend
Academic Development and Retention	Student Services
First Year Advising and Information Services	Student Legal Services
Academic Exploration Program	Veterans Affairs
Academic Services for Student-Athletes	Student Union
Multicultural Student Services	Dean of Students
Student Academic Resource Center	Administration and Research
Articulation and Community College Relations	Information Technologies and Resources
LEAD Scholars Program	Computer Services and Telecommunications
University Registrar	Instructional Resources
Student Financial Assistance	University Libraries
Special Programs (Student Outreach)	Academic Programs
Undergraduate Admissions	Division of Continuing Education
Administration and Finance Division	Cooperative Education
Business Services	University Honors Program
Student Accounts	Planning and Evaluation
University Police	Teaching and Learning Center
Physical Plant	Downtown Academic Center.
Cashiers Office	Institutional Research and Planning
Budget Office	Administrative Services
Environmental Health and Safety	Research and Graduate Studies
Facilities Planning	Graduate studies
Human Resources	Sponsored Research
Purchasing	Publication Coordinator
Quality Initiatives	External Resource Development Coordinator
University Controller	CREOL
Student Affairs Division	FSEC
Student Orientation	IST
Career Resource Center	Arboretum
Counseling and Testing Center	University Relations
Creative School for Children	Public Relations
Housing and Residence Life	Alumni Relations
International Student Services	Community Relations
Recreational Services	Federal Relations
Student Activities	Defense Transition Services
Student Disability Services	Office of the President
Student Government	University Ombuds Office
Student Health Services	

Following the observations of the Fall Regular walk-by registration processes, the College of Arts and Sciences requested a more in-depth study. Discussions prior to the Spring 1998 Regular registration period indicated that there was a "fear" that there might be an unusually large number of students going through orientation and registration just prior to the start of classes. The approach that was planned initially was to have the entire group of students attend the orientation and then come back as a group at a designated time to register for classes. This approach would have all students coming to registration at the same time and result in a very long waiting line for many students. It was suggested by UCF 21 to divide the students in time blocks to

equalize the number of students going through registration. This was attempted for the Spring Regular walk-by registration, but was met with only partial success (in reducing line lengths) due to lack of enforcement for students coming to register at an earlier time than scheduled.

The Regular walk-by registration process immediately prior to the start of classes was observed during January for Arts and Sciences. It was noted that the signage was inadequate (it was difficult to determine that some terminals were for returning students, whereas others were for new students) and that the flow could be improved (the printing of the fee invoices forced students to group at the entrance to the registration area). The greatest delays appeared to be due to holds or finding out that classes were closed when the student was at the registration terminal which resulted in a need for the student to find replacement classes. The current approach for finding alternative classes is to provide a print-out of the status of the courses (which is not real-time and there is a single copy) for students to use when they find that their classes are closed. This problem became more severe for students at the end of the line as more classes were closed.

During the Spring 1998 semester, the normal Early walk-by registration process involving students registering for the Summer/Fall 1998 semesters in the College of Arts and Sciences was observed. The analysis involved initial interviews with OASIS personnel and other process server experts to characterize and define the Early walk-by registration process for Arts and Sciences. The actual registration process was observed in order to determine 1) individual workstation processing times, 2) process flow, and 3) physical layout actually employed. Preliminary findings indicate a number of problems with existing registration services, including scheduling, layout, and signage, as well as inadequate means of notifying students of holds and closed classes. These latter problems manifested themselves as bottlenecks in the process. These findings are similar to the observations recorded in the Spring 1998 semester regular registration process.

3.0 ASSESSMENT OF STUDENT PERCEPTIONS

The UCF 21 Inventory of Student Services indicates that the University of Central Florida provides/supports more than 100 different services, processes, and products that are designed to enhance and support the student while at UCF (see Technical Report UCF 21-TR-98-003). These "services" span from activities, processes and products with the primary focus on academic issues (e.g., academic advising, registration, and library facilities) to "services" whose primary focus is on enhancing the student's campus life experience (e.g., clubs, health services, and counseling).

The systems analysis of student services requires a comprehensive and comparative understanding of the student perceptions about the value and the quality of student services. In order to determine student perceptions, the UCF 21 team conducted two assessments (Fall 1997 and Summer 1998) and also performed a comprehensive evaluation of the existing surveys and assessments that were conducted by various offices.

3.1 Findings of the Fall 1997 Registration Student Interviews

During the Fall 1997 Regular registration period, UCF 21 conducted interviews of students who were waiting in line for service at several offices (see Technical Report UCF 21-TR-97-003). The primary objective of the interviews was to examine students' satisfaction with registration and financial aid processes, as well as other student services at the University of Central Florida. A secondary objective was to "jump-start" the UCF 21 project by immersing its members in an initial data collection and analysis effort.

Students who had just completed regular Fall 1997 Regular registration were randomly selected from one of the following testing sites: 1) Cashier's Office; 2) Financial Aid Line; 3) Parking Services; 4) Student ID; and 5) Bookstore. Following the completion of every two surveys, a member of the UCF 21 team documented the time, number of servers and total number of students waiting in line. It should be noted that the survey does not constitute a statistical sample because it was performed opportunistically and the sample size is small. Consequently, the conclusions and observations are merely suggestive.

The surveys were conducted as structured interviews by UCF 21 team members. The questions addressed registration process issues and financial aid issues in addition to selected student services questions. The survey results suggest that students are dissatisfied with campus parking (note that this was prior to the opening of the new parking garage) and several information related issues with respect to financial aid and advising. Nearly one-fourth of the students had to make return visits to campus to complete registration. By college, Arts and Sciences students were dissatisfied with orientation (12%), Business Administration students were dissatisfied with registration, and both Engineering and Education students were dissatisfied with financial aid (16% and 12%, respectively). This preliminary study provided insight into the registration process and some associated problems, and was useful for identifying areas for further study.

3.2   An Inventory of Student Services Surveys Conducted at UCF

More than twenty of the University offices that are involved with student services have conducted surveys and assessments of their processes (see Technical Report UCF 21-TR-98-002). In order to gain an understanding of student satisfaction, data from 25 existing or planned surveys has initially been collected and examined. The surveys have been grouped into two categories: general satisfaction surveys and service specific satisfaction surveys. The surveys are summarized in Table 3. With the exception of the Cycles Survey, all surveys examined in this study were conducted between Fall 1996 and Fall 1997.

Technical Report UCF 21-TR-98-002 includes a brief description of each of the surveys in this inventory, followed by a short summary of survey results and access information. The degree to which survey results have been analyzed varies across different offices. Some offices have analyzed and summarized their results in a formal report, while others provided results informally or are still in the process of analyzing the results (see Table 1). It is clear that their is no consistent approach used across offices for conducting, analyzing, reporting, or utilizing the surveys.

3.3   An Evaluation of the Surveys Conducted at UCF

Following the inventory described in Section 3.2, a detailed evaluation of the various surveys was conducted and is described in Technical Report UCF 21-TR-98-011. A total of 25 surveys and assessments were evaluated with respect to the following factors:
- content and coverage,
- instrument design,
- survey administration,
- approach to analysis,
- validity and reliability,
- written report, and
- accessibility and dissemination of findings.

In aggregate, the recent surveys (1996 - 1997) suggested student dissatisfaction in the following general areas: parking, safety and security, financial aid, admission counselors, business hours, run around, orientation and registration, timeliness of information, Student Accounts, and Student Financial Assistance. In addition, there was an apparent lack of awareness of student services that are available. Note that this evaluation of the surveys is not intended to be an evaluation of the student services, but rather an evaluation of the reliability of the survey results. Specific actions by various offices to address some of these issues during the past year are not reviewed here, but would be reflected in an evaluation of the services.

The evaluation of the surveys found that most of the questions included in the surveys were too general to map back to specific processes. Generally, there were problems with the rating scales that were used, the length and number of the questions, and the use of space on the survey form. Frequently, small convenience samples were used that were non-representative, limiting the generalizability of the results. In most cases, demographics were not used in the analysis when collected as

part of the data. The reports, when written, were often informal and incomplete. There is little indication that the survey results have been used as the basis for seeking process improvements. The evaluation also revealed that the various offices experienced problems with the process of designing and conducting surveys, and analyzing and evaluating how to use the results.

Table 3: Summary of Student Satisfaction Surveys Conducted at UCF

TYPE OF SURVEY/ADMINISTERING OFFICE	STATUS		SAMPLE					RESULTS				DATE	FOLLOW-UP			
	Conducted	Planned	Representative	Convenience	Point of Service	Total Population	Unknown	Formal Report	Reported Informally	In Process	Not Available	Administration	Performed	In Process	Planned	None Planned
Cycles Survey	X		X					X				Spring: 1987-1996	X			
Personal Assessment of the College Environment	X					X		X*				Spring 1996		X		
Student Satisfaction Inventory (SSI)	X		X					X				Spring 1996	X			
SSI: Asian Pacific Islander	X					X		X				Summer 1996			X	
Academic Services for Student Athletes	X					X				X		Fall 1997			X	
Counseling and Testing Center	X					X			X		X	Fall 1997		X		
First-Year Advising and Information Services	X					X		X				Spring 1997				X
Housing and Residence Life	X					X		X				Fall 1997		X		
International Student Services		X										Spring 1998				
LEAD Scholars Program	X											Fall 1997				
Library, Computer Services & Telecommunications	X						X		X			Spring 1997		X		
Office of Student Activities (OSA)	X						X		X	X		Fall 1996, Spring 1997				X
Orientation Office	X			X				X				Summer 1997		X		
Recreational Services	X			X					X			Spring 1997		X		
Registrar's Office	X						X	X				Fall 1997		X		
Student Academic Resource Center (S.A.R.C)	X					X			X			Every Semester			X	
Student Accounts	X					X			X			Fall/Spring 1996		X		
Student Disability Services	X			X						X		Fall 1997				
Student Financial Assistance	X					X			X			Fall 1997				X
Student Health Services	X			X				X*				Spring 1997		X		
Student Information and Evening/ Weekend Student Services	X					X				X		Fall 1997				
Student Legal services	X					X			X			Case-by-Case		X		
Student Union		X										Spring 1998				
Undergraduate Admissions	X						X				X	Spring/Summer 1997		X		
University Honors Program	X					X		X		X		Fall 1997			X	
University Police	X						X		X			Fall 1997	X		X	
Veterans Affairs	X					X			X			Spring 1997				X

* indicates statistical analyses performed

3.4   Preliminary Results from a Summer 1998 Survey

As described in Section 5.4, one of the UCF 21 brochures was designed to inform students about UCF 21 and solicit their opinions about student services. The brochures were distributed on June 3-4, 1998 to passing students who stopped at a UCF 21 display table outside of the Student Union. The brochures/questionnaires were distributed with a pencil that was imprinted with UCF 21 contact information to permit

the students to complete the questionnaire and to have an easy reference to UCF 21 contact numbers.

A total of 111 surveys were returned. The detailed analysis of the responses is in process, but overall, 69% of the respondents indicated that they were satisfied to very satisfied with student services at UCF, and 31% were undecided to very unsatisfied. The preliminary results of this convenience sample are consistent with other survey results about satisfaction with services that UCF 21 has examined. The areas of dissatisfaction mentioned most frequently include the parking, financial aid office and phone lines, lack of information about student services, getting the run around, and lack of 24 hour service. It is intended that additional information be collected using these convenience samples as exploratory research to further identify opportunities for work during Phase 2.

4.0   INFORMATION FOR AND ABOUT STUDENTS

Accurate, consistent and timely information is essential for all students. The process of developing the inventory of student services indicated that there did not exist a common description of student services across the various UCF publications, that the published locations were sometimes incorrect, and that it was frequently difficult to obtain needed information. The inability of existing legacy information systems to provide timely and accurate information needed to ensure quality student services has been identified as a major source of frustration for staff. The UCF 21 efforts in this area were focused on identifying the various types of information and communication media that exist and that are necessary for the provision of student services. It was expected that this identification of information needs would provide insight with respect to the relationships (explicit and implicit) among various student services. There are no plans to address information issues further in Phase 2.

4.1   An Inventory and Evaluation of Information Systems at UCF

UCF 21 developed an inventory of the databases, information systems, and applications that are either used by students or are used to service students. Each element in this inventory is briefly described along with who has access and the manner in which it is accessed in Technical Report UCF 21-TR-98-004 (Rev. 1). The report identifies thirty-five known databases, electronic communication, and information systems that are used on a regular basis at UCF.

Only the student database is used universally throughout the campus. All other systems are "departmental" or specific to certain organizational divisions. This is important when considering the flow of information between and among divisions or departments. Although the student database is relied upon for common information needs, it is somewhat limited, and is dated. Its limited capabilities have, in part, contributed to the development of the large number of "departmental" systems. The age of the student database has also contributed to the costs of making changes and improvements, as well as a reluctance to invest in it further. Consequently, the student database is in the process of being replaced with a new PeopleSoft student information system that will use current technology.

The departmental systems are a mixture of purchased software packages and small database applications programmed by staff or student assistants. Most were intended for use only by the department despite occasional need for sharing with other departments. Typical sharing occurs through printed reports or "telephone inquiries" where the receiving department calls for specific facts from the department that manages the data. In most cases, this separation is appropriate given the cost of interfaces and the infrequent need for them. The divisional systems span several departments. For example the Schedule 25 system is used by all the colleges for scheduling classrooms. These systems are managed centrally by Computer Services.

The current information environment at UCF is complicated at best. Information about and for students is stored on many different computer machines and platforms. Platforms include mainframes, AS/400s, Unix servers, LAN file servers and individual

PCs.   Mainframes are located both at the Northwest Regional Data Center in Tallahassee and across the UCF Orlando campus.

Application software for maintaining databases is also quite varied.   Some mainframe applications are several years old, while other applications are new.   Many are purchased packages and others are custom developed.   Some development is managed by departments and programmed by student assistants.   The result of the application environment is a lack of data standards and lack of a common data language.   However, on the positive side, there is a centralized office for managing the data dictionary for the student database.

Almost everyone in business offices/departments has access to the student database.   The student database is the center of information flow throughout UCF's operations.   Departments which provide vertical services use the student database either directly or through an interface between their application software and the student database.

Most interfaces are downloads of subsets of the student database.   An example of a subset would include only enrolled students.   Processing of those student records occurs in the vertical system.   Some interfaces occur periodically: once each evening, or once per semester.   Others occur as needed.   Interfaces to share student data between systems are numerous.

UCF is taking positive steps to modernize and centralize student information through the PeopleSoft implementation project initiated in 1997 and planned through 1999.   The PeopleSoft system is a package that includes a set of databases and software modules that support a university setting such as UCF's.   Though it is an "off-the-shelf" package, the system allows for extensive customizations for specific UCF needs.   The student database will be replaced by the new system as will several other vertical systems currently in use.   The result will be integrated databases and modules that use a common data language.   However, the course of implementation will require more interfaces to be developed and maintained.   These interfaces will have to translate data between the old and the new.

Some departmental and divisional systems will continue to be used after the implementation of PeopleSoft is complete.   Some specialized functions are not part of the new package nor would one expect them to be.   UCF will continue to have difficulty in accessing departmental data from these vertical systems outside of the department that maintains them.   But the number of data access paths and the security needed to maintain them should decrease once the PeopleSoft implementation is completed.

4.2   An Evaluation of the Student Services Content of the UCF Website

The University Website is critical to providing information to students, faculty, alumni and prospects.   Anyone connected to the Internet may browse the UCF site and thus its reach is global.   The site is also used to communicate with students, advertise to prospects, and to publish to the community.   It is the most accessible link to the broadest possible audience.   Because the need for information about student services

has been identified as a pressing need, it was necessary to carefully evaluate the UCF Website with respect to its ability to provide that information.

In separate reports, UCF 21 has examined the accessibility and content of the various catalogs and has evaluated the non-electronic communication media. Technical Report UCF 21-TR-98-007 contains an evaluation of the ability of the University's World Wide Web presence through its primary web site and departmental websites to provide timely, accurate, and easily available information about student services at UCF. This evaluation involved a thorough examination of the capabilities of the existing UCF Website to find the desired student service information. For each of the 107 student services previously identified, a search was performed to find relevant information about the service. In each case, the search engine on the UCF Website was used as well as drilling down from the home page. Once the student service was found, it was evaluated for relevancy to students needing the service. Then it was also measured as to how easy or difficult it was to find the student service information and how recent and accurate the information was. An attempt was also made to check the usage (frequency) of the particular pages of the service.

It was found that in drilling down from the home page, the number of clicks required to find the appropriate service site varied depending on the approach used. When using the Website for the Undergraduate Catalog, six clicks were usually required Most of the other ways of getting to the service link, such as through the "campus map", "building list" or "UCF Department accounts with Home pages on Pegasus", required three or four clicks. When using the search engine, a maximum of one or two clicks was usually required as long as the correct name of the service or office was used (including the proper case). When the service could not be found easily by drilling down, the search engine proved a generally reliable means for finding the service for services with "known" names. The desired service was usually located within the top five hits returned by the search engine. Many of the capabilities of the UCF Website are obscure and require an element of discovery to make them usable. Departmental websites typically had recent updates. The UCF Website had some items that were several years out of date. The UCF Website has great potential for providing the required student service information. However, adjustments need to be made for case sensitivity and some capability for dealing with potential synonyms for the various services should be included.

4.3   An Inventory and Evaluation of Non-Electronic Communication Media

As part of the UCF 21 Project, there is a need to determine how and how well information (related to students) is being managed, communicated, and updated at UCF. Part of the systems analysis is to gain an understanding of all of the means of communication and information storage and retrieval used at the University. Technical Report UCF 21-TR-98-005 provides an inventory of the non-electronic communication media related to student services (e.g., brochures, information sheets, flyers) where each element in this inventory is briefly described, as well as who has access and how they are accessed. The report includes a description of the process used to collect the information and includes a broad overview on the various types of communication media. A total of 128 media pieces are included in the evaluation.

A gross level evaluation of the various types of media leads to the conclusion that there is no coordinated approach to the preparation and distribution of the various brochures and other non-electronic communication media. It is clear that most offices providing student services are interested in developing relevant non-electronic communications media, but differing budgets and capabilities yield very different results, ranging from professional to embarrassing. Copies of the relevant brochures, information sheets, and other non-electronic communication media are maintained in a separate file at the UCF 21 project office. Technical Report UCF 21-TR-98-013 (in progress) includes a detailed evaluation of these media. Each item is evaluated with respect to appearance, quality of paper and print, and organization.

4.4 An Evaluation of Other Major Information Sources at UCF

The comprehensive lists of student services and processes that were developed and reported in Technical Report UCF 21-TR-98-003 were compiled by reviewing a number of major information sources that are readily available to students. These information sources included:
- 1997-1998 Graduate Catalog
- 1997-1998 Undergraduate Catalog
- 1997-1998 Golden Rule
- Spring 1998 Schedule of Classes
- UCF Website
- Kiosks

Technical Report UCF 21-TR-98-010 describes the contents and provides a comparative analysis of the first four information sources with respect to their descriptions of student services and offices. A separate evaluation of the UCF Website was performed and is documented in Technical Report UCF 21-TR-98-007 (see Section 4.2). An evaluation of the Kiosks is given in Technical Report UCF 21 TR-98-008. The focus of these evaluations is not intended as a comprehensive evaluation of the information sources, but is only an evaluation of how well information about student services and offices is presented.

Each of the four major non-electronic information sources (from the 1997 calendar year) is briefly described in UCF 21-TR-98-010.. This is followed by a table displaying all student services providing an indication of how well (in terms of access information and description) the services are presented.   The evaluation identified major gaps and inconsistencies among the four sources. For example, there was no consistent academic calendar among the different sources. There was an obviously different "look and feel" about the different sources, with the only commonality being the Pegasus logo. There was little to give an impression that these documents were from the same university. This analysis also revealed that there were some student services that did not appear in any of the catalogs (some were found on the UCF Website only), and others that appeared nowhere. This search pointed to the obvious need for a central information repository about student services which is one of the major recommendations of the UCF 21 Phase 1 project.

5.0   COMMUNICATIONS INITIATIVES

5.1   UCF 21 Website

As part of the systems analysis, the UCF 21 Website serves as a means of communicating the purpose and progress of the UCF 21 project to the UCF community and the world, as well as prototyping web-based surveys and web-based student services. The UCF 21 Website was developed by taking into account the information needs of the systems and process analysts working on the UCF 21 project. Technical Report UCF 21-TR-98-006 describes the construction, development, contents, and future implementation of the UCF 21 Website.   The Website implementation encountered early difficulties due to the change in the IEMS web server. Because a major aspect of the site was to be able to provide easy access to UCF 21 reports, considerable effort was made in developing an effective means of doing so. Initially, all of the reports were being entered in an HTML format to be consistent with the IEMS Website. It was later determined that the work involved to modify existing reports with numerous tables and figures was excessive, and the decision was made to proceed with the Portable Document Format (PDF) requiring the use of Acrobat Reader. With that transition, the UCF 21 Website was fully functional at *http:ie.engr.ucf.edu/ucf21/* and has been linked through several locations in the UCF Website. Phase 2 will continue to maintain and to utilize the Website.

5.2   Evaluation of the Web for Conducting Surveys

It was anticipated that future survey work may include a significant web-based component. Various alternatives were examined for constructing web-based surveys. The major tool used in the development of the UCF 21 Website is Microsoft's *FrontPage 98*. That development software includes a structure for developing surveys with e-mail responses. A prototype was implemented on the existing UCF 21 Website that includes a provision for communicating with UCF 21 through an e-mail response using a designed form. The form includes the capability of identifying the individual's demographic characteristics and provision for including comments in a text box. However, those responses are not easily translatable into a database format. Technical Report UCF 21-TR-98-014 evaluates the capabilities and costs of two additional software packages: *TeleForm Internet Solution* developed by Cardiff Software, and *Omniform Internet Publisher* developed by Caere Software.   Both software packages 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. It is expected that some use of web-based surveys will be made in UCF 21 Phase 2 and that one of the more powerful software packages will be obtained.

5.3   A Prototype Web-based Information System on Student Services

UCF 21 developed a comprehensive identification of UCF student services (Technical Report UCF 21-TR-98-003). In addition, UCF 21 conducted a thorough examination of the UCF Website, particularly with respect to student services

(Technical Report UCF 21-TR-98-007). Because the need for information has been identified as a critical concern, UCF 21 examined the possibility of developing a web-based information system on student services. The concept is to use a friendly search engine, keying on selected student service descriptors, to link the student with the appropriate web page providing information about the desired service. The resulting prototype structure for an On-Line Student Services Search (OSSS) is described in Technical Report UCF 21-TR-98-015. Both a hierarchical structure and a keyword structure were considered. Because of the various interrelationships, it was determined that the keyword structure would be easier to implement and maintain. Appropriate keywords were developed for the 107 student services previously identified. Implementation of the prototype system was delayed because of software problems with the Website host computer. Several alternative schemes for conducting the search are also discussed. Conceptually simple, the implementation requires careful attention to the links. The implementation and usefulness of such a system depends critically on the existence of a single, accurate description of each student service. It was recently learned that the Center for Distributed Learning has advertised the availability of a similar system in the Fall, 1998 semester. The UCF 21 Phase 2 effort will share the UCF 21 prototype with the Center for Distributed Learning.

5.4   UCF 21 Public Relations

UCF 21 is an internal UCF project, and therefore, public relations is concerned with the internal customers: students and units providing student services. The public relations efforts were conducted on an individual basis by the UCF 21 team members as well as focused public relations activities by undergraduate student assistants in the communications program. Public relations activities were delayed pending establishment of office space and communications (telephone and fax, and ultimately a website domain name). Initial public relations efforts involved articles in the *UCF Report* announcing the project.

A UCF 21 fact sheet was used by team members to describe UCF 21 activities to various committees, groups and individuals with whom they would work. In addition, two brochures were developed that provided a general description of UCF 21 and served to solicit student input regarding student services. Copies of the brochures are included in Appendix A. The Student Services brochure was distributed, along with UCF 21 pencils, as part of a convenience sample to solicit student opinion during the Summer, 1998 semester. The results of that sampling are being processed. During this past year, there has been less interaction with students than initially anticipated. There were some surveys conducted by UCF 21, but the use of focus groups and wide use of the web to solicit student opinions did not take place. Rather, the primary focus on student perceptions involved examination of current surveys. That foundation will lead to broader survey activity involving students in the future. The public relations materials that have been developed will be useful during Phase 2 of the project. Among the administrative units, there is a general awareness of UCF 21. With that awareness however, there is not a clear understanding of the role of UCF 21. A number of individuals are not aware that it is structured as a research project and not as a functioning organizational unit.

The UCF 21 Website will continue to play a central role in project public relations. The central purpose of public relations in this project is to ensure that people understand its legitimacy and the value of participating and supporting the UCF 21 activities.

6.0   ADDITIONAL UCF 21 ACTIVITIES

In addition to the focused activities described above, UCF 21 team members were involved in a number of activities that involved working with other organizational units on various projects related to operational excellence and student services. These activities are summarized below.

6.1   Student Services Improvement Teams (SSIT)

During the 1996-97 academic year, the Provost convened a focus group to consider various areas involving student services that provided opportunities for a focused effort to improve the level of services. The focus group, led by Dr. Denise Young and facilitated by Dr. Janice Terrell, produced a long list of problem areas, of which seven were judged to be of very high importance and for which a multi-functional team could be effective. Of those seven areas, four were selected in Summer, 1997 for detailed study by separate "Student Services Improvement Teams" (SSIT). The four areas include 1) Holds, 2) Non-curricular Information, 3) Orientation, and 4) Academic Advising. During the 1997-98 academic year, the four teams were formed and the team leaders and facilitators were provided training by Quality Initiatives. The teams started meeting in the April, 1998 time frame and continue to meet on roughly a bi-weekly schedule.

Because much of the work that had been accomplished by UCF 21 would be relevant for most of the teams, and because UCF 21 had taken a systems focus that would be useful for the teams, it was determined that it would be beneficial for UCF 21 members to participate in the SSITs as resource persons. The SSITs are addressing problems that cross organizational lines, and in fact, the different SSIT topics are related. The UCF 21 participation provided an opportunity to ensure some cross-communication among the teams. Because there is no overall structure that requires communication among the team leaders, it turns out that the UCF 21 involvement has provided the only means for such communication. UCF 21 participation in the SSITs includes one faculty member and one graduate student on each team. Generally, both are present at all meetings, but class conflicts and occasional travel have resulted in only one representative at some meetings.

The underlying premise for the team process is confidentiality of the discussions within the team setting--a "safe zone." The various comments offered in this section are general in nature and primarily reflect on the UCF 21 contributions to the SSITs. In all teams, UCF 21 members function as resource persons rather than as active participants, although some teams encourage full participation, including voting.   It appears that teams that include a mixture of administrators and staff seem to have more difficulty in addressing the issues than those that are composed primarily of staff. In some instances, a few team members tend to dominate the discussions. Within at least one team, the expectation has been surfaced that nothing will be done with the team recommendations. In all cases, UCF 21 members have been advocating for a sound analysis based on data that will support any recommendations.

6.1.1   Student Holds. The Holds SSIT is functioning well. A firm objective has been identified and team members are actively attempting to identify all possible sources of

holds and additional needs for holds. The focus is on accurately describing the current system. It appears that some of the reasons for holds have been for matters of control, and it is possible that the PeopleSoft system will provide the required administrative capability. In a separate survey, UCF 21 is attempting to identify holds and will provide that feedback to the SSIT. A critical issue raised here is notifying the students about the holds when they are imposed and what the consequences are if the problem is not resolved. This issue is of interest and concern for the Non-curricular Information SSIT as well.

6.1.2   Non-curricular Information.   The Non-curricular Information SSIT has had a more difficult time in establishing its objective and focus, but is now clearly focused and functioning well. One concern that had been expressed early on was that many of the information areas involved functions controlled by the Student Government rather than the administration, and therefore, there was little leverage for implementing the team recommendations. Information is acknowledged among all of the teams as a critical issue. UCF 21 members worked with the team leader to assist in developing an appropriate direction for the team focus. The focus of the team is currently on improving student information from the admissions process through the registration process. This team has had a recent change in the team leader.

6.1.3   Orientation. The Orientation SSIT has had a slower start than the other teams. UCF 21 missed one of the scheduled meetings because of mis-communication about the meeting location. The reorganization within Student Affairs has also had an effect on the SSIT's opportunity to coalesce. The meetings have not been as regular and the latest meeting was replaced by a "paper" meeting where each SSIT member is clearly specifying his/her responsibilities with respect to orientation. Additionally, scheduling of summer meetings is hampered by the continuing orientation sessions that are being offered.

6.1.4   Academic Advising. The Academic Advising SSIT was the last team to get started, and it is now meeting regularly, subject to members' availability. Difficulties the team face include defining what academic advising is and identifying the various forms that academic advising may take. Many symptoms of academic advising problems have been discussed, and many solutions have been suggested. The team is now using a focused approach to identify the specific nature of the academic advising problem(s).

6.2   Student Satisfaction Inventory (SSI)

For approximately ten years, the university conducted a "Cycles" survey to assess overall student satisfaction with various elements in UCF life. Two years ago, a different survey was conducted that used the generic Student Satisfaction Inventory (SSI).   This instrument also sought importance evaluations as well as satisfaction evaluations.   For the current (1997-1998) academic year, there was interest in conducting another broad based survey. Quality Initiatives, Academic Development and Retention, Student Affairs, and Institutional Research and Planning collaborated to develop the plans for such a survey. The UCF 21 faculty members also participated in the planning for this effort, and UCF 21 team members assisted in the execution. In particular, UCF 21 members suggested combining the best parts of the UCF Cycles

survey and the SSI. The SSI had the advantage of incorporating both satisfaction and importance scales, while the Cycles survey addressed important local issues not included in the SSI. This led to the inclusion of ten specialized questions on the SSI as well as a supplemental questionnaire. Approximately 4,000 questionnaires were distributed mid-semester during the Spring 1998 semester. The computer analysis of the responses is in process. It is expected that UCF 21 will be involved in additional analysis of these data during Phase 2.

6.3   Leading Edge Administration Project (LEAP)

The Leading Edge Administration Project (LEAP) was developed to implement the PeopleSoft (year 2000 compliant) software system for student information and UCF human resources. After the project became active in the Fall 1997 semester, UCF 21 leaders met with LEAP leaders to discuss areas of mutual interest and support. Following that meeting, UCF 21 provided LEAP with a listing of all of the information systems that had been identified at UCF as supporting student services (see Technical Report UCF 21 TR-98-004). The "fit" sessions conducted by LEAP with the various user groups were not attended by UCF 21. Our understanding of the purpose of the fit sessions was to identify the information requirements for the different functions, rather than to try to reengineer existing processes. It is expected that the PeopleSoft system will facilitate reengineering those processes in the future. UCF 21 analysts have maintained contact with the LEAP analysts during this period. It was expected that the system would be fully functional near the beginning of Phase 2 of UCF 21, but that is unlikely. It is expected, however, that UCF 21 will be able to acquire more detailed PeopleSoft knowledge that will facilitate the process analyses in UCF 21 Phase 2.

6.4   Participation in University Committees

The UCF 21 Project Director presented initial results from the project to the committee examining alternative organizational structures for Student Affairs. The presentation provided a valuable opportunity to obtain additional insight into perceptions about the role of student affairs offices, primarily that of being in second place behind academic services. Dr. Pet-Edwards provided the committee with some suggestions for focusing their efforts in a way that would lead to a meaningful recommendation for an organizational structure that would ensure adequate integration of student "affairs." (See Appendix B) That meeting provided additional insight that the term "student services" had an exclusive academic connotation. It also led to a revision of terminology used by UCF 21 (academic services and non-academic services) to one that changed the "non-" terminology to campus life-enhancing services. It is interesting to note that the resulting organizational structure that was adopted strongly resembles the overall structure suggested by UCF 21.

The UCF 21 Project Director was also assigned to an Operational Excellence Cross-Functional Team for implementing the UCF Strategic Plan. To that effort, she brought a matrix-based analysis of the relationships among the various university activities and the elements of operational excellence, and drafted the introduction to the plan. This required developing a clear understanding of where operational excellence was implicitly addressed in the strategic plans well as identifying those administrative areas with appropriate responsibility.

6.5   LEAD Scholars

The UCF 21 Project applied to the LEAD Scholars program for one or more students in the Fall, 1997 semester. A sophomore business administration student was assigned to the project. Initially, given office administration responsibilities, he was given more analytical and computer based responsibilities and contributed significantly to several of the tasks. Normally a one semester assignment, he was assigned to the project for the Spring, 1998 semester because of his enthusiasm and excellent performance.

6.6   Office Management

The UCF 21 Project was provided space by the Department of Industrial Engineering and Management Systems in the Research Pavilion (Rooms 425, 426, 427, and 439). Desks and other furniture beyond that which was available in the existing offices were obtained from surplus property. Excess IEMS computers were upgraded and some new systems were acquired, along with appropriate software.

Six graduate students (2 Ph.D. and 4 M.S.) were employed as systems analysts and process analysts. All of the graduate students were enrolled in IEMS programs, but they brought a variety of backgrounds (e.g., psychology, hospitality management, mathematics, civil engineering, simulation). None of the students had a traditional industrial engineering background. In addition to the LEAD Scholar, two undergraduate students were also employed, one in public relations, and one as a computer assistant

Because the different analysts were working on different parts of the larger student services system, they would frequently have a need to contact the same office. It was critical that the analysts have an awareness of what others were doing. Weekly staff meetings were conducted throughout the project to provide both a deadline for work completion and to ensure that there would be a timely exchange of current status among those working on related tasks.   A comprehensive contact matrix was developed to indicate who was being contacted in each administrative or academic unit and which UCF 21 member made that contact. This allowed an individual to call a contact and refer to the previous contact with another team member, and provide a clear indication that this was a coordinated effort.

Because the students were required to interact with various administrative units, one of the criteria used in their selection was the ability to communicate in addition to having good analytic capability. As indicated above, none of the students had a traditional industrial engineering background. Therefore, it was necessary to work closely with the students to develop the analytic skills necessary for process analyses. Additional work was required in developing computer skills, web-based skills, and data analysis skills. The result has been a valuable learning experience for the students involved as well as the development of valuable results for UCF. Four of the graduate students will be continuing with the project in Phase 2.

6.7   Publications and Conference Proceedings

The management strategy of continuous documentation was applied to UCF 21. Guidelines for a Technical Report Series were developed to provide for both paper and electronic documentation of the work efforts and results. The technical reports provided a focus for the student analysts and gave them a clear expectation. The UCF 21 faculty members reviewed the student work and assisted the students in revising the reports as appropriate.

One technical report (Technical Report UCF 21-TR-98-001) was presented at the 7th Industrial Engineering Research Conference in May, 1998 and was included in the proceedings. The particular session (Reengineering) was well attended and there was significant interest in the process being used at UCF to examine student services. The remaining technical reports are detailed descriptions of the various activities and the findings and recommendations. The completed and in process reports are summarized in Table 4. Abstracts for all of the technical reports are included in Appendix C. All of the technical reports will be submitted to the UCF Library for archival purposes. All technical reports are available on the UCF 21 Website (http://ie.engr.ucf.edu/ucf21/) as a downloadable MS Word document or readable as a Portable Document Format (PDF) file using Acrobat Reader (also downloadable from the UCF 21 Website).

6.8   Finance and Accounting IE Senior Design Project

The UCF 21 Phase 1 proposal indicated that an IE Senior Design Project Team would be given the opportunity to work on a student services related project. Because of a restructuring of the senior design project experience, it was necessary for the students to select a project before UCF 21 had identified a suitable student service project. The resulting project assigned to the Senior Design Team involved improved processing of vouchers in Finance and Accounting in order to ensure achievement of compliance goals. One UCF 21 faculty member served as the Engineering Mentor for this three student team, working closely with the team and F&A to identify problem areas and develop solutions. The student team developed a number of recommendations, some of which were adopted by the Controller and others of which have formed the basis for further study. While this is clearly a worthwhile educational experience, the time commitment of a UCF 21 faculty member is not commensurate with the expected benefits even if the students had been working on a student services project. It is more beneficial to commit that time to direction of students employed by the project.

7.0   CONCLUSIONS AND RECOMMENDATIONS

In examining student services at UCF from a top-down or systems perspective, UCF 21 identified several common problems that are pervasive. These were apparent when we attempted to identify student services, identify who was responsible for particular student services, and identify who was capable of improving the delivery of student services. The two problems are best characterized as:

- a lack of consistent and accurate information about student services, and
- inadequate resources to study and make improvements to existing processes.

7.1   Student Services Information Capability

7.1.1   Student Services Information Findings

The various Technical Reports reviewed above used numerous sources to attempt to identify and evaluate student services. We found that the different sources were often incomplete and occasionally had conflicting information about student services. When we used that information as a description and sent it back to offices for verification of accuracy, the descriptions were often modified when returned to us. From this experience, it is clear that there is a need for a mechanism to create and maintain current descriptions and other relevant information regarding student services. This conclusion was confirmed by numerous staff and student comments as well.

The lack of standardized descriptions of student services contributes to misunderstandings about what services are actually available and how they are obtained. Both staff and students are not aware of many of the services that exist and in which they are interested. Updating of information is an important problem. For example, the timing of the telephone directory to appear in the Spring using the previous summer telephone numbers creates an instant information gap. There is no single, definitive source of information where a student's question can be answered. Finding the "expert" who knows the answer is difficult. The result is that the students feel that they are "getting the run-around."

In addition to information accuracy and timeliness, another issue that has been raised involves how information is made available to students, and whether students actually receive complete information to support their academic and campus life enhancing activities. Two of the SSIT teams (Non-curricular information, and Academic Advising) are specifically examining how information is provided to students and other interested parties.   Because this latter problem is being addressed and recommendations are expected to be forthcoming from the SSITs, UCF 21 will only recommend a means of addressing the first problem.

Table 4: UCF 21 Phase 1 Technical Reports

Report Number	Title
UCF 21 TR-97-001	Guidelines for the UCF 21 Technical Report Series
UCF 21 TR-97-002	The Student Database and Its Relationship to Student Services
UCF 21 TR-97-003	Fall 1997 Registration: Summary of Student Interviews
UCF 21 TR-97-004	Student Registration Analysis: Fall 1997
UCF 21 TR-98-001	Integrating Reengineering and TQM to Achieve Operational Excellence in Student Services
UCF 21 TR-98-002	An Inventory of Student Satisfaction Surveys Conducted at UCF's Main Campus
UCF 21 TR-98-003	An Inventory of Student Services and Processes at UCF
UCF 21 TR-98-004	An Inventory of Information Systems at UCF
UCF 21 TR-98-005	An Inventory of Non-electronic Communication Media at UCF
UCF 21 TR-98-006	The UCF 21 Website Construction, Development and Implementation
UCF 21 TR-98-007	Evaluation of the UCF Website
UCF 21 TR-98-008	An Analysis of Kiosks at UCF
UCF 21 TR-98-009	Documentation of the Relationships among Student Services
UCF 21 TR-98-010	An Analysis of Major Non-Electronic Information Sources at UCF
UCF 21 TR-98-011	An Evaluation of Student Satisfaction Surveys and Recommendations
UCF 21 TR-98-012	An Analysis of Student Services and Recommendations
UCF 21 TR-98-013	An Evaluation of Non-electronic Communication Media at UCF
UCF 21 TR-98-014	The Potential Use of the Web for Conducting Surveys
UCF 21 TR-98-015	The Potential Use of the Web for On-Line Searching
UCF 21 TR-98-016	Final Report UCF 21 Phase 1

7.1.2   Student Services Information Directory (SSID) Recommendation

In order to ensure accurate and timely student services information, it is recommended that UCF establish a *student services information directory (SSID)* that shall serve as a central repository for all student service information. The SSID shall be the sole source of student services information that is used in all publications (paper and electronic). The SSID shall be maintained by a specialized staff headed by a Student Services Information Director. The Director shall establish procedures for collecting student services information from responsible offices and maintaining its accuracy. The Director shall establish appropriate mechanisms for disseminating student services information to interested parties. In describing student services, the SSID shall contain both summary descriptions and detailed descriptions of the various student services. The Director shall establish guidelines for content and appearance of the various media to be used and shall create a desired "look and feel" that will establish a professional image. Additionally, the Director shall establish guidelines for the distribution and accessibility of student services information.

Organizationally, the SSID Director should report to the Vice-President for Student Development and Enrollment Services. The SSID Director will necessarily need to maintain close liaison with the UCF Webmaster and with the Office of Public Relations to ensure a consistent "look and feel" of both the internal and external information media.

7.2   Process Improvement Capability

7.2.1   Student Services Process Findings

The numerous studies, interviews, observations, and analysis of surveys have resulted in some important findings related to student services processes. Although the student "run-around" may initially be caused by incorrect or incomplete information, a significant portion is caused by the physical location of many services. Some of the main service departments are housed in trailers at rather distant locations. Not only are visits to multiple locations required, but there is a lack of clear signage and little prior information about campus changes (e.g., bookstore location, road closures). In working with the offices, it appears that there is a resource imbalance with some offices understaffed and other overstaffed (at least with respect to other offices). Incompatible information systems and flows result in other problems for students. The frequent use of holds and lack of receipt of notification about some holds is a problem that is being addressed by the Holds SSIT.

In addition to uncovering a number of problems, UCF 21 has found that a number of student services providers have found ways to improve the quality of their service and expand their client base. For example, recent parking improvements are reducing parking complaints on the west side of the campus. The Cashier's Office has extended office hours on some work days to provide better access for working students. Housing and Residential Life has introduced electronic-key entry to provide greater security. The Financial Aid Office has significantly improved their consultation space to improve privacy.

With few exceptions, UCF 21 found the staff responsible for student services to be highly motivated to provide timely and supportive service to the students. They have expressed frustration at their inability to modify various procedures or to have the time necessary to study the processes in detail and investigate alternative ways of performing the functions. Frequently, the staff are unaware of other alternatives that could facilitate their work. Although Quality Initiatives can provide substantial training that will empower individuals to improve processes, we have observed that the press of daily business usually takes precedence. Even with the ongoing SSITs, the normal job responsibilities of the team members limit their opportunities to work on the problems outside of the designated meeting times. The team process when the team is not a full-time entity easily loses momentum and tends to greatly extend the work period. In order to assign individuals as full time team members, other resources need to be provided in order to cover the essential responsibilities.

The existing UCF infrastructure does not include a "doing capability" for activities related to process improvement. This includes not only process analysis, but also survey design and analysis. The UCF 21 evaluation of recent surveys revealed

minimal analysis of the survey responses by the offices conducting the surveys due to a lack of time and ability to conduct more detailed analyses. It is clear that there is a need for establishing a doing capability to assist student service providers in assessing the need for and adequacy of student services, and for examining alternative ways of providing needed student services.

7.2.2   Operational Excellence and Assessment Office Recommendation

UCF 21 recommends the eventual establishment of an "Operational Excellence and Assessment (OEA) Office." This office would have three primary functions:
1. Training of individuals in assessment methods and methods for achieving operational excellence through process improvement or reengineering,
2. Providing information and direct assistance to individuals and units for conducting assessments and surveys, and
3. Providing direct assistance to individuals and units for conducting process improvement and reengineering analyses.

At the present time, Quality Initiatives provides some of the training specified in function 1. In addition, Institutional Research and Planning Support provides some of the information specified in function 2. The remainder of function 2 and all of function 3 represent the "doing capability" that is currently lacking.

Prior to establishing such an office, it is recommended that UCF conduct a *demonstration project* to establish the viability of the concept of having an external group provide that doing capability by working with process owners to identify means of process improvements. Two approaches were considered. The first is to continue UCF 21 as a research project at a slightly reduced level from Phase 1 to build on the student services knowledge base and select several process areas and assessment areas for detailed work. The second approach includes a heavier involvement to conduct those process analyses and assessments in addition to establishing a prototype office that could easily transition to the OEA Office. Because the latter approach had a higher cost and included activities that could be distracting with respect to the actual analyses, a proposal was submitted for the first approach. The detailed Project Proposal/Work Statement for Phase 2 is included in Appendix D.

The Project Proposal/Work Statement identifies the particular work tasks that are anticipated in the demonstration project. The elements of the "doing capability" that are provided by UCF 21 are illustrated in the following capability requirements lists.

The capabilities required for process analysis and systems analysis include:
- document and measure processes
- document facility layout
- optimize (process or facility layout)
- reengineer (eliminate process through use of technology)
- evaluate options (costs/benefits)
- prepare detailed designs and specifications
- implement solutions and follow up
- model processes
- develop simulations

- conduct work measurement and sampling
- prepare implementation plans (scheduling)

The required capabilities for survey analysis and assessment include:
- design, administer, and analyze surveys
- prepare reports and distribute results
- assist with follow up and evaluate impact
- conduct interviews
- apply appropriate statistical analyses

The primary recommendation is the establishment of the OEA Office. The UCF 21 Phase 2 proposal includes an evaluation of the effectiveness of the "doing capability" that will influence the speed with which an OEA Office would be created. Note that the recommended proposed OEA Office and the SSID have been restricted to student services, consistent with the focus of UCF 21. It is likely that such structures would be useful for other academic and administrative functions as well. The evaluation of both recommendations should include an assessment of their extension to all areas of university life.

APPENDIX A

STUDENT AFFAIRS EXPLORATION COMMITTEE HANDOUT

<u>Overall goals for UCF 21</u>: assess importance, satisfaction, and performance of current student services; identify improvement opportunities; recommend changes or areas for more in-depth analysis; and develop implementation plans.

<u>UCF 21 Linkages with other related efforts</u>:
1. SSI Survey Team (Quality Initiatives)
2. Student Services Improvement Teams (academic advising, non-curricular information, student holds, orientation)
3. New student data base—People Soft Implementation
4. Evaluation of UCF Web Site
5. Student Affairs Exploration Committee

<u>Our Approach</u>
Establish Baseline (where are we today?)
Establish Future Scenario (where would be like to be in the future?)
Determine Constraints (what impediments are there?)
Establish Goals (how do we get there?)

<u>Three views to establish the baseline</u>:
What is the perception of students?
  importance and satisfaction levels with respect to student services
What services (processes, activities, and products) are there?
  how and how well do we deliver them?
What information sources/systems are there?
  how and how well is information managed, communicated, and updated?

<u>Context and Scope</u>:

<u>Definition</u>: Students services includes all activities, processes, and products (excluding classroom instruction) provided/supported by UCF that are related to a successful student experience at UCF. The term "services" includes both student life enhancing services and instructional services.

<u>Must consider all types of students</u>
  Undergraduate vs. Graduate
  Part-time vs. Full-time
  Working vs. Non-working
  Day-time vs. Evening
  Single parents, single, married
  Source of student (high school, community college, other universities, several

years of work experience)
International vs. US
Multicultural
Distance Learning
Degree seeking vs. Non-degree seeking

Must consider all "campuses"
UCF main Campus
UCF branch Campuses
UCF distance learning (FEEDS)
Continuing Education and Off-Campus Programs

Must consider all stages of student academic experience
Pre-admission
Newly Admitted (transfer, first-time student, first-time UCF)
Enrolling into courses
Taking courses
Graduating
After graduating

Questions: For each type of student, campus location, and stage within the student's academic experience…..

What activities, processes, and products lead to a successful UCF experience?
What activities, processes, and products does UCF currently provide and what is missing?
How does UCF currently provide the activities, processes, and products?
How well does UCF provide these activities, processes, and products?
What are the opportunities for improving student services?

General types of opportunities
1. develop new activities, processes, and products
2. improve existing student services
3. improve approaches to managing (facilitating, monitoring and controlling) student services

Charge to the Student Affairs Exploration Committee: Title of the head of the Division of Student Affairs (reporting structure remains the same) and the "scope" of the Division of Student Affairs. [Level and scope of responsibility—not the detailed structure]

Overall Goals of Student Services "Model": 1. To develop an innovative, responsive, and comprehensive student affairs program that is integrated with other elements of the campus. 2. To provide the "best" administrative structure (model) that will help to facilitate, monitor, and control the delivery of services to all types of students at UCF and branch campuses at the lowest cost to UCF.

Considerations:
Cost differences
Control differences
Reporting differences
Responsiveness
Comprehensiveness
Integration with other entities
Perception of status of position by students
Perception of status of position by faculty and staff
"Fit" with UCF model

Some questions to address
1. What is the current model?
2. What are the problems/issues with the current model?
3. What is good about the current model?
4. How can one measure the quality of various student affairs models?
5. What are the alternative models
6. What are the costs and benefits of each model to UCF?
7. Which alternative will best achieve the goals?

How can UCF 21 help?
1. Draft of organization charts (not validated)
2. Inventory of all types of student services (purpose and access)
3. Inventory of satisfaction surveys

APPENDIX B

UCF 21 BROCHURES

APPENDIX C

ABSTRACTS OF UCF 21 PHASE 1 TECHNICAL REPORTS

UCF 21-TR-97-001
GUIDELINES FOR THE UCF 21 TECHNICAL REPORT SERIES
Julia Pet-Edwards
Robert L. Armacost
September 25, 1997

ABSTRACT

This Technical Report provides the basic guidance for the establishment and operation of a Technical Report series within the UCF 21 Operational Excellence Initiative. The purpose of this series is to provide a means for documenting research results developed by UCF 21 faculty and students and to facilitate the dissemination of those results. This paper provides guidance on the format to be followed in preparing technical reports in this series and describes the responsibilities of the authors and the series editor.

UCF 21-TR-97-002
THE STUDENT DATABASE AND ITS RELATIONSHIP TO STUDENT SERVICES
Linda Trocine
Julia Pet-Edwards
October 8, 1997

ABSTRACT

This Technical Report is part of a systems analysis of information systems at UCF. A preliminary summary of the current student database and its relationship to student services is provided. Three views of the student database are presented: information flows, functions, and static information. This report indicates how the database supports student services and also how the organization uses the information contained in the student database. Future reports will examine how and how well information (related to student services) is being managed, communicated, and updated at UCF in order to identify areas for improvement.

UCF 21-TR-97-003
FALL 1997 REGISTRATION: SUMMARY OF STUDENT INTERVIEWS
Susan Lanham and Carolyn Pace
Julia Pet-Edwards
& the UCF 21 PROJECT TEAM
October 1997

ABSTRACT

This Technical Report summarizes the results of structured interviews that were conducted by the UCF 21 project team during the Fall 1997 registration period (August 19-20). The primary objective of the study was to examine students' satisfaction with registration and financial aid processes, as well as other student services at the University of Central Florida. A secondary objective was to "jump-start" the UCF 21 project by immersing its members in an initial data collection and analysis effort.

Students who had just undergone Regular Fall 1997 registration were randomly selected from one of the following testing sites: 1) Cashier's Office; 2) Financial Aid Line; 3) Parking Services; 4) Student ID; and 5) Bookstore. Following the completion of every two surveys, a member of the UCF 21 team documented the time, number of servers and total number of students waiting in line. Because the survey was performed opportunistically, the sample size is small and it does not constitute a statistical sample. Consequently, the conclusions and observations are merely suggestive. The survey results suggest that students are dissatisfied with campus parking and several information related issues. It is recommended that additional studies be performed at the UCF main campus and satellite campuses, during various registration time intervals, and during evening hours in order to gain a more accurate representation of student concerns and the degree of importance of various student services.

UCF 21-TR-97-004
STUDENT REGISTRATION ANALYSIS: FALL, 1997
Mitra Eriksson and Peder Hägglund
Charles H. Reilly
& the UCF 21 PROJECT TEAM
October 31, 1997

ABSTRACT

This Technical Report presents the results of an observation of the student registration process during the Fall 1997 Regular walk-by registration. Observations of the processes in the five colleges are reported. In addition, follow on meetings with the persons responsible for the registration provided clarification. The registration process flow and office layouts are illustrated. Similarities and differences among the several colleges are described.

UCF 21-TR-98-001
INTEGRATING REENGINEERING AND TQM TO ACHIEVE OPERATIONAL
EXCELLENCE IN STUDENT SERVICES
Robert L. Armacost
Julia Pet-Edwards
Charles H. Reilly
Gary E. Whitehouse
February 16, 1998

ABSTRACT

Total Quality Management has been institutionalized in many universities to improve academic processes and student services. Such efforts typically involve process owners at a lower levels of organizations and focus on continuous improvement. What is sometimes missing is a systems focus that asks not only how well we are doing it, but also why are we doing it? This systems approach provides an opportunity to reengineer critical processes and achieve breakthroughs in performance. This paper develops an approach for integrating reengineering and TQM efforts that is applied at the University of Central Florida to achieve operational excellence in student services.

UCF 21-TR-98-002
AN INVENTORY OF STUDENT SATISFACTION SURVEYS CONDUCTED AT UCF'S
MAIN CAMPUS
Susan Lanham
Carolyn Pace
Julia Pet-Edwards
March 1998

ABSTRACT

This Technical Report is part of a systems analysis to examine the importance and satisfaction levels of students with respect to student services at the University of Central Florida. In order to gain an understanding of student satisfaction, data from existing surveys has initially been collected and examined. This technical report provides an inventory of twenty-five student satisfaction surveys that have been conducted throughout the UCF campus and several that are currently being planned. The surveys have been grouped into two categories: general satisfaction surveys and service specific satisfaction surveys. A brief description is provided for each of the surveys in this inventory, followed by a short summary of survey results and access information. The summary to this report briefly indicates the current state of student satisfaction surveys.

A future report will contain an evaluation of the results of these existing surveys summarizing what we know and don't know about the importances and student satisfaction levels with respect to each of the services. This report will also evaluate the designs of the survey instruments, the approaches used to administer the surveys,

the methods used to analyze the results, and the manner in which the findings were documented.

UCF 21-TR-98-003
AN INVENTORY OF STUDENT SERVICES AND PROCESSES AT UCF
Peder Hägglund
Mitra Eriksson
Charles Reilly
Julia Pet-Edwards
March 1998

ABSTRACT

This Technical Report is part of a systems analysis of how well student service functions are being performed at the University of Central Florida. In order to obtain a broad perspective of student service processes at UCF, a comprehensive list of over 100 student-related services and processes has been compiled. This report provides an inventory of the various student services and processes. Each of the services in the inventory is briefly described and additional information concerning access is provided. Future reports will contain a formal analysis of the interrelationships among, usage of, and functions of these services.

UCF 21-TR-98-004 (Rev. 1)
AN INVENTORY OF INFORMATION SYSTEMS
Linda Trocine
June 1998

ABSTRACT

This Technical Report is part of a systems analysis of student services at UCF. Providing comprehensive, accurate, and timely information about and for students is an important service that UCF supports. This report provides an inventory of the databases, information systems, and applications that are either used by students or are used to service students. Each element in this inventory is briefly described along with who has access and the manner in which it is accessed. Future reports will examine the relationships among the databases as well as how and how well information (related to students) is being managed, communicated, and updated at UCF in order to identify areas for improvement.

UCF 21-TR-98-005
AN INVENTORY OF NON-ELECTRONIC COMMUNICATION MEDIA AT UCF
Catherine Baltunis
Julia Pet-Edwards
June 1998

ABSTRACT

This Technical Report is part of a systems analysis of non-electronic communication media at UCF as they relate to student services. As part of the UCF 21 Project, there is a need to determine how and how well information (related to students) is being managed, communicated, and updated at UCF. Part of the systems analysis is to gain an understanding of all of the means of communication and information storage and retrieval used at the University. This report provides an inventory of the non-electronic communication media related to student services where each element in this inventory is briefly described and as well as who has access and how they are accessed. The report includes a description of the process used to collect the information and includes a broad overview on the various types of communication media. A gross level evaluation of the various types of media leads to the conclusion that there is no coordinated approach to the preparation and distribution of the various brochures and other non-electronic communication media. It is clear that most offices providing student services are interested in developing relevant non-electronic communications media, but differing budgets and capabilities yield very different results, ranging from professional to embarrassing. Copies of the relevant brochures, information sheets, and other non-electronic communication media are maintained in a separate file at the UCF 21 project office. A follow-on study will provide a detailed evaluation of these media.

UCF 21-TR-98-006
THE UCF 21 WEBSITE CONSTRUCTION, DEVELOPMENT AND IMPLEMENTATION
Bartricia Williams
Julia Pet-Edwards
Robert L. Armacost
March, 1998

ABSTRACT

This Technical Report is part of a systems analysis of student services at UCF called the University's Customer Focus for the 21st Century (UCF 21). As part of the systems analysis, the UCF 21 website serves as a means of communicating the purpose and progress of the UCF 21 project to the UCF community and the world, as well as prototyping web-based surveys and web-based student services. The UCF 21 website was developed by taking into account the information needs of the systems and process analysts working on the UCF 21 project. This technical report describes the construction, development, contents, and future implementation of the UCF 21 website. Future reports will show how the UCF 21 website has progressed with respect to providing timely feedback from and to the UCF community about the activities of the UCF 21 project.

UCF 21-TR-98-007
EVALUATION OF THE UCF WEBSITE
Peder Hägglund
Mitra Eriksson
Julia Pet-Edwards
June 1998

ABSTRACT

This Technical Report is part of a systems analysis of student services at the University of Central Florida. The UCF 21 project team earlier identified over 100 student services provided by the University. Students and interested parties obtain information about these services through a variety of communication media. In separate reports, UCF 21 has examined the accessibility and content of the various catalogs and has evaluated the non-electronic communication media. This report is an evaluation of the ability of the University's World Wide Web presence through its primary web site and departmental websites to provide timely, accurate, and easily available information about student services at UCF. The UCF Website is evaluated as follows. For each of the 107 student services previously identified, a search was performed to find relevant information about the service. In each case, the search engine on the UCF Website was used as well as drilling down from the home page. The report is organized by student service heading. Once the student service was found, it was evaluated for relevancy to students needing the service Then it was also measured as to how easy or difficult it was to find the student service information and how recent and accurate the information was. An attempt was also made to check the usage (frequency) of the particular pages of the service.

It was found that drilling down usually resulted in finding the appropriate site in six clicks or less. When the service could not be found easily by drilling down, the search engine proved a generally reliable means for finding the service. The desired service was usually located within the top five hits returned by the search engine provided that the correct name of the student service is known. Many of the capabilities of the UCF Website are obscure and require an element of discovery to make them usable. Departmental websites typically had recent updates. The UCF Website had some items that were several years out of date. The UCF Website has great potential for providing the required student service information.

UCF 21-TR-98-008
AN ANALYSIS OF KIOSKS AT UCF
Lucas Henderson
Julia Pet-Edwards
June 1998

ABSTRACT

This Technical Report is part of a systems analysis to examine the importance and satisfaction levels of students with respect to student services at the University of Central Florida. An important information service at UCF is the set of Kiosks that are located across the UCF main campus and branch campuses. This technical report presents an analysis of the accessibility, content, and usage of the Kiosks.

UCF maintains fourteen Kiosks primarily located within buildings on the UCF campus. The analysis indicates that while the Kiosks provide students with useful information, there are some potential problems regarding the recency of the information as well as operational maintenance of the Kiosks.

UCF 21-TR-98-009
INTERRELATIONSHIPS AMONG STUDENT SERVICES AND PROCESSES AT UCF
Mitra Eriksson
Peder Hägglund
Julia Pet-Edwards
June 1998

ABSTRACT

This Technical Report is part of a systems analysis of student service functions performed at the University of Central Florida. This report provides an organizational view of student services and processes. In order to better understand the interrelationships among the services, each organizational unit that supports students was identified. The role of each of these organizational units is briefly described, followed by a summary of the services provided, access information, a list of the type of users of the services provided, the databases that support the unit, surveys that have been performed, location of the office, and reference to an organizational chart found in the Appendix to this report. A future report will evaluate the organization of the student services and provide recommendations concerning location and access.
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UCF 21-TR-98-010
AN ANALYSIS OF MAJOR NON-ELECTRONIC INFORMATION SOURCES AT UCF
Julia Pet-Edwards
Peder Hagglund
June 1998

ABSTRACT

This Technical Report is part of a systems analysis of student services at the University of Central Florida. As part of the study to develop a comprehensive list of student services offered at UCF (see UCF-21-TR-98-003) several major non-electronic information sources were consulted: the Undergraduate Catalog, the Graduate Catalog, the Golden Rule, and the Schedule of Classes. This report contains an evaluation of these sources in terms of content, accessibility, and reliability of information related to student services. The focus of these evaluations is not intended as a comprehensive evaluation of the non-electronic information sources, but is only an evaluation of how well information about student services and offices is presented. Each of the four major non-electronic information sources is briefly described in the report and its contents are summarized. This is followed by a table displaying all student services providing an indication of how well (in terms of access information and description) the services are presented.

The evaluation identified major gaps and inconsistencies among the four sources. For example, there was no consistent academic calendar among the different sources. There was an obviously different "look and feel" about the different sources, with the only commonality being the Pegasus logo. There was little to give an impression that these documents were from the same university. This analysis also revealed that there were some student services that did not appear in any of the catalogs (some were found on the UCF Website only), and others that appeared nowhere. This search pointed to the obvious need for a central information depository about student services.

UCF 21-TR-98-011
AN EVALUATION OF STUDENT SATISFACTION SURVEYS AND RECOMMENDATIONS
Susan Lanham
Carolyn Pace
Julia Pet-Edwards
June 1998

ABSTRACT

This Technical Report is part of a systems analysis to examine the importance and satisfaction levels of students with respect to student services at the University of Central Florida. In order to gain an understanding of student satisfaction, data from existing surveys has initially been collected and examined. This technical report includes a detailed evaluation of the 25 surveys and assessments that were described in Technical Report UCF 21-TR-98-002. The surveys and assessments were evaluated

with respect to the following factors: content and coverage, instrument design, survey administration, approach to analysis, validity and reliability, written report, and accessibility and dissemination of findings.

The evaluation found that most of the questions included in the surveys were too general to map back to specific processes. Generally, there were problems with the rating scales that were used, the length and number of the questions, and the use of space on the survey form. Frequently, small convenience samples were used that were non-representative, limiting the generalizability of the results. In most cases, demographics were not used in the analysis when collected as part of the data. The reports, when attempted, were often informal and incomplete. There is little indication that the survey results have been used as the basis for seeking process improvements. The evaluation also revealed that the various offices experienced problems with the process of conducting, analyzing, and using the results.

UCF 21-TR-98-012 (in progress)
AN ANALYSIS OF STUDENT SERVICES AND RECOMMENDATIONS
Peder Hägglund
Mitra Eriksson
Amy Touchstone
Julia Pet-Edwards
September 1998

ABSTRACT

This Technical Report is part of a systems analysis of student service functions performed at the University of Central Florida. This report gives an organizational view of student services and processes and the resources required to provide the services. The report compiles data from a student service worksheet that seeks to identify the size of the student population currently served, the size of the potential student population, confirmation of the scope and description of the student service, resources used to provide the services, resource excess or shortfall, and perceived opportunities for process improvement. The results of this administrative "survey" will provide insight with regard to potential specific effort in Phase 2 of this project.

UCF 21-TR-98-013
AN EVALUATION OF NON-ELECTRONIC COMMUNICATION MEDIA AT UCF
Catherine Baltunis
Julia Pet-Edwards
June 1998

ABSTRACT

This Technical Report is part of a systems analysis of non-electronic communication media at UCF as they relate to student services. Technical Report UCF 21-TR-98-005 developed an inventory of the non-electronic communication media related to student services that included 128 media pieces. Each of those items was

briefly described and the accessibility assessed. This report evaluates each of those media pieces with respect to appearance, quality of paper, print quality, and organization. This evaluation clearly documents the divergence of approaches that currently exist in describing student services.

UCF 21-TR-98-014
THE POTENTIAL USE OF THE WEB FOR CONDUCTING SURVEYS
Bartricia Williams
Robert L. Armacost
Julia Pet-Edwards
June, 1998

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 sends 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 Publisher* 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.

UCF 21-TR-98-015
THE POTENTIAL USE OF THE WEB FOR ON-LINE SEARCHING
Bartricia Williams
Julia Pet-Edwards
Robert L. Armacost
June, 1998

ABSTRACT

This Technical Report evaluates the potential use of the UCF 21 Website for conducting on-line searches for student service information. A prototype structure for an On-Line Student Services Search (OSSS) was developed. Both a hierarchical structure and a keyword structure were considered. Because of the various interrelationships, it was determined that the keyword structure would be easier to implement and maintain. Appropriate keywords were developed for the 107 student services previously identified. Implementation of the prototype system was delayed because of software problems with the website host computer. Several alternative schemes for conducting the search are also discussed.

APPENDIX D

PROJECT PROPOSAL/WORK STATEMENT FOR UCF 21 PHASE 2

P R OJE CT P R OP OS A L
June 3, 1998

UCF 21 OPERATIONAL EXCELLENCE INITIATIVE: IMPROVING STUDENT SERVICES

Phase 2: Process and Survey Analysis

Department of Industrial Engineering and Management Systems
PI: Dr. Julia Pet-Edwards
Co-PI: Dr. Robert L. Armacost
Co-PI: Dr. Charles H. Reilly

1.0   INTRODUCTION

The UCF Strategic Plan, *Charting the Course 1996-2001*, identified "achieve operational excellence" as one of the four strategic directions for the university. The plan emphasized that the University of Central Florida continues to experience rapid growth and a significant annual increase in the number of students to be served on campus. Various surveys and other indicators indicate that satisfaction with student services has not kept pace with satisfaction with academic services. During the 1997-1998 Academic Year, the Provost established a research project titled "UCF 21--University's Customer Focus for the 21st Century" as part of the President's Operational Excellence Initiative to establish the broader systems view of student services. The primary goals of the first year of the UCF 21 project were to:

- develop a systems level view of student services and their interactions by documenting all critical student service processes and their interrelationships;
- identify systems level improvement opportunities, including reengineering;
- recommend changes and/or in-depth studies; and
- develop implementation plans for changes and /or in-depth studies.

This proposal addresses the next phase of the UCF 21 project, where more in-depth studies would be conducted and recommendations would be evaluated, implemented, and tracked.

The UCF 21 Project is directed by a faculty member from the Industrial Engineering and Management Systems Department and currently consists of a team of 3 faculty, 6 graduate students, and 3 undergraduate students. The UCF 21 team's focus during phase 1 was in three specific areas: (a) student perceptions, (b) student information,

and (c) student services. The student perceptions area involved identifying the importance and satisfaction levels of students with respect to student services. The student information focus area involved determining the accuracy and timeliness of information provided to students and about students. The University of Central Florida provides and supports over 100 different significant products, activities, and processes that enhance the students' educational experience. A major thrust of the phase 1 UCF 21 effort was to determine the activities, processes, and products that lead to a successful UCF experience, develop an inventory of the services that UCF currently provides, and determine what is missing.

In addition to the UCF 21 project, the UCF administration has initiated two other efforts involving the implementation of new information technologies and the establishment of focused Student Service Improvement Teams that are assisting in addressing student service concerns. The Leading Edge Administration Project (LEAP) was established to provide the leadership and mechanism for the implementation of new information technologies using the PeopleSoft software system. With this system, there is a need to "fit" existing processes to the system, at least in terms of information requirements. Cross-functional teams are used in these fit sessions to identify the essential information required for their respective processes. SSIT teams have been established in four areas: Non-Curricular Information, Orientation, Academic Advising, and Student Holds. These areas cross different organizational functions. The teams are being led by key individuals in each of the areas and facilitated by the Quality Initiatives office.

The UCF 21 project team is performing an integrative function among the major projects. The assessment of information needs and relationships by UCF 21 is being used by LEAP in its fit analyses. In addition, the LEAP analyses are providing information to UCF 21 regarding the relationships among the various information systems and requirements. The initial fit analyses require individuals to assess their current processes. The several SSIT teams include members from the UCF 21 project who are functioning primarily as observers, but are also providing technical guidance for process examination. The two-way communication among the projects and the frequent interaction with various administrative personnel provides an opportunity for user "buy-in" regarding process change. This approach combines the advantage of a top-down approach while heavily involving the user and process owner. It is expected that this will lead to greater ownership of the outcomes.

At the conclusion of Phase 1 of the UCF 21 project, a wealth of information has been compiled regarding student services at UCF. The top-down view has identified 107 distinct student services as described in the various catalogs, guides, and the UCF WebSite. Importantly, organizational and some functional relationships among these student services including an estimate of the customer population have been identified. The information systems used and requirements necessary to support these services have been identified, providing further insight into the relationships among the various services. Various methods to assess student satisfaction have been identified and evaluated. A critical review of the numerous surveys that have been administered, and the analysis and use of the responses has been documented as well.

The principal finding of the work to date is the *critical need for accurate and timely information about student services* and the execution of student service transactions.

With few exceptions, personnel involved in student service functions are highly motivated and are working hard to provide quality service within the limits of available resources. However, there are several areas where there is an indicated need for assistance:

- *Information*—There is an urgent need for an "Information Czar" or equivalent function that will serve as a central repository of current information about particular student services. This repository should be the point of information to be used by all UCF elements.

- *Process Analysis Capability*—Although student-service personnel are constantly trying to improve their operation, they are often too close to the action to see alternative methods of providing that service. Frequently, many of those methods are technology dependent, and the offices generally do not have sufficient resources to both operate the current system and simultaneously study ways to improve it. The PeopleSoft implementation (through the LEAP project) provides an opportunity and perhaps a requirement for reengineering processes that deliver student services. Student-service personnel are in need of assistance to accomplish these types of analyses.

- *Survey and Assessment Capability*—The UCF 21 inventory and evaluation of student surveys and assessments indicated that most were undertaken in association with the recent SACS evaluation. There is great variance in the design, administration and analysis of the surveys, and most appear to have had little effect on student service operations. The various offices strongly indicated a need for assistance in developing and analyzing these satisfaction surveys.

The above results provide a basis for extending the UCF 21 project or establishing regular permanent positions to provide the indicated capabilities. This proposal addresses the former alternative.

2.0   OBJECTIVE

The objective of the Operational Excellence Initiative is to define student services, identify systems level opportunities for improving the delivery of student services including the possibility of reengineering the student services system, recommend changes, and develop appropriate implementation plans to effect those changes. It was expected that this initiative would be a multi-year effort. This proposal addresses the effort for the 1998-1999 Academic Year (Phase 2). The Phase 1 objective was to clearly and comprehensively define and identify student services, review all previous assessments of student services and conduct additional assessments as necessary, identify and document all critical student services processes and their interrelationships, and develop an implementation plan for conducting detailed analyses of critical student service areas in order to develop improved processes in Phase 2.

Two different potential project scopes are envisioned for Phase 2. The first (and larger scope effort) would be to develop a prototype office capable of performing ("doing") surveys and systems and process analyses in order to facilitate a smooth transition to a permanent function at UCF. The objectives of the Phase 2 effort would be to develop a prototype office and the analytical capability to effectively establish a "doing capability" for process and systems analysis and survey and assessment design and analysis. A secondary objective for this Phase 2 effort would be to establish a marketing capability to make the analysis function attractive to potential users and to deliver products that provide value. In addition, the operation of this prototype office by UCF 21 should lead to a smooth transition for a permanent office supporting the Provost.

The second (and more moderate scope effort) would be to select several offices and processes; and assist in developing surveys and process improvements. This effort would involve fewer projects than the prototype scope effort and would not include establishing the marketing capability or the office functionality.

The UCF 21 Phase 2 effort (at either level) would continue to focus on student services. Successful implementation could be followed by extension to all administrative services as well. This proposal addresses the second project, continuing the UCF 21 Project Team to conduct selected process analyses. The premise for the Process and Survey Analysis project is that the existing UCF 21 project team has a good working knowledge of many student service areas and can be effective in conducting much needed process improvement analyses. The major effort will be directed toward these analyses with no significant requirement to develop an integrated prototype office. The success of the Process and Survey Analysis effort will form a basis for establishing the student-services "doing" capability on a permanent basis.

3.0   STATEMENT OF WORK: Process and Survey Analysis Project

The purpose of this one year follow-on effort is to take advantage of the accumulated knowledge of the UCF 21 Project Team to address critical issues with respect to a doing capability for student-services Process Analysis and Survey Analysis. The primary focus of this effort would be to assist selected student-services offices across UCF to analyze, model, and assess their current delivery of services, identify areas for improvement, implement the changes, and measure the outcomes. The underlying goals are to measurably improve services for students and do so at a minimal cost. While the goal for Phase 2 is to focus only on student services, this research effort could easily be extended to other administrative functions as well as well as a smooth transition to a permanent office. The UCF 21 Project Team will continue to function in IEMS research office space in the Research Pavilion using the resources acquired in Phase 1 of the project and continuing the employment of existing graduate students.

The following task structure provides the means to accomplish the Phase 2 objectives.

3.1   Establish liaisons with Student Services and with other related offices.

Work closely with Tom Huddleston to identify primary focus areas. Solicit input from Quality Initiatives (Jan Terrell), university assessment (Denise Young), Institutional

Research (Dan Coleman), LEAP (Joel Hartman), and others (Ken Lawson and Larry Rumbough) to develop a strategy for selecting processes and obtaining user participation. It is expected that these individuals will serve in an advisory capacity in helping to select appropriate areas for analysis.

3.2   Project communications.

The UCF 21 Project Team will function as internal consultants with respect to student-services processes. UCF 21 must solicit potential customers and must also visibly demonstrate the value of its work. As a starting point, the results from UCF 21 phase 1 can be used to demonstrate value. The capability must be marketed to targeted customers (offices).

> 3.2-1 Disseminate UCF 21 Phase I findings.
> 3.2-2 Use results from Phase I Survey and Assessment review to establish targeted marketing plan.
> 3.2-3 Develop mechanisms for effective communication with and about the UCF 21 Project office.

3.3   Process and systems analysis functions.

A primary goal of the UCF 21 phase 2 project is to integrate process analysis capability with knowledge of current critical student services needs to provide workable process reengineering solutions. This function will free the service providers and administrators from the burden of analyzing their processes (this would also free them from having to learn how to analyze and model their processes); but also to ensure that they are involved throughout the solution process. Potential users of the process analysis capability include specific process owners of various student services as well as administrators who are considering system level changes (e.g., changes in organization or policy). As a starting point, one systems-level study (customer—Tom Huddleston) would be initiated examining the organization and location of student services, and several process improvement projects would be proposed to other potential customers.

> 3.3-1 Examine organization and location of student services. Develop relationships among various student services. Develop alternative organizational structures that could affect delivery. Identify those services that have maximal interaction and can be located where more "appropriate."
> 3.3-2 Identify potential candidate services for process improvement based on student perceptions, anecdotes, and other appropriate means. Develop "proposals" to relevant process owners.
> 3.3-3 Evaluate candidate processes in light of PeopleSoft capability and reengineer processes in cooperation with LEAP and the process owners.
> 3.3-4 Select several projects for work based on need and likelihood of success.

3.4   Survey, assessment, and analysis functions.

A second primary goal of the UCF 21 phase 2 project is to integrate survey, assessment, and analysis capabilities with knowledge about critical student satisfaction and importance information needs to provide meaningful information for service

improvement. UCF 21 will solicit service providers who would like assistance in developing or improving their assessment and survey instruments, critique existing instruments and the processes used to administer the instruments, develop new instruments, help administer the instruments, perform data analysis and reports, and work with offices to help them identify areas for improvement. The potential customers include administrators, offices, and departments that are required to perform assessments for accreditation purposes and that are interested in assessing the importance and satisfaction levels associated with their services. As a starting point, the UCF 21 team will evaluate how current survey results can be used and what information is missing. This will also involve additional analyses of existing data and a comprehensive examination of the SSI questionnaire results. This initial analysis will identify areas requiring additional surveys and proposals will be sent to potential customers.

3.4-1   Summarize and integrate current information needs for assessment and evaluation of student services. Identify how that information can be used by process owners and the administration.

3.4-2   Develop a corporate picture of student perception. Use results of current surveys to develop a corporate picture of all student services in terms of importance and satisfaction.

3.4-3   Identify existing surveys that have not been fully analyzed and conduct relevant analysis.

3.4-4   Perform a comprehensive analysis and examination of SSI (98) results.

3.4-5   Identify areas of need for additional survey, evaluation, and assessment developing the link between performance measurement and process improvement needs. Develop "proposals" to relevant offices. Select candidate services for providing assistance and work with process owners to develop, administer, and analyze appropriate instruments.

3.4-6   Select several survey development, improvement, and analysis projects based on greatest need.

3.5   Permanent Operational Effectiveness and Analysis (OEA) office.

Evaluate the effectiveness of the UCF 21 project activities. Determine whether a permanent OEA office should be established. Develop a preliminary plan for a permanent OEA office based on experience with UCF 21 project.

3.6   Information and coordination.

The phase 2 UCF 21 project will continue to act as a resource for other improvement activities that are in progress or may be initiated during the next year. Current activities include the SSITs and LEAP.

3.6-1   Continue to serve as resource for LEAP and the SSITs and serve as an information bridge among the SSIT teams.

3.6-2   Work with "Information Czar" (if implemented) to improve accuracy and availability of information regarding student services.

3.7   Administration.

The phase 2 UCF 21 project will also perform regular administrative functions including documenting procedures for process and survey analysis, preparing reports on projects conducted, and preparing reports to the Provost and President.

4.0   PROJECT SCHEDULE AND DELIVERABLES

4.1   Deliverables

1. Bi-monthly progress reviews for the President, Provost, and appropriate departments.
2. Report on student services "organization" (October).
3. Corporate picture on student assessment (September)
4. Reports on process analysis projects (September-June)
5. Reports on survey and assessment projects (October-June)
6. Evaluation of UCF 21 project results and permanent office decision (May)
7. Preliminary implementation plan and final report (June)

4.2   Project Schedule

	1st Quarter July 1 - Sept 30	2nd Quarter Oct 1 - Dec 31	3rd Quarter Jan. 1 - Mar 31	4th Quarter Apr 1 - June 30
Task 3.1	███████			
Task 3.2-1	█████			
Task 3.2-2	███	██		
Task 3.2-3		████████	████████	████████
Task 3.3-1	██████			
Task 3.3-2		███████		
Task 3.3-3		█████		
Task 3.3-4	█	████████	████████	████████
Task 3.4-1	████			
Task 3.4-2	███			
Task 3.4-3	██			
Task 3.4-4		███		
Task 3.4-5		█████		
Task 3.4-6			████████	████████
Task 3.5-1				████████
Task 3.6-1	████████	████████	████████	████████
Task 3.6-2		████	████████	████████
Task 3.7	█	████████	████████	████████

5.0   PROJECT PERSONNEL

The success of Phase 2 of the UCF-21 Operational Excellence Initiative will require the joint efforts of UCF faculty, staff, and students, as well as outside experts whose specialized skills are invaluable to the successful implementation of new processes and systems. The effort will be led by a faculty Director; additional faculty whose expertise is pertinent to the systems or processes under review will also be involved in the effort, as will graduate and undergraduate student assistants. The Principal Investigator/Director is Dr. Julia Pet-Edwards. Co-PIs for the project include Dr. Robert L. Armacost and Dr. Charles H. Reilly. All three have significant administrative experience and have conducted systems analyses for various organizations. Together, they have 39 years of academic experience. All three are effective communicators and are able to work with individuals in a non-threatening manner.