Final Report
of the

Infostructure
Task Force

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UNIVERSITY OF
FLORIDA

Institute of Food and Agricultural Sciences

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Where there is no vision, the people perish ...

Proverbs 29:18

Executive Summary

Charge and Activities

Vice President Davidson convened the Infostructure Task Force in April 1996 to "evaluate the current function and organizational structure of UF/IFAS information management, hardware and software support, and training needs and how they should be structured to lead us into the 21st century." We were asked to focus on "administrative, extension, teaching and research needs for both management functions and information for our internal and external clientele."

Over the course of 14 months, the task force surveyed teaching, research and extension faculty, as well as unit technical and administrative personnel. We read and discussed relevant white papers, investigated existing units and resources, studied practices and policies at similar institutions, consulted with private sector specialists, and deliberated at length and in depth on specific problem areas through focused subcommittees.

Analysis and Trends

We learned that UF/IFAS already allocates substantial resources to information technology (IT). This includes five core units with a combined annual operating budget of over $880,000 and more than 60 FTEs. There are approximately 50 high-level technicians assigned to academic units, and a hardware base of nearly 3,500 microcomputers and 78 minicomputer or server-class systems.

Yet in spite of these resources, survey results indicated a low level of overall customer satisfaction. We found that support and facilities were rated adequate by only 23% of extension, 62% of research and 36% of teaching personnel. Individual comments centered on outdated equipment, poor Internet connectivity, and lack of training and support. Compounding these problems is an environment characterized by rapidly evolving and increasingly complex computer and communication technologies, erosion of traditional funding sources with inappropriate budget paradigms, increasing stakeholder expectations, and the inertia of legacy systems and solutions. Furthermore, the core units have historically operated independently of one another. As a result, a shared vision for IT is lacking, as is coordination in the acquisition, deployment and management of related resources.

The task force analyzed infrastructural needs under a variety of scenarios, explored realistic and viable alternatives for leveraging our current resources, and identified areas where additional efforts and resources would have the greatest positive impact.

Recommendations

The task force prepared recommendations in response to these needs. Most obviously, UF/IFAS must: develop a hardware replacement and software upgrade program; increase the number of statewide support personnel; enhance the effectiveness of existing personnel; explore and implement viable technological alternatives so that all systems are connected to the Internet; and implement focused training programs to raise the skill levels of faculty and staff to a base standard. We offer specific recommendations that span across accountability, administration, extension, research and teaching.

But beyond the surface of such day-to-day needs lie philosophical issues that are less easily approached. Recent developments resulting from the marriage of computer and communication technologies have triggered profound changes in the way that organizations produce, store, maintain, deliver and even *value* information. These developments have affected private and public enterprises and are having a global effect that many analysts consider a major driving force in social change.

The major contribution of this task force lies not with the perfunctory recommendations that couple straightforward solutions to everyday needs, but rather with the creation of a new, mission-driven model for information technology, one that is inspired by the emerging paradigm of an information-based society. Predicated on the notion that information technology is a tool in service to the larger UF/IFAS mission, this model describes an infrastructure that is service-oriented, efficient in its use of dwindling resources, and sufficiently flexible to meet the challenges and seize the opportunities that evolving technologies will always present.

Through a balanced distributed/centralized approach, this model places IT resources and personnel in close partnership with the users that technology serves, and shares with them the responsibility for policy, planning and needs assessment. At the same time, it employs central coordination to manage resources, to provide coherent direction, and to maintain unit responsiveness. Appropriate accountability mechanisms are built into the model, which provides 9 logical components that enhance and supercede our current IT service units, policy and management structures:

- **Policy and Acceptance Review** (VP/Deans)
- **Long Range Planning and Needs Assessment** (Information Technology Policy/Advisory Committee)
- **Customer Service** (Customer Relations, Help Desk and Documentation)
- **Local Support** (Unit-Level Computer Support Personnel)
- **Training and Learning** (Computer Training and Teaching Labs)
- **Information Management** (Software and Applications Development)
- **Transport Pathways and System-wide Linkage** (Hardware, Operating Systems and Connectivity)
- **Publications Review, Packaging, Sales and Delivery** (Educational Media and Services)
- **Coordination and Leadership** (Director of Information Technologies)

Envisioned Benefits and Outlook

The proposed model stresses the need for a system-wide perspective when assessing priorities, developing policy, creating strategies and formulating plans. It encourages the involvement of different UF/IFAS constituents in the development of strategies and implementations of information and communication technology, and builds mechanisms for accountability, change and innovation into the system itself. In so doing, our model sidesteps the split thinking, split energies and split attentions that have kept us from realizing our fullest potential in the past, both individually and as an institute collectively.

As an institute, we must avoid the tendency to become seduced by the bedazzling technologies themselves. The true infrastructures most needed to support our institute's information and knowledge based activities into the 21st century will be primarily financial, social and strategical – not technical. The *real* infrastructural imperative is to create the underlying processes that can produce the standards, methodologies, and governance mechanisms to manage an ever-changing technological landscape. Financially, we must manage information technology so as to maximize the return on investment across our entire IT portfolio. Socially, we must cooperate, coordinate and converse. And strategically, we must focus on technological implementations that support the entire enterprise, build effective synergies, and eliminate redundancy.

Introduction

Definitions and Terminology
Information Technology

Up until about 10 years ago, nearly all of data and information processing could be summed up in a single word: computers. Today this term has given way to the broader descriptor *information technology* (or "IT" for short) which has become a generally accepted umbrella term that you will not yet find in the dictionary. It refers to a rapidly expanding range of services, methods, techniques, applications, equipment and electronic technologies used for the collection, manipulation, processing, classification, storage and retrieval of recordable information and knowledge. At this time, this includes (but is not limited to) computers, software, CD-ROM, networks, telecommunications, databases, multimedia and training, the Internet and its World Wide Web, Geographic Information Systems (GIS), Computer Aided Design (CAD), online services, video conferencing, Executive Information Systems (EIS), electronic mail, and expert systems.

Infostructure

The term "infostructure" is a portmanteau word that t combines "information technology" with "infrastructure".   It was coined to acknowledge the importance of analyzing information technologies in concert with the institutional structures needed to obtain, utilize, apply and sustain them.

Why This Task Force?

No comprehensive review of computer and communication capabilities, structures or needs of UF/IFAS has been made since the 1970's. Since then various technologies have become powerful tools for the production and delivery of data, information, and knowledge.

Vice President Davidson convened the Infostructure Task Force in April of 1996 with representation from diverse functional and administrative elements of the institute (Appendices A and B). Dr. Davidson noted that "various organizations and functions have evolved within UF/IFAS and that the status quo will not serve us well into the 21st century." He directed that the task force "evaluate the current function and organizational structure of UF/IFAS information management, hardware and software support, and training needs and how they should be structured to lead us into the 21st century." Furthermore, the task force was instructed to "focus on ... administrative, extension, teaching and research needs for both management functions and information for our internal and external clientele."

The interpretation of the charge by the Infostructure Task Force included the development of a model for information technology that supports the mission of UF/IFAS. The model presented later on is one that is geared towards satisfying the needs of internal and external constituents throughout a spectrum of short, medium and long term scenarios.

The situation that the institute currently faces in attempting to leverage its existing information technology resources to best advantage can be described as a very difficult challenge. The present environment is characterized by five principal dynamics:

- Rapid evolution of computer and communication technologies with a trend towards increasing levels of complexity.
- Shrinkage of traditional funding source.
- No appropriate budgetary alternatives.
- Increasing stakeholder expectations.
- Inertia of legacy systems, methodologies and applications.

These factors notwithstanding, there is an underlying need to somehow integrate planning for information resources (computers and communications) with UF/IFAS institute-level planning. In other words, we must achieve a high level of integration of the technology with programmatic efforts in accountability, administration, research, teaching and extension.

An infrastructure capable of serving us well in the 21st century must be one that is flexible and responsive, with a clear appreciation for the diversity and variability found throughout UF/IFAS. It must allow for the coordination of programmatic complexity in an effective manner.

We must not lose sight of the fact that the primary purpose of IT activity in UF/IFAS is to enable the design, development, management and continual improvement of information-related methodologies and functions in support of teaching, research and extension. This supporting role is filled in service both to UF/IFAS as a whole and to the institute's diverse family of stakeholders.

A Vision for Information Technology in UF/IFAS

Teaching

We envision a system that prepares individuals to use information technology in the exercise of their profession. We envision a system in which teaching is strongly supported by information technologies to improve the learning experience of students and facilitate teaching. We envision a system in which new forms of education emerge, unconstrained by current formal structures and perceptions of education.

Research

We envision a system that provides high levels of computational power for research purposes, allows fast access to information, and enables dynamic interdisciplinary communication among peers. We envision a research program in information technologies that results in applied tools and techniques for the implementation of information delivery systems addressing UF/IFAS constituents' needs.

Extension

We envision a system that delivers knowledge through electronic means, without spatial or temporal constraints. We envision a system that allows dynamic interdisciplinary communications between and among UF/IFAS extension faculty, extension constituents, and peers within and beyond the institution. We envision a system that facilitates long term planning and the production of knowledge deliverables.

Administration

We envision a system that continually improves UF/IFAS's ability to fulfill its mission by locating funding, obtaining funding, managing resources and developing partnerships with the public and private sectors. We envision a system that enhances the institute's competitive edge in the recruitment of superior faculty, students and staff. We envision a system that provides effective, timely and accurate decision support without placing an undue burden upon those who must report information.

The key to increasing our effectiveness rather than merely increasing our efficiency will lie in our ability to access, refine, utilize and disseminate the collective experiences of everyone in the institute. We envision an infrastructure that will learn how to document and pass on "tacit knowledge" – best practices for solving specific problems – and will make these electronically available to others in the organization.

Accountability

We envision a system that facilitates the accountability process through tools that minimize faculty and staff effort while maximizing access to quality information for stakeholders. We envision integrating accountability activities more fully into broad programmatic and management processes in teaching, research and extension.

What This Report Contains

This report consists of two main sections with supporting appendices. The first section assesses and analyzes our needs and provides recommendations for dealing with these needs. It describes the current perception of problems, identifies those that are the most pressing, and discusses how they should best be addressed. Addressing these problems and issues was prerequisite to designing an "infostructure" that employs IT in support of the UF/IFAS mission.

The second section proposes a model for reorganization of IT within UF/IFAS that responds to the critical needs identified by the analysis. It describes in detail our model for reorganization of IT resources that we believe will position UF/IFAS to improve its effectiveness and efficiency, while enabling the institute to exploit the opportunities presented by rapidly evolving technologies.

Appendices A through K contain supporting documentation and data, primarily the results of surveys and studies conducted by the Task Force.

Assessment of Needs and Recommendations for Action

Teaching

Assessment of Teaching Needs

The goal of the teaching subcommittee was to evaluate "infostructure" needs pertaining to the use of computers in various modes of instruction, including individualized computer aided instruction, teaching laboratories, classroom lecture aids and distance education (Appendix D). An emphasis was placed on identifying ways to encourage teachers to develop and use courseware as part of their instructional activities.

Computer aided instructional (CAI) technology has been promising major impacts and educational reforms since the 1970's. Yet in the 1990's the vast majority of courses are still taught through traditional classroom lectures using printed textbooks and blackboards. The most recent additions to CAI technologies have been multimedia classrooms and distance education. These promise (and have already demonstrated) an increased level of activity in adopting new instructional technologies. Yet, much work remains ahead.

UF/IFAS has been involved in CAI since some initial work was done in 1979 on interactive courseware design. The Entomology Department under the direction of John Strayer experimented with the PLATO computing network, and several titles were developed. Since then, UF/IFAS has made instructional technologies a top priority, and has built several large computer teaching laboratories and multimedia production facilities.

Most of the instructors who are using computers augment their lectures by using multimedia to go the next step beyond their overhead transparencies. Using presentation software such as Power Point, lecturers can present their materials using computer graphics, animation, sound, and video. Many instructors (Food and Resource Economics) use utilities such as spreadsheets and commercial software packages to present demonstrations to their students. A few instructors have taken on the more difficult task of developing interactive multimedia (Don Hall in Entomology) and electronic texts delivered via CD-ROM (Mary Collins, Soil Science). Internet-based delivery is rapidly emerging through courses such as bee keeping (Thomas Stanford, Entomology) and water management (Fedro Zazueta, Agricultural and Biological Engineering).

Computers are used in counseling and advising roles. This has led to a "universal" tracking system. Various databases are used for ongoing policy analysis related to budget, state funding, formula funding and communications with the Provost's office.

Impediments to further development largely include the cost and time involved in development of high quality instructional programs. Educating instructors in the available

technology and providing support services can encourage adopting new instructional technologies.

Currently, computers in teaching are receiving substantial attention in UF/IFAS. Several committees are in place conducting analyses and making recommendations on this issue. Committees include the UF/IFAS Teaching Committee, the Distance Education Task Force, and the Technology Assisted Graduate Education Committee.

Of major needs identified for teaching, the top priority was training faculty on the use of software tools for courseware development. In general, faculty need to be educated on teaching technologies through a variety of formats such as workshops, conferences and short courses. It is also important to evaluate teaching methodologies in relationship to the use of new teaching technologies. The task force identified two levels of activities, an "entry level" in which instructors move traditional teaching technologies (overhead transparencies) to new technologies (presentation software), and a "high-end" approach that utilizes new, experimental approaches to interactive instruction. Standards and guidelines are needed for developing comprehensive databases of instructional materials that also address accountability needs.

Recommendations for Teaching

- Provide training to promote an "entry-level" approach and on-going professional development to applying computer technology to teaching at the level of "lecture aids" and "Internet-based training". This would be comprised primarily of using presentation software (e.g. PowerPoint) and World Wide Web (HTML-based) information delivery (hypermedia). The tools for doing this are widely available. What is needed is training and support for instructors to assist in adapting their course materials to an electronic format.

- Pursue a "high-end" approach that explores state-of-the art, leading edge applications in interactive computer aided instruction. We must begin not with promoting technology for its own sake, but by asking what makes for effective teaching programs and how can technology supplement the process. Since this is beyond the scope and budget of individual instructors, it is recommended that a core team of professionals be assembled including experts in education as well as technical experts in media production and software development. This team will work directly with subject specialists to develop experimental educational programs, evaluate their effectiveness, and encourage technology transfer and utilization.

- Enhance and support efforts for extramural funding in teaching using IT.

- Establish standards and guidelines for developing courseware and establish a database of reusable course materials that can be shared among instructors. While experimentation and diversity are to be encouraged, too much courseware is developed in incompatible formats. Because of the expense of developing quality materials, standards are needed to improve reusability and promote longevity of these materials.

- Examine ways in which accountability and evaluation of teaching programs can be enhanced through the use of information technologies. Using a common database format for teaching resources will have additional utility in promoting accountability and facilitating the evaluation of teaching programs.

Research
Assessment of Research Needs

Research faculty need information technologies primarily for data analysis and collaboration with internal and external colleagues, in addition to the usual word processing, graphics, and database management applications.

Evolving technologies have brought about the promise of cross-platform distributed databases, which have spawned the development of data warehousing technologies that make it possible to place UF/IFAS research data into a fully catalogued and archived source. Access to this warehouse, combined with powerful analysis tools, would enhance researchers' ability to expand scientific knowledge. With this and other possibilities in mind, there is a need to expand the range and improve the availability of research analysis tools. This includes software for statistical analysis, modeling and simulation; data acquisition and control; data mining and neural networks; geographic information systems; and remote sensing. Tools for collaboration include video and audio conferencing, white board, and e-mail. These technologies require enhancements to existing communications capabilities.

Although researchers tend to support their needs primarily with extramural funds (Appendix E), many programs at the national, state and local levels disallow or severely restrict the purchase of computing equipment with grant funds. Programs can still be found where requests are allowable for funds to purchase and/or upgrade personal computers, but even in these inclusion of larger machines or multiple PCs is not allowed or strongly discouraged. Exceptions to the above, of course, are grant programs where the product is computer-related (program development, development of electronic educational materials, hardware and software engineering, for example).

Consequently, the availability of powerful research tools is very important for ongoing research and will allow UF/IFAS researchers to be more competitive when applying for external support from both national and local grant programs. Most national (e.g., NSF, NIH), and many state and local grant programs application packages include a form for "institutional support" where computer and statistical analysis facilities are prominent. Program officers and review panel members take this section very seriously. Lack of institutional support for computing seriously weakens a grant application prospect for acceptance. The availability of existing major computing resources for data analysis and support that do not require additional budget from the granting agency improve the chances for success when competing against other institutions.

Recommendations for Research

• They should be informed of any existing policies with respect to IT support, and available training opportunities.

• UF/IFAS should adopt a policy that individuals should be responsible for the operation and maintenance of PC hardware and software, with the exception of network-related components.

• To provide the level of support needed for competitive research, the core computer facility should become a more powerful research-oriented tool. In particular, a comprehensive suite of statistical analysis, data management/manipulation software

(e.g., SAS) should be available to all researchers. Appropriate front ends for remote access and output should be provided.

- Facilities for effective and secure storage and backup of large data sets should also be maintained, with provisions for transparent retrieval, transfer, and storage of data.

- Given the growing importance of GIS-based data in both research and management, UF/IFAS should also support general access GIS resources that would interface with appropriate front ends in researchers' machines.

Extension
Assessment of Extension Needs

The main tool used to assess needs and develop recommendations was a survey conducted that targeted extension faculty.   A second was the input received by subcommittee members from extension faculty and finally from the direct experience of task force members. By far the heaviest weight for these suggestions and recommendations comes from the survey.

Respondents to the survey (Appendix F) were for the most part computer users. A majority of extension faculty (62%) considers computer facilities inadequate to perform their functions, as opposed to (23%) who consider them adequate. It was clearly indicated in the survey that the most urgent needs and problems to be addressed are (in order of importance):

1. Outdated hardware.
2. Lack of support.
3. Lack of access to Internet.
4. Need for relevant training.

Currently, there is no regularly organized system for evaluating county faculty hardware or software needs. Additionally, many of our counties are provided equipment and software from county government, are functional elements of county government networks and are obliged to conform with county specifications and standards which are inconsistent with those in place or envisioned by UF/IFAS.

Providing all faculty with easy and convenient access to an updated computer system should be a primary goal of a systematic acquisition program. One possibility that should be considered is for the system to annually bid a set number of replacement machines.

Our traditional cooperative funding relationship with counties has been strong. In the future, county Extension office budget requests need to include issues of purchase and maintenance of computer equipment. Local funding for software, contract computer services, telephony, satellite down/up links, network connectivity and other information technologies should be considered as part of the cooperative partnership.

In certain counties there is a conflict between the use of computers purchased by county government in the Extension office, and the software programs. In these situations,

county government computer personnel have restricted the types of programs that can be installed on county-purchased equipment. This is an untenable situation for the overall development of a statewide Extension program, and needs to be addressed.

Recommendations for Extension

Actions needed to improve IT in extension are addressed in the *System-Wide Needs and Recommendations* section. It is very important to note that the greatest extension needs currently concern the off-campus units.

- The combination of outdated hardware, poor connectivity, and almost non-existent support and training has reached a critical level that makes IT in many of these units visibly dysfunctional. Thus, it is critical for extension, particularly on off-campus units, that these issues are immediately addressed.

- Provide extension faculty with startup funds for equipment purchases that will permit the expected entry level of expertise in IT to be applied to the faculty's extension program. This should include funds for a suitable PC, connection to the Internet, and access to an intranet library of recommended applications (e-mail, FTP, etc.), and travel funds to attend training and professional development courses.

- Initiate actions to address the incompatibilities that exist between UF/IFAS and some counties, with respect to policy, standards for hardware and software, and connectivity.

- Develop effective knowledge delivery of IT to the county offices. Target faculty county training on the use of this technology with model programs that use IT to complement current delivery systems, and that are targeted to local community's needs. Parallel to this is the potential to reach new audiences through IT.

Administration
Assessment of Administration Needs

Results from two written surveys (Appendix G) were used as the main source of data in assessing needs in the administrative area. The first surveyed administrative end users while the second surveyed administrative technical support staff. In addition to the surveys, input was collected from the three-member subcommittee. This subcommittee consisted of the Assistant Director for Administrative Computing Systems, the Assistant Director for Fiscal Services and the Administrative Assistant for the Agronomy Department. Each of these people brought with them over fifteen years of experience in their respective administrative areas.

There were three major areas of concern that dominated responses to the end user survey. The first and most pressing issue was a need for training. This includes training in existing and new systems and applications. In addition, formal training on the use of spreadsheets, word processors, graphics tools, and the Internet is required.

The second most important issue to users was the need for technical support; in particular, help with hardware, help with software problems, and advice on the purchase of computer hardware and software.

The third most important issue to users was that of connectivity. Common complaints in the survey were related to trouble getting to the information or applications needed to conduct business. Approximately 79% of the respondents complained about the "network" being down or too slow.

The responses to the technical support staff survey mainly pointed out a great need for formal training. Most of the respondents are self-educated in computers, with no formal training. Connectivity problems were also obvious, as with the end user survey.

In addition to the above needs, UF/IFAS must address the need for consistency in the use of UF/IFAS systems. To satisfy the need to extract reliable data for fiscal and accountability documents at the unit and administrative level, units must use available systems in a consistent manner. Currently, unit based needs determine how available systems are used; some emphasis must be placed on institute based needs. Consideration of institute based needs and the adoption of standards for consistent use will provide quality fiscal and accountability reports.

Recommendations for Administration

General technical support recommendations are discussed under *System-Wide Needs and Recommendations*. The following recommendations apply to training of personnel in the administrative area.

- While the formal structure of the Task Force recommendations is implemented, there should be an immediate effort to better coordinate the resolution of user hardware, software and connectivity interaction problems. A possible solution might be to coordinate all trouble calls through one of the existing entities, such as ICON or Administrative Computing Systems (the potential beginning of the UF/IFAS specific customer relations/help desk concept).

- Initiate a procedure through UF/IFAS Personnel Office for ACS/Accounting to begin training of new employees in the use of administrative systems and procedures.

- Begin to offer training sessions to upper level administrators in the use of existing UF/IFAS systems as management tools for accountability.

- Develop a permanent training team composed of at least two instructors:
    - A computer professional who is well versed in UF/IFAS computing systems and methods.
    - A fiscal professional who is well versed in UF/IFAS accounting systems and methods.

- Design for continuous training of permanent staff:
    - For training in new technologies, procedure changes, systems changes, and new systems.
    - Some classes should be taught in existing central on campus UF/IFAS labs.
    - Some classes should be taught at off campus central locations using a mobile lab (see *Recommendations for Training* under *System-Wide Needs and Recommendations*).

- Develop and implement a new employee training system.

- Design for new employee training:
    - To minimize loss of prior employees training and knowledge.
    - To minimize any effects of work backlog during prior vacancy period.

- Develop a generic unit level transition procedures manual:
    - To contain standard elements of sign-on security/responsibility, e-mail, SAMAS, UF systems, UF/IFAS systems, etc.
    - To be customized with the addition of unit specific systems and methods.

- Develop training team personnel notification system for new hire postings:
    - Initiate appraisal of unit's ability to execute a smooth transition.
    - Work with exiting employee as needed to develop transition procedures.

- Develop training team personnel notification system for new employee start date:
    - Review procedures manual with new employee.
    - Explain and demo systems and train as needed.

Accountability
Assessment of Accountability Needs

There is widespread agreement that many infostructure issues must be resolved if UF/IFAS is to respond efficiently to accountability requirements. Though accountability needs are complex and numerous, they can be classified into two areas.

The first area deals with definition of the scope and depth of accountability information required. This includes identifying which persons or agencies will get specific information and the timelines for doing so. Reporting mandates from the federal, state and county levels, which almost always use different indicators and are subject to change, exacerbate the accountability definition problem. Currently, UF/IFAS administration has not articulated what story it wants to tell nor has it fully communicated the why and how of accountability to faculty and staff throughout the organization. The second area concerns implementation of a computer based information system that will support the accountability process.

Budget information is not linked to extension planning or reporting information. Though extension databases contain a large volume of information, relatively little is available to describe outcomes in economic, social or environmental benefits. Likewise, the quality of budget information linked to the CRIS system (used to report research accomplishments) is not high quality. Accomplishments listed in the CRIS system vary in quality and generally do not address questions about outcomes and public benefit. Information related to academic programs is focused primarily on output measures of performance and lacks information pertaining to outcomes. Continued efforts are needed to communicate what information is needed and to train faculty and support staff to obtain and report such information. Although progress has been made, the annual financial reporting for the CRIS system remains unit-based and cannot be generated centrally – this has been accomplished by many states resulting in savings of many hours.

Currently our faculty are required to respond to a myriad of planning and reporting documents during the course of a year. Poor synchronization and integration causes faculty

to spend extra time updating information. Information processing tools are needed so that information is input into the system only once and different users can then extract specific information to meet their needs.

Also there is a need to develop appropriate and consistent linkages with expenditure data files such that various financial reporting functions, such as the CRIS 419 and SMP expenditures, can be accomplished electronically and conducted centrally.

Recommendations for Accountability

- An accountability committee should be appointed by the vice president and deans to develop a conceptual framework for an UF/IFAS accountability system and to help clarify what accountability information should be included (i.e., what story do we want to tell?) and how it should be delivered to its users. This would provide a framework for matching an information system with the need.

- After the requirements for an UF/IFAS accountability system have been defined, a committee should be appointed to implement policy decisions to develop an accountability information system, including elements related to hardware requirements, software development, training and support. We note that this committee's work extends beyond the mission of the Infostructure Task Force.

System-Wide Needs and Recommendations

A series of surveys were used to identify current needs in administration, teaching, research and extension (Appendices D through H). As the task force analyzed the survey results, certain common themes echoed across all functional areas. Although the degree of need varied somewhat from one functional area to the next, three system-wide deficiencies were identified. This section addresses these three needs:

- Support infrastructure.
- Connectivity to the Internet, with associated hardware and software.
- Training.

Assessment of Support Needs

Support is considered here to be the necessary service infrastructure that will allow users to maintain a working hardware and software system that provides them with the computer-based and communications tools that help them contribute to the UF/IFAS mission.

Support needs vary from area to area and geographically. Off campus units, particularly county offices, are the ones in greatest need. Presently, there are only two dedicated positions to provide day-to-day support for the equipment and software used throughout 67 counties. The spatial separation and the ratio of support staff to county faculty make the tasks of these district computer support personnel extremely difficult to respond adequately and timely to the needs of our county faculty. Increasing the number of people in the field available for support should be an objective of the organization that may be obtained by sharing resources from the departments and research centers and a net increase in personnel dedicated to this effort.

On the other extreme, some campus and off-campus units have built much of the necessary support structure to address their needs independently. The diversity of needs and environments in which computers are used within UF/IFAS presents a difficult problem to overcome, but one that must be urgently addressed.

An effective support program will use several methods for assisting faculty and staff. These include call in support through a customer relations/help desk, providing effective training on software and hardware and hands on assistance.

Mechanisms should be put in place that encourage counties to develop in-house expertise to deal with problems. When the problem cannot be solved at this level it can then be escalated to a centralized customer relations/help desk or a regional support person.

Recommendations for Support

- While reorganization of unit responsibilities and reallocation of resources is being conducted, immediate training should be initiated.

- Establish a centralized customer relations/help desk facility that:
  - Provides a single identifiable resource where internal and external UF/IFAS constituencies can obtain help and information about support and training.
  - Is readily available at least in the forms of diagnostic/recommendation technicians, automated support /system knowledge content and dispatching.
  - Provides event analysis as a main driver of reactive training.
  - Defines levels of problems and responsibilities within the institution.
  - Establishes processes to insure that help events are managed, such as monitoring and tracking help events, follow-up and closure, and providing summary reports so requests for help can be classified by their nature to identify trends throughout the system.
  - Provides input via a tracking system to establish training priorities.

- Increase and distribute statewide support staff.
  - The number of District Computer Support Specialists (DCSS) needs to be increased to reasonable levels.
  - Reassign DCSS as geographically distributed support specialists. These technical support personnel will support county Extension needs and expand their role in support of off-campus centers. Their roles in training and collaboration will accord with other facets of the overall proposal for Information Technology. DCSS should be organized along the lines of a distributed model where they are linked to a central core but are driven by the needs of their constituents.
  - At least 10 individuals should be contracted and located close to the locations they serve. Management, supervision, direction and coordination of the ten DCSS will probably call for one additional middle level manager or coordinator, responsible to the DoIT but in frequent communication with Extension administration (District Directors) and Center District Support Personnel needs to be properly equipped to fulfill their responsibilities. DCSS should be issued a "kit" that includes computer, troubleshooting equipment, audio visual presentation equipment, net access, communications (credit cards and WATS accounts), loanable hardware for emergency use within the county offices and centers, and the necessary associated software licenses.
  - Mechanisms need to be put in place that insure that these individuals feel responsible to the users while they are part of a larger team (ties to the central core). To insure effective and efficient use of DCSS personnel and off-campus support unit personnel, activities related to connectivity management, on-site support and training must be coordinated.
  - Adequate operating expenses, including equipment renewal budget and continuing education budget must be made available to DCSS.

- Provide technical support for a defined standard set of applications. Where possible mechanisms to use site licenses in order to maintain software and reduce costs should be used. A central site for downloading software should be available to UF/IFAS faculty through an Intranet mechanism.

- As part of their start-up package, incoming faculty should be provided with funds for a PC suitable to their respective program, connection to the Internet, and access to an intranet library of recommended applications (e-mail, File Transfer Protocol, etc.).

Assessment of Internet Connectivity Needs

All faculty and pertinent staff must be connected to the Internet. The system has worked hard to provide alternatives for county offices to be connected to the Internet through FIRN, the Division of Communications, 800 telephone service or dial-in to Research and Education Centers, but this only assures that there is one connection per county. Quite often only the CED or the office secretary has direct connection to the Internet. Effective programming for the 21st century will require that each faculty member have access to the resources of the Internet from their own desktop. Assisting county offices in the development and management of Local Area Networks should be a goal of the system; making it a reality needs the full commitment of the institute.

Recommendations for Internet Connectivity

- Improve installed hardware base.
  - Develop an equipment replacement program. This needs to be immediately addressed, particularly at locations where hardware is outdated.
  - Assess and develop local area networks for county offices.
  - Encourage upgraded connectivity through collaboration with county governments and through shared resources with other state agencies (such as DOE installations under the President's mandate to wire all schools, FIRN or Management Services, Division of Communications, Florida Communities Network, etc.) Seek means of higher speed transfer such as 56kb or 128kb lines.

- Provide all faculty and staff that requires IT with convenient access to the Internet. Different alternatives should be explored that are within current budgetary constraints for immediate implementation. In addition, a long-term connectivity structure should be designed to provide a blueprint for realization of a full connectivity goal (i.e. all faculty and pertinent staff connected).

- Provide new faculty with startup funds for equipment purchases that will permit the expected entry level of expertise in IT to be applied to the faculty's program. This should include funds for a suitable PC and software, connection to the Internet, and access to an intranet library of recommended applications (e-mail, FTP, etc.).

Assessment of Training Needs

Training is essential for the successful adoption and use of new technology. Change is rapid in the information technology field. Much of the change is familiar in the context of traditional Cooperative Extension work and its classic role: the acquisition of information and knowledge and its communication to users who may have need to practically apply it. The current explosion of informational and educational resources through the Internet dictates that the organization make all reasonable efforts to enable state, regional and county faculty and staff in effective use of this network. Unlike many former technological changes with which Extension has been associated in the past, information technologies are at one and the same time the means for agents to acquire and communicate information on behalf of client constituents, and the subject or content of the technology transfer itself.

Recommendations for Training

Training was identified as a consistent theme in needs and requirements for a functional IT system. Again, training needs and requirements vary markedly from area to area and training programs require targeting to the audience. With this in mind the following actions are recommended:

- Training for faculty and staff must be targeted at different user levels in different regions in the state.

- Training must be offered with sufficient frequency to allow new faculty and staff to learn the skills required to use computers effectively and efficiently in execution and support

of extension, teaching, research programs and administrative duties. Likewise, retraining of existing staff and faculty as technology and applications change or evolve.

- Training must be offered within a reasonable distance from working centers for convenient access by faculty and staff and to reduce off campus faculty and staff travel expenses and minimize personnel time invested in training.

- A mechanism needs to be established by which training program content is determined with faculty and staff input. For the effective fulfillment of the UF/IFAS mission, the institute must assume some responsibility for repetitive training of clerical staff, paraprofessionals and volunteers (such as 4-H leaders and Master Gardeners) who <u>are</u> <u>not</u> direct employees of the institute or UF.

- Initial training can be immediately implemented if resources from Administrative Computing and UF/IFAS Information Technologies are pooled for a short period of time. If we use currently available computer hardware and systems installed at the county offices, the only cost requirement for this training to take place is funding for travel.

Resource	Comments	Cost
Training Laboratory	Use current portable laboratory.	0
Personnel	Using current personnel from UF/IFAS Information Technologies and Administrative Computing.	0
Operating Expenses	Annual Travel Expenses and course materials.	9,800
		$ 9,800

- A permanent training program could consist of a team of two technicians dedicated full time. They would be able to cover all county extension offices and research centers that don't have dedicated computer staff.

Resource	Comments	Cost
Training Laboratory	Laptop computers, projection system and software licenses (one-time startup).	31,000
Personnel	Annual salary for 2 full time technicians dedicated to training throughout the state.	66,000
Operating Expenses	Annual Travel Expenses and course materials.	12,000
		$ 109,000

- At an administrative level, give a unit within UF/IFAS the responsibility for training programs. This unit would be responsible for training program design, execution, evaluation and accountability. It is suggested that the current Information Technologies unit (formerly Software Support and FAIRS), with formal liaison with the Agricultural Education and Communications Department be designated as the training unit until the recommendations of the overall report are implemented on a permanent basis.

- Establish a permanent vehicle by which training content and demands are established. This should include input from the customer relations/help desk, and a committee for each district. Each committee would provide input and review the training program design and evaluations of conducted programs. In addition, other mechanisms that allow direct feedback from the user need to be put in place.

- Establish a team of technicians whose sole responsibility is to conduct training throughout the state.
- Develop a comprehensive training program for new faculty.

A Needs-Based Model for IT Resource Reorganization

The Distributed/Centralized Concept

In a centralized system, IT vision, budgets, direction and implementation are conducted using hierarchical management structures. Such systems provide services using a centralized staff and resources. They reached their height of popularity 15 years ago with the mainframe computer center. Today these systems continue to play an important role in institutional level computing by providing computer services that require central management, but they also carry with them the burden of legacy methodologies.

With the advent of the microcomputer, people became empowered with a tool that addressed most computing needs on the desktop. Eventually, resources migrated away from centralized control and, as a result, computing became distributed and disconnected.

Today network technologies are economically viable and easier to implement than in the past. In addition, the explosion of knowledge resources on the Internet, increased communications capabilities, and the promise of distributed computing have resulted in standardization of hardware and software. More significantly, this has created a need for the centralized coordination of these distributed resources.

Our current situation in UF/IFAS is one in which, for historical reasons, our computing universe has evolved into a constellation of units dealing with computer technologies and services, some tending to be centralized and others tending to be more distributed. However different, the various units share one commonality: all tend to operate independently of one another.

The Task Force discussed and debated the distributed and centralized paradigms for organization. Following these dialogues, an Infrastructure Subcommittee was charged with the task of developing a distributed-centralized model to address IT organizational issues within the purview of the Task Force's mandate.

The resulting model is proposed below. It attempts to exploit the advantages of both centralized and distributed architectures while lessening the adverse impacts of their disadvantages. Every attempt possible was made to use the financial, physical and human resources currently available to the institution.

Design Philosophy

Information technology is a tool. UF/IFAS utilizes information technology to better fulfill its mission to develop knowledge in agriculture, human and natural resources and to make that knowledge accessible to sustain and enhance the quality of human life.

With this clear and simple principle in mind, we reviewed the current system and its resources, then developed a model to reorganize our information technology infrastructure. It was the intent of the Infostructure Task Force to balance the promise and potential of the

numerous information technologies against the probable realities and constraints under which the institute must operate in the near and long term. This turned out to be a very difficult and time-consuming process that required many months to complete.

In designing the model we strove for a service-oriented focus, optimal utilization and distribution of existing resources, and flexibility. Where possible, we attempted to build mechanisms for accountability, change and innovation into the system itself. In so doing, we hope we have designed an infrastructure which avoids all of the split thinking, split energies and split attentions that have kept us from realizing our fullest potential in the past, both individually and as an institute combined.

Overview of the Plan

We present a "logical" model rather than a "physical" one; that is, we do not identify and situate specific units or departments within the UF/IFAS organizational chart. Rather, our model encapsulates the essential elements of the overall job that IT must do in service to the institute's mission, then breaks this job down into its component functional areas, analogous to the teaching/research/extension functional component model for UF/IFAS itself. The working and reporting relationships among these functional areas then emerge as a rational and natural consequence of the cooperative interactions required to perform the component tasks which serve IT's larger purpose.

These "functional areas" can also be thought of as focal points or domains of responsibility. They are as follows:

- **Policy and Acceptance Review** (VP/Deans)
- **Long Range Planning and Needs Assessment** (Information Technology Policy/Advisory Committee)
- **Customer Service** (Customer Relations, Help Desk and Documentation)
- **Local Support** (Unit-Level Computer Support Personnel)
- **Training and Learning** (Computer Training and Teaching Labs)
- **Information Management** (Software and Applications Development)
- **Transport Pathways and System-wide Linkage** (Hardware, Operating Systems and Connectivity)
- **Publications Review, Packaging, Sales and Delivery** (Educational Media and Services, or EMS)
- **Coordination and Leadership** (Director of Information Technologies, or DoIT)

This is the recommended model for reorganization of our information technology infrastructure. These functions will now be explained and described, each under its own section heading. Because options available for implementation are expected to evolve in line with rapid developments in information technology, specific operational details have been generally excluded from our discussions. However, before we introduce the components of the model in detail, we would like to emphasize an important and fundamental aspect of the design.

Paradoxically, sometimes an object can be seen in greater detail by staring at it through the wrong end of the telescope. Its true nature becomes clearer when it is observed in its appropriate surroundings, situated in relationship to some greater whole. As you visit each section, try to keep in mind that none of the components of our model operate in a vacuum. While each section is custodian of its own domain, all areas always operate in tandem. A philosophy of cooperation and communication underlies our model's mechanics, so that each function serves as a supporting player on the larger information technology team.

Components of the Model
The VP/Deans

The vice president and deans (VP/Deans) anchor information technology firmly to the UF/IFAS mission and allocate resources at the institutional level. They provide the policy-level foundation for the acquisition and deployment of information technologies, and provide the necessary institutional oversight and acceptance review across teaching, research and extension.

Within UF/IFAS, the responsibility for the formulation and development of institute-wide policy resides with the vice president and deans. On policy, planning and budgetary matters relating to information technology, they are advised by the Information Technology Policy/Advisory Committee, or ITPAC (see next section). If needed, these administrators can set UF/IFAS-wide policy relating to IT by issuing appropriate Internal Management Memoranda or other directives.

They also provide programmatic guidance in the form of continual dialog with the DoIT to help ensure that information technology is utilized in service to the institute and its constituencies, and they assist the DoIT in the development of IT strategic plans as they relate to the UF/IFAS mission.

The VP/Deans also provide a safeguard against unsanctioned or unilateral actions by the DoIT who reports for operational oversight to the Associate Vice President.

Information Technology Policy/Advisory Committee (ITPAC)

The Information Technology Policy/Advisory Committee, working together with the Director of Information Technologies, advises the VP/Deans on institutional IT policy needs, budget and long range planning. This committee provides a permanent and dynamic forum for debate wherein the institute's IT needs may be identified, discussed and addressed and through which long-range strategic plans and annual budgets may be developed and assessed on a continuing basis.

The ITPAC supercedes in function and scope both the Computer Policy Committee and the Computer User's Advisory Committee. It is also the standing successor to the Infostructure Task Force.

This committee would be the institute's primary organ of progression and change for information technology. Analogous in function to the Faculty Advisory Committee, the ITPAC serves both the Director of Information Technology and the VP/Deans by providing needed input from all areas of the institute. The committee provides a mechanism by which ideas or insights from anywhere within UF/IFAS can percolate through "the system", be formally received and acknowledged, and ultimately become visible to those capable of fashioning them into reality.

The ITPAC is not an operating committee. It would concern itself primarily with the "what" rather than the "how". In addition, it has no authority of its own. It operates in conjunction with the DoIT, and it communicates with the policy makers through the chair.

Cross-sectional representation is paramount, and the membership profile is intended to make this committee "look just like UF/IFAS". Its membership must therefore be recruited solely from within UF/IFAS. Such careful representation is intended to foster a multidisciplinary, cross-functional, project-oriented approach to problem solving.

The committee should consist of 2 ex-officio members and at least 12 others who are predominantly non-technical and user oriented. They would be appointed to staggered, 2-year terms. The three deans would each appoint a representative, with the Vice President for Agriculture and Natural Resources appointing the remainder. We envision the composition of the ITPAC as follows:

- Associate Vice President for Agriculture and Natural Resources (*ex-officio*)
- Director of Information Technologies (*ex-officio*)
- Office of the Dean for Academic Programs representative
- Office of the Dean for Extension representative
- Office of the Dean for Research representative
- Departmental faculty representative
- Research and Education Center faculty representative
- Administrative staff representative
- Educational Media and Services (EMS) representative
- County faculty representative
- Student representative
- At-Large representatives (at least 3)

The members would convene at least once every quarter and would elect a new committee chair every year.

Customer Relations, Help Desk and Documentation

Whereas the ITPAC deals with long-range issues, this functional area will primarily address immediate needs as they arise.

This is envisioned as the "face" of information technology and is the primary interface between IT and its internal and external customers. The purpose of this functional area is twofold.

Firstly, it provides a single point of contact for users of information technology, serving as an UF/IFAS-wide virtual "800" number for assistance or information relating to any aspect of IT. Where possible, it provides immediate assistance; otherwise, it identifies appropriate parties for assistance, then redirects requests and schedules the required support service. It monitors the progress of customer service events through to closure, and provides oversight for follow-up or escalation of service calls.

Secondly, because it must identify, track and communicate with various other components of the model, it is in a sense the DoIT's "conning tower", and is thus in a strong position to supply internal coordinating services to the DoIT, as well as all other members of the IT community. This function is envisioned as being highly proactive. It would coordinate the necessary focus groups for testing and development of IT's products, and provide a channel for feedback and overall performance evaluation of information technology's various teams.

We envision a strong linkage between this function and the Computer Training and Teaching Labs. This is because Customer Relations is strategically positioned to assess the needs for training based upon an analysis of data captured through the logging of service calls to the customer relations/help desk.

This area could also function as a research librarian in providing answers to questions, and should develop and distribute, through EMS (see *Educational Media and Services* section), documentation and training materials such as an UF/IFAS-wide information technology-related newsletter.

Unit-Level Computer Support Personnel

A number of units in the institute have elected to hire their own information technology support personnel, for a variety of reasons, but mainly to support a local area network (LAN) or support PC operations. Historically, the activities of these individuals have not been coordinated with the central IT "core" in a systematic manner. Under the proposed blueprint for reorganization, it is important that these individuals coordinate and link programmatically with IT.

It is essential that the local support people assist IT with connectivity, training and user support issues, and that they become or remain responsive to IT issues that are UF/IFAS-wide in nature. We envision that they will participate in special IT projects with the approval of their unit head.

The unit level FTEs will remain located where they are, within their own academic units. They will continue to manage their own LANs, their own software and their own PCs in accordance with any relevant UF/IFAS standards. What has been missing from this arrangement is a mutual leveraging of effort and expertise between unit level personnel and IT. Thus, it is proposed that job descriptions of unit level computer support personnel who are responsible for LAN management be changed to include statements that they will manage their respective LANs and PC support system in accordance with UF/IFAS networking guidelines and will assist UF/IFAS network managers in local/regional training and network maintenance activities as appropriate.

For some years, UF/IFAS Computing Systems has had in place an informal network of unit level contacts, one for each unit, who played the role of "computer liaison" between Computing Systems and administrative users. This allowed for efficiency of communication between the users and developers of administrative systems. This existing communications channel should be formalized, strengthened and broadened to encompass all IT-related issues. A contact structure with formal recognition would enable rapid, efficient and effective communication of technological information, as well as provide a pipeline for the Customer Service function to utilize as needed.

Computer Training and Teaching Labs

This functional area is focused on delivering information technology training and providing the resources required for students, faculty and staff to learn.

Opportunities for cooperative operation of computer training facilities should be sought. Efforts should be made towards consolidation of various student-, staff-, faculty- and administration-oriented computer labs where little negative impact would result.

In addition, the anticipated benefits to be derived from coordinating these operations with the rest of the institute's IT efforts are: reduction of the overall costs of operating the needed training facilities, tighter integration of programmatic and administrative software strategic planning, an enhanced understanding on the part of IT of overall training logistics, as well as increased interactions among students, faculty and staff across units and functions.

This functional area would coordinate and schedule training sessions and workshops, and could negotiate group discounts for outside training providers as well.

Software and Applications Development

As an educational institution, UF/IFAS is heavily involved in dissemination of information. A vital function of information technologies is to facilitate dissemination of information in electronic form to increase efficiency and lower costs. It must acquire existing applications software packages (including coordination of commercial software licenses) and develop custom software as needed to support this function.

Information management encompasses a range of activities including developing applications software for administration and public accountability, as well as broader tasks in teaching, research and extension. An all-encompassing metaphor is the digital library of knowledge generated and disseminated by UF/IFAS. IT must design this library, provide standards and tools for generating and storing content, provide cataloging and indexing for integrating and cross-referencing knowledge from a diversity of sources, and disseminate information in a multimedia package acceptable to users including students, industry, and home owners. The contents of the library include not only text-based publications, but also educational programs, decision support tools such as expert systems and crop models, shared research data stores (climate and GIS data), and other application programs.

IT must also enable, through software, central information coordination. In the past, development of institutional level software and information systems was, by necessity, a highly centralized activity. Recently the process has become more decentralized with individuals and departments throughout the institute actively involved in development. Yet centralized coordination of these distributed activities is needed to build a coherent collection of institutional information resources. In this sense, IT can serve the important role of "central librarian".

The information management team must maintain a product development orientation, and identify priorities based on constant interaction with users. Yet at the same time, many of the problems identified by users will require research and development. Similarly, many of the advanced techniques in information delivery, such as decision support systems or computer-aided instruction, must be taken from a research mode to demonstration and implementation. The information management unit must keep abreast of the latest research and tools and techniques that can be applied to problems, thus providing vision, leadership and innovation in software development. It must also actively facilitate adoption of advanced techniques by departments, specialists and users.

IT will work closely with EMS in many of these functions. EMS can be viewed as the primary content broker for the digital library. EMS can use and assist in adopting technologies developed by IT's research and development.

Hardware, Operating Systems and Connectivity

Wide area networking is the institute's information nervous system, and a secure and reliable network is vital to the daily operations of our information infrastructure. Networking is the focus of this functional area, together with the related management, maintenance, operations and support of multi-use computers, shared servers and network components "up to the wall plate". Installation maintenance and development of supported client operating systems and network software will be provided where needed.

Economies of scale can be realized through the sharing of an IT engine room for systems that provide general purpose, UF/IFAS-wide services. Such is the nature of the Gainesville campus network communications core and its facilities. This system must also interface with other networks such as local county governments and internet service providers (ISPs) at various locations throughout the state, including NERDC, UF core and county offices. This group must assess and implement communications standards. Their expertise should lie with the planning, design and analysis of connectivity, including the evaluation and selection of operating systems, system-wide services, and network software.

During the Task Force deliberations, the faculty and staff identified connectivity issues as the second most critical challenge confronting the effective and efficient management of the computer network. This issue overlaps other issues such as local computer hardware capabilities, base user level knowledge of PC and network interaction, PC software usage, network software, and telecommunications links to the central network. This problem exists most severely within the county extension office and the RECs, particularly the smaller units. The Extension Service attempted to address this a number of years ago with the allocation of five District Computer Support Specialists. However, these positions were never fully staffed, did not have appropriate linkage with the central network, and only serviced specific Extension districts. There is an obvious need to more fully integrate these positions into the overall management of the UF/IFAS network and to serve as the unit level training and hardware/software support linkage between all statewide faculty and the central core.

To help accomplish this throughout the state, the Task Force proposes that all District Computer Support Specialist FTEs be transferred and incorporated into this functional area, and that a commitment be made to increase their numbers to at least 10 specialists distributed geographically throughout the state as needs suggest. They will work directly in support of unit level computer support personnel to meet faculty and staff needs. Without this minimum level of effort, it will not be possible to operate a statewide information infrastructure with any reasonable level of stability or success.

Educational Media and Services

The mission of the UF/IFAS Educational Media and Services unit is to lead educational communications and public information program development and implementation for the institute. Its director serves as the institute's chief protocol, chief information, and chief external relations officer, and is coordinate in rank with the proposed Director of Information Technologies.

EMS is the editor, publisher, marketer, and distributor of content and publications. It is also the institute's news provider, graphics design resource, and video production resource.

This unit is a resource for Distance Learning, but is involved in neither the technology training nor the technology development. Primarily an end user of information technology, it links programmatically with various IT resources. Research and development for EMS is conducted by components of IT. Educational Media and Services then applies what IT develops.

Director of Information Technologies

The Director of Information Technologies, or "DoIT", is envisioned as a leader, team builder, coordinator and catalyst. The benefits of having a Director of Information Technologies are best appraised by recognizing what must be accomplished: a unified IT vision for the institute; comprehensive strategic planning; centralized coordination of efforts and funding; effective dialog between IT implementers and UF/IFAS policy makers; integrated, cooperative IT efforts on a sustained basis; and acquisition of extramural funding for IT.

The DoIT is conceptualized as a proactive coordinator and convener; a facilitator, arbiter and ombudsman; and a listener, interpreter, and consensus builder. Under our model, it is the users of technology who must drive the system, with the DoIT serving as implementer, project manager and lightning rod.

This individual would have UF/IFAS-wide operating responsibilities for IT, with the VP/Deans and ITPAC providing checks and balances against excessive or unwarranted unilateral actions. As a consequence of the DoIT's broad operating responsibilities, he or she would also prepare the operating budget request for IT in consultation with the ITPAC and others.

The Director of Information Technologies would delegate much of the day-to-day operating responsibility to various team members assigned among the four primary functional areas over which he or she would have sole or joint budget authority: (1) Computer Training and Teaching Labs; (2) Customer Service, Help Desk and Documentation; (3) Software and Applications Development; and (4) Hardware and Connectivity.

The success of our model rests largely upon the selection of a highly competent and energetic individual. Any selection process should proceed with care and deliberation.

The Infrastructure Subcommittee decided that perhaps the simplest and most effective way to illustrate our vision of the DoIT was to present this example position announcement:

DIRECTOR OF INFORMATION TECHNOLOGIES

The University of Florida Institute of Food and Agricultural Sciences (UF/IFAS) is a Land Grant institution with teaching, research and extension responsibilities. A faculty of 950 is located at 13 statewide research and education centers, 10 associated research and demonstration units, 67 county extension offices throughout Florida and a central campus at Gainesville. The mission of UF/IFAS is to develop knowledge in agricultural, human and natural resources and to make that knowledge accessible to sustain and enhance the quality of life for Florida residents. Our information technologies support the varied computing and communication needs of the College of Agriculture; the Florida Agricultural Experiment Station; the Florida Cooperative Extension Service; the School of Forest Resources and Conservation; International Programs for Food, Agriculture and Natural Resources; the Center for Tropical Agriculture; the College of Veterinary Medicine; the Florida Sea Grant Program and Sea Grant Extension; and the Florida Energy Extension Service.

The existing information technology environment is diverse and geographically dispersed. It is composed of a hierarchical network of distributed general purpose time-share and client-server computer systems. This network provides a secure, stable computing environment as a backbone for data storage, processing and communications. The participating units utilize local area networks that are interconnected to a high speed wide area network utilizing services provided by the Florida Information Resource Network and the Florida Division of Communication. Full internet functionality is provided along with access to a regional data center's IBM mainframe and various other services available on the campuswide network.

Duties and Responsibilities

Reporting to the UF/IFAS Associate Vice President, the Director of Information Technologies (DoIT) will:

- Harness and distill the institutional views and vision to provide leadership for effective and efficient application of information technology in support of the UF/IFAS mission.
- Develop and coordinate strategic plans and budgets for IT.
- With the support of an IT Policy/Advisory Committee, make recommendations and provide advice to the vice president and deans relative to IT policy and direction.
- Provide access to and promote sharing of information by all UF/IFAS constituencies to improve teaching, research and extension.
- Communicate technical information as well as budgetary and personnel issues effectively to both technical and non-technical audiences.
- Manage effectively a service-oriented organization, providing training and assistance to all UF/IFAS constituencies as appropriate.
- Manage the infrastructure, budget, and environment that provides for or facilitates accomplishment of technology tasks as a cooperative effort.
- Manage administrative computing, network services, user support and telecommunications while insuring communications technology compatibility with other university, state and federal agencies.
- Promote support for UF/IFAS information technology from extramural sources.

Qualifications

Progressively responsible leadership and proven record of success, which may include planning, budgeting and securing funding for information technology. Experience required in working collaboratively within a university or similar community, and knowledge of the Land Grant system with its functions of teaching, research, and extension. Experience in managing dynamic technologies and environments, including digital networks, multimedia applications, distributed computing, distance learning, or software and hardware applications. Excellent interpersonal skills and documented experience in team building. Superior oral and written skills including the ability to communicate technical issues to all levels of the university. Ability to work within a decentralized management and budget environment.

Sense of humor required.

Appendix A – Task Force Mandate

UNIVERSITY OF FLORIDA

Institute of Food and Agricultural Sciences
Office of the Vice President for Agriculture and Natural Resources

1008 McCarty Hall
PO Box 110180
Gainesville FL 32611-0180
Telephone (352) 392-1971
Fax (352) 392-6932

April 29, 1996

MEMORANDUM

TO: D. Ayers, H. Beck, N. Byrd, L. Halsey, T. Hintz, G. Israel,
          J. Joyce, P. Kearney, R. Mack, D. McPherson, V. Parmenter
          D. Poucher, J. Rey, A. Wilkening, F. Zazueta

FROM: J.M. Davidson

SUBJECT: UF/IFAS Task Force on Information Management Infrastructure

This is to request that you serve as a member on a task force to evaluate the current function and organizational structure of UF/IFAS information management, hardware and software support, and training needs and how they should be structured to lead us into the 21st century. The need for this task force is brought about by recent advances in PC technology, interactive software, the Internet and World Wide Web access, on-line administrative functions, on-line publication distribution, electronic marketing and electronic mail. Additionally, increased demands for the integration of research and extension impacts with cost data have shown that our current system does not foster interconnectivity of function nor information. The focus of the effort should be on administrative, extension, teaching and research needs for both management functions and information for our internal and external clientele.

Based upon the above, the name of the task force will be the Infostructure Task Force. Dr. Fedro Zazueta has agreed to chair the task force and will be assisted by Dr. Joe Joyce, Associate Vice President. The Deans and I consider this task force a high priority and there are no set opinions concerning what the final organizational structure or recommendations which are anticipated from the task force. It is recognized, however, that various organizations and functions have evolved within UF/IFAS and that the status quo will not serve us well into the 21st century.

Dr. Zazueta will be in contact with each of you in the near future to schedule a series of meetings.

JMD:gk
cc: Administrative Council

An Equal Opportunity/Affirmative Action Employer

Appendix B – Membership and Subcommittees

Task Force Members

1. **David Ayers**, Senior Computer Operator, County Operations
2. **Howard Beck**, Associate Professor, IFAS Information Technologies
3. **Nancy Byrd**, Administrative Assistant, Agronomy Department
4. **Larry Halsey**, Extension Director, Jefferson County
5. **Tom Hintz**, Director, IFAS Computer Network
6. **Glenn Israel**, Acting Director and Professor, Program Evaluation and Organizational Development
7. **Joe Joyce**, Associate Vice President for Agriculture and Natural Resources
8. **Pete Kearney**, Coordinator, Computer Applications, Office of Planning and Business Affairs
9. **Robin Mack**, Coordinator, Computer Applications, Office of the Dean for Academic Programs
10. **Dale McPherson**, Coordinator, Administrative Services, Office of the Dean for Extension
11. **Vernon Parmenter**, Assistant Director for Fiscal Services, Office of Planning and Business Affairs
12. **Don Poucher**, Director, Educational Media and Services
13. **Jorge Rey**, Professor, Florida Medical Entomology Lab – Vero Beach
14. **Alan Wilkening**, Coordinator, Computer Applications, Office of the Dean for Research
15. **Fedro Zazueta** (Chair), Director and Professor, IFAS Information Technologies

Subcommittee Assignments

Accountability: Israel (Chair), Capinera[1], Chernesky[2], Cothran[3], Gregg[4], Hintz, Joyce, Kearney, Mulkey[5], Parmenter, Poucher, Wilkening, Zazueta.
Administration: Kearney (Chair), Byrd, Parmenter.
Connectivity: Zazueta (Chair), Hintz, Mack, McPherson, Wilkening.
Extension: Zazueta (Chair), Ayers, Halsey, Hintz, McPherson.
Final Report: Wilkening (Chair), Halsey, Kearney, McPherson.
Infrastructure: Wilkening (Chair), Beck, Halsey, Hintz, Poucher, Zazueta, (Joyce[6]).
Research: Rey (Chair), Joyce, Wilkening.
Teaching: Beck (Chair), Mack, Poucher.

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[1] John Capinera, Professor and Chair, Entomology and Nematology Department.
[2] Mary Chernesky, Extension Director, Hillsborough County.
[3] Hank Cothran, Assistant in Budget, Office of Planning and Business Affairs.
[4] Austin Gregg, Data Processing Control Specialist, Program Evaluation and Organizational Development.
[5] W. David Mulkey, Professor, Food and Resource Economics Department.
[6] Served as a non-voting facilitator.

Appendix C – IT Vision Statements from the Deans

UNIVERSITY OF FLORIDA

Institute of Food and Agricultural Sciences
Office of the Dean for Academic Programs

2001 McCarty Hall
PO Box 110270
Gainesville FL 32611-0270
352 (904) 392-1961
Fax (904) 392-8988
352

November 12, 1996

MEMORANDUM

TO: A. J. Wilkening

FROM: Larry J. Connor

SUBJECT: College of Agriculture - Information Technology Vision Statement

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I would offer the following comments relative to the questions you raised in your October 21 letter:

1.   How do you perceive information technology can best assist you in delivering your numerous teaching programs?

       Information technology is really changing how we handle courses on campus, and our outreach programs. We are currently utilizing the following forms of information technology: computer teaching laboratories, multimedia teaching, geographic information systems, distance education (internet, satellite, and possible KODAK in the near future). The information technology assists us in providing better instruction, and also extending our teaching mission to people outstate in Florida.

       We are also increasingly utilizing information technology in storing and retrieving data for accountability purposes and decision making.

2.   What is information technologies proper mission - related niche within our teaching operations?

       Our niche deals with program delivery and evaluation. We are very much concerned with delivering quality teaching programs, and delivering them outstate as well as on campus. Increasing accountability pressures are also forcing us to do a much better job of evaluating our existing programs. This means that we must now access data within IFAS and on campus which we previously were unable to access.

3. What should a desirable outcome look like 2 or 3 years from now?

We would hope there would be several desirable outcomes, including regularly scheduled distance education courses for the State of Florida, an increased number of courses utilizing multimedia technology, increasing computer applications within individual courses, and the ability to store and retrieve data relating to our teaching operations so as to better meet accountability pressures.

4. What organizational behaviors need to be in place; and why?

The major organization behavior needed is basically a positive attitude on the part of IFAS administration and teaching faculty indicating that we can accomplish the task before us. For example, we have had problems in the past in acquiring needed data pertaining to our teaching operations, room scheduling, etc.

5. What one technology - related activity would you do or change which, if done extremely well, would have the biggest positive impact in your own area of responsibility?

Without question, the most single important technology activity would be the provision of a good technological infrastructure for providing distance education in Florida. This would include a reliable satellite system, and a KODAK system linking Gainesville with 5 to 7 sites through the state. In our judgment, outreach is probably the area where information technology may have the greatest impact.

Hopefully, the above statements provide the information you requested. Please contact me if you have any additional questions.

cc: Cheek
Fry

UNIVERSITY OF FLORIDA

Institute of Food and Agricultural Sciences
Office of the Dean for Research
Florida Agricultural Experiment Station

1022 McCarty Hall
PO Box 110200
Gainesville FL 32611-0200
Tel. (352) 392-1784
Fax (352) 392-4965
Email: research@gnv.ifas.ufl.edu
WWW: http://research.ifas.ufl.edu

November 25, 1996

MEMORANDUM

TO: Alan Wilkening

FROM: Richard Jones

SUBJECT: Research Administration--Information Technology Vision Statement

The research deans and I have reviewed your request and offer the following comments:

1.   How do you perceive information technology can best assist you in delivering your numerous research programs?

Our office will need to have the capabilities to be more interactive and have more integration among our research programs.   The CRIS projects, Personnel, Extramural grants and Journal Series programs need to be easily accessible, inter-linkable, and contain current, up-to-date data.

The recent deletion of the "Who" screen has had a negative effect on many of our staff who relied on it daily for personnel information. It will be important for the personnel data on the DBM screen to be maintained and kept current.

2.   What is information technology's proper mission--related niche within our research operations?

We are very interested in linking research program input and output. We need to be able to measure our productivity and accountability. We need to have the capabilities to track resources and people. There will be an increasing demand to account for our total research programs in the future.

Mr. Alan Wilkening
November 25, 1996
Page 2

3. What should a desirable outcome look like 2 or 3 years from now?

    We would hope there would be readily accessible program information on
    budget, personnel, projects, grants and journal series. We need to be able to
    utilize modern computer applications. Will there be on-line video capabilities in
    the next few years?

4. What organizational behaviors need to be in place, and why?

    There needs to be good interaction and cooperation among the computer
    support groups, IFAS administration, and faculty members. We need to be able
    to get the information from our researchers to the user groups and our clientele.

5. What one technology-related activity would you do or change which, if done
    extremely well, would have the biggest positive impact in your own area of
    responsibility?

    We need a strong technological infrastructure and an interactive database
    where we can work on our research programs including personnel, budget,
    publications, grants and projects. Also we need a user friendly system.

Technology Vision Statement
Florida Cooperative Extension Service
Christine Taylor Stephens

How do you perceive information technology can best assist you in delivering your numerous, research or extension programs?

From our perspective information technology is the collection of tools that can be used to help collect, analyze, produce and disseminate information. The best use of any of these technologies has to be measured by their effectiveness with the audience served, accessibility, ease of use and cost of delivery. Consequently, the best assistance that any of these technologies can render to our programs is that which helps us deliver programs to diverse clientele groups at an effective cost.

Internally, information technology could best assist by improving our ability to assimilate, access, synthesize and transmit information readily within and between offices.

What is information technology's proper mission-related niche within your own function's operations?

Technology has no value unless it enhances our programs and operations or helps assess program effectiveness. Today the most talked about information technology is the World Wide Web Using it as a means of internal communication and as a vehicle for external users to access our information is probably our greatest prospect for the moment- It presents special challenges to our statewide organization to maintain local identities and to build new communities of users. Internally we need to make sure that our county faculty are not threatened by this new means of access to information. While the Web is currently the most talked about technology, we still have alternatives that have not been fully utilized. Television, radio and video productions are strong contenders for the effective program delivery- There are more "how to" shows about home repair, home construction, cooking, exercise and gardening than ever before. While we have utilized this technology on a limited basis, the potential has not been nearly fully realized.

Another niche that our information technologies should be geared toward is enhancing the computing ability of our organization to make the connection between the expenditures that we incur and the programs that we deliver. State and Federal policies are increasingly asking for program accountability that can be audited for the results of our efforts. Functionally, administrative computing and program computing have been viewed as separate entities. We can make more effective use of our resources to answer accountability questions if we take a fresh view of the purpose of our computing resources.

What should a desirable outcome look like in 2 or 3 years from now?

Our ability to generate programmatic reports with quantitative figures of who was served, how much it cost to serve them and an assessment of the benefit of the service would be a good place to be as a measure of success in 2 or three years. And, if those reports and figures could be easily tied back to points of origin with regard to budget source and service delivery, we would be prepared to answer the accountability questions better than we ever have in the past.

What organizational behaviors need to be in place and why?

To bring us to the point of effectively using information technology, the organization has to make a commitment to change the way it does business. One of the realities of using computing resources is that the machines that do the work need to have consistent streams of data to process. In our collegial atmosphere, we are reluctant make mandates on our employees, especially on the programmatic side. With the increasing demand to merge program and administrative data, it will be more important to stress consistency. Consistency in software, form. at, accounting, program definitions, classifying data and assessment tools will be the backbone of developing the accountability measures that are being demanded today.

What one technology-related activity would you do or change which, if done extremely well, would have the biggest impact in your area of responsibility?

Comprehensive training and education of our own faculty and staff would probably serve the organization best. It doesn't matter which technology is being taught as long as the organization has adopted a course of action to utilize it to achieve the institution's goals and objectives.

Appendix D – Survey of Teaching Faculty

Findings and Remarks

The teaching survey included eight questions aimed at learning about how computers are being used in teaching, and identifying some of the bottlenecks. The largest stated use of computers in teaching was for preparation of educational materials (24%), followed by use of multimedia in classroom presentations. Less than half of those responding thought that available computer facilities were adequate for teaching. More hardware and upgrades were needed in addition to more support staff. Most instructors used departmental funds to develop teaching materials, with grant funds being used as the second most common source. Only 10% of the respondents indicated that they were involved in distance education with another 10% expressing interest. Similarly, only about 15% indicated that they were using the Internet either for putting up course notes or searching on-line databases. A large portion of respondents indicated that they would attend training sessions if provided. Regarding the computer literacy of graduating students, most felt that students were generally prepared for using computer technology but needed more experience.

Survey Responses
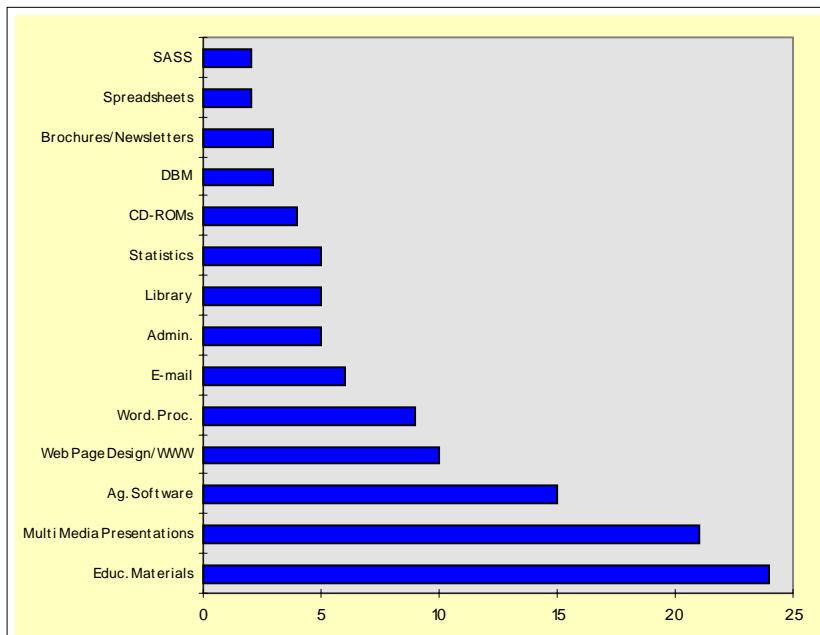
Figure 1. How do you use computers in your teaching program?

Figure 2. Are computer facilities and support adequate for teaching in your unit?
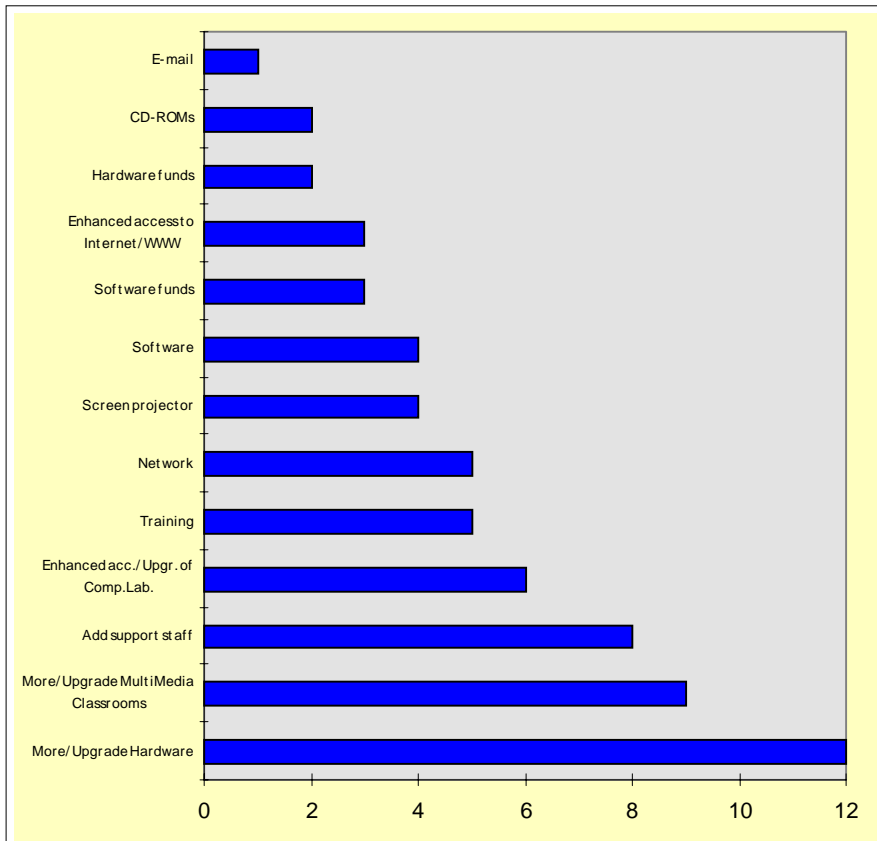
Figure 3. How can they be improved (computer facilities and support)?
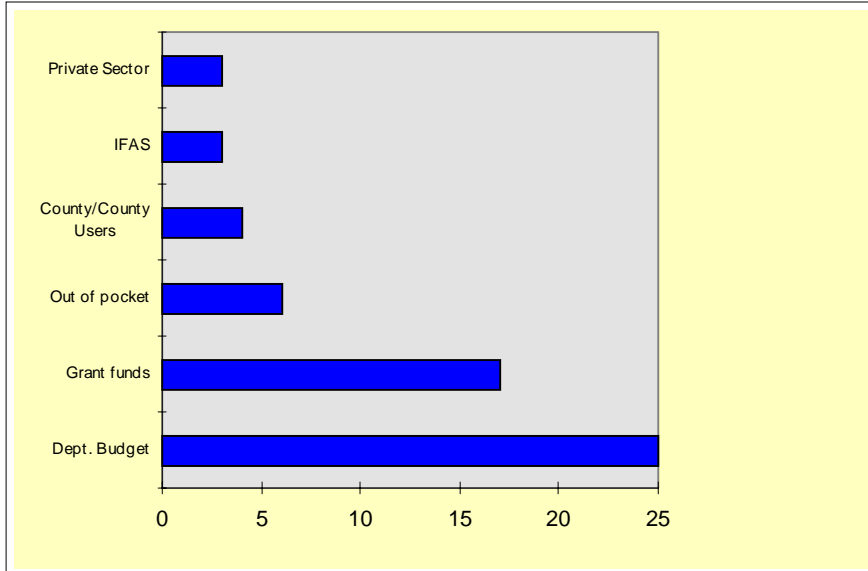
Figure 4. What is the source of funds for computer equipment purchases that you use for teaching?
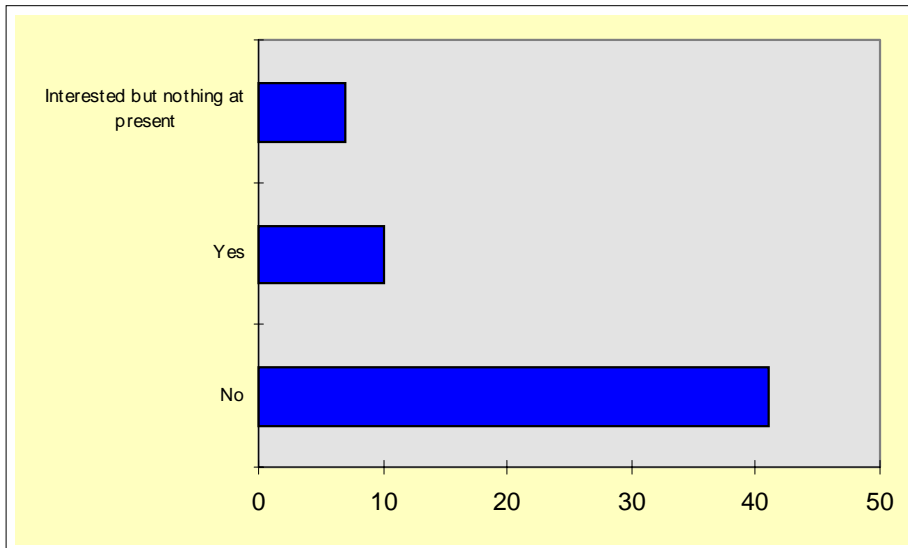
Figure 5. Are you involved in distance education?

Figure 6. Do you use the Internet as a teaching tool ? If yes How ?
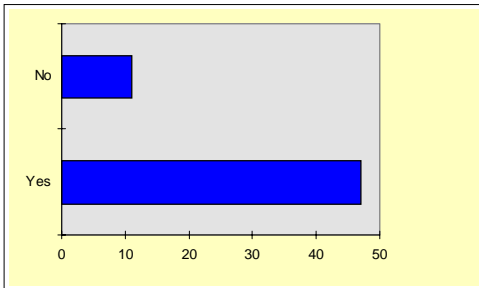
Figure 7. If training was available for computer based teaching skills development, would you take the time of your busy schedule to attend?
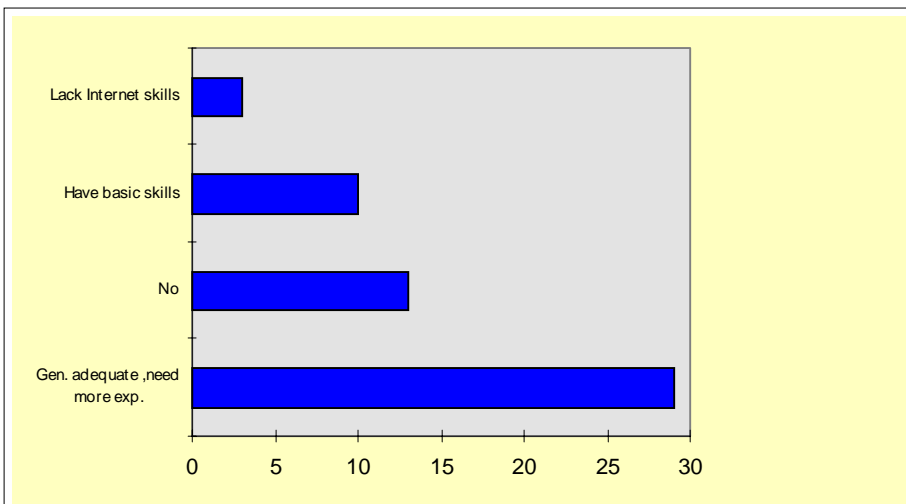
Figure 8. Do you feel that students graduating from your department competent in computer technologies ? If no, what is it they are lacking?

Appendix E – Survey of Research Faculty

Survey Responses

How do you use computers in your research program?

Data Analysis/Manipulation	54	WWW/Internet	9
Word Processing	38	Yes	7
Graphics	30	DNA Sequencing	2
Mail	20	GIS	1
Database	18	Other	4
Modeling/Simulation	10	Administration	6
Instrumentation	10		

Are computer facilities and support adequate for research in your department?

	Yes	No
Facilities	49	27
Support	46	31

Qualifications to "yes" answers:

- Data (?)
- Graphics
- Modeling/simulation facilities (3)

- Bibliographic facilities
- Adequate but by using "own" funds (7)

Needs that were identified:

- Hardware (17)
- Support staff (11)
- Training and documentation (11)
- Better support, including software installation (8)
- Common database software (5)
- Library services (4)
- Mac support (3)
- More number crunching power (3)

- Centralized facilities
- Departmental network installation or wiring
- Instrument interfaces
- Improve help facility
- Space
- Network installation and improvement
- Better phone system
- Recycle hardware

What is the source of funds for computer equipment purchases that you use for research?

Grant / Indirect	51
State / Departmental	17
SHARE Gifts	8
Personal	6
IFAS / Year-end OCO	3
Start-up Funds	2
Royalties	1
Other	5

Are facilities for generation of information adequate (instrumentation interfaces, temporary storage, etc.)?

Yes	85
No	33
Don't know	5
Undecided	6

Reasons for "no" answers and qualifications to "yes" answers:

- Support and training (6)
- Use own money (5)
- Database access &management (3)
- More computers (3)
- More space on VAX (2)
- Upgrade ICBR Vax (2)
- Vax not user-friendly (2)
- Slow network
- Need software
- Better access to libraries
- More RAM
- FDS
- Lexis
- Faster communications
- Need money
- High-end graphics

Do you have the facilities for long term storage of research data?

Yes	35
No	27
Don't know	3

Some respondents indicated what media they used for storage but did not indicate whether this was adequate. Media listed were diskette (10), tape (1), and other removable media (3).

What facilities will make it easier to integrate research data from different projects in ways that provide new insights?

Don't know	26
Better library/bibliographic facilities	20
Improved Internet access	19
Upgrade UF/IFAS VAX	8
We have what we need	8
Better e-mail	7
Training/documentation	5
Improve network	5
Better phone system	4
Statistical analysis facilities	3
Central storage and standards for data sets	3
GIS	2
Get rid of VAX	1
Mac support	1
ICBR VAX	1

Appendix F – Survey of Extension Faculty

Description

The survey was intentionally designed to be open in nature to determine the perceived problems related to the use of computers in UF/IFAS. The following set of questions were asked in the survey:

1. How do you use computers in your extension program?
2. Are computer facilities and support adequate for extension education in your unit?
3. How can they be improved (computer facilities and support)?
4. What is the source of funds for computer equipment purchases that you use for extension?
5. Do you use the Internet as an Extension tool? If yes, how?
6. If training was available for computer based extension delivery skills development, would you take time from your busy schedule to attend?

Findings and Remarks

The 6 applications mentioned in the survey (Figure 1) most used by extension faculty are word processing, preparation of educational materials, e-mail, database management, WWW access, and CD-ROM based applications. Most frequently used applications mentioned are PC based applications.

Most respondents are dissatisfied (Figure 2) with the current facilities and support system related to computers: 51 respondents were dissatisfied, 19 were satisfied and 12 were uncertain.

In order to improve the system (Figure 3), several issues were perceived by the respondents to be the most critical. Lack of hardware was clearly identified as the major problem for extension faculty. This was followed by lack of support staff. Poor Internet access, and lack of training were also frequently mentioned. Other problems mentioned were network access, lack of visual equipment and availability of funds.

Sources of funds used to purchase computers (Figure 4) include state, county, grants, donations and others.

About ¾ of the respondents use the Internet (Figure 5). The most common uses of the Internet are e-mail, WWW, access to extension publications and information retrieval (Figure 6).

There is a clear demand for training (Figure 7). 82% stated they would attend training, 13% would attend if convenient and/or focuses on their needs, and 5% would not attend.

Survey Responses
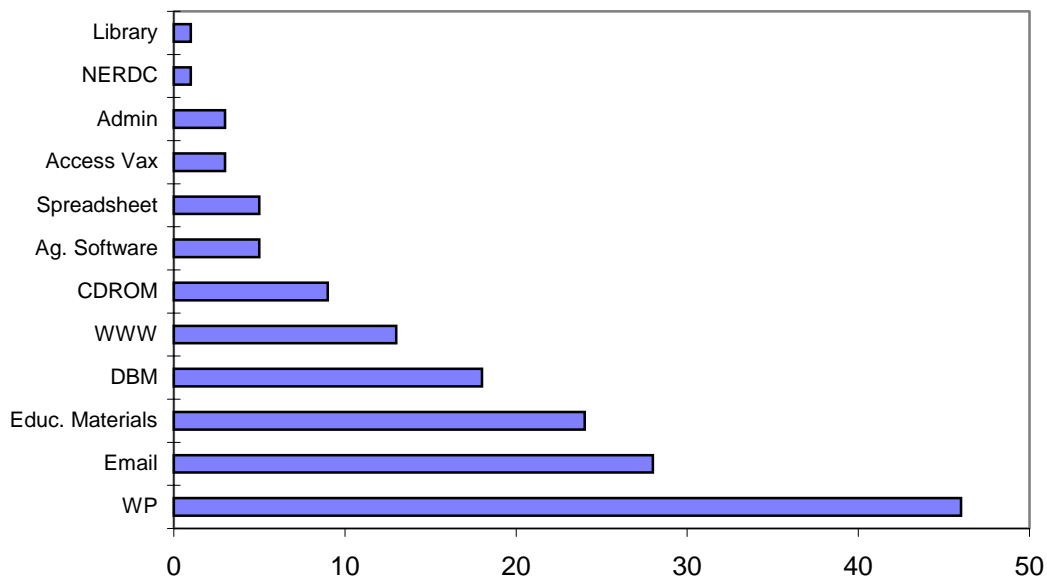
Figure 9. How do you use computers in your extension program?
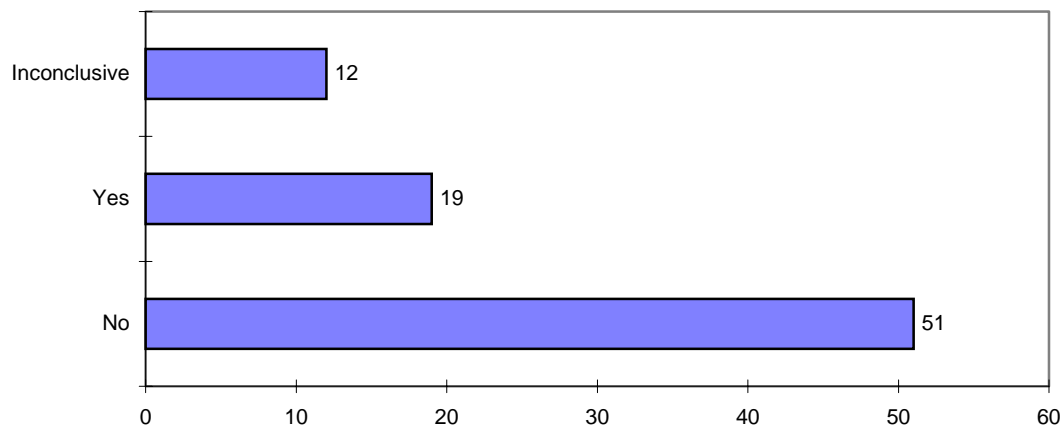
Figure 10. Are computer facilities and support adequate for extension education in your unit?
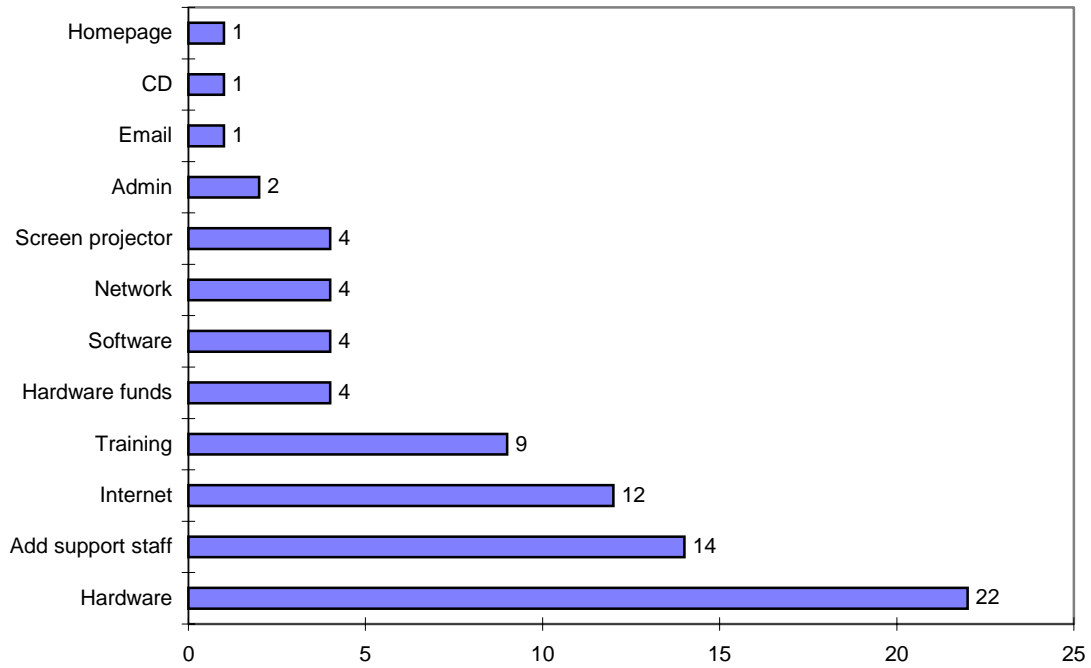
Figure 11. How can they be improved (computer facilities and support)?
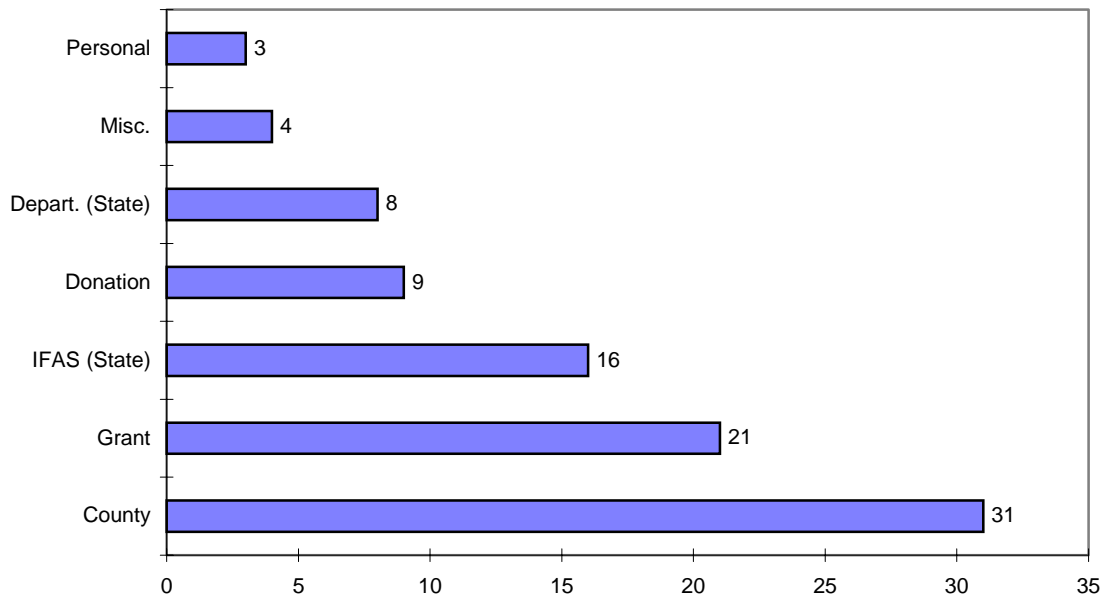
Figure 4. What is the source of funds for computer equipment purchases that you use for Extension?
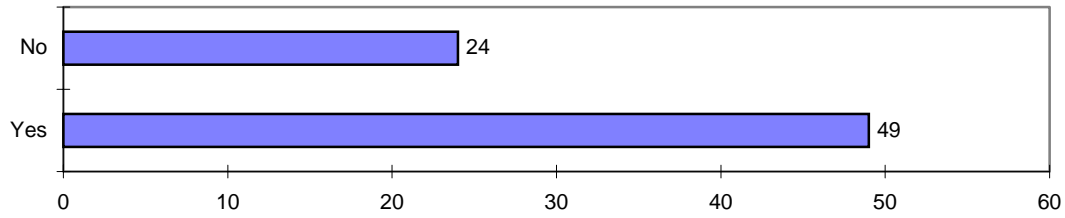
Figure 5. Do you use the Internet as an extension tool?
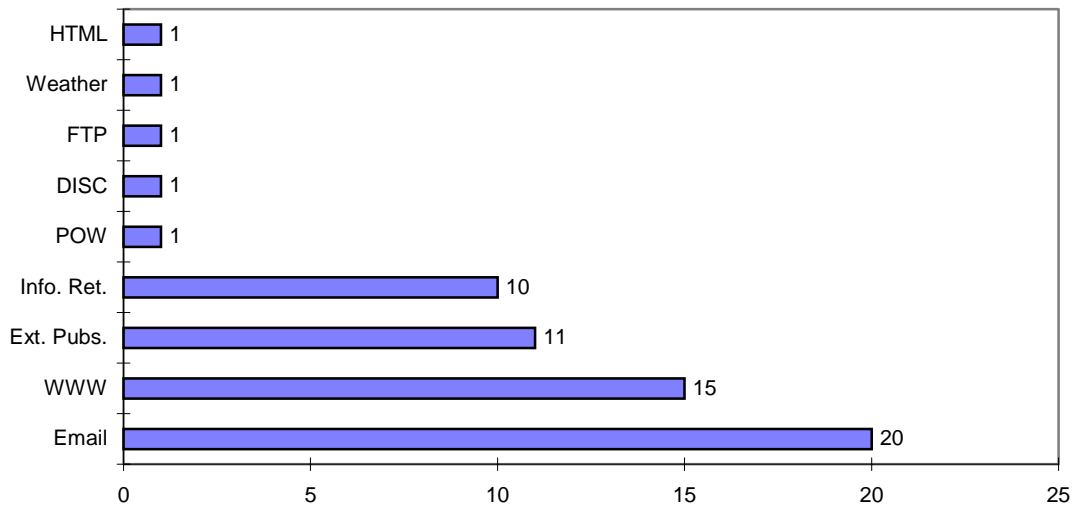
Figure 6. How do you use the Internet?
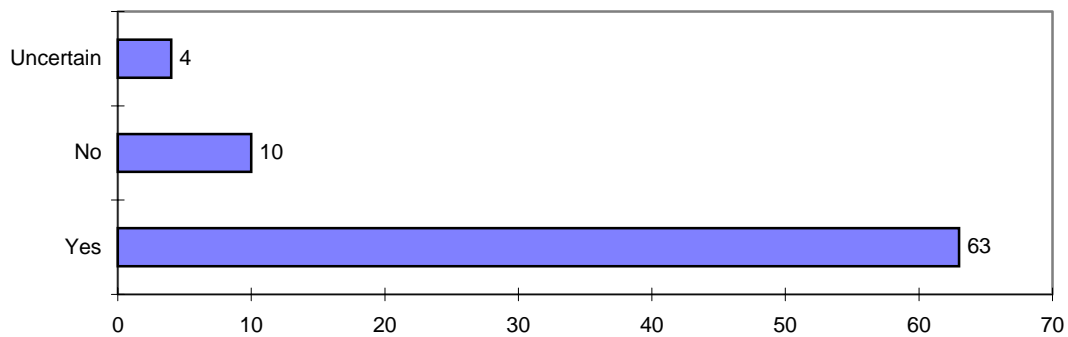
Figure 7. If training was available for computer based extension delivery skills development, would you take time from your busy schedule to attend?

Appendix G – Survey of Administrative Users

Findings and Remarks

There were three major areas of concern that dominated the 52 responses to this survey: training, technical support and connectivity.

Training was most requested for existing and new systems and applications. Formal training in the use of spreadsheets, word processors, graph tools, and the Internet were most often mentioned.

Technical support was the second most important issue, specifically assistance with hardware and software problems and advice on computer equipment and software purchases.

The third most often mentioned need was connectivity, in particular, being able to access information or applications needed to conduct business. Forty-one respondents complained about the "network" being down or too slow.

The responses to the technical support staff survey mainly pointed out a great need for technical support staff formal training. Most of these staff members have been self educated with little or no formal training. Connectivity problems were also obvious, as with the end user survey.

Survey Responses
Hardware

What computer hardware problems do you typically have?

shortage of available
   memory (6)
speed of machine (5)
computer locks up (4)
modem does not work (4)
printer problems (3)
disk drive unreadable (2)
"bad parts"

lack of color printers
key mapping failure
static on speakers
communication ports do not
   work
compatibility between
   components

type of hardware needed
   for applications
installation of components
keyboard "takes up too
   much work space"
monitor does not support
   graphics

What hardware improvements, if any, are needed for you to better accomplish your responsibilities or duties?

upgrade memory space (8)	higher speed modems (2)	Install Back-Up System
color printers (2)	better peripherals (2)	"modem compatibility with
upgrade machines (5)	power surge protective	scanners, etc."
more lines to connect to	devices (2)	better monitor
Gainesville Vax (2)	CD ROM Stackers	

What connectivity problems, if any, do you have (such as getting to GNV, NERDC, UF Menu, UF/IFAS Menu, Specific Applications) ?

trouble connecting to VAX	trouble connecting (3)	problems sending e-mail via
Pathworks (7)	FIRN not available (2)	bmail
network down (6)	lack of knowledge (2)	sign off problems
VAX down (5)	NERDC hangs up from $	bad connecting cables
trouble connecting to NERDC	prompt	unable to print from On Line
(4)	GNV via Internet rather than	Travel
unreliable phone lines (4)	Vax	hang up from VAX
e-mail problems (3)	VAX e-mail too slow and	"lock up, fatal exception
NERDC down (3)	inconvenient	errors"
response time (slow) (3)		computer freezes if idle

Software

What computer software problems do you typically have?

training on using software (6)
"Windows '95 … need I say more" (3)
limited selection of software (2)
compatibility between software (2)
different versions of WordPerfect between state
    and county
database
WP6.1 Spell Check locks up
WP6.1 opening more than one program locks up
WordPerfect preview and zoom causes error
getting into e-mail and WWW
lack of input on selecting software
Windows crashes often
"only when I hit the wrong keys or such.."
WordPerfect Office creates a general protection
    fault when

closing, when using Windows '95
not having latest version of particular software
IFAS Travel
"SPA and deliverable: software takes too much
    time for
input and repetitive…."
"Vax - calendar too difficult to be useful…"
"programs pertinent to office lack sufficient
    information
and data not always complete"
WP6.1
Power
IFAS CD Roms
Dept Network
error messages relating to the execute files

What software improvements, if any, are needed for you to better accomplish your responsibilities or duties?

training (9)
support person made available (3)
Need WordPerfect upgrade (3)
have Travel vouchers print in same application created in (2)
upgrade Windows (2)
communication
more control over data manipulation in the accounting
system
design a new database
encourage departments to allow staff attend software
classes
1234H Magic should be updated
money to upgrade
ability to edit e-mail

training sessions outside of Gainesville
"It would be nice if we all played off the same piece of music"
Need Excel to comply with Dean of Research requirements on
several reports
get Netscape
make database more user friendly
multiple search choices and ability to do customized reports
get Web Browser
get Lotus
fix Vax from going down
get AutoCad V12 with Architectural Utilities Software to
reduce time of making drawings

Human Resources

What are the major responsibilities/duties of your job?

use Travel System (15)
Purchasing (13)
Secretary (12)
use Departmental Accounting (10)
Personnel (7)
Data entry (6)
Payroll (5)
Office Manager (4)
Bookkeeping (4)
processing and administering grants and contracts (3)
Director/Administrator of Sponsored Programs (2)
Leave Distribution (2)

use Dean's Network
use SAMAS
Administrator of County Office
Support Rate System
4H Coordinator
training
County Extension Director
Academic Programs Coordinator
"phone answerer"
managing state extension program
budgeting and planning
Horticulture agent
interim Director for UF/IFAS Facilities planning and Operations

What training did you receive on existing systems or applications when you started with UF/IFAS?

none (16)
"very little" (7)
class training on SAMAS (7)
training on Travel (7)
training on Departmental Accounting (6)
training on Vax (5)
training on Central Leave (4)
class training on P.O. Requisitions (4)
class training on Payroll certification (3)
training on WordPerfect (3)
help from co-workers (3)
training on e-mail (3)
DANCE classes (2)

class training on Dean's Network
training on FAIRS
training on Accounts Payable
training on UF/IFAS Support Rate
training on NERDC
self training with guides
training on online Personnel
"IFAS Administrative Computing Systems"
literature from UF/IFAS Computer Network
training with the Computer System Coordinator
"I was given a black three-ring binder and told 'Good Luck'

What formal computer training have you received?

none (19)
WordPerfect (14)
Intro to Computer class (6)
MS DOS (4)
Excel class (3)
classes (3)
Faculty Support Center (3)
MicroSoft class (2)
formal training on Travel (2)
Windows Seminar (2)
In-Service classes (2)

AutoCad (2)
SAMAS (2)
Lotus (2)
Basic (2)
from books
County training
computer technical school for programming
class on Payroll and Distribution
DBase

Personnel Support classes
SAS
Harvard Graphics
PowerPoint
Departmental Accounting training
Grad course in computer applications
FORTRAN

Support Infrastructure

Who do you go to for help with your hardware problems?

Chris or Mike / UF/IFAS Computer Network (8)
Computer Technician (6)
co-worker in office (5)
Ernest Hall / Administrative Computing Systems (4)
Alan Wilkening (4)
outside consultants (4)
Digital Design (3)
"whoever we can find" (3)
computer software books (2)
Gateway (2)
Computer Programmer (2)
County MIS (2)

Brad Bates / Computer Application Coordinator
local software vendor manufacturer
Debby Royer
Lon
Bill Latham
local computer store
D. Ayers
Pensacola Computer
Jerry Britt
Ron Jessup
Rick Noble / Creative Computing
Bart Schutzmen

Media Specialist
Chair Computer Committee
VMTH employees
Nancy Johnson
MicroMenders
Marion Douglas
Robin Mack
JKL Enterprises
Computer System Coordinator
CIRCA
District Specialist
Quincy Computer Support
FAC OPS Engineering Technician

Who do you go to for computer hardware purchasing advice?

local vendor (6)	Computer Programmer (2)	consultants
IFAS Computing Network (4)	County MIS (2)	Central Purchasing
Computer Specialist (4)	Brad Bates	Verna Smith
co-workers (3)	PC magazines	VMTH employees
Alan Wilkening (3)	Department Chair	Nancy Johnson
Ernest Hall (3)	Bill Latham	District Specialist
Ernest Hall (3)	D. Ayers	Quincy Computer Support
County MIS (2)	Gateway	FAC OPS Engineering Tech
IFAS Purchasing (2)	Digital Design	
Computer Committee (2)	Media Specialist	

Who do you go to for help with your software problems?

IFAS Computer Network (10)	County MIS (2)	VMTH employees
manuals (9)	Computer Programmer (2)	Nancy Johnson
Department Staff (6)	Debby Royer	Marion Douglas
IFAS Administrative	local vendor	CIRCA
Computing Systems (4)	Gateway	IFAS Software Support
Computer Technician (4)	Ron Jessup	District Specialist
Faculty members (4)	Rick Noble	Quincy Computer Support
Alan Wilkening (3)	Media Specialist	FAC OPS Engineering Tech
Brad Bates (2)	Computer Committee	

Who do you go to for computer software purchasing advice?

publications (5)	Ernest Hall (2)	D. Ayers
local vendors (5)	County MIS (2)	Verna Smith
department staff (5)	computer programmer (2)	VMTH employees
IFAS Computer Network (4)	Cathy Calello	Nancy Johnson
computer committee (2)	Lon	"university"
Alan Wilkening (2)	Debby Royer	Quincy computer support
computer technician (2)	Melissa Cooperman	FAC OPS engineering tech

Where do you go for computer software training?

none available (9)	computer programmer (2)	UF Classes
publications (8)	"wherever I can get it"	Terrace James
Faculty Support Center (6)	County MIS	Marion Douglas
seminars (3)	local vendors	"out on a limb"
department staff (3)	employee development	"University"
IFAS training classes (3)	courses	hands on training
Extension's In-Service	NERDC	Gulf Coast Community College
training(2)	"campus"	
IFAS Software Support (2)	Nancy Johnson	

What technical support improvements are needed for you to better accomplish your responsibilities/duties?

receive more training (software,VAX) (13)

more computer support staff (12)

someone willing to work with us (3)

improve quality of VAX (2)

return calls (2)

quicker resolutions of problems (2)

programs can be fine tuned

link county system to UF/IFAS

quicker response when system is down

advice on hardware needs

"licenses so we can call tech. support"

improved phone system (modem line)

classes held closer to work

need to know who in UF/IFAS will help us

more computers in department

more database and networking systems available

Appendix H – Survey of Unit Resources

University of Florida
Institute of Food and Agricultural Sciences

To: Unit Directors
From: Infostructure Task Force

As you are aware, Vice President Davidson has convened an Infostructure Task Force, whose charge is to evaluate and redirect the use of computers and information-related technologies and resources within UF/IFAS. The need for this task force has been triggered by many factors, including: recent advances in PC technology, interactive software, phenomenal growth of the Internet and World Wide Web, the development of on-line administrative functions, electronic publication distribution, electronic marketing, and electronic mail. Additionally, increased demands for the integration of research and extension impacts with associated cost data suggest that changes to accommodate these functions may be needed in our current system.

To be successful, the task force needs your input from faculty regarding the current state of computer hardware, software, networking, and sources of technical support and training. <u>We are asking that you designate a person to fill the survey.</u> If this person has any difficulties with interpreting any of the questions on the survey please call any one of the persons below:

IFAS Information Technologies Office survey support (352) 392 7853
David Ayres (352) 343 4101
Francis Ferguson (407) 836 7570

Sincerely,
The Infostructure Task Force

Please return survey to:
Fedro S. Zazueta
IFAS Information Technologies Office
Building 162, University of Florida
Gainesville, FL 32611-0495

Infostructure Taskforce Unit Survey

All surveys will be grouped together. If results are requested, results will be presented in aggregate form. Your response and the accuracy of your answers are critical. Thank you for you participation.

The Information collected from this survey will help ascertain the current state of the use of computers in UF/IFAS. This information is needed to reevaluate the use of computers and associated information technologies within UF/IFAS.

UNIT SURVEYED: _____ **DATE:**
_____

Person surveyed: _____ **Surveyor:**
_____

Hardware

Computer: Enter the number of computers by hardware and user.

	8086	286	386	486	Pentium <16 MB RAM	Pentium 16+ MB RAM	Apple	Mac	Other	No Computer
Faculty	0	23	68	122	36	59	4	14	7	1
Adjunct/Courtesy	0	0	5	4	0	5	0	0	0	0
Secretarial	0	0	11	31	0	8	0	0	0	0
A&P	0	0	0	11	0	7	0	0	0	0
USPS	0	5	5	8	3	23	0	4	0	0
OPS	0	0	7	15	0	3	0	0	0	1
Stud./Teach. Lab.	0	0	10	33	6	12	0	4	5	0
General use	5	0	3	15	1	1	0	0	1	0
Volunteer	0	0	0	2	0	0	0	0	0	0
% purchased with UF/IFAS funds	100	100	93	85	100	73	0	93	60	0

Does your unit have a Fax machine? YES _33_ **NO** _1_

Does your unit have a satellite download link? YES _2_ **NO** _32_

Does your unit have multimedia and presentation equipment? YES _28_ **NO** _6_
   If yes, what equipment (fill with numbers):
   LCD Panel with overhead projection **YES** _34_ **NO** _0_ with video capabilities **YES** _9_ **NO** _25_
   RGB cannon _2_
   Overhead projectors _17_
   35mm slide projectors _23_

Other facilities for distance education : _Proxima w/ Video Capabilities._

Printer: Enter the number of printers by type and user.

	Dot Matrix	Laser		Inkjet		LAN Access to a Printer
		HP compatible	*Non-HP compatible*	B&W	Color	
Faculty	11	111	1	4	13	30
Adjunct/Courtesy	0	11	0	0	1	7
Secretarial	5	30	1	0	1	16
A&P	0	6	0	0	1	10
USPS	3	41	0	3	0	31
OPS	1	15	0	0	2	7
Stu./Teach. Lab	0	14	3	1	5	16
General use	0	7	0	1	0	1
Volunteer	0	0	0	0	0	1
% purchased with UF/IFAS funds	78.57	84.38	100	100	65.80	50.00

CD-ROM: Enter the number of CD-ROMs by speed and user.

	1x	2x	3x	4x	8x	> 8x
Faculty	1	21	8	43	13	0
Adjunct/Courtesy	0	1	0	5	0	0
Secretarial	0	16	0	9	2	0
A&P	0	1	0	4	2	0
USPS	0	5	0	14	5	0
Stud./Teach. Lab.	0	2	7	15	2	0
General Use	1	1	0	1	0	0
OPS	0	2	0	1	2	0
Volunteer	0	1	0	0	1	0
% purchased with UF/IFAS funds	100	93.75	66.67	61.14	67.75	0.00

MODEM/ISDN Adapter: Enter the number of modems by speed and user.

	less than 9600 baud	9600 baud	14,400 baud	28,800 baud	greater than 28,800 baud	ISDN Adapter
Faculty	14	14	17	31	3	1
Adjunct/Courtesy	1	0	3	1	0	0
Secretarial	4	1	6	3	0	0
A&P	0	0	1	2	1	0
USPS	1	0	0	0	0	0
Stud./Teach. Lab.	0	0	8	6	0	0
General Use	0	0	0	0	0	0
OPS	0	0	0	2	0	0
Volunteer	1	0	1	0	0	0
% purchased with UF/IFAS funds	100.00	100.00	80.00	80.78	28.50	0.00

Network Access: Enter number of users by connectivity service and user.

	Local Dial into VAX	Long Dist. Dial into VAX	Local Dial into FIRN	Long Dist. Dial into FIRN	Internet Service Provider	On-line Service Provider	None
Faculty	18	4	11	1	47	14	0
Adjunct/Courtesy	4	2	3	0	1	2	0
Secretarial	17	4	7	2	7	4	1
A&P	9	0	0	0	2	2	0
USPS	12	0	4	0	31	8	0
OPS	6	0	2	0	3	2	1
Stud./Tech. Lab.	4	0	4	0	1	20	1
General Use	1	0	1	0	0	0	0
Volunteer	0	0	0	0	0	0	0
% paid with UF/IFAS funds	66.67	0.00	100.00	0.00	100.00	100.00	0.00

Do you have a local network?   YES _10_ **NO** _24_

> **IF YES:**   (Individual responses are reproduced below.)
> **Network Software**: _Novell_ **Version** _3.12 ;_
> _Pathworks ; NT Server   3.51 ; Windows 95(supports file sharing) ; Windows NT Server w/ Win '95 (ver 1.1) ; Windows for Workgroups 3.11 ; Windows NT Server 4.0; Lantastic 5.0;_

Do you have a dedicated file server? YES _6_ **NO** _22_

> **IF YES:**   The numerical data is averaged over available responses. Individual descriptive responses are reproduced below as is.
> **CPU** _486 or better_ **Speed** _Greater than 100 MHz_
> **Amount of memory** _Greater than 56 MB RAM_
> **Actual Disk Storage** _2150 MB_   **Available** _1290 MB_
> **Briefly describe how the file server is used**: _Provide connectivity for shared CD's, files and printers, support Windows 3.1 from server freeing workstation HD space; Support computer teaching lab; all data from workstations, email, scheduler, printer (intra-office); User storage, Installation point for LAN, serves non-high-use software ;   Hammock is the WWW server for FAIRS.; File & Print Services, SQL Server, WWW and FTP Server._

Do you have any other dedicated servers (Communications, print) YES _3_ **NO** _28_

> **IF YES**: The numerical data is averaged over the responses. Individual descriptive responses are reproduced below as is.
> **CPU** _486 or better_ **Speed** _66 Mhz or better_
> **Amount of memory** _Greater than 50 MB RAM_
> **Total Disk Storage** _2867 MB_   **Available** _480 MB_
> **Briefly describe how the file server is used:** _Sprint printer; Support computer teaching lab; WWW, E-mail, LAN printing, Inbound Modem Serving ; Backup file servers for FAIRS documents._

Do you have someone on staff responsible for you LAN? YES _7_ NO _23_

> **IF YES: Name of Person** : Carol Andrews - co-staff ; Steve Lasley ; Kent Perkins; Joe Gasper ; D. Royer ; Alan Wilkening ;
> **IF NO: Who assists you with your LAN**?: IFAS Computer Network ; UF/IFAS Computer Support ; Reed Beaman; David B Williams;

Is your LAN connected to the Internet?   YES _13_ NO _10_

> **IF YES**: **Name of connection provider**: IFAS Computer Network ; University of Florida Network
> **Type of connection provider**: _UFNet ; State Div. of Comm. ; UF/IFAS VAX ; PPP_
> IFAS _3_ County __   FIRN __ ISP _1_ OLS __   Other _1_ .

Who is your local telephone company?

> BellSouth -- 28   ;   UFTelCom   --   3   ;   Other -- 3

Software

Operating System: Enter number of licenses by operating system and computer type

	8086	286	386	486	Pentium <16 MB	Pentium >=16 MB	Apple	Mac	No Computer
DOS only, V5 and earlier	10	23	30	16	1	0	0	0	0
DOS only, V6.nn	0	0	5	6	0	3	0	0	0
Windows 3.1	0	0	19	47	4	1	0	0	0
Windows for Workgroups	0	0	10	75	4	21	0	0	0
Windows 95	0	0	3	70	5	85	0	0	0
Windows NT	0	0	1	7	0	13	0	0	0
OS/2	0	0	0	1	0	0	0	0	0
Unix family OS	0	0	0	0	0	0	0	2	3
Other	0	0	0	0	0	0	0	18	2

Application licenses: Enter the number of application licenses by software category and operating system.

	DOS	Windows 3	Windows 95	Other
Word Processing:	**133**	**148**	**166**	**9**
WordPerfect	130	83	71	2
Microsoft Word	3	65	94	7
Other	0	0	1	0
DBMS:	**40**	**38**	**45**	**0**
DBase	4	0	2	0
FoxPro	1	8	0	0
Access	0	18	40	0
File Express	29	2	2	0
Other	6	10	1	0
Spreadsheet:	**14**	**120**	**102**	**2**
Excel	0	77	80	2
Quatro	9	37	21	0
Other	5	6	1	0
Communications:	**17**	**41**	**10**	**2**
ProComm	16	41	5	2
Other	1	0	5	0
Internet:	**8**	**195**	**268**	**9**
Email	5	76	119	1
Browser	0	65	109	8
FTP	3	54	40	0
Presentations:	**7**	**134**	**135**	**3**
Powerpoint	3	88	98	1
Harvard Graphics	4	21	23	2
Other	0	25	14	0
GIS:	**0**	**1**	**2**	**19**
Arc Info	0	0	0	6
Arc View	0	0	1	6
IDRISI	0	1	1	0
Other	0	0	0	7
Statistical Packages:	**24**	**17**	**24**	**2**
SAS	21	14	13	2
SPSS	3	3	8	0
MiniTab	0	0	0	0
Other	0	0	3	0

Human (Skill levels are defined below the table): Enter your appreciation of skill levels by position and application type.

Elem = Elementray Adv = Advanced	Word Processing		Spreadsheets		Communications		Internet	
	Elem	Adv	Elem	Adv	Elem	Adv	Elem	Adv
Faculty	37	33	20	12	25	13	30	14
Adjunct/Courtesy	8	8	8	0	3	3	4	0
Secretarial	30	26	28	0	31	4	31	4
USPS	21	16	8	6	11	1	13	5
OPS	12	8	16	1	8	3	12	4
Volunteer	6	0	1	0	3	0	2	2
Other	5	6	6	4	4	5	4	6

Word processing: Elementary means user can develop documents with graphics imported and tables. Advanced means user can use the equation editor, create mail merges, use the drawing tools, program macros.

Spreadsheets: Elementary means user can develop single spreadsheets and simple graphics.   Advanced means user can use multiple spreadsheets, OLE, scripting language for macros.

Communications: Elementary means user can use a comm. program to login to VAX or a BBS. Advanced means user can download and upload, understands protocols, set up the communications software.

Internet: Elementary means user can use browsers, search engines and ftp using an on-line provider or an Internet service provider.   Advanced means user can develop and maintain simple HTML pages.

Elem = Elementary Adv = Advanced	Database Manager		Presentations		GIS		FAIRS CD	IFAS Software
	Elem	Adv	Elem	Adv	Elem	Adv		
Faculty	15	8	37	13	7	4	25	8
Adjunct/Courtesy	1	0	5	1	3	0	4	4
A&P	4	3	3	5	1	0	7	6
Secretarial	21	0	12	2	3	0	4	4
USPS	16	7	14	6	0	4	6	13
Stud./Teach Lab.	8	2	10	0	10	1	4	4
General Use	0	1	0	0	0	0	0	0
OPS	7	1	3	3	4	0	5	4
Volunteer	0	0	0	0	0	0	12	12

Database Manager: Elementary means user can use a DBM, make simple uses of SQL, or can develop simple DBMS using wizards. Advanced means user can program in a DBMS, or use object-oriented tools for DBM creation.

Presentations: Elementary means user can develop simple presentations, imports clip art, figures and tables.   Advanced means user can develop multimedia presentations.

GIS: Elementary means user can use a GIS to display graphical information, simple queries.   Advanced means user can program using a GIS scripting language

FAIRS *figures indicate number of people using the FAIRS CD.*

IFAS *Software figures indicate number of people using UF/IFAS software.*

Support Infrastructure (Technical Support and Training)

Enter the approximate % for Hardware Technical Support from each of the sources below and rate the quality of service:

Provider	% of Hardware Problems Handled	Quality of Service (%)			
		Poor	Fair	Good	Excellent
Local Staff	46.23	4.76	4.76	61.91	28.57
District Support Staff	5.22	0.00	20.00	0.00	80.00
Local Computer Store	3.44	0.00	40.00	40.00	20.00
Local Computer Consultant	3.57	0.00	50.00	50.00	0.00
IFAS VAX	14.47	22.22	11.10	33.34	33.34
IFAS IT Office	17.36	10.00	10.00	40.00	40.00
CIRCA	1.95	0.00	66.67	33.33	0.00
FIRN	0.00	0.00	0.00	0.00	0.00
Other	7.76	14.29	0.00	71.42	14.29

% of hardware problems handled by source type

- IFAS Info. Tech. Off. 17%
- CIRCA 2%
- Other 8%
- Loc. Comp. Stre 3%
- IFAS VAX 14%
- Loc. Comp. Consult. 4%
- Distr Supp. Staff 5%
- CIRCA 2%
- Local Staff 45%
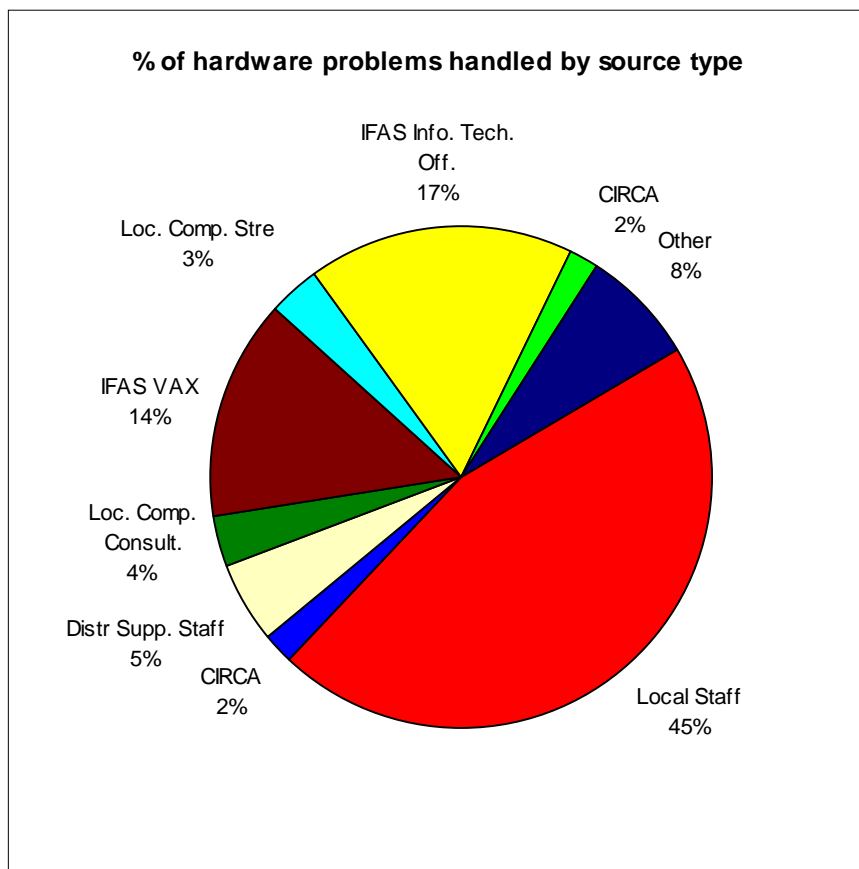
What are your three most common hardware technical support complaints?

First Response

Response to Network hardware problems is disorganized and needs to be handled more professionally so that customer can get feedback as to status.

VAX connections are poor, consistently the system goes down; the problems are not with the PCs.

It takes too long for service people to get to your problem - they are always busy- it often takes a day before they can get to your problem.

Cannot get through to people - when operator is in the middle of deadline - (no one's fault).

Need help with upgrade installations and debugging. Support person is stretched so thin they cannot service area assigned. District support person is excellent . We just have such a long response time because of the workload.

Not enough time to support hardware.

UF/IFAS E-mail service down.

None.

Network down/slow.

Replace Power Supply/Fan.

Hard disk and/or drive problems.

We have no dedicated staff; we use our own talents plus the UF/IFAS computer staff plus local stores/ consultants.

People who we ask aren't familiar with the product.

Lack of Unit capability.

Broken Drive Door.

Freeze up.

Slow service by Gateway.

System is down.

What to purchase.

System crashes because of network.

Vax - Log-on - modems.

System is down (NERDC or UF/IFAS E-mail).

Hard to put items on network.

Broken equipment.

Second Response

NERDC Down time - the system goes down in this Building (McCarty Hall D) too frequently in an 8 -hr workday.

Sometimes don't understand what they are trying to tell me.

Hardware outdated.

NERDC system down.

No others.

Reset CMOS/ New Internal Battery.

Lack of time for district staff to come to our site ; service is excellent but time is limited.

Lack of unit capability.

Viruses.

Lack of parts on hand.

Timely assistance in diagnosing problems.

Internet - modems.

Lack of unit capability.

Can't get what we need in timely basis.

Misconfigured equipment.

Third Response

Poor printing connections and has to be related to 1 & 2 above. The VAX jams the printing messages, so that information from the VAX and NERDC screens never prints. Have to clear the queue and sometimes the jobs never print out.

Install RAM/Hard drive / Network Card.

Lack of unit capability.

Network.

Takes too long to get help.

Don't get full details on what we need and are unaware of needs until we get partial equipment. Don't have budgeted funds for rest! No help from state for Internet!

Operation misunderstandings.

Enter the approximate % for software technical support from each of the sources below and rate the quality of service

Provider	% of Software Problems Handled	Quality of Service (%)			
		Poor	Fair	Good	Excellent
Local Staff	41.25	12.50	37.50	18.75	31.25
District Support Staff	7.66	0.00	16.66	16.67	66.67
Local Computer Store	0.81	50.00	0.00	0.00	50.0
Local Computer Consultant	5.65	66.67	0.00	33.33	0.00
IFAS VAX	20.24	14.28	21.44	14.28	50.00
IFAS Info. Tech. Off.	11.43	25.00	12.50	25.00	37.50
CIRCA	1.29	25.00	25.00	25.00	25.00
FIRN	0.40	100.00	0.00	0.00	0.00
Software vendor	11.27	9.10	36.36	27.27	27.27
Community College	0.00	0.00	0.00	0.00	0.00

% of software problems handled by each source type
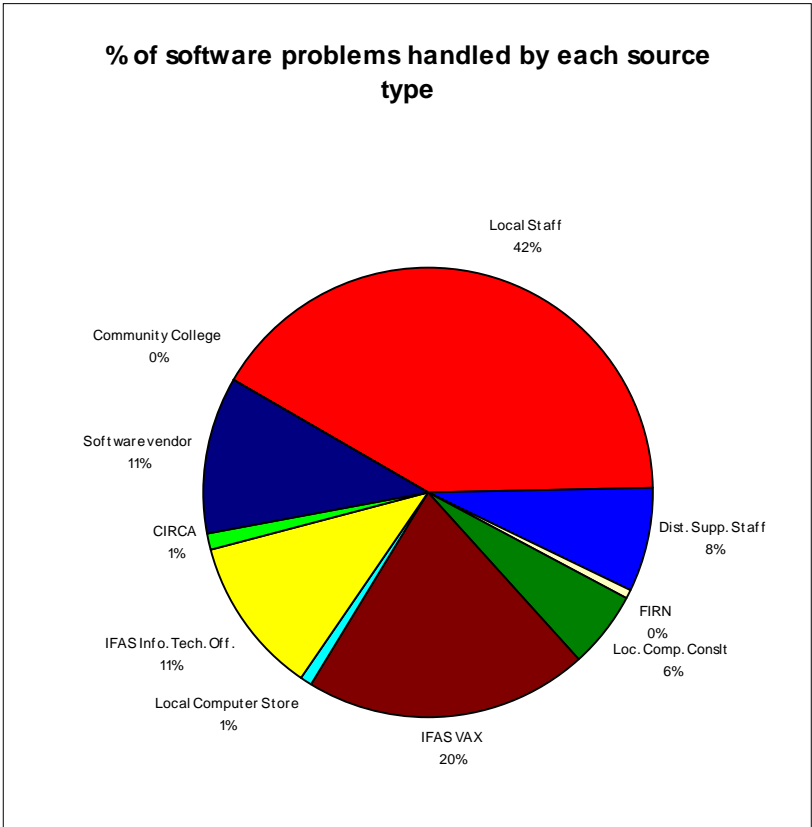
What are your three most common software technical support complaints?

First Response
Not enough training on software packages.

Some software not user-friendly.

Compatibility , "BUGS".

Customers need training.

I don't remember my password (any ; UF/IFAS VAX, NERDC, etc).

UF/IFAS travel report wouldn't print. Our secretary could never get the help needed from UF/IFAS to fix the problem. In -house staff had to fix the problem. It prints, but not how they (IFAS) say it should print.

Hard disk and/or drive problems.

Printer not set-up properly.

Windows 95 crashes.

Long waits for Technical support.

Windows 95 crashes.

Technical staff too overloaded to assist or train our staff on software applications.

Language too technical . Need written, easy-to-follow software user instructions.

Not enough training.

Envelope manager upgrade . No one in office feels comfortable!

Where did my file go?

Second Response
No assistance in purchasing correct software, no guidelines or limitations.

Secretaries are not computer specialists, need easier programs.

Upgrades that cannot be run on existing equipment because of memory constraints, etc.

Many people still in Win 3.1 with most software for Windows 95. Need to upgrade.

How do I get a license for _____ software (i.e., SAS, SPSS, WP, and Microsoft).

How do you do _____?

Viruses.

Printer does not work due to network.

Not enough hands-on training.

No help from state for Internet equipment. County expects state to buy!

Installation and purchase problems.

Third Response
Must make LARGE adjustments on programs instead of smaller ones for programs. It must be kept in mind that secretaries not only have to learn but utilize with other responsibilities.

How I do _____ in Word/Excel/PowerPoint/Access/WordPerfect/Graphics, etc.

Clunkiness of communications environment.

How do I _____?

Enter the approximate % for training from each of the sources below and rate the quality of service training:

Provider	% of Training Needs Supplied to You	Quality of Training (%)				Is Training offered often enough? (%)	
		Poor	Fair	Good	Excellent	Yes	No
Local Staff	44.76	7.14	21.43	42.85	28.58	33.33	66.67
District Support Staff	12.76	0.00	0.00	40.00	60.00	25.00	75.00
Local Computer Store	0.00	0.00	0.00	0.00	0.00	N/A	N/A
Local Computer Consultant	0.00	0.00	0.00	0.00	0.00	N/A	N/A
IFAS VAX	13.85	14.28	0.00	57.14	28.58	0.00	100.00
IFAS IT Office	9.51	25.00	12.50	25.00	37.50	20.00	80.00
CIRCA	6.33	0.00	20.00	20.00	60.00	50.00	50.00
FIRN	0.00	0.00	0.00	0.00	0.00	N/A	N/A
Other	12.79	14.28	42.86	28.58	14.28	50.00	50.00

% of training needs supplied to you by source type
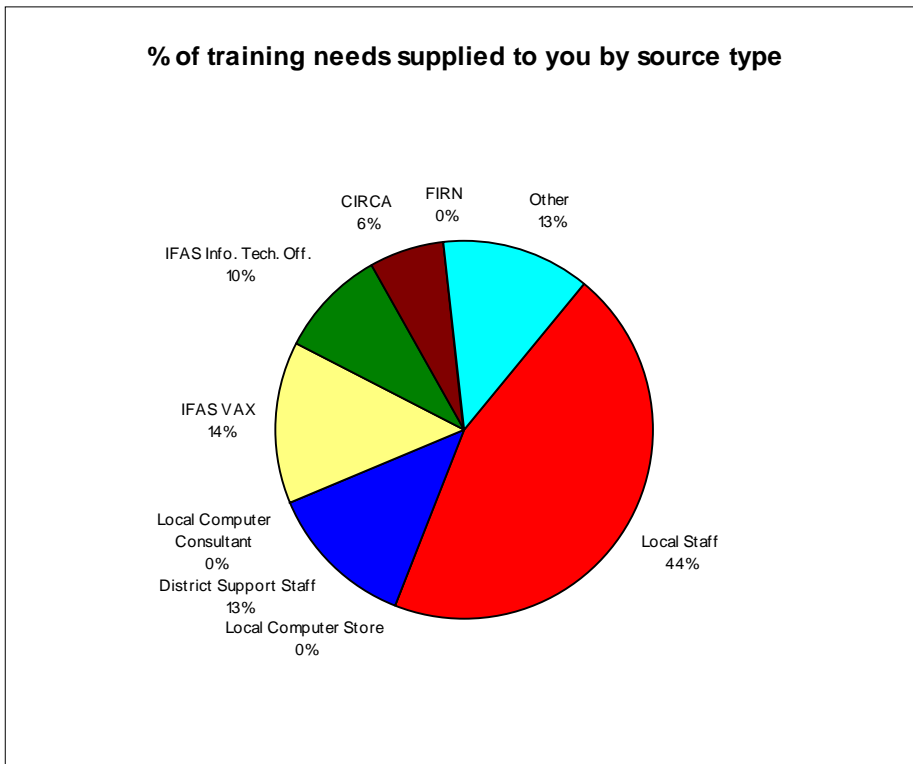
What are your five most important training needs?

First Response

Windows 95 and Windows NT, Microsoft for Windows and all phases.

Training is non-existent; what help we receive is minimal and we are treated as if we aren't supposed to know.

Using upgrades properly, i.e. WP, Powerpoint, 4-H Magic.

Need Network (Novell) training.

Advanced Presentation.

Find enough time to be trained, beginning with the basics.

Better knowledge of NERDC.

RGB Cannon/LCD Panel.

MS-Access and general database management.

Each department should have an individual capable of assisting faculty, staff and students with special training needs. Good training is currently available on the UF campus. Line item for computer and information technologist.

Internet - e-mail, Internet - adapting course material.

How to use Web Browser better.

Basics in getting your programs to run like you want them to - setting defaults.

Work shops on software techniques.

Basic computer software applications for secretarial staff; DOS, Windows, Windows 95, Spreadsheet, Communications, Internet, Publications, etc.

Windows and Windows 95.

Envelope Manager.

Web browsers.

Learn package capabilities.

Second Response

Windows 95 and other Microsoft products.

UF/IFAS Computer Network totally unresponsive.

Envelope Manager.

All staff need training - secretary, program assistant and agent.

Internet, Advanced Internet.

Better knowledge of UF/IFAS VAX.

Location to give hands-on training (ie, computer classroom).

PERL/HTML -> CGI-BIN applications for SUN Sparc (Unix).

Funding to enhance skills and support computer and information technologist position.

WPW 7.0, Word Perfect macros to set up letters and memos.

How to use SASS Advisory system.

Training sessions on new software or versions - what is new and how to get most out of it. Learn package functions.

We need it all !

SASS.

Third Response

Internet - finding information and utilizing, Internet, E-mail via Internet.

Better knowledge of Microsoft E-mail.

Extensive Win 95 and MS -Office training sessions.

Unix.

We need more district staff . Support is good but too few people and too little time.

Layout.

Using correct tools for job.

Fourth Response

Just keeping up with newer versions of software.

Require all faculty/staff to take a computer application course/short course/sessions.

HTML.

Desktop Publishing.

Backup.

Fifth Response

Trying to understand error messages in programs.

More faculty support training sessions. Some courses can fill up quickly.

Statistics.

Appendix I – Existing IT Resources in UF/IFAS

Introduction

This section contains a brief overview of human and material resources currently allocated to the IT-related units. Resources are presented in tabular form along with the products and services associated delivered by each unit. The intent is to provide an overview of these resources, products and services in order to better understand the current system and what is immediately available for reorganization. Budget figures do not include salaries.

Unit	FTEs	96-97 Operating Budget	Special 1-Yr Allocation
Educational Media and Services	19.25	37,143	360,000
IFAS Administrative Computing Systems	10.00	340,000	
IFAS Information Technologies	13.35	101,357	
Office of Academic Programs	5.50	52,000	
IFAS Computer Network	12.00	350,000	101,000
Total	**60.10**	**$ 880,500**	**$ 461,000**

Educational Media and Services Department

Human Resources

	FTE
Special Projects	1.00
Print News Writers	2.25
Television/Video Producers	2.00
Publication Editors	2.50
Graphic Designers	3.50
Distance Education Specialists	2.50
Printing Personnel [7]	3.25
Administrative Personnel	2.25
Total HR Utilizing Technology	**19.25**

Financial Resources

Hardware	20,823
Docutec [8]	360,000
Software	5,731
Repairs	5,361
Supplies	2,745
Training	2,483
Total	**397,143**

Products and Services

Communication Products and Systems Design
Sea Grant Publications
UF/IFAS Publications
Displays, Graphics Art/Design
Photographic Services
Printing Support (25 million impressions)
Television and Print News and Features
Television and Video Production
Credit and Non-credit Course Production Support
Media Library Materials
Distance Learning Infrastructure Support

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[7]   With Docutec on line.

[8]   One-time allocation.

IFAS Administrative Computing Systems

Human Resources

	FTE
A&P	2.00
USPS Technical	7.00
OPS	1.00
Total	**10.00**

Financial Resources

This unit receives a $40,000 annual allocation from State General Revenue and oversees $300,000 in NERDC expenditures.

Products and Services

IFAS-wide Interactive Systems

Budget Entry	Rate Control
Departmental Accounting	Transactions Analysis
Publications	Travel

Unit Specific Interactive Systems

Greenhouse Space and Time Management	Revolving Fund
Personnel	Travel Log

Batch Systems (over 600 production jobs in library)

Budgetary	Publications
CRIS	Revolving Fund
Departmental Accounting	Salary distribution
Grant Termination	Salary Equity
Information Resource	Salary Projection
Personnel	Soil Science
Property	Transaction Analysis

PC Systems
Gas Tax
Penalty Mail
Publications
Stock Inventory
Vehicle Maintenance

Office of Academic Programs

Human Resources

	FTE
A&P	1.00
OPS Assistant Network Admin	1.00
OPS Lab Staff	3.50
Total	**5.50**

Financial Resources

Category	Amount
OPS	43,000
OE	7,000
OCO	2,000
Total	**$ 52,000**

Products and Services

Maintain and support public access to PC Labs for students in the College of Agriculture.
Maintain and support GIS/UNIX facility for GIS based courses.
Establish and maintain multimedia equipped classrooms.
Support departmental printing for SASS audits from NRDC.
Purchase and distribute portable multimedia equipment to departments of college.

IFAS Computer Network

Human Resources

	FTE
Faculty	1.00
A&P	1.00
USPS Technical	6.00
USPS	2.00
OPS	2.00
Total	**12.00**

Financial Resources

This unit receives an annual operating allocation of $350,000 and received a special projects allocation of $101,000 in 1997.

Products and Services

Install, operate and maintain
Wide area network to 11 off-campus research centers.
Local area networks for 10 research centers, 40 campus buildings, 500+ networked PCs.
Dial-in services for ASYNCH, RAS SLIP, CSLIP and PPP.

Multiple client server environments for VMS, Windows NT and Win 95.
Common client/server environments for multiple units/departments.

Provide technical support for
2000+ PC users, 3000+ VAX users.
IFAS Wide WAN/LAN network troubleshooting.

Software site licenses, PC Software resale

Consulting services and help-line for
Network design, purchase, installation and operation.
PC hardware & software purchasing, installation and operation.
PC upgrades and repairs.

VAX hardware and software purchasing, installation and operation.
WWW design development and installation.
Database design, development and operation.

Design, develop, maintain and/or install and operate
USENET, GOPHER and WWW servers.
Comprehensive electronic mail server/system (MIME, POP, IMAP...).
Satellite weather downlink and database.
Statistics programs (SAS and Minitab).
Agriculture Market News Interface.
WWW home pages (IFAS, ICON, Accountability, Maps...).

Faculty A&P database with pictures and SQL interface to WWW.
Faculty and A&P semi-annual printed directory.
NERDC remote job entry and retrieval.
PC hardware, software and networking.

<u>Courses</u>
How to create a WWW home page.
Tools for surfing the Internet.
Utilizing VAX services.

IFAS Information Technologies

Human Resources

	FTE
Faculty	2.00
Secretarial	1.00
Technical	4.85
Graduate Students (paid from grants)	3.00
OPS	2.50
Total	**13.35**

Financial Resources

FAIRS State Allocation	49,357
Incidental Income (expected for fiscal year)	45,000
Distance Education Allocation	7,000
Total	**$ 101,357**

Products and Services

Development of Information delivery systems
CD-ROM (FAIRS, CITRUS)
Plant Selector
IFAS Software (review and production)
Web sites
Newsletter

Development of production tools for information delivery systems
Macros, templates and software for production of UF/IFAS publications.
Development of object oriented databases and search engines.
GUIs for UF/IFAS information delivery systems.

Formal Courses (graduate and undergraduate)
AGE 4932 Computer in Agriculture and Natural Resource Management (Distance education offering).
AGE6644 Decision Support Systems.
AGE4233 Drainage Engineering (Course taught using the Internet).
AGE5647 Advances in Microirrigation (experimental course to be taught over the Internet internationally).
Development of an undergraduate basic computer skills course.

In-Service Training
Developing UF/IFAS documents for Print, CDROM and the WWW (18 times per year at 12 different
    locations).
Introduction to Windows and Office Suites (18 times per year at 12 different locations).
Introduction to Visual Programming (12 times per year at 1 location).

Organization of Workshops
The Internet and Agriculture II (24 workshops per year at 12 locations)

Organization of Conferences
International Conference on Computers in Agriculture.
Florida Artificial Intelligence Symposium Agriculture Session.

Technical Support
IFAS Software Products, including CD-ROMs, software and development tools.
Technical support for non-IFAS products is also provided when resources allow.

Grants
Environmental education programs.
Casava.
Irrigation scheduling software.

Appendix J – Unit IT Support Personnel

Name	Job Title	Unit	FTE	Hired On
Robinson, Shirley	Comp Operator	Soil and Water Science	1.00	08/22/80
Ding, Ciqin	Comp P-A Mgr	IFAS Computer Network	1.00	12/30/94
Austin, Tracey A.	Comp Prog-Analyst	NFREC – Quincy	1.00	12/02/79
Brackett, Daniel P.	Comp Prog-Analyst	Forest Resources & Conserv	0.50	05/06/95
Hall, Ernest C.	Comp Prog-Analyst	VP Ag & Natural Resources	1.00	09/03/80
Kanofsky, Michael L.	Comp Prog-Analyst	IFAS Computer Network	1.00	12/04/96
King, Jay C.	Comp Prog-Analyst	Physiological Sciences	1.00	02/26/93
Sachs, Sidney J.	Comp Prog-Analyst	IFAS Computer Network	1.00	04/26/85
Zuccarell, Pauline R.	Comp Prog-Analyst	VP Ag & Natural Resources	1.00	11/28/89
Cao, Wei	Comp Prog	Veterinary Medicine	1.00	10/08/96
Harrison, Norman L.	Comp Support Analyst	EREC – Belle Glade	1.00	04/20/79
Jones, Ashley S.	Comp Support Spec	Food & Resource Economics	1.00	07/25/95
Lamb, Anna L.	Comp Support Spec	Home Economics	1.00	11/15/96
Bates, Bradley A.	Coord, Comp Applic	CREC – Lake Alfred	1.00	06/10/96
Cornwell, Deborah G.	Coord, Comp Applic	IFAS Computer Network	1.00	02/03/95
Kearney, Peter J.	Coord, Comp Applic	VP Ag & Natural Resources	1.00	02/16/81
Mack, Robin W.	Coord, Comp Applic	Teaching Administration	1.00	03/31/86
Watson, Monica Z.	Coord, Comp Applic	VP Ag & Natural Resources	1.00	03/07/85
Wilkening, Alan J.	Coord, Comp Applic	Research Administration	1.00	02/27/81
Gasper, Joseph J., Jr.	Coord, Comp Systems	Wildlife Ecology & Conserv	1.00	06/21/93
Hunter, Walter P.	Coord, Comp Systems	Agricultural Engineering	1.00	06/26/85
Kramer, John B.	Coord, Comp Systems	Ft. Lauderdale REC	1.00	04/04/97
Gregg, Jon A.	Data Proc Ctl Sp	Extension Administration	1.00	07/01/92
Laidlaw, David A.	Data Proc Operator	Fiscal Services	1.00	09/19/96
Nelson, Tyann M.	Data Proc Operator	Extension Administration	1.00	02/07/89
Schroeppel, Jennifer	Data Proc Operator	Fiscal Services	1.00	09/17/96
Ayers, David H.	Sr Computer Operator	County Operations	1.00	03/01/84
Owens, Scott	Sr Computer Operator	VP Ag & Natural Resources	1.00	11/22/85
Bergsma, Kathy	Sr Comp Prog-Analyst	Animal Science	1.00	03/10/86
Bloom, Stephen A.	Sr Comp Prog-Analyst	Soil and Water Science	1.00	08/29/83
Bowman, Ernest G.	Sr Comp Prog-Analyst	SWFREC – Immokallee	1.00	07/07/89
Brackett, Daniel P.	Sr Comp Prog-Analyst	Statistics	0.50	05/06/95
Clemmons, James R.	Sr Comp Prog-Analyst	Food & Resource Economics	1.00	02/08/93
Combs, Donna L.	Sr Comp Prog-Analyst	VP Ag & Natural Resources	1.00	07/19/79
Confer-Oresky, Andrea	Sr Comp Prog-Analyst	Extension Administration	1.00	11/17/95
Cope, William D.	Sr Comp Prog-Analyst	VP Ag & Natural Resources	1.00	09/19/86
Harvey, Kathy A.	Sr Comp Prog-Analyst	VP Ag & Natural Resources	1.00	05/01/89
Jessup, Ronald E.	Sr Comp Prog-Analyst	Soil and Water Science	1.00	09/25/72
Johnson, Ferris G., Jr.	Sr Comp Prog-Analyst	Horticultural Sciences	1.00	01/01/64
Niblack, E. H.	Sr Comp Prog-Analyst	Agricultural Engineering	1.00	10/12/82
Schutzman, Bart M.	Sr Comp Prog-Analyst	Environmental Horticulture	1.00	08/04/89
Smith, Arthur R.	Sr Comp Prog-Analyst	Statistics	1.00	06/19/72
Villali, Margarita	Sr Comp Prog-Analyst	VP Ag & Natural Resources	1.00	01/03/95
Whitford, Carolyn J.	Sr Comp Prog-Analyst	Veterinary Medicine	1.00	06/11/93
White, John F.	Sr Comp Repair Tech	Agricultural Engineering	1.00	06/24/83
Johnson, Nancy D.	Sr Comp Support Spec	Expanded Nutrition	1.00	10/03/83
Lampert, Jason David	Sr Comp Support Spec	Plant Pathology	1.00	05/02/97

Loche, Christina L.	Sr Comp Support Spec	CREC – Lake Alfred	1.00	02/20/97
Walker, Alderman D.	Sr Comp Support Spec	County Operations	1.00	09/20/96
Brandt-Williams, Paul	Sr Systems Prog	Extension Administration	1.00	06/30/90
Name On	**Job Title**	**Unit**		**FTEHired**
Delker, Richard D.	Sr Systems Prog	IFAS Computer Network	1.00	01/09/81
Ferguson, Francis, Jr.	Sr Systems Prog	Extension Administration	1.00	12/09/88
Lancaster, Bill	Sr Systems Prog	IFAS Computer Network	1.00	11/04/74
Lasley, Steven E.	Sr Systems Prog	Entomology & Nematology	1.00	03/06/80
Xu, Jing H.	Sr Systems Prog	IFAS Computer Network	1.00	10/23/89
Chang, Vivian T.	Systems Prog	Center for Biotechnology	1.00	10/02/87
Leopold, Christian R.	Systems Prog	IFAS Computer Network	1.00	10/25/91
Wilson, Thaddeus C.	Systems Prog	Dairy & Poultry Science	1.00	05/24/91

57.00

Appendix K – Installed Hardware Base in UF/IFAS

The Folowing Statistics were obtained from official state records. The following three tables show details for the two previous fiscal years on number of computers of different types and manufacturers.

Accompanying graphs show system-wide expenses and distribution of computers and other related equipment. These data were obtained from the same source but were classified using the equipment description. Due to poor desciptions, some of the equipment could not be classified

Information Resource Commission 1995-1996 Equipment Survey Results	1994-1995	1995-1996
Workstation	59	77
Apple	173	215
PC	2.719	3.091
90xx		114
286		346
386		616
486		1.321
Pentium		689
Pentium-Pro		5
Miscellaneous		52
Totals	**2.951**	**3.435**

 A total of 573 new computers were purchased in 1995-1996

| Manufacturer and model	FY 94-95 Inventory	Quantity Added	Quntity Deleted	Total new inventory
DEC MicroVAX II	2			2
DEC VAX 2000	5			5
DEC VAX 3100	6			6
DEC VAX 3400	4			4
DEC VAX 400	4			4
DEC DECStation MIPS	4			4
DEC ALPHA	6			9
SGI INDY MIPS	2	3		2
SUN SPARC RISC	26	15		41
Total	**59**	**18**		**77**

Identity by manufacturer and chip achitecture (e.g.AS/400, Sun SPARCenter). Does not include Intel x86, Pentium machines, Power 1, Power 2, Power PC machines unless they are multiprocessors

Mainframe and Super Computers

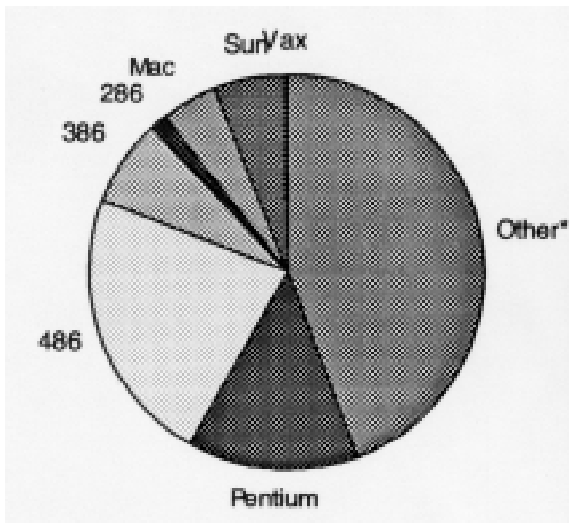| Manufacturer and model	FY 94-95 Inventory	Quantity Added	Quntity Deleted	Total new inventory
DEC VAX6620	1			1

Identified by manufacturer, model number, and primary operating system.

Computer Property
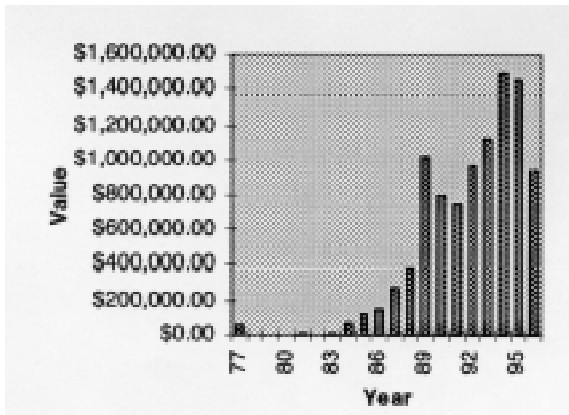
This chart shows the total expenses incurred. It included only computer system related hardware costing $500,00 or more through September 1996
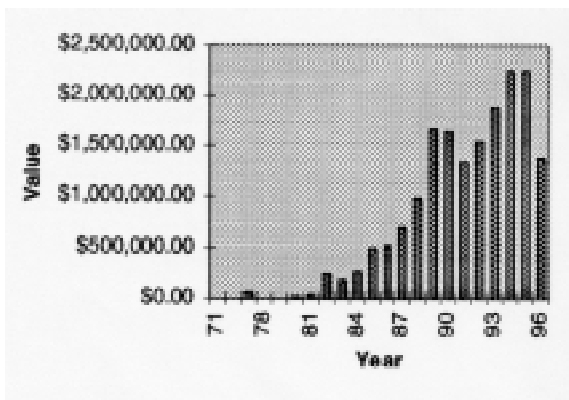
Computer types

This graph shows the distribution of computer equipment for the data period by computer type. Other is a category for which the eqipment could not be identified

Computer type	Value	Number
Other	$ 4,288,723.10	1303
Pentium	$1,367,083.59	456
486	$2,188,606.30	840
386	$706,405.62	298
286	$133,996.32	51
Mac	$441,332.26	127
Sun	$577,401.24	952
VAX	$15,461.71	1

Property in all Categories

This chart shows computer expensesfor all computer system related items $ 500.00 or more to esptember 1996. Of special interes are printer expenses as shown below:

Printer Type	Value	Number
Laser	$ 1,510,211.57	1071
Other	$786,877.85	573