

Preface

September 18, 1998

Overview:

The need to understand the ongoing demand for technology will play an important role in the success and failure of our County's ability keep current with the State and Local requirements. This mission critical area of responsibility does require a basic knowledge of long term planning and project management. The individual tasks reviewed in this draft will require flowcharts and formal project plans.

Pleasants County should not jump into a web-site strategy without the proper planning and written research. Our vision includes a well designed written strategy for data and investment.

Deficiencies:

We understand that many of the technology requirements for our County are yet unknown and the current cost to be all things to all people is not possible. We must plan for the **virtual Courthouse** (not to be confused with a simple web site) in a financially sound manner. Pleasants County generates services to the public and we maintain mountains of information in the form of data. If we take the time to plan our true needs we will end up with a system that makes this information available to everyone on an ongoing basis. With this in mind, we have developed an ongoing process to monitor and upgrade our abilities without making a financial commitment to any one-system format. We must communicate with the State Dept of Technology and build our infrastructure with grant monies. In time, the State will develop a statewide standard for data distribution. Until this standard is clearly defined, we will continue to build a countywide highspeed network that is flexible and yet has the ability to wide-area-network with any platform that is issued in the future.

Steps/Timeline:

The logical steps in our 7-year plan are to capture the ATM backbone for high-speed broad bandwidth access in 2000. The second step is to capture the Courthouse voice/video program and server equipment in 2001. This will set the stage for the wiring the entire County for the category 5, 4 lead network. This final preparation stage that installs the Courthouse network wiring is planned for 2002.

Once this infrastructure is in place (2 years), we will roll out the formal Strategic Information Technology Plan as a draft, and then set the standards for the Offices and Internet data access in 2002. Our in-house server's rough-cut capacity is adequate to handle Microsoft NT email. Our web presence will be intranet and internet and be Access database driven. We will be digitally connected to the Assessors mapping structure as well as the Circuit Court and Clerks records and make this available through our **virtual Courthouse** internet in 2003.

It is important to watch the wireless technology but security within the network is very critical to the project. The ability to install dishes for directional exchange to the Park and Senior Citizens is still a viable option.

New Issues:

We will mind map and set formal policy for the 911 data exchange and basic record retention exchange. The web presence will be the final steps in the project flows but does represent the final product outcome.

Joe Reckard

**Strategic Information Technology Plan
5 year Draft
Pleasants County West Virginia**

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Executive Summary

Background

In January 1998, the Pleasants County Commission began the process of developing a Strategic Information Technology Plan for the County. The goal is to have the initial process completed and defined by August 2001.

The Strategic Planning Team will consist of the Pleasants County Commission, all Elected Officials, all Appointed County Authorities and County Boards.

We have identified Six major issues facing the County in the area of information technology and its application to Pleasants County. Each issue needs to be assigned to the Strategic Planning Committee to further defined the issues, conducted research into alternative solutions, and developed recommended solutions.

These solutions will be presented to the Pleasants County Commission as a whole, and be reviewed to address the concerns and questions raised by those teams.

The six issues identified by the Policy and Functional Teams are:

- Training
- Information Technology Standards
- LAN / Personal Productivity
- Data Access
- Business Process Re-Engineering
- On-Going Operations/Support

This Executive Summary briefly defines these six issues and presents the outline of the strategies recommendations by the County Commission.

The Pleasants County Commission is faced with Technology Systems issues and did not have an effective long-range information Technology Planning Process. To avoid major financial impacts in the future, it is imperative that the Pleasants County Commission adopts a Technology policy that provides an annual update to this plan, and for integrating the Technology Plan into the budget cycle. This process must include all departments, and be designed to be inclusive, not exclusive.

Trends in the information technology field emphasize a shift in the role of the data processing staff from a control orientation to one of coordination and consultation. As the Pleasants County Government moves away from the totally centralized processing orientation and towards a cooperative processing model which utilizes client/server technology, shifts in the skill mix and job content will have to occur. Extensive retraining workers may need to take place as Elected Officials assume responsibility for their technology operations.

Extensive education in the possibilities of Information Technology must be provided at all levels of the, County especially at the Elected Official's offices. This education should be part of an on-going quality management effort by the County designed to provide our citizens with a more productive work force in a time of fiscal constraints.

The Pleasants County Commission also posted a web presence in 1997. The County needs to purchase a domain for about \$200.00. To date the site averages 6000 hits per year and is a critical element to the public access policy.

Issue Overview

Training

It is essential that a comprehensive effort designed to assist the County staff in the effective utilization of existing and new technologies be developed. Finally, an on-going program of education designed to support the migration to the Windows 2000/Microsoft Office platform must be established as part of the migration effort.

Information Technology Standards (STANDARDS)

Standards are defined as agreements, business decision tools that allow organizations to fix or prevent problems and take advantage of opportunities. Information technology presents a challenging arena for the development of standards because of the rapid progression in the industry and the myriad options and alternatives available.

County wide standards can assure the best and most effective use of existing technology while developing strategies for long term growth and sustenance, continually phasing in newer technology as it becomes most cost effective.

In the past, standards could be developed by data processing for its internal use because users were not affected by the day to day management of data and systems. Now, with the surge of end-user computing, the many issues surrounding data and systems management become the non-technical person's responsibility, and uniform direction becomes necessary to preventing problems and taking advantage of opportunities from a Countywide perspective. Key areas for standards development include:

Policies and Procedures

Data Format/Retention

Hardware and Software

County-wide policies and procedures concerning these issues need to be established to provide end-users and managers with the guidance they need to effectively manage their systems, and formal system standards and procedures which would assure a coherent and cost effective direction in information technology acquisitions must be developed.

LAN / Personal Productivity (LAN)

At the present time, the personal computers in use in the County are not 100% linked - many of the PC's operates independently. Many PCs could be linked to the County's AS/400e.

Implementation of Countywide Local Area Networks (LANs) and Wide Area Networks (WANs) will allow electronic communication, file and data sharing, and coordinated scheduling. The focus has estimated the potential savings for using electronic meeting scheduling, combined with ongoing annual costs associated with paper and photocopy savings associated with electronic mail, the County has the possibility of major real dollar cost savings. In addition, the increased productivity associated with use of electronic tools typically allows deferred staff growth.

In conjunction with the County's plan to upgrade to the ATM backbone, the County will be linking its major operational locations together with fiber, or hard wire forming a backbone for a Countywide high speed data network.

Data Access (ACCESS)

Data is an important part of the operation of the County and needs to be in a form that allows ease of access and exchange. County employees and others need the ability to share selected data and information without regard to how or in what form it was created or where it is stored.

In addition, several categories of data maintained by the County, including property ownership information, are of value to the business community. The ability to sell access to that information can, in many cases, come close to recovering the cost of collecting and maintaining the data.

There are several systems and support issues that need to be in place to manage data before data sharing can begin. These include standards for communications, software and data format, system design, a data dictionary and on-going training for all users.

There are several models which will enhance the ability of the County's offices to share data and information in its many forms. Primary among them is moving to a more distributed computing environment. Part of that model includes implementing and expanding Local Area Networks (LANs), and developing a Wide Area Network (WAN).

There are several issues involved in data. Primary among them is that most of the County's information and data is in the public domain (except that restricted for confidentiality and by statute) and free for public review. Most of the information and data within the County is not organized and formatted for easy electronic access and in some cases there are conflicts between similar types of data.

The impending requirements by the State that the County develop databases will become more common. In preparation for the publishing of these databases, the County will be undertaking an extensive review of all data bases, both manual and automated. This review will also serve to provide a baseline data set for development of a Countywide standard data dictionary, ensuring that all addresses, are formatted in the same way.

Business Process Re-Engineering (BPR)

The implementation of technology into the County without evaluating the workflow is not only dangerous, but it can be counter-productive. As part of the Technology Plan for the LAN/WAN design, the County Commission recommends evaluating:

Asset control
Records storage/retrieval

Use of such technologies as bar coding for fixed asset monitoring, has the potential for significant cost savings, as well as productivity increases based on a reduced need for work "rechecking". During the first year of this SITP, an assessment of several potential asset control and bar-code applications will be conducted. Pilot projects will be identified in the next update to this plan.

One of the principal products of local government is information. Much of that information is stored on paper, in file cabinets, where it must be manually retrieved when requested. In many cases, copies are then made of the form in question, and the original returned to the file. This process is a major labor-consuming activity on the part of many departments. The focus team identified the need for the County to review and re-engineer document handling processes. As a pilot project, the team suggested implementing an imaging system in the records section of the Sheriff's Department. Copies of incident and accident reports frequently

requested from the Police Department. Imaging those reports will allow co-workers to more rapidly retrieve and produce copies of the desired reports. The potential savings accrue not only from faster response time, but from reduced storage space requirements.

On-Going Operations (OPS)

The County has made a major investment in its information assets over the last several years, purchasing and implementing administrative and technical support systems based on the IBM AS/400e platforms. Using software supplied by third-party vendors, the County's' ongoing operations are highly dependent on these systems. Without them, the County could not move forward with the state plans for data and Court Room Voice/Video transmission.

Because of increased use of these systems, as well as the need for historical data storage associated with the Count's dependence on the automated systems, it is necessary to periodically upgrade the system processors and storage units. These periodic upgrades, which range from installing additional disk and memory to replacing and enhancing processor units, are a normal part of the ongoing maintenance of a computer system.

From an operational point of view, the County needs to begin to organize services in the most effective manner possible. This will entail a movement towards a more consultative role, as well as implementation, in the long-term, of a charge-back system in which County would purchase services and support from other vendors. Several strategies for enhancing the organization within County are presented.

Priorities

Assessing the funding and implementation priorities for the strategies identified by the focus teams is not a straightforward task. Because of the need to maintain a strong central processing mechanism for our mission critical functions such as 911 and finance, those strategies within the on-going operations function were given first priority. Beyond those strategies, priority will be assigned next to strategies designed to support the implementation of standard equipment and networking within the County,

The capital improvement technology requests will be reviewed from the above priority perspective. At the request of the County Commission, several funding levels will be assigned. In order to meet funding level targets, not all of the new personal computers requested in the process will be approved for any one fiscal year.

It was not possible to fund all a department's request, priority will be given to funding devices "closest to headquarters" - in other words, priority was given to building the network from the center out.

Those items not funded in a plan year will be included in future planning efforts at a higher priority.

Recommended Strategies

The recommended strategies summarize the work of the County Commission. They are, by definition, brief summaries of the findings. A more detailed discussion of each alternative can be found in this document.

Number	Description
1.1	Develop countywide training co-workers in personal productivity software, including word processing, spreadsheet, and database applications.
1.2	Provide training within 30 days of receipt of hardware/software applications and provide time for coworkers to learn and operate the system application

- 1.3 The Commission provides updates for applications to users and the elected officials
- 1.4 The Commission will provide upgrade training for systems users as available and approved.
- 1.5 The Commission will seek innovative ways to provide computers to coworkers that require technology.
- 1.6 The Commission will establish priorities for providing technology planning to meet specific department applications.
- 1.7 Provide coworker access to the Internet.
- 2.1 Develop standard personal computer configurations for each level of user.
- 2.2 Develop recommended vendors/models to limit the variances between personal computer systems.
- 2.3 Develop printer standards
- 2.4 Develop Network Standards
- 2.5 Develop Operating System and Applications Software Standards
- 2.6 Upgrade Existing Systems to be able to take advantage of the new software and networks.
- 3.1 Supplant existing methods of communication with more efficient electronic communication.
- 3.2 Provide an alternative to manual files for organizing correspondence mailed and received.
- 3.3 Establish the capability to share files with other network users.
- 3.4 Establish one centralized networked data repository.
- 3.5 Establish stringent security criteria for database access.
- 3.6 Allow querying of shared databases
- 3.7 Develop coordinated "real-time" scheduling capabilities
- 3.8 Develop personal productivity tools.
- 3.9 Allow coworker access to the Internet.
- 3.10 Concentrate hardware among groups of users.
- 3.11 Protect the network from ad hoc changes.
- 3.12 Base scheduling policies on quantifiable criteria.
- 4.1 Investigate with vendors and other governmental units bar coding and other methods of electronic inventory controls as well as fixed asset identification.
- 4.2 Maintain dual systems of record retention until such time that one system can legally meet all requirements
- 4.3

- 5.1 Recommend that the pilot project for imaging begin in fiscal year 2002.
- 5.2 Improve awareness of existing databases.
- 5.3 Develop database procedures and standards.
- 5.4 Improve external access to County information.
- 5.5 Ensure legality of data access
- 6.1 Develop public access recommendations.
- 6.2 Strategic Information Technology Planning will become part of the County's budgeting process
- 6.3 Information Technology needs will be linked to County's policy/objectives
- 6.4 The Commission will take a proactive role in Information Technology planning and coordination.
- 6.5 The Strategic Information Technology Planning process should be open and inclusive in order to reflect the needs of all County departments in a comprehensive fashion.
- 6.6 The role of the County Commission will evolve to that of a consultant.
- 6.7 Provide training in LAN operations and support to all assigned staff.
- 6.8 Provide a series of information meetings to all Elected officials/Policy Team members on IT state-of-the-art
- 6.9 Upgrade the AS/400 Processors, and Peripherals as required.
- 6.9 Upgrade AS/400 Operating System versions and applications software licenses as required to meet demand.

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Introduction

In January 1999, the Pleasants County Commission began the process of developing an Strategic Information Technology Plan for the County. Using as a basis work done in the Fall of 1998, County Commissioner Joe Reckard began to prepare a formal draft plan and the required components.

The Policy Team (consisting of the County officials) and Functional Team (made up of representative co-workers and County affiliates) will intelligently deal with the major issues facing the County in the area of information technology and its application to County operations

Each issue will be assigned to the Policy, or Functional Team, which will further defined the opportunities, conducted research into alternative solutions, and then develop the final recommended solutions. These solutions will be presented to the Functional and Policy Teams as a whole, and revised to address concerns and questions raised by all interested individuals.

This section of the County Strategic Information Technology Plan presents the draft plan developed by the County Commission, and includes the strategies developed.

The appendix on "SITP Costs" provides details of the costs of implementing the plan. In many cases, the cost of implementing a strategy is trivial -- amounting to just a few hours of effort to get a consensus among the affected parties. These "low-cost" items are identified in the table located in the "strategies section".

:

Issue Analysis and Discussion

1. Training

Issue Definition

Identify appropriate training and education programs to benefit the County in developing and maintaining skills on existing and future technology applications.

Goals

Coordinate training needs for the beginner, intermediate, and advanced level users in personal computing applications.

Select and incorporate technology training that is beneficial to the training of coworkers on systems applications, procedures, and tools necessary to do their job.

Explore existing technology for voice/video access for meetings, teleconferencing, and educational programs.

Provide basic computer operation skills.

Provide orientation seminars on current systems capabilities, department functions and operations.

Provide just in time training to coworkers for new system procedures, software, or hardware applications.

Alternative Strategies/Discussion

1.1 Strategy: Develop County-wide teams for training coworkers in personal productivity software, including word processing, spreadsheet, and database applications.

In order to fully utilize the various skills of individuals within the County in computer applications, individuals would be identified to provide coaching on the various applications. This requires the full support of the elected officials in allowing flexibility of schedules for the individuals to conduct and participate in the sessions.

Resources to be defined include vendors for teaching outlines, potential trainers, and specific topics required to meet individual and County-wide requirements.

PERSONAL COMPUTER

Topics:

Introduction

Operating Systems

Spreadsheet

Word Processing

Data Base

Calendar/Scheduling

Electronic Mail

Desktop Publishing

Bar Coding
AutoCAD Design
Diagram Creator
CD-ROM Cataloging/Indexing

Topics:

Introduction
Finance
Work Order
Police
Payroll
Fixed Assets
Land Management
Budgetary Accounting

Providers:

PRT
WVU-Parkersburg
Video programs
Audio tapes
Scripted outline/lesson plans
Internally Developed Materials/Instructors

Cost:

\$200.00 per person
\$40-\$50 per hour customized training;
\$200-500 for course training aids.

1.2 Strategy: Provide training within 30 days of receipt of hardware/software applications and provide time for coworkers to learn and operate the system

Application.

Training/education is critical to the coworker in developing the skills to be productive in the application of the newly acquired technology. The training should occur after the user has been provided the equipment or applications and has been given the opportunity to work with or read tutorial information prior to attending the class.

Customized training could be provided by a user who knows the application.

1.3 Strategy: The Pleasants County Commission will provide updates for applications to users.

1.4 Strategy: The Pleasants County Commission will provide upgrade training for systems users.

The Pleasants County Commission will provide the elected officials with updates prior to any changes on the system.

In order to provide a smooth transition regarding system changes, The Pleasants County Commission would schedule short sessions to be attended by the elected officials and users prior to implementation.

1.5 Strategy: The County is encouraged to seek innovative ways to provide computers to coworkers.

Currently, personnel with the County have various computer skills. We support a program that would provide opportunities for coworkers to purchase the latest technology in computers. Opportunities such as this would greatly enhance an individual's skills and knowledge.

An issue regarding conducting work at home must be defined meeting Fair Labor Standards Regulations.

1.6 Strategy: The Pleasants County Commission will establish priorities in providing technology planning to meet specific department applications.

Each department within the County provides specific services to the community. The Pleasants County Commission would provide technical assistance in reviewing specific software applications with the elected officials to establish goals for available technology.

Departments may be aware of service specific applications in software but face the challenge of determining proper software and hardware applications. The Pleasants County Commission will serve as the internal consultant to assist departments in planning and budgeting for new technology

1.7 Strategy: Provide coworker access to the Internet.

Each day the Internet creeps more into our lives. Merits are debated constantly; however, the reality is that this new medium is an accepted way to conduct business and a potential information source. Coworkers who have access can perform project research and bench marking activities.

Cost per employee will be minimal after the ATM is installed in each Elected Officials office.

2. Information Technology Standards

Issue Definition

Standards can be defined as agreements, decision tools that allow The County to fix or prevent problems and take advantage of opportunities. Information technology presents a challenging arena for the development of standards because of the rapid progression in the industry and the myriad options and alternatives available. However, despite the tenuous footing created by incessant changes in the industry, County-wide standards can assure the best and most effective use of existing technology while developing strategies for long term growth and sustenance, continually phasing in newer technology as it becomes most cost effective.

Background

End-user computing has grown in the last few years from a scattered few personal computers to some 10 to 15 personal computers, a pilot local area network, several printers and peripherals and the demand is steadily growing. It used to be that standards could be developed by data processing for its internal use because users were not affected by the day to day management of data and systems. Now, with the surge of end-user computing, the many issues surrounding data and systems management become the non-technical person's responsibility, and uniform direction becomes necessary to preventing problems and taking advantage of opportunities from a County-wide perspective.

In the past, equipment was often purchased based on at-the-moment availability, with no overall attempt to ensure any standard components and/or configurations. This means that almost every personal computer system in the County is slightly different. When something goes wrong, the time necessary for the County to identify the problem, obtain the necessary part, and install it is much larger than it should be. Standardized hardware configurations would reduce this problem.

By the same token, the County has many different versions of its personal computer applications software in place. We are running different versions of the DOS operating system, and different versions of MS Office. This makes data exchange, help desk support, and training very difficult and time-consuming, because extensive diagnosis is required to even begin to figure out what the problem is.

As the County begins to refresh its personal computer base, it is imperative that standards in the area of hardware, software, and networking. This will leverage the County's investment in technology and ensure a longer lifespan for the newly acquired items.

For the purpose of easily classifying County workers, three categories of system user were defined by the Standards Focus Team.

Category	Types of Tasks
Entry Level	Basic letters, memos, scheduling, calendar maintenance, simple newsletters, electronic mail
Average User	basic word processing , spreadsheet, newsletters, filing, requisitions, reports, multi-media, research, simulations, on-line connectivity, web browsing
Power User	desktop publishing, multi-media presentations, AutoCAD, engineering functions, budget analysis, heavy application integration.

2.1 Strategy: Develop standard personal computer configurations for each level of user.

Three standard PC configurations, with increasing levels of hardware capability, have been developed. They are outlined in the Hardware Standards appendix.

2.2 Strategy: Develop recommended vendors/models to limit the variances between personal computer systems.

For each system level, a limited number of vendors have been identified, with model numbers and "guidance" pricing specified. Because of the variances in system pricing based on component pricing, these suggested vendors and models will be updated quarterly. They are outlined in the Hardware Standards appendix.

Within any particular standard, the user may opt for higher criteria, such as: faster CPU's, more RAM, additional drives, larger DASD, or larger monitors. The deviations from standards will be approved by the County Commission only after consultation with the user to determine the justification and need for the request.

2.3 Strategy: Develop printer standards

One of the major cost savings associated with the implementation of local area networks is the ability to share common resources, especially printers. Rather than have several low-speed printers in a department, it is far more cost-effective to have one or two high-speed laser printers shared by all departmental users. This reduces the number of machines, which have to be maintained, speeds print times, and cuts down on the amount of supplies that need to be stocked.

The standard print mechanism for the County will be network-based laser printers. Dot matrix printers and personal laser printers will be considered on a case by case basis, and approved only when technical reasons justify their purchase.

Printer standards are included in the Hardware Standards appendix.

2.4 Strategy: Develop Network Standards

As the County begins to connect personal computers together in local area networks, it is imperative that the networks be established using common hardware, software, and protocols to ensure that all systems can communicate, and that the County's investment in training has been maximized.

Because of its widespread acceptance, the County has chosen to use Novell Netware as the standard network operating system. Additional standards have been established for network protocols, operating speeds, and architecture, and are detailed in the Network Standards appendix.

2.5 Strategy: Develop Operating System and Applications Software Standards

The County is presently using MS Office as the standard applications software. Because of differences in hardware, several versions of the software are in place. This causes significant support difficulties. Many County departments have external reporting requirements. For that reason, and because of the included scheduling, presentation, and other programs, the applications suite with the Windows operating system, the County has adopted Microsoft Office as the standard applications suite. A bulk license for 40 users of the software should be purchased, and we will install the software on systems in a phased-in fashion.

Several versions of operating systems are in place in the County. This inconsistency will make it difficult to incorporate and support users into a comprehensive system. Because of the built-in support for electronic mail and networking, the focus team has adopted Microsoft Windows as the standard operating system for the County. A license for 40 users should be purchased, and we will install the software on systems in a phased-in fashion.

2.6 Strategy: Where possible, upgrade existing systems to be able to take advantage of the new software and networks.

Many of the County's existing personal computers can be upgraded to run the new applications software and network/operating systems. All of the existing Pentium-based machines, and most of the 486-based machines, can be upgraded to a minimum of 64 Mb of RAM in order to be networked.

3. LAN / Personal Productivity

Issue Definition

Each of the departments of the County has developed its own methods of preparing, storing, and disseminating information. As electronic data storage has evolved, the departments have responded to their individual needs with technology that typically is specific to their programs only. We know that the technology for each effectively serves the needs of internal and external customers:

Where does all the information connect, and how should it? The issue for study by the LAN / Personal Productivity focus team is the management's myriad of information centers and making our resources more effective through a single source, a Local Area Network (LAN).

The overall mission is to determine how best to connect the County's electronic computing assets to achieve fully networked computing services, enabling information sharing among all departments within three years.

Background

CURRENT TECHNOLOGY

The County has 10 to 15 major computers:

One IBM AS/400e for our accounting software

Of these computers, the AS/400e can exchange data over a dedicated telephone line. This midrange mainframe system is capable of managing all our future server and technology needs.

An accurate inventory of personal computers is not available at this writing. However, it should be documented that a wide disparity exists between departments. The number of personal computers per department varies greatly; however, this important aspect of any LAN system is beyond the scope of this study.

PLANNED TECHNOLOGY

The County Commission acknowledges the establishment of the County's pilot LAN system in the County Clerks office. The consensus is that this was a positive first step to meet the County's long-term needs.

Though this indicates a commitment to a long-term information strategy with a network as the center, the position of the LAN / Productivity team is that a rapid expansion of the network beyond the pilot should be carefully examined and prioritized.

The highlights of the LAN pilot include:

- Estimated cost of network:
- Network protocol: Ethernet
- Wiring for protocol
- Ethernet cards
- Proposed expansions will be:

Estimated cost of adding a personal computer to the network: \$300, which includes shared costs of wiring, ports, Netware, E-mail and Ethernet card

The Pleasants County Administrator will be the first to connect with the County Clerk's office so staff can train on network technical issues.

Goal: Enable E-mail exchange among all desktop personal computers.

3.1 Strategy: Supplant existing methods of communication with more efficient electronic communication.

How many times a week does County staff call someone in another department and get a busy signal or another coworker whose work has been interrupted? How many interoffice memos take two days to be hand-delivered to another department? Answering these questions makes the discussion of electronic ("E") mail very one-sided. Although E-mail is one of the primary features of a network, its significance should not be overlooked. Instead of typing a memo, printing it, copying it, and walking to the mail drop, a memo typed on a personal computer would be delivered as soon as its author finished writing. The opportunity cost savings of E-mail are considerable, especially for an organization that has remote sites.

Estimates for cost savings are virtually incalculable for E-mail.

3.2 Strategy: Provide an alternative to manual files for organizing correspondence mailed and received.

One of the great inefficiencies of paper is that it has to be organized and filed. Let the network do it: E-mail captures documents as they are sent or received, so why walk to the copier or the file cabinet? Non-critical correspondence can be removed from the stack of critical correspondence that sits on the memo recipient's desk.

Technology continues to advance in media other than paper, and the County needs to position its information systems to take advantage of change.

For example, imaging technology has developed rapidly over the past few years. If viable imaging technology exists within two years, will Pleasants County have the infrastructure in place to optimize use of one of the most significant productivity tools of the decade? Probably not without a network and the hardware capabilities associated with it.

Goal: To enable data exchange among all personal computers in the County.

3.3 Strategy: Establish the capability to share files with other network users.

Common Access

An extension of the concept of E-mail is the sharing of word processing, spreadsheet, or database files by network users. Common documents could be "posted" electronically for anyone to review. For example, any County employee can post a document for all interested parties. Such a common area on the network would eliminate the need to print and distribute hundreds of pages of documents each year.

Where do the advantages of open access begin to conflict with needs for confidentiality and security? Here is the critical issue of a network: the system must respect confidentiality as much as it respects open access. State statutes govern the right to privacy. This is worthy of thought as a network is planned.

Selected Access

Fortunately, network file access is not an all-or-nothing decision. Levels of security allow system administrators to determine where a user can go on the network. Confidentiality would be maintained. At the same time, other advantages can be gained.

The advantages may be as simple as an administrative assistant editing a manager's memo for a final draft or as complex as multiple parties approving a single electronic budget transfer.

Regardless, the benefits in time and paper savings would be substantial.

Goal: To enable selective access to existing and future databases, enhancing workflow and greatly reducing or eliminating database duplication.

3.4 Strategy: Establish one centralized networked data repository.

Required databases are maintained in each office, and copies of the same are on file. The only way to eliminate the inefficiency that exists is to consolidate the information into a central database that The Pleasants County Commission can appropriately maintain (prepare data backups, authorize access, etc.).

3.5 Strategy: Establish stringent security criteria for database access.

The issue of system security discussed in the earlier data access goal comes to the fore again. The legal ramifications of network access mistakes cannot be overstated. No aspect of bringing the network on-line will require more planning and coordination than the development of policies to establish the security criteria for user authorization. Only with a strong, central source within The Pleasants County Commission will the County avoid confusion.

3.6 Strategy: Allow querying of shared databases

The biggest gains in information sharing will be made with the biggest sources of databases. Of course, security should always be paramount as discussed above.

Goal: To empower coworkers with networked personal productivity tools.

Only the individual coworker knows what can make his or her work faster, easier, or more efficient. By implementing a network, each individual will gain access to productivity tools which allow them the potential to create improvements in their own work.

3.7 Strategy: Develop coordinated "real-time" scheduling capabilities.

Scheduling benefits would extend far beyond the elected official level. Depending on the complexity desired, one person could review a master schedule for all workers in the County. Another significant use would be project management. When responsibilities are spread across several departments, how many ways exist to manage the progress of all the parties involved?

3.8 Strategy: Develop personal productivity tools.

Instead of another trip to the fax machine, why not fax a document from a personal computer? Most new personal computers are already equipped with the technology, and a network would facilitate that technology.

Other electronic productivity tools include personal information managers and electronic address books.

3.9 Strategy: Allow coworker access to the Internet.

Each day the Internet creeps more into our lives. Its merits are debated constantly, but the reality is that this new medium is becoming an accepted place for organizations to conduct their business. Many Federal government agencies, for example, now post regulation updates on "home" pages. The County should not ignore the medium's potential as an information source. By allowing selected coworkers to access the Internet, many new roads could be utilized on the "information highway":

- Research: Project research, grant proposals

- Forums: Share in discussions of problems shared by other Officials

- Benchmarking: Facilitate partnerships with other Counties

- Purchasing: Obtain product information; advertise bids, etc.

- Public Information: Post Recreation Department schedules, etc.

Goal: Maximize the benefits of network hardware.

3.10 Strategy: Concentrate hardware among groups of users.

It has already been established that the cost of a network will be substantial. To fully evaluate the cost of a network, however, the economies which can be gained through hardware management must be considered.

With careful planning, every desk top will not need a printer and a modem. Simply combine groups of users and structure the network to let one printer and one modem serve one group. The savings would be substantial. For example, instead of buying five printers for five desktops at a cost of \$300 each, with the attendant costs of five sets of consumables, and five machines to maintain and power; one printer would serve five coworkers. Even after outfitting the five coworkers with a \$500 printer the County would save \$1,000. In most cases the County would be substituting mediocre equipment with superior equipment.

In the case of modems for dial-up access, sharing the ATM would eliminate ongoing monthly phone line costs, plus reduce the growth of "modem lines" at an installation cost of as much as \$200 per line.

Goal: Determine a policy and schedule for bringing each department on-line.

3.11 Strategy: Protect the network from ad hoc changes.

Once the County's pilot network is in place, the question becomes "Who's next?" A sequence of phases has been proposed to link the entire County in three years. Can we remain true to these plans over an estimated three-year project life? The plans follow logical cost-savings measures like linking some departments sooner as cable is "pulled" by their location on the way to larger departments. However, that which seems perfectly logical is often lost in the competition for scarce County resources.

Strong management will be extremely important in the process. The only way to successfully extend the network is to avoid changes to the process once it has started. This County strongly urges that all plans should be thoroughly documented and scrutinized, and that all departments should reach a consensus of agreement before the first cable is connected. Stay with the plan, or expect serious cost problems as well as a parochial attitude towards the network by departments.

3.12 Strategy: Base scheduling policies on quantifiable criteria.

Every department will be able to demonstrate a need for linking to the network. How do we differentiate and rank the needs? Costs of equipment and hookups of individual desktops can give us total costs per department, which can be easily ranked. Quantifying need is a different matter:

How does one Department demonstrate that it should be linked before another?

There is no established way to quantify need. Unless one is developed, the decision process will become very subjective. The County may lose efficiencies that could be gained through an organized, objective, approach that is supported by a majority of departments.

4. Business Process

Issue: Asset Control

Identify new systems or modify existing systems to improve asset control procedures and fixed asset management

Background

The County currently has one asset inventory control program.

Current control methods call for the inventory asset count just prior to the close of the fiscal year. This usually does not occur.

Problems associated with the current methods are listed below.

- Excessive time involved due to repetition, that is, person A doing the same thing more than once and 2 persons duplicating processes

- Human errors occurring - transposing information, incorrect input from verbal, written, and keyed sources

- Possible inaccurate identification of parts - possibility of parts located in the wrong bins or assigned to the wrong vehicles

- Inaccurate inventory counts and lack of monitoring activity

- Inability to access information - cumbersome getting to information, losing maintenance history

- Inaccurate tracking of fixed assets and other equipment

4.1 Strategy: Investigate bar coding and other methods of electronic inventory controls as well as fixed asset identification.

Co-workers should study this issue and update their assets on the network once each year.,

BENEFITS

- Time savings resulting from the elimination of repetition
- Decrease occurrences of human error by improving informational input
- Accurate identification of parts through electronic system will provide an increased ability to track incoming assets.
- Ability to accurately identify County properties and equipment from acquisition to user assignment. This tracking would continue until the item was retired from service.

COSTS

Staff salary and time required a minimum of 2 hours per person.

Bar code scanning equipment/software to be determined

Issue: Records Storage/Retention

Identify various methods of reproducing and saving information and the viability of the different retention methods.

Background

The conclusion indicates that the state department of archive recognizes microfilm as the only viable archival storage medium. However, a preliminary investigation of document imaging to simplify internal customer requirements for information retrieval revealed that imaged documents are viable and binding evidence in courts. Most imaged documents of this type would be digital representations of hand-written police reports. Other problems related to the records retention issue are as follows:

- Internal customer requirements regarding hard-copy retention time and on-line computer information retention is also a legal issue.
- Excessive storage space required (This is a bulk issue and a fire hazard.).
- Difficult accessibility - physical restrictions (heavy boxes, bulky binders), separate locations (same building, different floors, separate building)
- Inefficient use of office space as opposed to archived storage locations

4.2 Strategy: Maintain dual systems of record retention until such time that one system can legally meet all requirements.

4.3 Strategy: Recommend that the pilot project for imaging.

Subsequent users of imaging will be determined by the success of the pilot project at the PD.

BENEFITS

- Better customer services both internal and external by enhanced accessibility to information
- Allows the County to meet legal requirements more efficient use of existing space and decreased needs for additional space
- Eliminates problems associated with lack of accessibility due to separate storage locations
- Use of existing equipment with enhanced programs as opposed to continuing replacement and maintenance of antiquated equipment

Any authorized co-worker should be able to retrieve information without concern for moving and/or lifting heavy, unorganized boxes, files
Compactness and centralized location (digitized storage) enables more efficient backup and information duplication
Increases access to all co-workers

AFFECTED USERS

Anyone whether internal or external to the organization who records and accesses County records.

COSTS

To be determined.

5. Data Access

Issue Definition

To determine how we can use existing County data to best serve any person who needs information and services from the County, whether that person be a County coworker or an external customer. Information to be provided must fall within confidential and legal guidelines.

Background

Information already exists in digital and/or hard-copy formats, but cannot always be accessed by those who need that information. This access problem is due to the lack of :

- 1.knowledge of what is available (both in-house and for purchase);
- 2.training in how to use the information;
- 3.hardware; and/or
- 4.connectivity.

Goal: Provide and improve internal access to information.

Currently, there may be a need for more efficient and effective information exchange between County departments. There is also some duplication of effort occurring, which would be eliminated if departments could share and or link databases.

5.1 Strategy: Improve awareness of existing databases.

PLAN OF ACTION:

Review existing data collected from previous surveys.
Develop a survey to determine the structure and contents of the County's existing databases, as well as needed data and access links.

BENEFITS:

Provides information on what formats are currently used, what doesn't exist, and who needs access to that information.

Initiates the formation of a glossary of terms to ensure that everyone in the County means the same things when they use a term.

Determines the type and speed of access required in order to obtain needed information, whether it be a link in the County network, mobile data communications, or some other form of access.

COST:

At the department level existing staff can be utilized.

Estimated time spent by departments to complete survey is 20 hours.

5.2 Strategy: Develop database procedures and standards.

PLAN OF ACTION:

Develop standards to ensure that information is entered the same way no matter where it is entered, or who enters it, and procedures for updating information.

BENEFITS:

- Allows data to become more readily available to co-workers and customers
- Reduces duplication by making databases interconnected.
- Allows for manipulation of data to track trends. (i.e. Track senior citizen information in order to provide benchmarks on programs.)
- Determines who will maintain and update information and ensures the flow of information.

COST:

Estimated time to develop standards and procedures is 200 hours.

Goal: Determine external needs and recommend ways to improve access to County information.

5.3 Strategy: Improve external access to County information.

PLAN OF ACTION:

- Send surveys to selected external customers.
- Purchase a Domain and spider /refresh data to domain on a scheduled basis.
- Survey (i.e. County Council, Commissions, Chamber of Commerce, Media) on what types of information and forms of access they would like to see provided by the County.

BENEFITS:

- Determines what information is desired to be accessible by the public.
- Determines the methods of access which would best serve the needs of external customers.

COST:

- Estimated time to develop, distribute, and evaluate survey results is 40 hours.
- Estimated time for external customers to complete the survey is .5 hours.

5.4 Strategy: Ensure legality of data access.

PLAN OF ACTION:

Review survey results with legal and other appropriate departments to determine what information can and should be made accessible to the public.

BENEFITS:

Ensures confidentiality and rights of privacy.

Determine what information should be accessible to the public.

COST:

Estimated time to review information with legal and other departments is 40 hours.

5.5 Strategy: Develop public access recommendations.

PLAN OF ACTION:

Coordinate the implement and develop recommendations for public access, based on the results of the surveys.

BENEFITS:

Improves external customer access to County information.

COST:

Estimated technology committee time to develop recommendations is 40 hours.

(Recommend a Commissioner for continued data maintenance and update.)

6. Ongoing Operations

Issue Definition

The major reason the County is faced with the major systems issues addressed in this plan is that the County has not had an effective long-range information technology planning process.

Because of that history, and to avoid major financial impacts in the future, it is imperative that the County adopt a methodology for providing an annual update to this plan, and for integrating the IT planning process into the budget cycle. This process must include all departments, and be designed to be inclusive, not exclusive.

Background

Trends in the information technology field emphasize a shift in the role of the data processing staff from a control orientation to one of coordination and consultation. As the County moves away from the totally central processing orientation of the past, and towards a cooperative processing model which utilizes the client/server technology, shifts in the skill mix and job content of IS department staff will have to occur. Extensive retraining of staff will need to take place as departments assume more and more responsibility for their IT operations.

The County has made a major investment in its information assets over the last several years, purchasing and implementing administrative and technical support systems based on the IBM AS/400 platform. Using software supplied by third-party vendors

The County's ongoing operations are highly dependent on these systems. Without them, the County could not issue and maintain the financials. These administrative systems have become the backbone of the County's operations.

Because of increased use of these systems, as well as the need for historical data storage associated with the County's dependence on the automated systems, it is necessary to periodically upgrade the system

processors and storage units. These periodic upgrades, which range from installing additional disk and memory to replacing and enhancing processor units, are a normal part of the ongoing maintenance of a computer system.

From an operational point of view, The Pleasants County Commission needs to begin to organize to deliver services in the most effective manner possible. This will entail a movement towards a more consultative role, as well as implementation, in the long-term, of a charge-back system in which County departments would purchase services and support from either the TS department or other vendors. Several strategies for enhancing the business organization within TS are presented.

Extensive education in the possibilities of Information Technology (IT) must be provided at all levels of the County, especially at the Elected Official level. This education should be part of an on-going quality management effort by the County designed to provide citizens with a more productive work force in a time of fiscal constraints.

Alternative Strategies/Discussion

Goal: Institutionalize the IT Planning Process

6.1 Strategy: Strategic Information Technology Planning should become part of the County's budgeting process

6.2 Strategy: Information Technology needs should be linked to County policy/objectives

6.3 Strategy: The TS Department should take a proactive role in Information Technology planning and coordination.

6.4 Strategy: The Strategic Information Technology Planning process should be open and inclusive in order to reflect the needs of all County departments in a comprehensive fashion.

6.5 Strategy: Write Budget Procedures to incorporate SITP Process.

Goal: Enhance IS Capabilities

6.6 Strategy: The role of the TS Department should evolve towards a consultancy mission.

6.7 Strategy: Define TS & Customer Department Roles.

6.8 Strategy: Provide training in LAN operations and support to staff.

Goal: Begin Elected Official/Orientation Process

6.9 Strategy: Provide a series of seminars to Elected officials on state-of-the-art.

Goal: Maintain the County 's investment in mission-critical enterprise systems such as the public safety systems and the joint County/County Geographic Information System.

6.10 Strategy: Upgrade AS/400 and Peripherals as required.

6.11 Strategy: Upgrade AS/400 Operating System versions and applications software licenses as required to meet customer demand.

Appendices

Strategies

Number	Description	Cost Impact
1.1	Develop County-wide training for co-workers in personal productivity software, including word processing, spreadsheet, and database applications.	Minimal
1.2	Provide training within 14 days of receipt of hardware/software applications and provide time for coworkers to learn and operate the system application	Moderate
1.3	The Pleasants County Commission will provide annual updates for applications to users and the elected officials	Moderate
1.4	The Pleasants County Commission will provide upgrade training for PC systems users once annually.	Moderate
1.5	County is encouraged to seek innovative ways to provide personal computers to coworkers.	Minimal
1.6	The Pleasants County Commission should establish priorities in providing technology planning to meet specific department applications.	Minimal
1.7	Provide coworker access to the Internet.	Minimal/Moderate
2.1	Develop standard personal computer configurations for each level of user.	Minimal
2.2	Develop recommended vendors/models to limit the variances between personal computer systems.	Minimal
2.3	Develop printer standards	Minimal
2.4	Develop Network Standards	Minimal
2.5	Develop Operating System and Applications Software Standards	Minimal
2.6		

- Upgrade Existing Systems to be able to take advantage of the new software and networks.
Moderate
- 3.1 Supplant existing methods of communication with more efficient electronic communication.
Significant
- 3.2 Provide an alternative to manual files for organizing correspondence mailed and received.
Significant
- 3.3 Establish the capability to share files with other network users.
Significant
- 3.4 Establish one centralized networked data repository.
Significant
- 3.5 Establish stringent security criteria for database access.
Minimal
- 3.6 Allow querying of shared databases
Moderate
- 3.7 Develop coordinated "real-time" scheduling capabilities
Significant
- 3.8 Develop personal productivity tools.
Moderate
- 3.9 Allow coworker access to the Internet.
Minimal/Moderate
- 3.10 Concentrate hardware among groups of users.
Moderate
- 3.11 Protect the network from ad hoc changes.
Minimal
- 3.12 Base scheduling policies on quantifiable criteria.
Minimal
- 4.1 Investigate with vendors and other governmental units bar coding and other methods of electronic fixed asset identification.
Minimal
- 4.2 Maintain dual systems of record retention

- until such time that one system can legally meet all requirements
Moderate
- 4.3 Recommend that the pilot imaging begin in the Clerk's Office in fiscal year 02.
Significant
- 5.1 Improve awareness of existing databases.
Minimal
- 5.2 Develop database procedures and standards.
Minimal
- 5.3 Improve external access to County information.
Moderate
- 5.4 Ensure legality of data access
Minimal
- 5.5 Develop public access recommendations.
Minimal
- 6.1 Strategic Information Technology Planning should become part of the County's budgeting process
Minimal
- 6.2 Information Technology needs should be linked to County policy/objectives
Minimal
- 6.3 The County should take a proactive role in Information Technology planning and coordination.
Minimal
- 6.4 The Strategic Information Technology Planning process should be open and inclusive in order to reflect the needs of all County departments in a comprehensive fashion.
Minimal
- 6.5 Write Budget Procedures to incorporate SITP Process.
Minimal
- 6.6 The role of the TS Department should evolve towards a consultancy mission.
Minimal
- 6.7 Define TS & Customer Department Roles.
Minimal
- 6.8

- Provide training in LAN operations and support to TS staff.
Moderate
- 6.9 Provide a series of seminars and site visits to Elected officials/Policy Team members on IT state-of-the-art
Minimal
- 6.10 Upgrade AS/400e, Processors, Memory, and Peripherals as required.
Moderate
- 6.11 Upgrade AS/400 Operating System versions and applications software licenses as required to meet customer demand.
Significant

Hardware Standards

PERSONAL COMPUTERS

As of the date at the bottom of this page, the personal computer standards for the County are as follows:

Processor: PentiumIII

System Memory: 10 gig

Graphics Memory:

Monitor : 17 inch VGA

RAM: 128

Operating System: Windows 2000

CD-ROM Drive: 32 Quad Speed

Sound Card: 16 bit Soundblaster

Modem: 56.6 kbps

Warranty

Estimated Price \$1,600

All computers should have at least 1 PCI slot to allow them to be connected to the network at 100 Mbps.

PRINTERS

As of the date at the bottom of this page, the printer standards for the County are as follows:

Add to Network Printer

HPJ2550A

Ethernet LAN Adapter

Complex print jobs may require additional RAM in all models of laser printers. If you anticipate heavy graphics print jobs with a laser, be prepared to spend a little more for additional RAM. In some instances, additional paper handling capacity may need to be added to networked printers, to reduce the number of times that a co-worker needs to fill the paper tray.

Software Standards

The operating system standard for the County will be Microsoft Windows 2000. Web publishing standard will be FrontPage 2000. No deviations.

The applications software suite standard for the County will be Microsoft Office 2000. Depending on customer needs, either Office Standard or Office Professional will be installed. Office Professional includes the Microsoft Access database program.

Deviations from the approved software configuration will be approved only with sufficient justification and indication of independent support.

Network Standards

The standard network operating system for the County will be Novell Netware.

The standard network architecture will be Category 5 Ethernet, 4 lead cable. The network hubs will be capable of supporting either 10 or 100 Mbps transmission. All new personal computers with PCI or EISA bus connections that support 100 Mbps transmission will have adapters which support the high speed connection installed. Print servers, older computers, and modem servers will be implemented at the 100 Mbps speed.

The minimum system requirements to connect to the network will be 128 Mb of RAM, and a 486 processor. This is the effective minimum for installation of Windows 2000.

Microsoft Exchange will be the electronic mail standard for the County. For that reason, The County will operate a Windows NT mail server linked to the Novell file server.

Deviations from the approved network software and hardware configurations will be approved only with sufficient justification and indication of independent support.

SITP Costs