

V I S I O N

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Supreme Court

STATE OF ARIZONA

FROM THE CHAMBERS OF
THOMAS A. ZLAKET
JUSTICE

1501 WEST WASHINGTON STREET
PHOENIX, ARIZONA 85007-3327
(602) 542-4531
FAX 542-9481

November 1, 1993

The Honorable Stanley G. Feldman, Chair
Arizona Judicial Council
Arizona Courts Building
1501 West Washington
Phoenix, Arizona 85007

Dear Chief Justice Feldman:

Subject: Technology Vision 2004 Plan

I am pleased to present to you, and the members of the Arizona Judicial Council, a document entitled, Vision 2004 . . . A Technology Visions Plan for the Arizona Judicial Branch. It represents the culmination of many days of work by the Council's Committee on Technology, and is considered by the Committee as a "milestone document." To our knowledge, no other judicial system in the country has developed a similar visionary plan for technology--it is a first. If endorsed and supported, we are convinced it will lead toward the infusion of responsible, creative technological change throughout the Arizona judicial branch.

We ask that the Council thoughtfully review and discuss this plan. We are hopeful that you will feel as we do . . . that the plan should be formally adopted by the Council with a recommendation to the Supreme Court that it be supported and implemented as an enunciated policy direction for the Arizona judicial system.

For the Committee,

The Honorable Thomas A. Zlaket, Chair
Committee on Technology
Arizona Judicial Council

VISION 2004

A Technology Visions Plan For The Arizona Courts

PARTICIPANTS

Committee on Technology

Thomas A. Zlaket, Chair
Supreme Court Justice
Arizona Supreme Court

Larry Blankenship **
Director, Judicial Information
Services

William E. Druke
Judge
Court of Appeals, Division Two

Gordon Griller **
Court Administrator
Superior Court in Maricopa County

Rhonda McAdams
Court Administrator
Flagstaff Municipal Court

Robert Raines
MIS Director
Superior Court in Pima County

Jack Shomenta
Assistant County Manager,
General Services
Maricopa County

Kathryn Anderson
(for Barbara Jackson)
Registered Professional Reporter
Superior Court in Coconino County

Dave Byers
Administrative Director
Administrative Office of the Courts
Superior Court in Maricopa County

Wayne Eiting
Court Administrator
Superior Court in Navajo County

Gary Howard
Molloy, Jones & Donahue, P.C.
State Bar Representative

David L. Phares
Judge
Gilbert Municipal Court

Mervis Reissig
State Bar Representative
Arizona Bar Association

Stephen Ventre
Commissioner
Superior Court in Maricopa County

Louraine Arkfeld **
Judge
Phoenix Municipal Court

Glen Clark **
Clerk of the Court
Court of Appeals, Division One

Steve Gallaher
(for Hon. H. Stewart Bradshaw)
Court Administrator
Superior Court in Yuma County

Rod Marquardt
Chief Probation Officer
Superior Court in Mohave County

Eloise Price
MIS Coordinator
Superior Court in Gila County

Dee-Dee Samet, P.C.
Attorney at Law
State Bar Representative

John Woods
Court Administrator
Superior Court in Pinal County

Richard Ashby
Director, MISD
Administrative Office of the Courts

Noël Dessaint
Clerk of the Court
Supreme Court Clerk's Office

Joyce Goldsmith
Clerk of the Court
Court of Appeals, Division Two

Rebecca Macbeth
Judge
East Phoenix Justice Court #1

Gary Russak
President
GR-SYSTEMS, Inc.

John Seidel
Judge
Superior Court in Maricopa County

John Wright
Automation Project Manager
Superior Court in Maricopa County

RESOURCES AT THE FLAGSTAFF LONG RANGE VISIONS CONFERENCE

Lillian Black
Project Manager
Adult Probation, Maricopa County

Gary Peet **
Manager, MISD
Administrative Office of the Courts

Bobbie Chinsky
Manager, Juvenile Justice Services
Administrative Office of the Courts

Marcus Reinkensmeyer **
Deputy Court Administrator
Superior Court in Maricopa County

Jeff Daniels
Manager, Adult Services
Administrative Office of the Courts

James Scorza
Executive Administrator
Phoenix Municipal Court

L.M. "Pat" Jacobs IV
Court Administrator
Pima County Justice Court

Sherry West
Specialist, Adult Services
Administrative Office of the Courts

RECORDERS / AOC STAFF

Dan Corsetti
Manager, MISD
Administrative Office of the Courts

Kim Eiseler
Administrative Assistant, MISD
Administrative Office of the Courts

Maureen Haggerty
Manager, MISD
Administrative Office of the Courts

Karrie Lawlor
Manager, MISD
Administrative Office of the Courts

**** Member of Long Range Planning Sub-Committee charged with conference planning, drafting of Technology Vision Plan and follow-up measures.**

**VISION
2004**

*A Technology Visions Plan
For The Arizona Courts*

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PROLOGUE

During four days in late March, 1993, the Committee on Technology (COT), a statewide advisory group to the Arizona Judicial Council and Arizona Supreme Court, met in Flagstaff to discuss technology and its application to the Arizona Court System. The thirty-five member Committee is chaired by Justice Thomas A. Zlaket.

The focus of the effort was futuristic — visioning the use of technology in the courts ten years distant...the year 2004. This report, **VISIONS 2004**, outlines that desired future as a target for the Arizona judicial branch. The report and project are ambitious to say the least, especially since technology is changing at break-neck speed.

During the four days that the Committee deliberated, the following events occurred:

- ◆ Intel announced the development of a new “computer chip,” the fifth-generation Pentium, that dramatically increases computer memory and processing capabilities. It performs 112 million instructions per second, and contains 3.1 million transistors, numbers that defy the imagination.
- ◆ A new version of WordPerfect (6.0) was introduced to the market, replacing the standard 5.1 package used throughout our courts and the industry.
- ◆ Microsoft rolled out its 6.0 version of MS-DOS, the operating system for the vast majority of personal computers.
- ◆ The nation’s largest operator of cable television systems, Tele-Communications, Inc., announced plans to install a fiber-optic cable network to feed the “Data Super Highway” of the future currently under development. Interactive programming will be widespread.
- ◆ The Clinton Administration announced support for the Intelligent Vehicle Highway Systems (IVHS) initiative, a “new age idea” that calls for smart cars and smart highways with computers, radar and electronic sensors to keep drivers in their lanes, allow selection of congestion-free routes and monitor safety zones around cars.
- ◆ A software company called AutoDesk announced a “forensic animation” program for personal computers that can recreate in the courtroom in a three dimensional fashion — a crime scene, an accident, an injury or how victims died in a homicide case. Auto CAD, another product offered by the company, dominates the design and engineering drawing business just as WordPerfect dominates word processing. AutoDesk is expecting its new software to significantly change trial tactics.

*If the purpose of
courts is to deliver
justice, the vehicle by
which it will be done
in the years ahead
will be technology.*

- ◆ Motorola announced new contracts with Asian partners in its global, satellite-based communications network called Iridium — a multi-billion dollar project aimed at providing a communications system to link every wireless phone on the planet by the turn of the Century. Sixty-six satellites will facilitate the communications system, as other companies continue their move to miniaturize phones to the size of “Dick Tracy watches” and smaller.
- ◆ IBM began repositioning itself in the market place as it hired a new Chief Executive Officer and turned its primary attention from mainframe to mid-range computers.

Life in the fast lane continues ...

INTRODUCTION

***Technology and
visions...a need to
plan for success.***

In today's fast-paced world, technology has influenced virtually every facet of modern life ... from microwaves and cellular phones to touch-screen computers. Although the change is maddening at times, the widespread use and adoption of technology in any organization is manageable and necessary to insure that it stays relevant and vital in future times. The Arizona Court system has made such a commitment and is exploring ways to utilize the technologies of today, and anticipate those yet to come, in the business of courts. In so doing, the Supreme Court has vested a specially appointed Committee on Technology with the task of guiding the use of technology in courts.

The Committee, meeting in Flagstaff in late March, 1993, directed its discussions toward what life would be like ten years in the future, and how technology may be employed in the courts. The exercise is called "visioning," and requires some risky and deep thought in an effort to identify trends, anticipate change ... and develop a proposed future.

Visioning has to do with leadership. It is based on the premise that although the future is uncertain, groups of far-sighted people and perceptive organizations can condition their own futures. In the area of technology, it becomes especially precarious since things change almost as if by "magic" through a myriad of innovations. Not to take the challenge, however, limits an organization's ability to improve and responsibly position itself for a changing world.

In the late 1980's, Arizona became one of the first states to initiate a "futures commission" — directed at developing a set of reforms to improve and modernize the judicial system into the Twenty-first Century. Among many of the work groups exploring needed changes was the Task Force on Court Productivity, charged with providing directions for computer automation and expansion of other technologies. The Task Force submitted its report to the full Commission on the Courts in December 1989.

***The genesis of the
Arizona Courts'
Committee on
Technology and
its role.***

Computer automation for all courts was the primary focus of the recommendations. Additionally, the Supreme Court's Administrative Office of the Courts (AOC) was vested with a variety of responsibilities to spearhead and pilot a wide array of technologies (i.e. optical and bar code scanning, video, facsimile, etc.) throughout the courts. A permanent, standing Committee on Technology (COT), reporting to a newly created Arizona Judicial Council (AJC) — an advisory group to the Supreme Court and Chief Justice — was charged with "providing strategic leadership for the successful application of information technology to improve access, efficiency and the quality of justice of the Arizona Court System." The COT formulated its initial strategic plan in the Fall, 1991. It was adopted by the AJC six-months later.

***Concerns with the
initial 1992 Strategic
Plan for technology.***

Following the development of the initial strategic plan, Committee work was slow to start and some discontent was registered by Committee members on various fronts. First, a series of "action plans" exhibiting tight timetables got little attention, causing much slippage in dates with little chance of regaining any sense of momentum toward accomplishment. Second, there was an expressed concern that the plan did not provide any consistent, long range direction, but was merely a package of common computer automation initiatives loosely assembled under general headings. Third, beyond the general mission of COT calling for statewide "strategic leadership," the responsibilities for local court leadership and any tie to state initiatives were vague at best, and non-existent at worst. Lastly, with a decentralized court system, funded through a variety of state, county and municipal sources, there exists a constant struggle to assess "what's going on — and what's not" in technology throughout the courts. Today, information is sketchy and there is little semblance of broad-scoped direction, other than an AOC packaged software/hardware case history and management system called ACAP.

***A better approach...
Develop a desired
future and target
toward it.***

Through Committee discussions in the Fall, 1992, a consensus grew that a long-range, more visionary plan for technology should be crafted ... that a proposed future — some ten years distant (the year 2004) — should be identified so all courts and COT could target toward it. In that way, judicial and court leadership throughout the state can freely exercise a series of choices or "pathways" toward a commonly agreed upon future. Local initiative is encouraged. Central control should not necessarily inhibit action. Rather, coordinated direction is more possible.

A Long Range Planning and Visions Retreat was developed for Committee members and selected resource people in Flagstaff, Arizona, March 24-27, 1993. Information affecting the state courts was collected and analyzed. Trends and court organizational issues were scrutinized and discussed. Technology plans of other states were researched. A series of visions were created, and strategies to achieve them were subsequently developed. These visions and broad-scoped implementation plans help position the Arizona judicial branch for quality service to the public well into the next century.

As the years unfold, and technology becomes increasingly part of the Arizona court scene, there will be numerous instances where court rules and formally outlined procedures will need to be altered or amended to permit new information system approaches. Electronic signatures, video hearings, privacy and security issues are examples of topics that may prompt new rules or amendments to old ones. The Committee understands that the move to enhanced technology in the court is evolutionary, not revolutionary, and oftentimes, may be governed by the pace through which judicial leadership can accommodate statewide rule changes. In this context, specific rule changes were not explored in crafting the Visions Plan. Rather, the Committee is content to let court rules be changed, from time-to-time, as new directions in technology are embraced. In this process, we anticipate the pull of new systems on past practices will make for not only stimulating debate, but reasoned progress as well.

***Mixing Future Visions
with Today's Reality
will be captured in
Court Rule changes.***

C O U R T F U N C T I O N S
&
A P P L I E D T E C H N O L O G I E S

The Committee's Technology Visions Plan is unique among technology directions in its use of an open-ended matrix, matching court functions with technologies. Further, the plan embraces, for the first time, the art of "futures visioning" in Arizona on a statewide scale.

A series of targets are proposed for the year 2004, weaving various technologies (both current and projected) together with court functions in a "futures mosaic." Various pathways or strategies are outlined to move the judicial system from today to the 2004 mosaic.

Twelve court functional areas were defined, ranging from court records maintenance to courtroom trials and hearing activities. Next, nine information technologies were structured to encompass current and future technologies. The functional areas and information technologies identified by the Committee are set forth in Table-1. Many of the technologies required by the courts are available today and emerging technologies also hold great promise. For the Committee and the judicial branch as a whole, the greatest challenge is the proper matching of appropriate technologies with court functions. Figure-1 graphically depicts these separate spheres — informational technologies and court functional areas — and suggests that these two worlds be drawn together through application of technologies in the court setting. Working within this framework, the Committee has explored the full range of potential court technologies — both now and for the future. A quick "snapshot" of the Committee's recommended course of action and applied technologies is shown in Table-2 — "Applied Technologies to be Used in the Next Ten Years". This global perspective serves as a guide to the Committee recommendations, as well as a tool for staging of technology planning and development efforts.

Unfolded in the following pages are the visionary statements and strategies structured by the Committee. In essence, this plan establishes a direction for the use of technology in the Arizona courts.

A matrix, matching various technologies with court functions, provides an array of future targets.

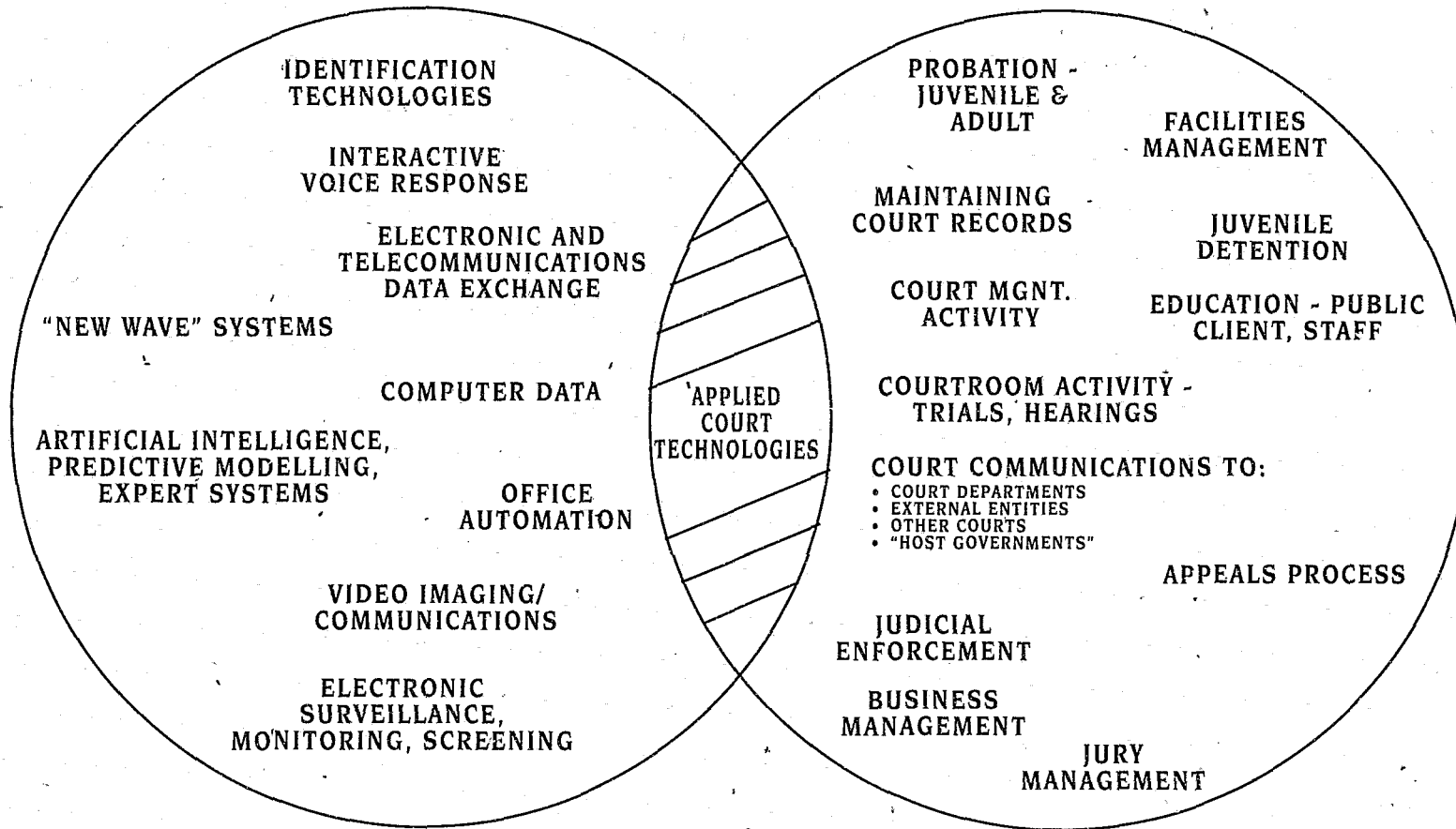
Table-1

COURT FUNCTIONAL AREAS	INFORMATIONAL TECHNOLOGIES
<ol style="list-style-type: none"> 1. MAINTAINING COURT RECORDS 2. COURT COMMUNICATIONS TO: COURT DEPARTMENTS EXTERNAL DEPARTMENTS OTHER COURTS "HOST GOVERNMENTS" 3. CASE MANAGEMENT ACTIVITY 4. COURTROOM ACTIVITY - TRIAL, HEARINGS 5. BUSINESS MANAGEMENT 6. EDUCATION - PUBLIC, CLIENT, STAFF 7. PROBATION - JUVENILE AND ADULT 8. JUDICIAL ENFORCEMENT 9. JURY MANAGEMENT 10. FACILITIES MANAGEMENT 11. JUVENILE DETENTION 12. APPEALS PROCESS 	<ol style="list-style-type: none"> A. COMPUTER DATA <ul style="list-style-type: none"> - Data Entry - Document Imaging - Light Pens - Bar Codes - Scanning B. OFFICE AUTOMATION <ul style="list-style-type: none"> - Electronic Mail - Word Processing. C. ELECTRONIC AND TELECOMMUNICATIONS DATA <ul style="list-style-type: none"> - Data Access - Data Transfer - FAX - Networking/Virtual Network - Automated Teller Machines D. VIDEO <ul style="list-style-type: none"> - Video Conferencing - Interactive Video E. INTERACTIVE VOICE RESPONSE <ul style="list-style-type: none"> - Interactive Phones - Voice Recognition - Multi Media F. ELECTRONIC SURVEILLANCE MONITORING, SCREENING G. IDENTIFICATION TECHNOLOGIES H. ARTIFICIAL INTELLIGENCE, PREDICTIVE MODELLING, EXPERT SYSTEMS I. "NEW WAVE" SYSTEMS <ul style="list-style-type: none"> - Computer Animations - Virtual Reality - Bio-Medical

Figure 1
MATCHING TECHNOLOGIES WITH COURT FUNCTIONS

The technologies we need are here, today. It's a matter of matching appropriate technologies with court functions.

VISION 2004



INFORMATION TECHNOLOGIES

COURT FUNCTION AREAS

**Table-2
APPLIED TECHNOLOGIES PROPOSED FOR USE IN THE NEXT TEN YEARS**

TECHNOLOGY COURT FUNCTIONS	COMPUTER DATA		ELECTRONIC AND TELE- COMMUNICATIONS DATA EXCHANGE	VIDEO	INTERACTIVE VOICE RESPONSE	ELECTRONIC SURVEILLANCE MONITORING, SCREENING	IDENTIFICATION TECHNOLOGIES	ARTIFICIAL INTELLIGENCE, PREDICTIVE MODELLING, EXPERT SYSTEMS	"NEW WAVE" SYSTEMS
	MAINTAINING COURT RECORDS	✓	✓	✓	✓	✓			
COURT COMMUNICATIONS		✓	✓	✓	✓				
CASE MANAGEMENT ACTIVITY	✓	✓	✓	✓	✓			✓	
COURTROOM ACTIVITY	✓	✓	✓	✓			✓	✓	✓
BUSINESS MANAGEMENT	✓	✓	✓	✓					
EDUCATION			✓	✓	✓				✓
PROBATION (JUVENILE AND ADULT)	✓	✓	✓	✓	✓	✓	✓	✓	
JUDICIAL ENFORCEMENT	✓	✓	✓	✓	✓	✓	✓		
JURY MANAGEMENT	✓	✓	✓	✓	✓				
FACILITIES MANAGEMENT		✓	✓	✓	✓	✓			✓
JUVENILE DETENTION	✓	✓	✓	✓	✓	✓	✓	✓	✓
APPEALS PROCESS	✓	✓	✓	✓					✓

VISION 2004

S T A T E W I D E
“ S T R A T E G I C L E A D E R S H I P ”
F O R T E C H N O L O G Y — A P I V O T A L
O R G A N I Z A T I O N I S S U E

*The role of the
Committee on
Technology needs to
be reviewed.*

The Committee on Technology, a standing advisory body to the Arizona Judicial Council, has a hazy role at best. It is formally charged with "providing strategic leadership for the successful application of information technology to improve access, efficiency, and the quality of justice of the Arizona Court System." This mission statement was developed at a strategic planning retreat in Flagstaff in the Fall of 1991. A series of goals were also structured, most relating to establishing statewide standards, monitoring court automation projects, developing a statewide communications network, and promoting selected pilot projects that had statewide importance in advancing technology in the courts.

The 1991 Plan developed by the Committee, subsequently endorsed by the Judicial Council at their March 18, 1992 meeting (Motion AJC- 92-005) and ultimately approved by the Supreme Court at their April 23, 1992 meeting, failed to catch hold in 1992. The Administrative Office of the Courts, charged with much of the staff and detail work inherent in the recommendations, was slow to start, and focused primarily on the development of a statewide computer automation initiative - ACAP. Many of the dates targeted by the Plan slipped.

Concurrently, there were a series of leadership changes on the Supreme Court and in the AOC that caused some momentum changes and readjustments in direction (i.e. new Chief Justice, new AOC Director, new COT Chairman). These changes served to continue a rather "fluid" role for the Committee vis-a-vis its strategic leadership mandate.

A positive force, elevating the Committee's place and stature as a statewide strategic policy-maker for technology was the appointment of a Justice of the Supreme Court to chair the Committee. To complement that acknowledgement by the Supreme Court, the Committee's role needs to be strengthened in other ways.

The Committee's Visions Retreat in Flagstaff in the Spring of 1993, concluded that a much stronger leadership, coordination, and monitoring role should be played by the Committee. As a result, a series of suggestions were offered:

...the Committee status should be elevated to that of "Commission" to denote a broader, more important role. The reporting relationship should then change. It is suggested that the Commission be attached directly to the Supreme Court. A "review and comment" requirement from the Judicial Council on Commission initiatives before action by the Supreme Court would seem appropriate under this model

...the membership of the Commission should be changed. Specific court leaders should sit on the Commission, with special sub-committees devoted to projects, studies, etc. Subcommittee members should not vote. A principal group on the Commission should be County Presiding Judges or their designates if new Administrative Rules vest them with overall information and technology management in the trial courts at the County level.

*A new, energetic role
for the Committee
needs to be crafted.*

...the Commission must view its role and function as an "enabler, clearinghouse, catalyst, and standards-enforcer" vis-a-vis technology. It should most certainly "energize and excite" the court community about the potentials and possibilities of technology in the courts. It should not be viewed as a "stifling force".

...the Commission should promote all facets and types of technology for use in the courts. There is more than computer automation.

...the Commission should open up the "purse strings" by drawing funding sources together, promoting joint state-county-city technology efforts, and reviewing/commenting on all special grant requests for technology flowing from the Supreme Court (i.e. JCEF, etc).

...the Commission should play an active roll in the re-engineering of court operational processes. This is a recognition that the application of technology alone does not necessarily bring improvements in quality. Technology merely enables the improvement of operational processes.

...a primary mission of the Commission should be the implementation of the "Vision 2004 Plan", and any reconfiguration of it from time-to-time.

...lastly, the Commission needs to monitor and solicit information from justice system groups outside the court system. Not only are exciting things happening throughout the spectrum of government, but there is an obligation on the courts to anticipate and cooperate regarding new technology by virtue of their leadership and partnership roles in the justice system.

**FUNDING OF COURT
TECHNOLOGIES —
A COORDINATED
APPROACH TO
RESOURCE
ACQUISITION**

Realization of the Vision 2004 Technology Plan will require acquisition and coordination of necessary resources. This would be no easy task in the best of fiscal climates. For the present and foreseeable future, however, government will be expected to operate with less resources amidst public demands for increased service. To meet these demands, the judicial branch must maximize the use of existing resources; identify and secure new funding sources; and, adopt a long-range, multi-faceted, approach to resource acquisition.

In Arizona, court finance is complicated by a dual system of state and local funding for various trial court operations. Although the Commission on the Courts has recommended full state court funding, there are no immediate prospects of a unified budget and the current system of mixed funding is likely to continue.

The lack of centralized budgeting is problematical in many respects, particularly for major state-wide technology initiatives requiring capitalization and maintenance over a period of years. On the brighter side, however, the existence of multiple funding sources may potentially provide greater aggregate dollars than a single funding source, e.g., state funding. Equally promising is the prospect of joint project funding on the part of different courts, various units of local government and the state.

The judicial branch is challenged with drawing together all parts of the court institution and actively involving appropriate units of government in underwriting new and emerging court technologies. Vision 2004 provides a blueprint for implementation of new and emerging technologies. As envisioned, the COT will implement the technologies through pilot testing, evaluation and state-wide application of proven models. Drawing from all available sources, the COT can locate "seed money" for pilot testing and related technology development activities. COT will also serve as a forum to: (1) determine budget requirements for state-wide applications; (2) identify all available funding sources, e.g. city, county, state general fund appropriations and grants; and, (3) facilitate joint funding efforts on the part of various level courts, their respective funding bodies and executive branch agencies.

Increasingly, the courts are expected to operate with less resources, amidst public demand for increased service.

The existence of multiple funding sources provides many avenues for collaboration and joint funding of Court technologies.

The COT can help identify and acquire the funding required to implement advanced court technologies in Arizona.

The courts and executive branch agencies may jointly pursue resources for electronic data exchange, information pathways, etc.

Several of the future visions in the technology plan call for electronic data exchange between the courts and executive branch agencies, e.g., electronic disposition reporting to justice agencies, child support enforcement and other judicial collection efforts. Public safety and social policy considerations will almost certainly dictate a systemic approach to these major initiatives. Through collaborative efforts, the judicial branch may opt to "join hands" with the executive branch in approaching the legislature for requisite funding.

The COT is available to serve as a central body, representing the courts in judicial-executive branch system integration efforts. This role can extend from global planning efforts to negotiation of intergovernmental funding agreements, coordination of system development efforts, etc. Collectively, these measures will help ensure a coordinated approach to resource acquisition, development efforts and implementation of court technologies for the year 2004 and beyond!

**EARLY SUCCESSES —
POSITIONING OURSELVES
NOW TOWARD A
PROPOSED 2004**

ELECTRONIC MAIL (E-Mail)

The Committee suggested that the implementation of a state-wide electronic mail system might be an excellent initiative for an early success.

An ad hoc committee was created to determine what linkages would be necessary to establish the electronic mail exchange. The problem was defined as having two aspects: (1) the communications highways and (2) the electronic mail products in use. The ad hoc committee has determined that a highway with two legs will be established between:

- A. The State of Arizona Department of Administration in Maricopa County and the State of Arizona Department of Administration in Pima County; and
- B. The Department of Telecommunications in Maricopa County and the State of Arizona Department of Telecommunications. See Figure-2.

With two highways, it will be possible to exchange E-mail among 2,565 Court employees and 185 judicial officers. See Table-3. It is anticipated this phase could be completed by late summer.

The ad hoc committee established a deadline of June 4, 1993 by which to identify the implementation and operation costs for the state-wide E-mail system.

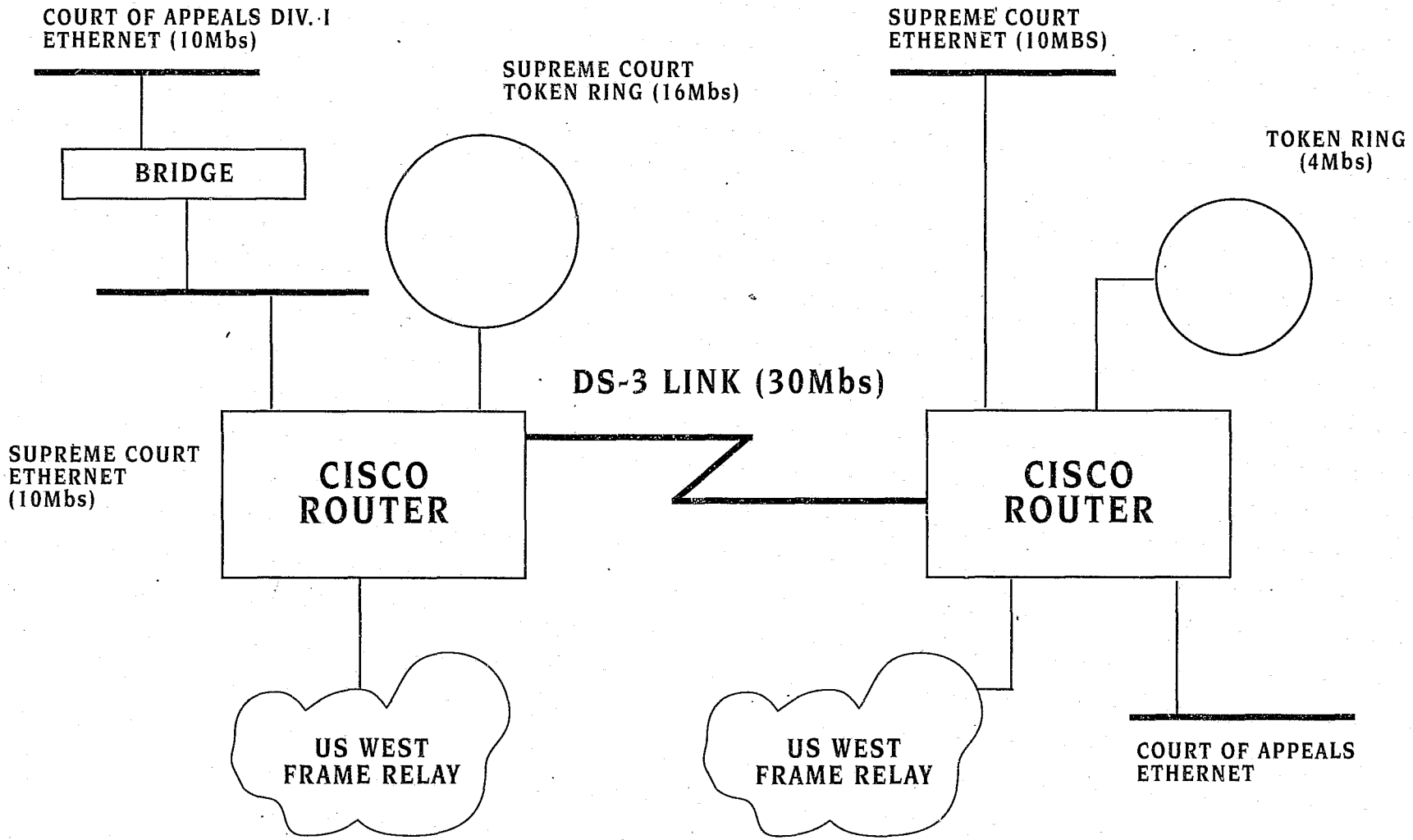
Further, it is anticipated that a technical link will be established between the two E-mail systems currently in use at the Administrative Office of the Courts. The ACAP and JOLTS systems that have been deployed throughout the state currently run on a different network and utilize a different E-mail product than the majority of court E-mail users in the state. When the link is established between the two systems, it will allow virtually all court employees in the state to exchange E-mail with each other. No timeline for this implementation has been established.

***185 judicial officers
could exchange
E-Mail by
late summer.***

ARIZONA SUPREME COURT COMMUNICATIONS NETWORK

PHOENIX

TUCSON



**TABLE-3
PROPOSED STATEWIDE ELECTRONIC MAIL SYSTEM:
LINKAGE OF JUDGES AND STAFF**

Agency	Number Of Courts	% Of Total	Number Of Judicial Officers	% Of Total	Number Of Fulltime Staff	% Of Total	Total Judicial Officers Plus Staff	% Of Total
Operational November 1993:								
Supreme Court	1		5		37		42	
Administrative Office of the Courts					162		162	
Court of Appeals - Division I	1		15		83		98	
Court of Appeals - Division II	1		6		26		32	
Maricopa County*:								
- Superior Court	1		98		469		567	
- Clerk of Court					554		554	
- Justice Courts	21		21		182		203	
- Adult Probation					575		575	
Pima County*:								
Superior Court	1		33		219		252	
- Clerk of Court					177		177	
- Justice Courts	3		7		81		88	
SUB-TOTAL	29	19%	18	563%	2,565	65%	2,750	65%
Operational Beginning January 1994:								
Juvenile Probation (JOLTS) Users:					936		936	
ACAP Counties**:								
- Superior Courts	10		23		168		191	
- Justice Courts	37		38		107		145	
- Municipal Courts	38		19		47		66	
SUB-TOTAL	85	56%	80	27%	1,258	32%	1,338	32%
Operational Mid-1994:								
Pinal, Yavapai, and Yuma Counties:	38	25%	27	10%	97	3%	124	3%
TOTALS	152	100%	292	100%	3,920	100%	4,212	100%

* Does not include Municipal Courts at this time.

** Will potentially include 10 counties: Apache, Cochise, Coconino, Gila, Graham, Greenlee, La Paz, Mohave, Navajo, and Santa Cruz.

REQUIREMENT FOR STANDARDS

The need for standards was recognized and reinforced by everyone at the conference. In those areas where work is currently underway, it became evident that efforts need to be accelerated in order to facilitate and promote the access, exchange and interpretation of court information. In order to accomplish these goals, it is very important to hasten the dissemination of standards of data and technical access to the data.

Communication standards have been adopted.

In the area of Technical Standards, the Committee has already adopted the Government Open Systems Interconnection Profile (GOSIP) for communications. Although it will be impossible to establish a fixed date for compliance with these standards, the Committee has identified a standard which counties should migrate toward.

Data dictionary to be available by July 1, 1993.

In the area of Data Standards, there has already been much accomplished. The Juvenile On-Line Tracking System (JOLTS) has created a standard data dictionary. A data dictionary is in draft form for the adult criminal and other court statistical reporting requirements. It is anticipated these standards will be available for general use by July 1, 1993.

CENTRAL CASE INDEX

A central index of case information for all of the cases throughout the state is currently being developed as an adjunct activity within the ACAP project. It is assumed the 10 counties participating in the project will provide information to a central index to be maintained on the AOC computer. The implementation for this project is scheduled for January 1, 1994.

An implementation plan for acquiring case information from counties not involved in the ACAP project has not yet been developed.

COURT TECHNOLOGY CONFERENCE

To promote statewide dialogue and exchange of information, the COT proposes establishment of an annual court technology conference. Such conferences will provide a forum for updates on various court technology projects, discussion on management and technical issues, and participation of representatives from all court levels in the statewide planning process. Additionally, the conferences might include workshops, demonstrations of new technological applications and vendor shows.

The Arizona Courts Association (ACA) has offered to undertake a collaborative effort with the COT in development and presentation of the court technology conferences. Specifically, ACA has offered to co-sponsor the first Court Technology Conference in conjunction with the association's annual conference, November, 1993 in Tucson, Arizona.

Statewide technology conferences will facilitate open communications, collaborative hi-tech projects and a shared vision on the part of Arizona Courts.

**C O U R T
F U N C T I O N A L
A R E A S**

HOW TO UNDERSTAND AND USE THE "COURT FUNCTIONAL AREA" SHEETS

Court Functional Area CASE MANAGEMENT ACTIVITY Priority ⇔ 3		①
METAPHOR "Save A Tree"		②
DEFINITION Caseflow Management:	Is the coordination of court processes and resources to move cases timely from filing disposition, regardless of the type of disposition. This area describes comprehensive case management information systems and emerging technologies which will support timely and efficient case management at all court levels.	③ ④
VISION 2004 Comprehensive Case Management Information System		⑤
<p>Although there has been a great infusion of computers in the courts, the introduction of automated information systems to aid management of court workload and dockets has largely occurred in a piecemeal fashion. For effective caseflow management, the courts of all levels require comprehensive <u>case management information systems</u> [Computer Data]. These systems will provide management control activity by comparing actual case processing performance to pre-defined standards, e.g. case processing time standards. The systems will also support strategic planning activities requiring statistical analysis of case data, caseflow management program design, preparation of special variance reports for predicting future case processing conditions and related management studies. The future systems will also provide streamlined data entry through the use of light pens, bar coding and retrieval of case data from other information systems.</p> <p>The fully <u>automated case management systems</u> of the future will fully support the following activities:</p> <ul style="list-style-type: none"> • Indexing • Docketing • Notice Preparation • Court Scheduling and Calendar Preparation • Management and Statistical Report Generation • Integration with Automated Financial Systems • Document Image Storage, Retrieval and Processing <p>The management information systems of the future will facilitate electronic flow of documents and case information to and from the official court record. On the front end of the systems, this will allow electronic filing of cases and pleadings, as well as electronic payment of assessed court costs. On the back end of the process, the automated system will electronically transmit court orders, notices, etc. Relatedly, the systems will provide electronic case disposition reporting from the courts to executive branch agencies in</p>		

① **Court Functional Area:** A descriptive phrase that represents one of twelve broad court functions identified at the Flagstaff Technology Visions Workshop. Functions apply to both trial and appellate courts. Descriptions may relate to the work or activities of the court, the places or environment in which the court operates, the clients served, or the legal/judicial mandates of the court.

② **Priority:** During the Flagstaff Technology Visions Workshop, the participants ranked court functional areas against each other as to their importance to technology applications over the next ten years. The lower the number — the higher the priority. These rankings answer the question: Where should the Arizona judicial system concentrate its technology initiatives from now to the year 2004?

③ **Metaphor:** A figurative, memorable phrase describing the collective vision the Committee held for technology in the year 2004 as it applies to a particular functional area.

④ **Definition:** An explanation or description of a Court Functional Area. Because of the broad nature of these definitions, they may overlap from one area to another.

⑤ **Vision 2004:** This narrative describes the Committee's desired or proposed future in the year 2004 for the meshing of technology with a court functional area. The vision was created as a "target," without regard to the constraints or problems that may have to be overcome to achieve it. Also, you will note that as a specific technology is described, it is underlined and followed by a more generic term in bracketed, bold type. An example:

"In special situations, virtual reality and hologram [new wave] data will be presented to jurors."

The bracketed term identifies one of nine general categories or families of "Informational Technologies" identified by the Committee. To find how a specific technology, described in a vision statement, will be developed over the next ten years, merely reference the bracketed term under the "Informational Technologies" section of the plan.

Court Functional Area
MAINTAINING COURT RECORDS

Priority ⇨ 1

METAPHOR

"Virtual Network" — Intelligent transportation system for automation

DEFINITION

Maintaining Court Records: Maintenance of the official records of the Court, including filing of documents, docketing, requests to view information, trial transcripts, file tracking, storage and tracking of exhibits, and cash management/payment processing.

VISION 2004

The vision for maintaining court records in the future is to develop a "paperless" court. This can be accomplished through implementation of various technologies in support of basic recording, storage, and retrieval functions. A key component in this vision is development of a "virtual network" [**Electronic and Telecommunications Data Exchange**], which will allow data to reside at distributed locations, but which will permit access to that data from authorized users throughout the integrated justice system.

Recording: Recording and entry of court records will be facilitated through technologies such as bar coding [**Computer Data**], scanning [**Computer Data**], voice recognition [**Interactive Voice Response**], and interactive phones [**Interactive Voice Response**], in addition to current technologies in use today. Wherever possible, electronic data transfer [**Electronic and Telecommunications Data Exchange**] will be used rather than manual data re-entry. Alternatively, the data may not need to be transferred at all, but will be "indexed" to allow access to the information at its distributed location.

Storage: The majority of court records are documents which will be stored electronically through document imaging [**Computer Data**] technologies. This will provide a major step in development of a "paperless" court. Other court data will be stored electronically through magnetic and/or laser media. Access to court records and information used in the judicial process will be provided through the "virtual network" described above. This network will have sufficient "intelligence" to find data requested by the user — wherever the data resides. The network will link together databases from various agencies within the integrated justice system. The user will not be required to specify where the system needs to go to find the data — the "virtual network" will know this automatically.

Retrieval: Retrieval of court records will incorporate many of the same technologies used in the recording and entry function. Additional technologies playing a role in retrieval of court information will include video [**Video**], automated teller machines (ATM's) [**Electronic and Telecommunications Data Exchange**] and multi-media kiosks [**Interactive Voice Response**].

Court Functional Area
COURT COMMUNICATIONS

Priority ⇨ 2

METAPHOR

"Open, open, open"

DEFINITION

Court Communications: Refers to the various needs and methods which will be required to exchange information in all of its forms among the various court entities.

VISION 2004

Networking: The goal is to have communications networking sophisticated enough to allow any court employee inquiry access to any court record system in the state. In order to accomplish this goal, it is mandatory that all members of the court family commit to utilizing only those communication networks, protocols, gateways, routers, transports and bridges which allow for open connectivity to all systems. All products must comply with the "Government Open Systems Interconnectivity Profile" (GOSIP) standards.

The network should be capable of transporting the range of media including voice, image, data, and video. A backbone network should be operational which provides access to each court in each county of the state.

Office Automation: The goal for word processing is to have sufficient standardization in the products acquired and used by the various courts in the state so that all documents may be routinely read and exchanged without technical manipulation. In order to meet this goal, it is likely that all courts will standardize on word processing software. As a practical matter, WordPerfect has become the de facto standard among the courts.

Electronic Mail: Should have enough standardization to allow courts throughout the state to routinely send and exchange electronic mail messages with each other. It will be mandatory that the electronic mail network will allow for the attachment of WordPerfect documents to the mail messages. It is assumed that the electronic mail systems will accurately transmit and reproduce the formatting of all WordPerfect documents.

Document Imaging [Computer Data]: The goal is to have all public court documents stored in an imaged form so they are accessible to all courts throughout the state. Anyone will be able to access the images at the host court and review them at the host site or download the images to a local computer.

The primary goal of data access is to have all public court documents electronically accessible to all court departments, the bar and the public. A secondary goal of accessibility is to provide all court officers with personal access to the records and to each other. Included in this scenario would be teleconferencing, mobile communication, video arraignment, interactive voice, touch screen and kiosk transactions.

Court Functional Area
CASE MANAGEMENT ACTIVITY

Priority ⇨ 3

METAPHOR

"Save A Tree"

DEFINITION

Caseflow Management: Is the coordination of court processes and resources to move cases timely from filing disposition, regardless of the type of disposition. This area describes comprehensive case management information systems and emerging technologies which will support timely and efficient case management at all court levels.

VISION 2004

Comprehensive Case Management Information System

Although there has been a great infusion of computers in the courts, the introduction of automated information systems to aid management of court workload and dockets has largely occurred in a piecemeal fashion. For effective caseflow management, the courts of all levels require comprehensive case management information systems [Computer Data]. These systems will provide management control activity by comparing actual case processing performance to pre-defined standards, e.g. case processing time standards. The systems will also support strategic planning activities requiring statistical analysis of case data, caseflow management program design, preparation of special variance reports for predicting future case processing conditions and related management studies. The future systems will also provide streamlined data entry through the use of light pens, bar coding and retrieval of case data from other information systems.

The fully automated case management systems of the future will fully support the following activities:

- Indexing
- Docketing
- Notice Preparation
- Court Scheduling and Calendar Preparation
- Management and Statistical Report Generation
- Integration with Automated Financial Systems
- Document Image Storage, Retrieval and Processing

The management information systems of the future will facilitate electronic flow of documents and case information to and from the official court record. On the front end of the systems, this will allow electronic filing of cases and pleadings, as well as electronic payment of assessed court costs. On the back end of the process, the automated system will electronically transmit court orders, notices, etc. Relatedly, the systems will provide electronic case disposition reporting from the courts to executive branch agencies in

Court Functional Area
CASE MANAGEMENT ACTIVITY

Priority ⇨ 3

VISION 2004 (Continued)

traffic, criminal and other selected case types. Electronic data exchange [**Electronic and Telecommunications Data Exchange**] between the trial and appellate courts will virtually eliminate the need for transmittal of paper records and maintenance of duplicative data storage.

Expert Systems - "Artificial Intelligence"

In the years ahead, the courts will make increasing use of expert systems and predictive modelling, both for resolution of individual cases and global system management. Case management information systems will provide data necessary for trend analysis and predictive modelling. The capacity to perform "what if" analyses based on comprehensive historical data will assist the courts in program evaluation, resource allocation, caseflow and jury management, and strategic planning initiatives.

Compatibility of Case Management Information Systems

The future promises ready exchange of case information [**Electronic and Telecommunications Data Exchange**] amongst trial and appellate courts, court support agencies and other entities. Although the information systems will have specialized functions to meet the needs of individual courts, these systems will be fully compatible. This will allow ready exchange of case information; single data entry at any court location, a measure which will greatly reduce redundant data input and storage; access to multiple data bases from a single work station; and, capacity to generate statewide statistical reports reflecting court activity, case trends, etc. Full compatibility and integration of case management information systems will require some standardization of data elements, a universal data dictionary, a degree of uniformity in procedures, naming conventions, terminology, and business language used, etc.

ADR - The Multi-Door Courthouse

The courts of the future will provide the full range of Alternative Dispute Resolution (ADR) services, e.g. the multi-door courthouse. Case management information systems [**Computer Data**] and related subsystems will support diversion of matters inappropriate for filing, early screening and case evaluation, and placement of cases on separate tracks with different governing case processing time standards, e.g. differentiated case management. Additionally, these information management systems will facilitate the appropriate sequencing of ADR procedures, timely notice of hearings, monitoring of intermediate case events and seamless movement of cases to appropriate ADR procedures within the case processing continuum. Finally, aggregate data such as case disposition rates, frequency of continuances, litigation costs and litigant satisfaction will be used for ongoing evaluation and enhancement of the court's ADR programs.

Court Functional Area
CASE MANAGEMENT ACTIVITY

Priority ⇨ 3

VISION 2004 (Continued)

Instant Electronic Access - "A Paperless Court"

The "Paperless Court" of the future will provide instant electronic access [**Electronic and Telecommunications Data Exchange**] to all forms of court information, including: docket information, images of public court documents [**Computer Data**], case status, calendar information and next available court dates, etc. This information will be readily available from most any office location or "public service centers" at any time. Prospective users include the general public, litigants, the media, justice agencies, the trial bar and court personnel.

Court Functional Area
COURTROOM ACTIVITY - TRIAL, HEARINGS

Priority ⇨ 4

METAPHOR

"Anywhere Trial"

DEFINITION

Courtroom Activity: This area focuses on activities which take place in the courtroom. To some extent, this area can be broken down into subcategories for the individual types of events that take place within the courtroom, although many of the information technologies will be used throughout the process.

VISION 2004

Initial Appearance/Arrestment:

The main technology here will be the use of video [**Video**] to allow for remote proceedings. Defendants will not need to be transported to courtrooms, but will instead appear via video from a site within the jail. Courtroom staff, including the judge, will be at the courthouse. The defendant will be provided a private, secured line with his counsel to allow for private conversation.

Any documents that are prepared in the courtroom will be faxed [**Electronic and Telecommunications Data Exchange**] to the defendant at the jail. The citation and/or charge itself will appear on the screen, having previously been imaged [**Computer Data**] in. The computer at the jail will also receive that image for the defendant to also review. Defendants appearing will also be identified via the automatic fingerprint [**Identification Technologies**], ensuring that the correct defendant is appearing.

The judge will have access to "expert systems" [**Artificial Intelligence**] software that allows for enhanced decision making. This will be based on the defendant's answers to certain questions, background information, victim information, police information, the nature of the charge and the criminal record. The computer will process this information and provide a profile delineating any concerns about release that may need to be addressed and recommend a bail amount, as well as appropriate conditions of release.

Pre-trials:

Once again, appearance by video [**Video**] can be made. And not just necessarily by in-custody defendants. Lawyers will have video facilities within their law offices, allowing for remote appearances. If a plea is taken, it can be done from the remote location as discussed in I.A.s and arraignments.

Here again, the judge can make use of the expert systems predictive modelling [**Artificial Intelligence**]. Information regarding the charges, the defendant, the witnesses and the attorneys can be fed into the computer. The program will then recommend that the case be placed on a special track such as simple, standard or complex. This will determine how far out to schedule the case, how much time to allow it on the calendar and whether there are specific times that will need to be set for motion hearings.

Court Functional Area
COURTROOM ACTIVITY - TRIAL, HEARINGS

Priority ⇨ 4

VISION 2004 (Continued)

Motions/Trials/Preliminary Hearings:

Following or during the motion hearing, the judge will not only have access to external law resources such as Westlaw or Lexis, but the court will also have "internal" database access for legal research [**Electronic and Telecommunications Data Exchange**] on CD-Rom with all the statutes and reports contained within these discs. The judge will also have word processing [**Office Automation**] capability to write opinions.

Time spent on prelims will be reduced as the witnesses present their testimony, again via the remote video [**Video**] site. The trial itself will be considerably shorter due to the use of video testimony, whether previously recorded or presented "live" via video conferencing. Child witnesses, while available to be cross-examined, will not have to sit in the courtroom and confront the defendant. Victims who wish to witness the trial, but do not wish to see or be seen by the defendant, can watch the trial from a remote location.

Jury selection will be from remote off-site "jury centers" located throughout the county. Jurors will appear and be given a video presentation of juror orientation. Voir dire will then be conducted via video [**Video**] conferencing. Only jurors actually selected to serve will be required to appear in an actual courtroom.

Testimony will be available on a real-time basis to everyone in the courtroom. Defendants, victims and witnesses needing translation will be provided with headsets hooked to a computer. As the testimony is entered, whether through voice digitization [**Computer Data**] or transcription, it will be translated in the appropriate language or even the specific dialect. Visual computer animations [**"New Wave" Systems**] of complex issues will be presented on screen to the jury. In some instances, judges and jurors will view the "scene" via the use of holograms or virtual reality [**"New Wave" Systems**]. Documentary evidence will be available from the electronic case file, having been previously imaged [**Computer Data**] onto an optical disc.

The defendant in the courtroom will again have his/her identity verified by the use of the automatic fingerprint [**Identification Technologies**].

Sentencing:

Sentencing will be done on-line, with the information automatically being entered into the system and distributed throughout the statewide network. Orders would automatically be distributed through Electronic Data Interchange (EDI) [**Electronic and Telecommunications Data Exchange**] to the Department of Corrections, the county jail, MVD, treatment programs and victims.

Court Functional Area
BUSINESS MANAGEMENT

Priority ⇨ 5

METAPHOR

"Buy In" - Enlightened Management

DEFINITION

Business Management: This area focuses on the business side of the court, mainly the management of non-judicial functions supporting the work of the judicial branch. In particular, the strategic plan anticipates dramatic technological advances in the critical areas of fiscal administration and human resources management.

VISION 2004

Fiscal Management Information System:

Increasingly, in the years ahead, public demand for accountability will require sound fiscal management on the part of the judicial branch and government in general. Even now, the multi-million dollar flow of money to and from the courts requires strong budget planning capacity, accounting controls, auditability, etc. Comprehensive fiscal information management systems [**Computer Data**] will be developed to support the court operations in all financial realms.

On the budget side of the equation, integrated information systems will allow for receipt and expenditure of general fund appropriations, grant monies and special funds. For the revenue side of the equation, the information systems will support collection and distribution of fees, fines, assessed costs and pass-through monies (e.g. child support and restitution) in a timely and efficient manner. These systems will also provide electronic bank interface [**Electronic and Telecommunications Data Exchange**] for reconciliation of payments, funds transfer, use of lock boxes, etc. Additionally, to manage public funds in the most responsible manner possible, the automation systems will provide for prudent investment of float monies, trust fund accounts, etc.

For accurate revenue/expenditure projections and strategic budget planning, the court will use expert systems, artificial intelligence, and other sophisticated predictive models.

Additionally, the courts will employ a fully automated fixed assets inventory system, using bar coding [**Computer Data**] and other emerging technologies.

Easy Payment Systems:

Current and emerging technologies will make "easy payment systems" available for the convenience of litigants, child support obligers/obligees, victims, etc. Persons having financial obligations with the court may opt to make payments by credit card, automated teller machine (ATM) [**Electronic and Telecommunications Data Exchange**] or a comparable justice system model, and electronic funds transfer. In the not too distant future, the courts might also employ interactive video, thus allowing parties to make court financial transactions at their homes, "remote services centers", etc.

Court Functional Area
BUSINESS MANAGEMENT

Priority ⇨ 5

VISION 2004 (Continued)

Increased Accountability of Obligers:

The future promises enhanced judicial collections through integration of court, executive branch and private sector management information systems. On-line access to credit history and other financial information will ensure accurate determination of indigency for defendants requiring court appointed legal counsel. Further, exchange of information by the courts and other governmental agencies will bolster enforcement of financial obligations such as child support, restitution, civil judgements, etc. Through a network of integrated information systems [Electronic and Telecommunications Data Exchange], the courts will have the capacity to garnish wages, unemployment and workers' compensation payments; intercept tax refunds, lottery winnings; establish liens on property and other assets; and, locate transient persons having outstanding financial obligations.

Human Resources Management - Long Term Investment in a Productive Work Force:

Rapid societal changes and technological advances are creating dramatic changes in the work place. This is particularly true in the courts, an institution involved in the information business and service to the public. Although the judicial branch must be responsive to the changing business environment, it need not do so at the cost of displacing existing staff. Rather, the court institution can serve as a model for participatory management, a humanistic approach to re-engineering of government and effective management of the organizational change process.

By effectively managing the change process, the judicial branch will reshape and strengthen the existing work force to meet the demands of the decade ahead. This will require restructuring of jobs, ongoing training and development of court personnel, deployment of specialized training and technical staff positions within the courts, and establishment of equitable policies governing the treatment of "relocated workers." As a foundation for effective human resources management, courts will have comprehensive personnel management information systems [Computer Data] to support staff recruitment, screenings, selection, performance appraisal and career development.

High-tech educational and communications media can greatly facilitate personnel administration, staff development and other initiatives in the arena of human resources management. Increasingly, the courts will provide staff development opportunities through multi-media presentations, interactive (self paced) video training programs [Interactive Voice Response], simulated learning situations ["New Wave" Systems], etc. Additionally, through the use of state-wide teleconferencing, it will be possible to bring a wide array of quality educational programs to court personnel in a timely manner. Collaborative efforts of the courts and public educational institutions will further expand the range and depth of learning opportunities for court personnel. Finally, state-wide implementation of E-mail [Electronic and Telecommunications Data Exchange] will facilitate ongoing communications and collaborative court improvement projects on the part of judicial branch personnel.

Court Functional Area

EDUCATION

Priority ⇨ 6

METAPHOR

"An Apple For The Court"

DEFINITION

Education:

A high level, philosophical objective of the judicial branch is educating staff and users about the justice system. Technology can help courts do so. Whether via applications to provide new ways to access courts for litigants (i.e. quick court kiosks) or improving skills of probationers (i.e. computer learning centers), education and technology play an interrelated role. Educating people about technology as used in the courts, and using technology in the courts to educate people is important.

VISION 2004

Educating litigants: In 2004, simpler, faster ways to access the courts and process routine, non-complicated cases will exist. It is envisioned that computer kiosks [Interactive Voice Response] will be available in libraries and other public places to file and process default divorces, post dissolution decree modifications, name changes, etc. Computerized, standard, easily-readable forms or software programs [Computer Data] will be available for pro-se litigants and others to file cases, submit reports and annual accounting to the court (i.e. guardianships, conservatorships, etc.)

Providing general information: Voice activated response systems [Interactive Voice Response] will be prevalent for routinely sought court information and interactive video via television [Interactive Voice Response] will provide juror orientation and data input.

Educating probationers: Computers, video and artificial intelligence approaches will be used to enhance skills of probationers directed at improving self esteem and occupational opportunities.

Information for lawyers: Computerized Bulletin Boards [Electronic and Telecommunications Data Exchange] will be used for electronic dissemination of rules, court case data, calendaring information, etc. Wireless, full-motion video phones [Video Imaging/Communications] will be used for telephonic judges/lawyers conferencing.

Staff Education: Staff training in targeted weak skill areas for employees will be diagnosed and prescribed by computer virtual reality ["New Wave" Systems] and will be selectively employed as screening devices prior to hiring or promotion for some managers, probation officers, social service personnel, etc.

Court Functional Area

PROBATION

Priority ⇨ 7

METAPHOR

"Getting to know you" ... High Tech / Soft Touch

DEFINITION

Probation: Case and cash management of juvenile and adult probation cases, including pretrial, presentence, and disposition activities.

VISION 2004

The future vision for adult and juvenile probation will require implementation of new technologies to facilitate automatic transfer and flow of information between various agencies involved in the probation function. New technologies will also accommodate advanced methods for monitoring active cases and provide more accurate and diverse information during presentence investigations.

Information Flow: Incorporating standardized unique identifiers through a state-wide data dictionary, future technologies will facilitate the flow of information between the courts, law enforcement, and corrections.

- Pretrial Phase: Enable automatic flow of information from law enforcement to pretrial/presentence investigation.
- Presentence Phase: Provide electronic data transfer [**Electronic and Telecommunications Data Exchange**] of juvenile and adult records from corrections, NCIC/ACIC, credit bureaus, mental health, employment sector and educational systems. Allow electronic filings through FAX [**Electronic and Telecommunications Data Exchange**] technology of presentence investigation reports and other probation-generated documents into court, prosecutor and defendant attorney systems. Also, using document imaging [**Computer Data**], provide capabilities which will allow defendant's picture to be generated on a judge's workstation.
- Disposition: Allow electronic data transfer to court clerk, corrections, jail systems, and probation system. Provide automatic assignment of cases to probation officers.

Presentence Investigation: New capabilities incorporating technologies such as artificial intelligence/expert systems/predictive modelling will be developed to assist probation in conducting risk/needs assessments and diagnostics on defendant profiles.

Case Monitoring: Future procedures for monitoring cases will incorporate several new technologies — automated random phone checking, voice recognition [**Interactive Voice Response**] and validation, bio-medical [**"New Wave" Systems**] analyses (medication and illegal drug monitoring) and mobile processors for field use.

Court Functional Area
JUDICIAL ENFORCEMENT
Priority ⇨ 8

METAPHOR

"You Can Run, But You Can't Hide"

DEFINITION

Judicial Enforcement: This area refers to the enforcement of court orders whether jail, fines, probation, treatment or civil judgements or injunctions.

VISION 2004

The key here is information sharing via electronic data transfer [**Electronic and Telecommunications Data Exchange**] on a statewide network. Data entry of all identifying information will be via a "smart card" [**Computer Data**] driver's license, having a magnetic strip which will put all personal and identifying information immediately in the computer. The judge will also have access to other pending court orders, whether for jail or financial assessments, through the statewide network.

Notice will then go to everyone as to what has been ordered and notice will also come back from everyone to the court regarding compliance or non-compliance with orders. Upon making the order, it would be transmitted immediately to the Department of Corrections, the county jail, the Motor Vehicle Division, treatment programs, etc. Judgement liens could be automatically filed via an electronic data transfer.

Routine inquiries and payments can be made through an interactive voice response system. Probationers can report to their probation offices via the video remote. Electronic surveillance equipment will allow many prisoners to serve their time via home detention. Video could again be used to conduct judicial sales and debtor's exams via a remote hook-up.

If the defendant fails to comply with any term of the court's orders, notice is immediately sent to the court and a notice of the failure to comply is automatically generated and sent to the defendant (and in appropriate cases, to the victim). Warrants issued by the court are then immediately sent statewide, via the information network, so that all agencies within the state know of the outstanding warrant. The State and Federal Department of Revenue are notified via electronic data transfer [**Electronic and Telecommunications Data Exchange**] to allow for possible attachment of refunds. MVD is automatically notified to allow for suspension of the license or registration.

Automatic fingerprint [**Identification Technologies**] technology will also be used to identify the defendant upon his entry at the jail in response to the court order or to make a positive identification when arresting the defendant for a warrant.

Court Functional Area
JURY MANAGEMENT

Priority ⇨ 9

METAPHOR

"Out Of The Box"

DEFINITION

Jury Management: Pertains to both petit and Grand Jury systems used by general and limited jurisdiction trial courts. Broad-scoped technology issues present themselves in insuring improved access, summoning, orientation, facilities accommodation, statistics, privacy, selection, education and use of jurors.

VISION 2004

In 2004, a variety of new and innovative ways to use juries in the Arizona Courts will be witnessed. Summoning, in large measure, will be through interactive voice/data response systems with biographical information and eligibility requirements electronically exchanged between the prospective juror and court. In rural areas and many special purpose cases, remote video panels will be utilized. Video will also play a big part in taped and edited trials, the jurors only having to view the relevant video portions of the trial. Virtual reality and hologram presentation of data to jurors will be used in special situations. Those jurors that are required to come to the courthouse will be checked-in and managed with widespread bar code and touch screen technologies. The American with Disabilities Act (ADA) will promote user friendly juror assembly areas and courtrooms. There will be much more widespread acceptance and use of the education model in the trial experience, with jurors allowed to appropriately seek instant clarification of confusing arguments and otherwise interact more with judges and lawyers in the case.

**Court Functional Area
FACILITIES MANAGEMENT**

Priority ⇨ 10

METAPHOR

"Re-engineering the Courtroom"

DEFINITIONS

Construction & Remodelling: Facilities construction, modification, remodelling, maintenance and repair.

VISION 2004

Construction & Remodelling:

Current: Our older courts and administrative and training facilities are in need of replacement, modification and repair. Funding, whether statewide or on a county basis, is needed to construct, modify and maintain our facilities for compliance with the federal Americans with Disability Act (ADA) and state standards. Programs that address the near-term needs of modifying and maintaining existing court facilities should be addressed in a five-year plan. Ten year construction and maintenance plans should be addressed in a long-range master construction plan.

Studies 1994 - 1995: Feasibility studies, which include demographic, social/economic and political considerations, must be completed and become part of the long-range master construction and maintenance plan. Establishing new courts and increasing the size of existing courts in inadequate facilities would not be serving the interests of the public, bar and the courts.

Construction 1996 - 1998: Courtroom construction and remodelling should provide for an ergonomic multi-media [Interactive Voice Response] environment that includes video, imaging [Computer Data] and communications. Interactive voice response, electronic telecommunications and computer data transfer [Electronic and Telecommunications Data Exchange] should also be a requirement.

New Wave 1999 - 2004: "New wave" systems such as virtual reality, computer animation, holograms, and other state-of-the-art equipment and technology should be integrated into any new construction and remodelling.

Court Functional Area
FACILITIES MANAGEMENT

Priority ⇨ 10

METAPHOR

"Re-engineering the Courtroom"

DEFINITIONS

Support Centers: Provide technology and facilities to support the court.

VISION 2004

Current: Rapid changes in construction, remodelling, maintenance and technology require the courts to anticipate and incorporate these changes in their planning process through constant evaluation. Changes could be managed through personnel management, training, equipment and facilities.

Construction 1994 - 1996: Future construction or remodelling of existing court support centers should include electronic monitoring [Electronic Surveillance] of prisoner holding areas, expanded jury facilities, video replay, new wave systems and other state-of-the-art expert electronic systems. A pilot program at selected facilities should use state-of-the-art technology.

Support staff 1996 - 1998: Clerks of the Court and Administrative Offices of the Courts staffs should be provided adequate facilities to perform their duties. The results of pilot programs would be evaluated and the results considered for inclusion in any new construction and remodelling. Continued evaluation and implementation of new technology would be required throughout the life of the plan. Facilities would incorporate all state-of-the-art technology, such as: video, interactive voice response, electronic telecommunications data exchange, computer data entry, data storage, output document imaging [Computer Data] and all new wave systems. Artificial intelligence, predictive modelling, electronic surveillance, automatic fingerprints [Identification Technologies], voice recognition [Interactive Voice Response] and DNA (bio-medical) [**"New Wave" Systems**] analysis would be available to assist court personnel.

Judicial suites: Judges, their staffs, and the courts' staff attorneys will require the same state-of-the-art technology that is provided to other support staff. On-line computerized access to court records and information will provide judges with immediate information to make informed decisions.

1999 - 2004: All court support centers, both those remodeled and those newly constructed, have state-of-the-art technology as an integral part of their day-to-day operation.

**Court Functional Area
FACILITIES MANAGEMENT**

Priority ⇨ 10

METAPHOR

"Ré-engineering the Courtroom"

DEFINITIONS

Scheduling and Access to Facilities: Support Services, through the use of technology, must take the lead in providing the public and bar access to court facilities.

VISION 2004

Current: Case scheduling and access to the courts are important public relations tools. Support services, with the aid of technology, are expected to lead the service industry over the next ten to twenty years. Technology will provide the vital infrastructure necessary to schedule cases, courtrooms and other court facilities and provide necessary access.

Facilities access 1994 - 1995: Public access to court facilities after normal business hours through the use of technology is a priority. Electronic filing of documents on a 24 hour/day basis, night court and access to automated teller machines (ATM's) [**Electronic and Telecommunications Data Exchange**] for payment of fines and fees, provides the public and bar a valuable service.

Information 1996 - 1998: Continued review of technology to provide video terminals, both on and off site for review of court records, would provide a valuable service to the public and bar. General information about court services, case and courtroom calendaring should be provided to the public. Touch screen video terminals (multi-media) [**Interactive Voice Response**] perform this function, which would otherwise require additional personnel. Law firms and the general public, through the use of personal computer technology, would be able to communicate with the court by using a court computer bulletin board to obtain important event information. Technology will enhance the dissemination of information and serve to enhance public trust and perceptions of the courts.

ADA: To meet the requirements of the Americans with Disabilities Act (ADA), court facilities, in many cases, must be modified and remodeled to provide for the needs of the disabled. Accessibility planning which includes the use of technology will ensure appropriate planning to enhance physical and communications access to the courts.

1999 - 2004: Evaluate and reevaluate new technology as it becomes available. Continue to provide maximum access and service to the public and bar. Provide funds to meet the needs of the court and access by the public through modification and remodelling of facilities.

**Court Functional Area
FACILITIES MANAGEMENT**

Priority ⇨ 10

METAPHOR

"Re-engineering the Courtroom"

DEFINITIONS

Court Security:	Technology through the use of electronic surveillance, monitoring and screening will provide physical security within the courthouse and courtroom to court personnel, the bar and the public.
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VISION 2004

Current: The depth of court security depends on the requirements of each individual court. Currently, court security measures range from open courts to courts with very strict security which makes use of present state-of-the-art technology.

Physical security 1994 - 1995: Physical security must be maintained throughout the courthouses and courtrooms. Electronic Surveillance technologies such as voice activated cameras, metal/weapons detectors, force fields/shield protection and bullet proofing must be provided for judges, their staff, jurors, witnesses and other court personnel. A statewide security plan should be developed to provide the level of security that is required to meet the needs of each court. Within the plan, present technology should be used to assist court security personnel and provide the level of security required. The plan should be initiated by beginning full implementation of state-of-the-art security measures in all large metropolitan courts.

Public image 1996 - 1998: Based on the results of the development of the plan, security technology can be used to protect court personnel, judges and the public throughout the courthouses and courtrooms. Public image and social attitudes can and will be enhanced by providing proper security within the court environment. Providing an environment with all of the necessary technology and physical arrangements to insure physical safety is a requirement.

Surveillance: Electronic surveillance, monitoring and screening will be required. Automated fingerprints [Identification Technologies], voice recognition [Interactive Voice Response], interactive voice response and voice/touch activated devices will become part of each court's security system.

1999 - 2004: High tech security should be expanded to all courts and all areas within the courts to provide maximum protection for court personnel and the public. Security will be upgraded as new technology becomes available.

**Court Functional Area
FACILITIES MANAGEMENT**

Priority ⇨ 10

METAPHOR

"Re-engineering the Courtroom"

DEFINITIONS

Maintaining Facilities: Use of high tech materials for construction and remodelling to produce low maintenance requirements.

VISION 2004

Current: Technology is currently available and in use in private industry to provide low maintenance facilities.

Low Maintenance 1994 - 1995: Maintenance of court facilities must have a high priority. Older court facilities throughout the state will require the use of high tech materials having low maintenance requirements. Remodelling of existing facilities should take advantage of new technology to cut operating costs. Short and long-term maintenance and construction plans must incorporate technology in future planning for courts.

Design 1996 - 1998: Courts should be designed with low maintenance and high technology requirements in mind. Integration of these two requirements will assist in improving design and development of court facilities. High tech materials and construction techniques must be considered in new construction and remodelling of the courts of the future. Increased construction and remodelling cost and reduced funding requires that technology be applied to reduce costs of operation throughout the planning, construction and occupation phases of building court facilities.

Funding: Building operation costs continue to increase each year. Adequate funding to sustain ongoing programs and those of the future must receive increased emphasis.

1999 - 2004: All facilities will be constructed and maintained by the use of high tech materials with low maintenance cost. State-of-the-art technology will be integrated into the design, development and remodelling of all courts.

**Court Functional Area
JUVENILE DETENTION**

Priority ⇨ 11

METAPHOR

"Protect and Preserve"

DEFINITION

Juvenile Detention: Management of juvenile detention centers, including responsibilities for security, supervision, surveillance, education, and rehabilitation services.

VISION 2004

The vision for juvenile detention is to incorporate new technologies which will enable greater sharing of information between agencies and which will provide more accurate and diverse information on juvenile cases.

Information Sharing: Incorporating confidentiality requirements, future technologies will provide electronic data transfer [**Electronic and Telecommunications Data Exchange**] to allow for the sharing of information between Juvenile Detention and the Juvenile Court, Juvenile Probation, law enforcement, and other agencies involved with the detention function. A major goal of implementing new technologies is to expedite case dispositions to reduce the amount of time in custody.

Other Goals: New capabilities and improvements in the Juvenile Detention function will be realized through technology in the following areas:

Identification: Provide advanced capabilities in automated fingerprinting [**Identification Technologies**], bio-medical analysis [**"New Wave" Systems**], and other technologies which will enhance the identification process.

Electronic surveillance: Enable more sophisticated monitoring and coverage in detention (suicide watch and entry of unauthorized drugs).

Predictive modelling: Provide artificial intelligence technologies to analyze risks associated with juvenile cases. New technologies will also accommodate case modelling to analyze the potential for prevention and diversion programs.

Educational programming and rehabilitation: Utilize video, networking [**Electronic and Telecommunications Data Exchange**], bi-lingual capabilities, and virtual reality [**"New Wave" Systems**] technologies to provide improved information for cognitive learning/socialization skills and to provide diversion/prevention and positive reinforcement opportunities.

Physical security: Provide advancements in security issues through use of technology such as video and voice recognition [**Interactive Voice Response**].

Court Functional Area
APPEALS PROCESS

Priority ⇨ 12

METAPHOR

"What goes around...comes around"

DEFINITIONS

Appeals Process:

Maintenance of official appellate court records to include: remote filing of notice of appeal and distribution through a statewide communications network, filing of documents, docketing, file tracking, records storage, fine/fee payments and coordination with federal jurisdictions.

VISION 2004

Remote filing of notice:

Current technology would allow remote filing and distribution of notice of appeal through the state. The limiting factor is funding and computer access by the courts. A statewide communications network will reduce or eliminate this problem and allow for the transfer of paper documents from all courts to the appellate courts. Notices of appeal filed in any trial court can then be electronically transmitted to the appropriate trial jurisdiction and then on to the parties and appellate court.

Virtual network [**Electronic and Telecommunications Data Exchange**] distributes notice: Development of a plan to provide a virtual network throughout the court system would allow for remote filings. To provide for early success, a communications network could be developed between the major trial courts and appellate courts and implemented within the next year. This plan would provide for electronic mail [**Office Automation**], document transfer and read-only access to each court's database.

Electronic record access: Begin design and development, to include new technology as it becomes available, as part of the communications network. The ability for all courts to be able to electronically access each court's records would allow all courts to have access to each others' databases. Appellate courts would then be able to access justice, city and superior court databases, which would obviate the need for the transmission of paper records. If required, the appellate could electronically transfer needed documents and information to the court. Issues on appeal and the documents filed in the appellate court, which constitute the appellate court record, would be kept on file in the appellate database for use by the Arizona Supreme Court when review is requested.

Electronic record access to all court databases is a step toward "paperless courts".

**Court Functional Area
APPEALS PROCESS**

Priority ⇨ 12

VISION 2004 (Continued)

Electronic knowledge based research:

Technology is available and is currently being used by the courts to access electronic legal and knowledge-based research. Although limited by the amount of available funding, judicial suites and court staff-attorneys are provided these programs in the appellate courts. Automated systems at county and state law libraries will be augmented by electronic legal research on CD-ROM, as well as access to Westlaw and Lexis. By the year 2004, technology can and will be applied to provide legal and knowledge-based research to all judges and their staffs throughout the state, courtrooms, public areas and other court personnel by on-line access to these systems.

Video conference/arguments: Video conferences or oral arguments are presently available to the appellate courts throughout the state. Installation of tele-video systems facilities at key locations within the state will eventually permit judges, counsel and parties to appear for oral argument electronically. Advances in hardware and software will be incorporated, such as virtual reality, computer animation and holograms [**"New Wave" Systems**] during tele-video conferences and arguments.

Imaging: Document imaging [**Computer Data**] will play an integral part in reaching a paperless court. Imaged documents can be stored in the computer system's database and can be retrieved in conjunction with the docket entry to assist the judge in making rulings on motions and decisions. Imaged documents are not readable as text files and therefore cannot be changed or modified. Current technology, as well as future state-of-the-art technology, will provide imaging in conjunction with other integrated judicial system information for instant on-line access to assist the court in decision making throughout the appeals process.

Optical Character Recognition (OCR): Optical character recognition systems, when used with a scanner program, will convert imaged documents to text files. These files are converted to readable files that can be searched, modified or rewritten just as any word processing document.

Court Functional Area
APPEALS PROCESS

Priority ⇨ 12

VISION 2004 (Continued)

Network distribution of opinions:

Development of a plan to provide a virtual communications network throughout the court system would allow the distribution of appellate court opinions to all state courts simultaneously. An integrated communications network could be developed between the major automated trial and appellate courts and could be implemented within the next year to provide for an early success. Technology is currently available and on line through the State Bar Bulletin Board for electronic access of appellate court opinions by members of the bar and the general public. Court opinions are also available via electronic media to various legal publishers.

By the year 2004, Arizona trial and appellate courts will have access to trial and appellate court databases through an integrated communications network. The integrated database will allow multiple users to access a single file. The record file will be stored on the trial courts' systems for use by the Intermediate Appellate Court where the case is on appeal or the Arizona Supreme Court for review. The appellate court's file will contain those documents filed on appeal, including the opinion, and can be reviewed by others having access to the court's database.

Federal Courts:

Presently no state court has electronic access to federal court databases or decisions. A joint committee should be established to research and coordinate the development of database and document transfer between federal and state courts.

Standard integrated databases would be required between courts to provide consistent information to allow information and document transfer. Technology is available throughout the industry to accomplish transfer and access to databases within corporations. Electronic Data Interchange (EDI) [**Electronic and Telecommunications Data Exchange**] has the potential to increase electronic exchange of court documents and provide a service for federal and state courts. New state of the art processes that are soon to be developed will expand on this concept and will take full advantage of the power of existing computers to provide enhanced services for the court community.

**INFORMATIONAL
TECHNOLOGIES**

HOW TO UNDERSTAND AND USE THE "INFORMATIONAL TECHNOLOGIES" SHEETS

TECHNOLOGY Interactive Voice Response (Interactive Phones)				①
TECHNOLOGY DESCRIPTION				②
Interactive Phones: Enables a caller to gain access to information by following a "menu" of choices selected through a touch tone phone. Interactive phones will provide for easier public access to specific court information/records without requiring court personnel assistance.				
PROJECTED IMPLEMENTATION PLANS				③
Current	1994 - 1995	1996 - 1998	1999 - 2004	
Technology is available and used extensively in other applications. However, there is very limited use of interactive phones to access court records in the Arizona court system.	Initiate pilot programs in Maricopa and Pima counties to provide information to the public on general court procedures.	Based on results of the pilot program, expand scope of the technology to include other counties and to provide on-line access to case management and calendaring systems.	Incorporate voice recognition technologies with interactive phone technologies which would, in effect, allow individuals to "speak" with computers over the phone.	

① **Technology:** A category or family of nine current and future technologies developed by the Committee that group like systems together. Technologies certainly may overlap at their boundaries. They range widely from today's common place systems such as voice and video processes to tomorrow's futuristic "new wave" approaches.

② **Technology Descriptions:** An explanation or definition of a specific technical system and its application to courts.

③ **Implementation Plans:** Visions must be linked to plans and actions or they are merely wishful thinking. Implementation takes place over years, and is best done as an integrated part of the activities of a number of participating organizations, courts, and offices in, and related to, the Arizona judicial branch. The implementation initiatives, here, were structured by a small group (Arkfeld, Blankenship, Clark, Griller, Peet and Reinkensmeyer) that planned and facilitated the Flagstaff Technology Visions Workshop. This work product is based on the "Court Functional" visions developed by the full Committee in Flagstaff. It groups plans by multiples of years as it outlines a series of possible pathways from today to 2004 for specific technologies. Obviously, there are numerous assumptions that are embraced and constraints that must be overcome to achieve the visions. These strategies, however, represent a conscientious attempt at outlining how we get to a proposed future. Their success rests principally on the ability of Arizona's judicial system leaders and staff to share ownership in the visions and commit to their realization...whether specifically through the pathways portrayed, or others yet to be developed.

TECHNOLOGY
Computer Data
(Document Imaging)

TECHNOLOGY DESCRIPTION

Document Imaging:

Technology which enables documents to be stored electronically. Physical documents are scanned/digitized and stored on optical disks with "indexes" which relate each document to a particular event in the docket entries for the case. Access to documents can be gained from any authorized workstation and, if necessary, documents can be printed or faxed.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Document imaging technologies are increasing in use and acceptance throughout the business world. In the Arizona court system, there are 2 installations	Continue monitoring the pilot installation in Pima County Superior Court. Develop feasibility report to the Committee on use of document imaging.	Subject to costs of technology and availability of funds, begin installations of document imaging in larger courts.	Continue with installations to include all courts, as well as outside enforcement agencies.

**TECHNOLOGY
Computer Data
(Bar Coding)**

Technology Description

Bar Coding: Incorporate laser technology which reads bar codes to assist in recording, entering, and retrieving court record data and for inventory control of fixed assets, materials and supplies.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>Technology is available and used extensively in other industries.</p> <p>However, there is currently no activity with bar coding technology in the Arizona court system.</p>	<p>Initiate pilot programs at selected courts throughout the State, using bar coding technology for controlling court files and exhibits and for inventory control.</p>	<p>Based on results of the pilot program, expand scope of bar coding technology to include additional courts and to integrate with other court business information systems.</p>	<p>Many court files will reside as images on electronic media and will be controlled through the court's case management system. For these courts, bar coding will be reduced in scope to controlling exhibits, other manual documents and for inventory control. For courts which do not use imaging technologies, the scope of bar coding technology to include all remaining courts and to integrate with other high-tech equipment for property control, supply reorders and purchasing functions will be expanded.</p>

TECHNOLOGY
Computer Data
(Data Entry)

TECHNOLOGY DESCRIPTION

Data Entry: A generic term which refers to the many technologies which are used to input data into a computer.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>Currently, information is entered via a keyboard.</p>	<p>Pilot projects will begin by issuing "smart cards" to some people to allow entry of all identifying information.</p>	<p>The pilot program will include the capability to enter the information via the "smart card" at all court facilities. will be expanded Voice recognition data entry will begin in a few pilot programs.</p>	<p>Appropriate agencies will expand the issuing of smart cards to include driver's licenses, as well as Arizona I.D. cards. Voice recognition will not only be a form of entry of information, but that information can be translated from English to other languages.</p>

**TECHNOLOGY
Computer Data
(Scanning)**

TECHNOLOGY DESCRIPTION

Scanning:

Technology which enables text from a physical document to be "read" by a scanning device and stored electronically as either an image or converted to character data using optical character recognition. Scanning will assist in recording and entering court record data.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>There is limited use of scanning technology in the Arizona court system. This technology's primary use is for converting physical documents into ASCII text for word processing software and for imaging purposes in the few courts with imaging capabilities.</p>	<p>Limited offerings of scanning capabilities for word processing document conversions.</p>	<p>Begin to develop document imaging technologies through-out the Arizona courts.</p>	<p>Continue implementation of document imaging throughout the Arizona courts.</p>

TECHNOLOGY
Office Automation
Word Processing)
(E-Mail)

TECHNOLOGY DESCRIPTION

Office Automation: Refers to those tools which are used to expedite the preparation and exchange of documents and information.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>1. Word Processing</p> <p>A large number of courts use WordPerfect.</p>	<p>WordPerfect will probably remain the de facto standard.</p>	<p>Either a single product will be used or generic functionality will emerge from one or more vendors.</p>	<p>A variety of inputting techniques will be integrated which will allow for document syntheses from voice, image and text.</p>
<p>2. Electronic Mail (E-Mail)</p> <p>A large number of judges have access to Digital Equipment Corp. electronic mail products.</p> <p>Disparate E-Mail products require extra effort and cost to exchange messages.</p>	<p>E-Mail products should be selected which are platform-independent.</p>	<p>GOSIP standards will become firmly established and disparate products will use X.400 and X.500 standards to facilitate mail message exchange.</p>	

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Automated Teller Machines)

TECHNOLOGY DESCRIPTION

Automated Teller Machines (ATM's): Will provide an "Easy Payment" system for court financial transactions.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Technology is available and used extensively in banking industry. However, there is little or no use of ATM in the courts.	Determine types of court financial transactions appropriate for ATM, examine both existing and custom system approaches, and identify pilot sites for testing ATM technology.	Conduct pilot tests using ATM for court financial transactions, evaluate findings and determine best system(s) for judicial branch, e.g. existing bank system or custom applications.	"Easy payment" systems will be available to the public for most every type of court financial transaction on a statewide basis, e.g. payment and receipt of child support, restitution, assessed court costs, etc.

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Data Access)

TECHNOLOGY DESCRIPTION

Data Access: Refers to the various methods and techniques used to acquire use of electronically stored data.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
There is one teleconferencing link.	Initiate remote access to attorneys.		
There is some remote access by judges to electronic mail.	Expand remote access to include more types of access to more users.		
There is some remote access to legal research.			
There is some remote access to court records by the public.			

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Database Access for Legal Research)

TECHNOLOGY DESCRIPTION

Database Access for Legal Research: Full-text searching of legal opinions, laws, rules and regulations is an instantaneous way of accessing a voluminous amount of information that has traditionally been printed on paper. It utilizes CD-ROM which allows large amounts of permanent electronic data to be stored on a compact disk and which is read through laser technology.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Westlaw and Lexis are currently available on-line. However, usage by courts is not nearly as common as in law offices. CD-ROM technology is also available, although much material is not yet available on this format.	All courtroom facilities should have on-line access to either Westlaw and/or Lexis through the statewide judicial network.	Courts will have a fully indexed database of judicial memoranda and other court work products. Courtroom workstations will begin to have CD-ROM capability added to them.	All workstations will have CD-ROM capability. Courts will maintain libraries of discs containing case reports, digests and treatises.

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Electronic Data Transfer)

TECHNOLOGY DESCRIPTION

Electronic Data Transfer: Provides the ability to transfer data between computer systems electronically without reentering the data manually. With many different systems and database structures, electronic data transfer is best accomplished using standard electronic data interchange (EDI) formats.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>Currently, there is very little electronic data interchange between outside agencies or even between courts.</p> <p>Presently, no state appellate court has electronic access to federal court databases or decisions.</p>	<p>Standards will be established for court processes and procedures and data security, as well as transmission of public court documents and forms. Exchange of information between courts will then begin.</p> <p>Determine types of information and transactions required for effective caseload management, establish dialogue with interested entities (e.g., the trial bar, state agencies) and plan for pilot testing of electronic data exchange, sharing of imaged documents, etc.</p> <p>(Continued next page)</p>	<p>Standards for interface and electronic filing and exchange of public court documents between courts and outside agencies and for data security will be established. Exchanges of information will begin between courts and enforcement agencies, corrections facilities and the motor vehicle department.</p> <p>Establish intergovernmental agreements and private sector contracts, conduct pilot testing of electronic data exchange, and enhance functionality and availability of integrated systems based on pilot test results.</p> <p>(Continued next page)</p>	<p>Exchange of information between courts and all outside agencies will be widespread. This means expanding beyond traditional justice system agencies to include social service agencies, treatment facilities and State and Federal Departments of Revenue. Litigants and members of the public will be able to connect with the system through their computers.</p> <p>(Continued next page)</p>

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Electronic Data Transfer)

PROJECTED IMPLEMENTATION PLANS (Continued)

Current	1994 - 1995	1996 - 1998	1999 - 2004
	<p>(Continued)</p> <p>Determine the types of financial information and transactions required for effective judicial branch functions; establish dialogue with executive branch agencies and private sector entities; and plan for pilot testing of integrated financial systems.</p> <p>Establish a joint committee to research and coordinate the implementation of database and public court document transfer between the federal and state courts. Establish a communications network between federal and state courts and provide access to court opinions.</p>	<p>(Continued)</p> <p>Establish intergovernmental agreements and private sector contracts, conduct pilot testing of electronic data exchange with executive and private sector entities, and increase functionality and availability of integrated system based on results of pilot projects.</p> <p>Based on the recommendations of the joint committee, begin planning the implementation and testing phase of the program. Complete testing and coordinate the final program implementation.</p>	<p>(Continued)</p> <p>Linkage of courts, justice agencies and the trial bar will allow electronic case filing, issuance of court notices and orders, image transmittal and disposition reporting to executive branch agencies. The public will also have electronic access to courts, both for case review and filing purposes, through "remote services centers".</p> <p>Through electronic data exchange with the executive branch and private sector, the courts will maximize judicial collections via credit checks; interception of tax refunds and lottery winnings; garnishment of wages, unemployment and workers' compensation; liens on property and other assets; and skip tracing.</p> <p>(Continued next page)</p>

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Electronic Data Transfer)

PROJECTED IMPLEMENTATION PLANS (Continued)

Current	1994 - 1995	1996 - 1998	1999 - 2004
			<p>(Continued)</p> <p>Provide a standard integrated database between federal and state courts. Provide a total communications and document network, which allows each court the flexibility to provide network information while continuing to meet the needs of the individual court and jurisdiction.</p>

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(FAX)

TECHNOLOGY DESCRIPTION

FAX: Is the commonly accepted term used to describe the process of transmitting the facsimile image of a document over telephone lines. Facsimile systems allow documents to be transmitted over phone lines eliminating the need to deliver or mail documents.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Most court facilities have access to at least one fax machine.	Fax machines will be available in all court facilities, as well as enforcement and prosecutorial agencies, to allow for immediate exchange of documents during proceedings.	Litigants and attorneys will be able to submit pleadings via fax.	Exchanging documents via fax will be the routine.

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Networking)

TECHNOLOGY DESCRIPTION

Networking: Refers to the various techniques used to electronically exchange data, voice, or video information.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>Networking compatibility within a county is more important than communications between the counties.</p> <p>There is very little connectivity among the courts in the state.</p> <p>The AOC is leasing a proprietary network from a computer hardware vendor.</p> <p>The Committee on Technology has adopted the Government Open Systems Interconnection Profile (GOSIP) for the courts open networking standards.</p>	<p>A statewide backbone network will be operational, allowing all 15 counties to access each others' dockets.</p>	<p>The statewide network will accommodate the transfer of data and images of court documents among all members of the court family.</p>	<p>The statewide network will be enhanced to readily perform full-motion video among all of the courts in the state.</p>

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Remote Filing of Notice)

TECHNOLOGY DESCRIPTION

Remote Filing of Notice: Notices of appeals filed remotely with any trial court. Distribution of the notice to the appropriate court and parties by the statewide communications network.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>Technology is presently available that would facilitate remote filing and virtual distribution of notices.</p> <p>Currently, no technology is in place to allow this procedure.</p> <p>The appellate courts presently provide court opinions, electronically, through the State Bar bulletin board.</p>	<p>Initiate a plan to provide a communications network throughout the court system which would allow remote filing of notices of appeal and distribution. The plan should be developed in conjunction with the major trial courts for implementation within the next five years. Ten year planning should incorporate the remaining trial courts as they automate.</p> <p>Plan for networking to provide access to court databases. Provide to all courts and the public, the appellate "issue tracking" database.</p>	<p>Continue to add new technology as it becomes available to enhance and facilitate the ease by which notices can be remotely filed and distributed.</p> <p>Plan to allow access to trial court records and databases as a step toward a "paperless court".</p>	<p>Through an integrated network, Arizona trial and appellate courts will have access to all court databases through integrated communications.</p> <p>Technology will reduce or eliminate the use of paper records. Access to trial court databases and, if needed, electronically transmitted records needed by the appellate courts to consider and dispose of appeals will be accomplished.</p> <p>"A Paperless Court."</p>

TECHNOLOGY
Electronic and Telecommunications
Data Exchange
(Virtual Network)

TECHNOLOGY DESCRIPTION

Virtual Network: Technology which allows data to reside on the computer in which it was first entered, where the data is accessible to all authorized parties needing access to it regardless of where they are physically located. The network incorporates its own "intelligence" to locate data that is requested by the user.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Technology is currently not being utilized to its fullest capabilities in the Arizona court system.	No resources are available for a virtual network during this time period. Modest research and development efforts will take place.	Begin design and development of virtual network. Initiate pilot project between the Arizona Supreme Court and selected county information networks.	Continue with installations to include all courts.

TECHNOLOGY
Video
(Video Conferencing)

TECHNOLOGY DESCRIPTION

Video Conferencing: Refers to the capability of having video transmission between two or more locations which are physically remote from each other. Allows a number of people to be in different locations and yet "meet" and see and speak to each other.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>The technology is available, but it requires that some sort of connection be in place either through television linkage or fiber optics network.</p>	<p>Initiate pilot projects with the arraignment phase of the court proceedings being conducted between Maricopa County and Pima County Jail facilities and downtown arraignment courtrooms. Develop rule changes to allow for defendants and counsel to appear by video.</p>	<p>Based on results of pilot program, expand video conferencing facilities to all courtrooms within Maricopa and Pima Counties.</p>	<p>Expand video conferencing capability to all court facilities throughout the state. Develop rule changes to allow for off-site jury selection and remote testimony. Specifications and protocols will be provided to state administrative and law enforcement agencies, as well as to the bar, the media and the general public for use in configuring corresponding facilities which they choose to develop to allow them to also interact via video.</p>

TECHNOLOGY
Video
(Interactive Video)

TECHNOLOGY DESCRIPTION

Interactive Video: Will provide an "Easy Payment" system for court financial transactions.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>Technology is available and used in the banking, travel and hotel industries. However, there is limited use of interactive video in the Arizona Courts (apart from the "Quick Court" pilot project for domestic relations cases).</p>	<p>Determine types of financial transactions appropriate for interactive video, examine both existing and custom systems, and identify courts for pilot testing of the interactive video system(s).</p>	<p>Conduct pilot testing using interactive video for court financial transactions, evaluate findings and determine best approach for state-wide interactive video system.</p>	<p>Interactive video will allow the public to check on case status and make court financial transactions at home and/or "remote service centers," e.g. payment and receipt of child support, restitution, assessed court costs, etc.</p>

TECHNOLOGY
Interactive Voice Response
(Interactive Phones)

TECHNOLOGY DESCRIPTION

Interactive Phones: Enables a caller to gain access to information by following a "menu" of choices selected through a touch tone phone. Interactive phones will provide for easier public access to specific court information/records without requiring court personnel assistance.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>Technology is available and used extensively in other applications. However, there is very limited use of interactive phones to access court records in the Arizona court system.</p>	<p>Initiate pilot programs in Maricopa and Pima counties to provide information to the public on general court procedures.</p>	<p>Based on results of the pilot program, expand scope of the technology to include other counties and to provide on-line access to case management and calendaring systems.</p>	<p>Incorporate voice recognition technologies with interactive phone technologies which would, in effect, allow individuals to "speak" with computers over the phone.</p>

TECHNOLOGY
Interactive Voice Response
(Voice Recognition)

TECHNOLOGY DESCRIPTION

Voice Recognition: Technology which enables people to enter information and commands into a computer by voice. Voice recognition will assist authorized court personnel in entering and retrieving court record data.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Technology is currently not available for court use.	No capabilities for voice recognition in the court setting are projected during this time period.	No capabilities for voice recognition are projected during this time period.	Subject to availability of technology, initiate pilot programs at selected courts throughout the state which enable court personnel to enter minute entries and other "textual" court data using voice recognition technologies.

TECHNOLOGY
Interactive Voice Response
(Multi-Media)

TECHNOLOGY DESCRIPTION

Multi-Media: Will provide an on-going, statewide program of education and staff development, using the most effective media available.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>A wide variety of educational media exists and emerging technologies are expanding the range of options. While the courts are using some of the approaches, rapidly changing demands on the work force will necessitate on-going educational programming using a high tech multi-media approach.</p>	<p>Inventory current education opportunities for court personnel, e.g., COJET. Define current and future training needs, and examine the full range of educational media, e.g., interactive video, simulations, teleconferencing (both state and nation-wide), self instruction programs, etc. Develop a strategic plan.</p>	<p>Implement strategic education plan incorporating court personnel training needs and multi-media approaches. Evaluate educational programs and update plan to meet needs of changing work force, job restructuring, etc.</p>	<p>All court personnel will have opportunity for long range, individualized, educational programming and career development. Training will be timely and effective, using proven adult education techniques and advanced multi-media presentation with emphasis on interactive approaches.</p>

TECHNOLOGY
Interactive Voice Response
(Kiosks/Multi-Media)

TECHNOLOGY DESCRIPTION

Kiosks/Multi-Media: Enhances public access to court information by placing these devices in convenient locations throughout the community. They will provide information on general court procedures and, eventually, accept payments and provide on-line information on specific cases.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>A pilot program involving 3 multi-media kiosks is currently underway. These devices will provide information on general court procedures.</p>	<p>Based on results of the pilot, expand scope to include additional locations throughout Arizona.</p>	<p>Using both kiosks and ATM's, expand capabilities to interface with case management systems for on-line access to court calendars and events.</p>	<p>Continue to expand capabilities of technology to allow for preparation of court documents, payment processing, etc.</p>

TECHNOLOGY
Electronic Surveillance,
Monitoring, Screening

TECHNOLOGY DESCRIPTION

Electronic Surveillance, Monitoring, Screening: Technologies which provide additional capabilities for observing activity in sensitive areas, or in monitoring an individual's location.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Many court facilities currently use basic electronic surveillance devices such as video camera monitoring and recording.	No additional capabilities for this technology are projected during this time frame.	Begin a pilot test of electronic monitoring devices for Probation applications.	Based on results of the pilot test, expand scope to include statewide use.

TECHNOLOGY
Identification Technologies
(Automated Fingerprinting)

TECHNOLOGY DESCRIPTION

Automated Fingerprinting: Fingerprints are scanned from a card into the computer which measures the prints and searches the existing database for a match. The process takes about 3-4 minutes in existing systems.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Currently, both the Phoenix Police Department and the Department of Public Safety are working with this technology.	Defendants being booked into jail on either new charges or warrants will be screened through the use of the automated fingerprint technology.	Automated fingerprint technology will now be available in courtroom facilities to verify identity and to attach to sentencing documents.	All courtroom facilities and enforcement agencies, as well as probation and treatment services, will have the automated fingerprint technology to verify users. Integrated systems will allow searches on a nationwide database.

TECHNOLOGY
Artificial Intelligence,
Predictive Modelling,
Expert Systems

TECHNOLOGY DESCRIPTION

Artificial Intelligence, Predictive Modelling, Expert Systems:

Computer systems that attempt to model the way humans think. These systems can solve problems, recognize patterns and simulate environments and thus assist courts with decision-making tasks.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>Use of expert systems ("artificial intelligence") and predictive modelling is becoming increasingly widespread in the public private sectors. However, courts have made little, if any, use of these systems to date. To our knowledge, there are no Arizona courts currently using expert systems/predictive modelling software</p>	<p>Examine expert system applications in other sectors. Court functions will be reviewed to determine those areas where parameters can be set up that will be appropriate for expert systems. Plan for acquisition/development and pilot testing of applicable systems.</p>	<p>Pilot projects will begin with data being entered and results being reviewed for consistency and compared with results reached using traditional methods. Evaluate pilot test results and make proven systems available on a statewide basis.</p>	<p>Expert systems will begin to be routinely applied to some of the more routine aspects of judicial decision making, such as bail amounts, conditions of release, case management tracks, multi-door courthouse and highly constrained sentencing determinations. Courts will have a full range of decision support systems for research and planning in fiscal and human resources management, e.g., budget forecasting, staffing requirements analysis, resource allocation based on shifting workloads and "what if" analyses for management decisions.</p>

TECHNOLOGY
"New Wave" Systems

TECHNOLOGY DESCRIPTION

"New Wave" Systems:

Depicts an array of technologies that are on the distant horizon ... on the cutting edge. They will likely effect, in dramatic ways that are not related to past trends, how courts manage themselves, how judges decide cases, how human behavior is changed or modified by court directive, how people gain access to the courts, how cases are tried, and how lawyers practice law. Among such approaches will be artificial intelligence techniques for modelling complex judicial decision making, virtual reality systems, holography, bio-medical applications, robotics, and the like.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
<p>There is very little experimentation or anticipation of new wave technology as applied to courts, corrections, social services in courts, judging or lawyering.</p>	<p>Begin initiatives on a statewide level via the technology commission to explore new wave applications to courts. Generate reports and proposals. Select pilot projects and small funding efforts. An early beginning might be with computer animation in trials</p>	<p>More patterned and structured ways to identify and assess new wave applications for courts. The national court community looks to Arizona as a cutting-edge experimental site for new technology applications for justice systems.</p>	<p>A new round of initiatives to review and explore new wave applications is seen. Because of the momentum in Arizona, an added focus now becomes induced behavior modification possibilities for community corrections programs.</p>

TECHNOLOGY
"New Wave" Systems
(Virtual Reality)

TECHNOLOGY DESCRIPTION

Virtual Reality:

Refers to having the ability to interact with data in a way that provides the ability to "enter" and navigate through a computer-generated, 3-dimensional "world" or environment. Allows you to change your viewpoint and interact with objects within that environment.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
Virtual reality is being explored within the private sector, but at this time, the technology is generally cost-prohibitive to court systems. There is little, if any, use by courts to date.	This technology will still be viewed from afar as courts wait for industry to reduce costs to produce and use.	Some pilot experimentation in a few large courtrooms throughout the state. Evaluations will be conducted on these pilots to determine the results and benefits.	Specialized trial courtrooms will have the equipment available for the complex, high-dollar cases that can support the usage of such high tech systems.

TECHNOLOGY
"New Wave" Systems
(Bio-Medical)

TECHNOLOGY DESCRIPTION

Bio-Medical:

This technology includes very advanced and sophisticated capabilities that are in their early stages of research and development. Examples include DNA analysis, behavior modification, and electronic implants.

PROJECTED IMPLEMENTATION PLANS

Current	1994 - 1995	1996 - 1998	1999 - 2004
There is no current use of these technologies in the Arizona Court system.	No capabilities using these technologies are projected during this time period.	No capabilities using these technologies are projected during this time period.	Begin test program incorporating bio-medical capabilities to monitor chemical usage in Probation applications.

GLOSSARY

The following descriptions and definitions are excerpted from "50 Things You Should Know About Court Technology" (State Justice Institute and National Center for State Courts, 1992).

Artificial Intelligence (AI) - A branch of computer science that attempts to model the way humans think. Expert systems, neural networks, virtual reality, and artificial life are among the branches of AI. These sophisticated systems can solve problems, recognize patterns, and simulate environments. They can continuously incorporate new knowledge and improve their decision-making ability. AI will be used to assist courts with decision-making tasks in the future.

Artificial Life - Artificial life is a problem-solving technique for complex situations involving an astronomical number of factors and combinations of values. Using an approach analogous to genetic engineering, a number of random solution sets are defined. These sets are structured like DNA on chromosomes. Each solution set is applied to the problem and scored. Using processes called selective breeding, survival of the fittest, and mutation, each successive generation of solution sets gets closer and closer to the ideal. Artificial life techniques will be used to model complex judicial decision making in much the same way expert systems currently assist with simple and routine decisions.

Automated Legal Research - Full-text searching of legal opinions, laws, rules and regulations has been available for many years. Newer technologies package these legal databases on CD-ROM disks for cheaper and more convenient access. Courts can now buy or build their own databases of legal and other information and easily link, cut and paste these materials into new opinions, memoranda, briefs, and correspondence.

Bar Coding - Information is normally entered into a computer through a keyboard. Bar-code technology provides a fast reliable alternative that, in the right circumstances, is much more efficient. Courts have been most successful in using bar coding for records management and jury applications, but have also had success using it for collecting statistics and managing documents. The key to bar coding is replacing the keyboard; if an operator has to switch back and forth between a wand and a terminal, most of the advantages of bar coding are lost.

Bulletin Board Services (BBS) - Bulletin boards are computers used by large numbers of people to share information. Bulletin boards are usually set up for people and organizations with common interest or need to exchange information. Special software helps users move files to and from the BBS and manage communications processes. For example, some appellate courts place opinions on a BBS and allow publishing companies, the media, litigants, and attorneys to retrieve them. The Court Technology Laboratory of the National Center for State Courts has a bulletin board service for anyone interested in court technology. Dial in at (804) 253-2526!

CD ROM - Compact Disk-Read Only Memory technology developed for audio recording, is excellent for storing large amounts of permanent electronic data. Information is pressed onto the CD-ROM surface; this information cannot be changed or updated. It is read with a laser beam, which is reliable and accurate but not yet as fast as electronic devices. The primary uses of CD-ROM technology in courts are long-term storage of court opinions, documents, and other data.

Case Management Systems - Case management systems are computer applications that organize and manage court information. Data entered once is used to perform many tasks and functions that used to take a great deal of time. Computerized case management systems are doing more and more of the work of courts.

Computer-aided Transcription (CAT) - CAT has been with us for many years. The latest developments include real-time systems that display a "dirty" copy of the transcript and synchronize video recordings. Simultaneous display for the judge, opposing counsel, and the jury allows scrolling through the testimony, searching for key words and phrases, and producing transcripts almost instantly. In addition, the technology helps hearing-impaired jurors and litigants.

Computer-aided Software Engineering (CASE) Tools - Computer Aided Software Engineering tools are computer programs used to design and develop software. CASE tools help designers model data flow and work processes, structure data, devise prototype screen and report layouts, and generate database specifications. CASE technology can improve the productivity of systems analysts, designers, and programmers.

Desktop Publishing - Desktop-publishing software helps layout published materials. Text, graphics, data, and images can be formatted and positioned to create attractive and useful documents. Courts can use desktop publishing for internal communications and for preparing presentation materials for funding bodies, the media, and the public.

Downsizing - Downsizing, in addition to being a euphemism for reducing staff, is the process of moving to smaller data processing platforms. Replacing a mainframe system with a minicomputer or microcomputer network is downsizing. It is possible because of the improving power, increasing sophistication, and lower cost of smaller machines. Distributed processing on PC networks eliminates the bottleneck of having a single engine drive data processing functions, much like changing delivery of goods from a single train with a number of rail cars to a fleet of trucks that can operate independently.

Electronic Access to Court Records - Remote access to court information is one of the hottest technologies for courts that have functional case-processing systems. Individuals can examine and copy information without coming to the courthouse or talking to court personnel. Issues of security, privacy rights of the subjects of the records, and cost recovery are key in establishing public-access systems.

Electronic Filing - The direct transmission of document text or image to the court is a technology of the present; its use will grow in coming years. As budget increases fail to keep pace with growing caseloads, electronic filing will help court staff keep up. Staff will spend less time at counters waiting on customers, and litigation costs will be reduced because more business will be transacted over telephone lines.

Electronic Mail - Electronic mail allows computer users to communicate with others quickly and efficiently. Sophisticated new packages provide features that will help make court employees more productive than they can be using regular mail, telephones, and fax machines. Electronic mail will become the communications medium of choice as more courts acquire the needed equipment and software.

Ergonomics - In strict terms, ergonomics, or biotechnology, is the application of biological and engineering data to problems relating to people and the machine. In a more practical sense, ergonomics is the study of how technology can maximize comfort and minimize the risk of injury and fatigue. Examples include the provision of proper lighting, seating, and arrangement of work materials to eliminate eyestrain, carpal tunnel syndrome, and back problems.

Expert Systems - Expert systems are low-level artificial intelligence programs that capture the expertise of decision makers, convert it to a set of rules, and apply those rules to routine decisions. Sometimes, these systems are written in a special artificial intelligence programming language; sometimes, the rules are applied using more traditional sequential techniques. Courts use expert systems to help predict case outcomes, schedule cases, and perform other functions.

Fax - Facsimile systems allow documents to be transmitted over telephone lines. Paper documents are no longer carried or mailed to the courthouse. Courts use fax technology to accept filings from law firms and other organizations. Key issues include printing cost recovery and the payment of filing fees.

Fiber Optics - Glass or plastic wires that carry light instead of electricity. Fiber optic lines transmit large volumes of information quickly and accurately. Greater bandwidth allows images and full-motion video to be transmitted the same way voice and data are moved with copper-wire technology. Courts use fiber optics to connect computers and peripherals and for video arraignments and other conferencing applications.

Frame Relay - This sophisticated telecommunications technology improves the performance of X.25, a standard protocol for moving information between computers manufactured by different vendors. Frame relay enhances the ability of courts to communicate electronically with other courts and outside agencies by eliminating some of the error checking and acknowledging that is a part of older, less reliable telecommunications systems.

Fourth-generation Language - Fourth-generation languages are tools that assist in the development of computer software. In the first three generations of technology, detailed programs were written to tell the computer what to do. In the fourth generation, much of this programming has been eliminated. Though still somewhat limited, fourth-generation languages have been used to build successful case management systems.

Imaging and Micrographics - Paper documents can be converted to images by electronic scanning (optical disk imaging) or through photography (micrographics) to improve storage, retrieval, and processing procedures. The two technologies have many cost-effective uses in court records and information management programs.

Integration - Integration in software minimizes redundant data entry and ensures that navigation within and between modules is quick and easy. Integration also refers to how well computer tasks fit with people tasks. An integrated system should eliminate manual tasks and functions to the extent that it compensates for new tasks introduced by the computer. At the interorganizational level, as in an integrated criminal justice system, all involved agencies should draw relevant information from a common pool. The information need not reside in a single place, but program structure should make the location of data transparent to users.

Judicial Electronic Data Interchange (JEDI) - JEDI is the transmission of common documents and forms between courts and court users. It includes both standards for the content and format of the documents and the infrastructure necessary to make information transmission as easy as placing a telephone call. JEDI will increase the exchange of electronic information and eliminate most of the paper traffic in courts in years to come. Initiated by the ABA, the Judicial Electronic Data Interchange Consortium is a group of state and federal courts, EDI providers, law firms and others who are dedicated to making EDI a reality in the courts. Contact the National Center for State Courts at (804) 253-2000 for more details.

Local and Wide Area Networks (LANs & WANs) - Local area networks and wide area networks are configurations of microcomputers and other devices that allow the sharing of printer, storage, software, and data resources. PCs can be linked at lower cost to better disk storage, higher quality printers, telecommunications and fax boards, and other peripheral devices. A LAN normally consists of equipment physically connected together, while a WAN links the same types of hardware through telephone lines. Bridges or routers may be used to link several LANs into a WAN.

Multi-media - The integration of data, text, image, audio, and video in a single application. Using multi-media, a court will be able to view a docket, documents, and the court record (both audio and video) simultaneously in windows on a personal computer screen.

Neural Networks - This branch of artificial intelligence is most closely associated with pattern recognition. By storing data in layers, it can compare and evaluate information based on its fit with known data. These patterns do not have to be physical; they can be characteristics of defendants, typical jury awards, or appellate decisions. Neural networks may play a vital role in judicial decision making and court management in the years to come.

New Wave Systems - Depicts an array of technologies that are on the distant horizon ... on the cutting edge. They will likely effect, in dramatic ways that are not related to past trends, how courts manage themselves, how judges decide cases, how human behavior is changed or modified by court directive, how people gain access to the courts, how cases are tried, and how lawyers practice law.

Optical Character Recognition (OCR) - Optical Character Recognition converts images to understandable text or data. Intelligent programs match patterns in the image with stored copies of alphanumeric characters to determine which letter or number is being represented. When used with imaging, OCR can be an excellent data-entry device and can allow intelligent retrieval of images based on their content.

Optical Disk - Optical disk is a new type of data storage that uses light instead of electricity to store and read information. It has a much higher capacity than electronic media, but typically writes and retrieves information more slowly. The Optical disk was first used for permanent data storage, but updatable forms of the technology are now available, making it more practical for court use.

Portable Computers - Advancing technology is producing computers without keyboards, computers that fit in a briefcase, and even computers that slide into shirt pockets. Computer equipment will become more adaptable to our dynamic life-style, leading to docking stations, wireless networks, and handwriting and voice recognition. Portable technology will be indispensable for judges riding rural circuits, for probation officers monitoring offenders, and for administrators managing multiple court locations.

Telecommunications - Computers pass information between components and peripheral devices through electric wires. When a device or another computer cannot be physically attached, connections can be made through the telephone system. A 'modem' is used to change the signal so it can be transmitted through the wire and still be understood at the other end, despite the interference and garbling that can occur in the telephone network. This process of moving information through telephone wires (or similarly with microwave signals, through satellites, or with fiber optics) is called telecommunications. Courts use telecommunications to access and share information with other courts, government agencies, and other court users.

Text Management - The advent of the word processor and copier have greatly expanded the amount of printed materials that are produced and distributed. Text management systems allow documents in a computer system to be organized and examined without requiring individual access. Full-text indexing programs allow files to be searched for words and phrases, just like a legal research system. Text management offers hope for making organizations more efficient by improving information retrieval.

Video Arraignment - Many courts hold arraignments over two-way television links. The defendant, in jail with counsel, appears before the judge, clerk, and prosecutor via a television monitor. Video arraignment saves thousands of dollars in prisoner transportation and security costs.

Video Conferencing - Video conferencing allows a number of people to meet in different locations and see and speak to one another. Like a telephone conference with live video, this technology can greatly enhance productivity by reducing the need to travel to transact business. New multi-media systems integrate this video technology with the personal computer. Video arraignment is the most popular application of this technology, but it can also be used for other court events, for conferences with attorneys, and for depositions.

Video Recording - The use of video- and audio- recording technology to capture court events on magnetic tape. Video recording has replaced verbatim transcription in a number of court locations.

Virtual Reality - Virtual reality is a branch of artificial intelligence that simulates the real world in three dimensions with stereographic headsets, gloves, and body suits. Visual, audio and tactile senses are stimulated. The user can move around in the virtual reality, examine things from different perspectives, feel and move objects, and gain a greater understanding of the reality being simulated. This technology will be used to reenact events and situations for juries.

Viruses - Viruses are programs designed to disrupt operations or destroy data on a computer system. Systems are infected with viruses through telecommunications networks or through legitimate software installation. Because they are so hard to recognize, viruses can do a great deal of damage and cause huge losses to organizations that are not adequately prepared. Good operational procedures, adequate system backups, and virus-scanning software can minimize the damage that can be done by viruses.

Voice Recognition - Computers that respond to the sound of your voice? Yes! Technology developed for the handicapped has demonstrated the value of voice-recognition systems as an input device for computers. Discrete voice recognition systems are now available for under \$10,000. Though it will be many years before continuous voice recognition technology can be used in the courtroom, watch for microphones to begin replacing keyboards very soon.

Voice Response - A computer-assisted system that allows two-way communication using a Touch-Tone telephone as a data-entry device. The computer synthesizes or plays back messages and data based on options selected with the telephone keypad. Courts use voice response for routing, scheduling of court hearings, and public information.

Word Processing (WP) - Word processing is a set of computer programs to create and maintain text information. Word processing allows information to be stored, formatted, combined with other types of computer data, displayed and printed. Newer WP packages using WYSIWYG (What You See Is What You Get) displays offer a wide range of options to customize the appearance of information, to check for spelling and grammatical errors, and to translate and communicate this information to other applications.

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