

# COST-BENEFIT ANALYSIS MODEL FOR COMPUTER-AIDED TRANSCRIPTION

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Courtroom Equipment</b>					
Steno Machine	0	0	0	0	0
Personal Computer	0	0	0	0	0
CAT Software	0	0	0	0	0
Printer	0	0	0	0	0
AC Surge Protector	0	0	0	0	0
<b>Total Courtroom Recording Equipment</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Courtroom Modifications</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Backup Courtroom Equipment</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Clerk's Office Equipment</b>					
<sup>1</sup> Storage Cabinet for Reporter's Notes	600	0	643	0	738
<b>Official Court Reporter Office Equipment</b>					
Desk	200	0	0	0	0
Chair	75	0	0	0	0
Telephone	150	0	0	0	0
<b>Total Court Reporter's Office Equipment</b>	<b>425</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Supervisor's Office Equipment</b>					
Desk	200	0	0	0	0
Chair	75	0	0	0	0
Telephone	150	0	0	0	0
Personal Computer	1,800	0	0	0	2,066
File Cabinet	600	0	0	0	0
<sup>2</sup> Total Supervisor's Office Equipment x 1/10	<b>283</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>207<sup>3</sup></b>
<b>Supervisor Training Costs</b>					
<sup>4</sup> Two Weeks of Intensive Training for a New Supervisor (1/24 of Supv.'s Salary)	217	0	0	0	0
<b>Total Start-up Costs</b>	<b>1,524</b>	<b>0</b>	<b>643</b>	<b>0</b>	<b>944</b>
<b>Direct Recurring Costs</b>					
Official Court Reporter Salary	35,000	36,225	37,493	38,805	40,163
Benefits @ 30% of Salary	10,500	10,868	11,248	11,642	12,049
<sup>5</sup> One-tenth (1/10) of Supervisor's Salary	4,000	4,140	4,285	4,435	4,590
Benefits @ 30% of Salary	1,200	1,242	1,285	1,330	1,377
<sup>6</sup> Official Court Reporter Space (64 sq. ft. @ \$10)	640	662	686	710	734
<sup>7</sup> Supervisor Space (100 sq. ft. @ \$10)	1,000	1,035	1,071	1,109	1,148
<sup>8</sup> Storage Space per Cabinet (11 sq. ft. @ \$10)	110	114	236	244	375
<sup>9</sup> Archival Space for Reporter's Paper Notes	0	39	41	50	52
Maintenance Costs	0	0	0	0	0
<b>Total Direct Recurring Costs</b>	<b>52,450</b>	<b>54,325</b>	<b>56,345</b>	<b>58,325</b>	<b>60,488</b>
<b>Total Direct Costs</b>	<b>53,974</b>	<b>54,325</b>	<b>56,987</b>	<b>58,325</b>	<b>61,432</b>
<b>Assumed Inflation Rate</b>	<b>3.5%</b>				
<sup>10</sup> Net Present Value of Costs Using the Discount Rate of 7.625%	<b>228,777</b>				

<sup>1</sup>A standard size cabinet for a medium volume court will require an additional cabinet approximately every two years.

<sup>2</sup>Estimates vary; however, identified equipment likely requires replacement in 4-5 years. We have replaced those pieces in year five (5).

<sup>3</sup>Federal standards suggest one supervisor for from 10 to 40 court reporters.

<sup>4</sup>The cost figure reflects 1/24 of 1/10 of the supervisor's salary and benefits.

<sup>5</sup>Space allotments are figured on standard government space authorizations.

<sup>6</sup>A four-drawer cabinet occupies approximately 11 square feet of floor space including drawer-aisle access space.

<sup>7</sup>See Net Present Value description on page 17. Public financing discount rate is calculated on average rate for 15-year Treasury note.

<sup>8</sup>1/2 record center carton per month at a cost of \$5 per carton. A standard record carton measures one cubic foot. A standard records center shelving configuration holds twelve (12) boxes high.

# COST-BENEFIT ANALYSIS MODEL FOR AUDIO

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Courtroom Equipment</b>					
Two (2) Speakers	550	0	0	0	631
Speaker Cables	45	0	0	0	0
Amplifier	491	0	0	0	563
Equalizer	558	0	0	0	640
Four (4) Mixers	922	0	0	0	1,058
Nine (9) Microphones	2,160	0	0	0	2,479
Four (4) Mike Stands	54	0	0	0	0
Three (3) Mike Floor Stands	80	0	0	0	0
Mike Cables	100	0	0	0	0
Three (3) Standpipes	186	0	0	0	0
Misc. Gooseneck Mike Inputs	174	0	0	0	200
Equalization	200	0	0	0	230
Rack	275	0	0	0	0
AC Switch Pilot light	25	0	0	0	0
AC Strip	19	0	0	0	0
Six (6) Modules	158	0	0	0	181
Mounting Brackets	21	0	0	0	0
Four-Channel Recorder	2,900	0	0	0	3,328
Two (2) Headsets	46	0	0	0	53
Digital Counter	575	0	0	0	660
<b>Total Courtroom Recording Equipment</b>	<b>9,539</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10,022<sup>1</sup></b>
<b>Courtroom Modifications</b>					
Acoustical Modifications	1,500	0	0	0	0
<b>Backup Courtroom Equipment</b>					
<sup>2</sup> Cost of Four-Channel Recorder x 0.33	957	0	0	0	1,098 <sup>1</sup>
<b>Judge's Chambers Equipment</b>					
Four-Channel Recorder	2,900	0	0	0	3,328
Three (3) Microphones	720	0	0	0	826
Mike Stands	40	0	0	0	0
Mike Cables	35	0	0	0	0
AC Surge Protector	19	0	0	0	0
<b>Total Judge's Chambers Equipment</b>	<b>3,714</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4,154<sup>1</sup></b>
<b>Clerk's Office Equipment</b>					
Reformatter/Duplicator	4,000	0	0	0	4,590
Transcribing Equipment	875	0	0	0	1,004
Tape Eraser	10	0	0	0	0
<sup>3</sup> Tape Storage Cabinet	600	0	643	0	738
<b>Total Clerk's Office Equipment</b>	<b>5,485</b>	<b>0</b>	<b>643</b>	<b>0</b>	<b>6,332<sup>1</sup></b>
<b>Monitor's Office Equipment</b>					
Desk	200	0	0	0	0
Chair	75	0	0	0	0
Telephone	150	0	0	0	0
Typewriter	350	0	0	0	0
Personal Computer	1,800	0	0	0	2,066
<b>Total Monitor's Office Equipment</b>	<b>2,575</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,066<sup>1</sup></b>
<b>Supervisor's Office Equipment</b>					
Desk	200	0	0	0	0
Chair	75	0	0	0	0
Telephone	150	0	0	0	0
Personal Computer	1,800	0	0	0	2,066
File Cabinet	600	0	0	0	0
<sup>4</sup> Total Supervisor's Office Equipment x 1/5	565	0	0	0	413 <sup>1</sup>

<sup>1</sup>Estimates vary; however, identified equipment likely requires replacement in 4-5 years. We have replaced those pieces in year five (5).

<sup>2</sup>Reports and literature recommend one back-up recorder for every three (3) courtrooms.

<sup>3</sup>A standard size cabinet for a medium volume court will require an additional cabinet approximately every two years.

<sup>4</sup>Management standards indicate that one (1) supervisor is required for at least every five (5) monitors.

<b>Monitor Training Costs</b>					
One Month of Intensive Training for a New Monitor (1/12 of Monitor's Salary)	2,817	0	0	0	0
<b>Monitor Continual Education and Certification</b>					
Two Weeks of Continual Education and Certification (1/24 of Monitor's Salary)	0	0	1,509	0	0
<b>Supervisor Training Costs</b>					
<sup>1</sup> One Month of Intensive Training for a New Supervisor (1/12 of Supv.'s Salary)	780	0	0	0	0
<b>Total Start-up Costs</b>	<b>27,932</b>	<b>0</b>	<b>2,151</b>	<b>0</b>	<b>24,085</b>
<b>Direct Recurring Costs</b>					
Monitor's Salary	25,000	25,875	26,781	27,718	28,688
Benefits @ 30% of Salary	7,500	7,763	8,034	8,315	8,606
<sup>4</sup> One-fifth (1/5) of Supervisor's Salary	7,200	7,452	7,713	7,983	8,262
Benefits @ 30% of Salary	2,160	2,236	2,314	2,395	2,479
<sup>6</sup> Monitor's Office Space (64 sq. ft. @ \$10)	640	662	686	710	734
<sup>4</sup> Supervisor's Office Space (100 sq. ft. @ \$10)	1,000	1,035	1,071	1,109	1,148
<sup>7</sup> Storage Space per Cabinet (11 sq. ft. @ \$10)	110	114	129	133	138
Backup Courtroom Equipment Storage Space	120	124	129	133	138
<sup>9</sup> Archival Space for Audio Tapes (1 sq. ft. @ \$10)	0	41	43	54	56
Maintenance Costs (5% of Total Equipment)	477	494	511	529	547
Estimated Cost of 1.5 Days Per Year of Equipment Down Time	8,368	8,661	8,964	9,278	9,602
<b>Total Direct Recurring Costs</b>	<b>52,575</b>	<b>54,456</b>	<b>56,476</b>	<b>58,463</b>	<b>60,627</b>
<b>Total Direct Costs</b>	<b>80,398</b>	<b>54,456</b>	<b>58,570</b>	<b>58,463</b>	<b>84,712</b>
<b>Assumed Inflation Rate</b>	<b>3.5%</b>				
<b><sup>10</sup>Net Present Value of Costs Using the Discount Rate of 7.625%</b>	<b>270,937</b>				

<sup>1</sup>The cost figure reflects 1/12 of 1/5 of the supervisor's salary and benefits.

<sup>4</sup>Space allotments are figured on standard government space authorizations.

<sup>7</sup>A four-drawer cabinet occupies approximately 11 square feet of floor space including drawer-aisle access space.

<sup>9</sup>See Net Present Value description on page 17. Public financing discount rate is calculated on average rate for 15-year Treasury note.

<sup>10</sup>1/2 record center carton per month at a cost of \$5 per carton. A standard record carton measures one cubic foot. A standard records center shelving configuration holds twelve (12) boxes high.

# COST-BENEFIT ANALYSIS MODEL FOR COMPUTER-INTEGRATED COURTROOM

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Courtroom Equipment</b>					
Four (4) Personal Computers	-	0	0	0	8,262
Network Software	-	0	0	0	0
Four (4) AC Surge Protectors	-	0	0	0	0
CIC Software	-	0	0	0	0
Network Cable & Hardwars	-	0	0	0	0
Installation	-	0	0	0	0
<b>Total Courtroom Recording Equipment</b>	<b>42,500</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8,262<sup>1</sup></b>
<b>Courtroom Modifications</b>					
Electric & Telephone Wire Modifications	500	0	0	0	0
<b>Backup Courtroom Equipment</b>					
<sup>2</sup> Personal Computer (Cost x .33)	594	0	0	0	682 <sup>1</sup>
<b>Clerk's Office Equipment</b>					
<sup>3</sup> Storage Cabinet for Reporter's Notes	600	0	643	0	738
<b>Official Court Reporter Office Equipment</b>					
Desk	200	0	0	0	0
Chair	75	0	0	0	0
Telephone	150	0	0	0	0
<b>Total Court Reporter's Office Equipment</b>	<b>425</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Supervisor's Office Equipment</b>					
Desk	200	0	0	0	0
Chair	75	0	0	0	0
Telephone	150	0	0	0	0
Personal Computer	1,800	0	0	0	2,066
File Cabinet	600	0	0	0	0
<b>*Total Supervisor's Office Equipment x 1/10</b>	<b>283</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>207<sup>1</sup></b>
<b>Training Costs</b>					
<sup>2</sup> Two Weeks of Intensive Training for a New Supervisor (1/24 of Supv.'s Salary)	217	0	0	0	0
<b>Total Startup Costs</b>	<b>45,118</b>	<b>0</b>	<b>643</b>	<b>0</b>	<b>9,888</b>
<b>Direct Recurring Costs</b>					
Official Court Reporter Salary	35,000	36,225	37,493	38,805	40,163
Benefits @ 30% of Salary	10,500	10,868	11,248	11,642	12,049
<sup>4</sup> One-tenth (1/10) of Supervisor's Salary	4,000	4,140	4,285	4,435	4,590
Benefits @ 30% of Salary	1,200	1,242	1,285	1,330	1,377
<sup>6</sup> Official Court Reporter Space (64 sq. ft. @ \$10)	640	662	686	710	734
<sup>6</sup> Supervisor Space (100 sq. ft. @ \$10)	1,000	1,035	1,071	1,109	1,148
<sup>7</sup> Storage Space per Cabinet (11 sq. ft. @ \$10)	110	114	236	244	375
<sup>9</sup> Archival Space for Reporter's Paper Notes (1 sq. ft. @ \$8)	0	39	41	50	52
Maintenance Costs (4% of Total Equipment)	1,700	1,760	1,821	1,885	1,951
Basic Telephone Line Charges	360	373	386	399	413
<b>Total Direct Recurring Costs</b>	<b>54,510</b>	<b>56,457</b>	<b>58,551</b>	<b>60,609</b>	<b>62,852</b>
<b>Total Direct Costs</b>	<b>99,628</b>	<b>56,457</b>	<b>59,194</b>	<b>60,609</b>	<b>72,740</b>
<b>Assumed Inflation Rate</b>	<b>3.5%</b>				
<b><sup>1</sup>Net Present Value of Costs Using the Discount Rate of 7.625%</b>	<b>284,341</b>				

<sup>1</sup>Estimates vary; however, identified equipment likely requires replacement in 4-5 years. We have replaced those pieces in year five (5).

<sup>2</sup>It is recommended that one back-up computer be used for every three (3) courtrooms.

<sup>3</sup>A standard size cabinet for a medium volume court will require an additional cabinet approximately every two years.

<sup>4</sup>Federal standards suggest one supervisor for from 10 to 40 court reporters.

<sup>5</sup>The cost figure reflects 1/24 of 1/10 of the supervisor's salary and benefits.

<sup>6</sup>Space allotments are figured on standard government space authorizations.

<sup>7</sup>A four-drawer cabinet occupies approximately 11 square feet of floor space including drawer-aisle access space.

<sup>8</sup>See Net Present Value description on page 17. Public financing discount rate is calculated on average rate for 15-year Treasury note.

<sup>9</sup>1/2 record center carton per month at a cost of \$5 per carton. A standard record carton measures one cubic foot. A standard records center shelving configuration holds twelve (12) boxes high.

# COST-BENEFIT ANALYSIS MODEL FOR VIDEO

	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Courtroom Equipment</b>					
Audio Video Mixer	-	0	0	0	-
Interface card	-	0	0	0	0
Video Switcher	-	0	0	0	-
Two (2) Video Distribution Amplifier	-	0	0	0	-
Rackmount	-	0	0	0	0
Audio Distribution Amplifier	-	0	0	0	-
Sectional Wall Cabinet	-	0	0	0	0
UREI Feedback Controller	-	0	0	0	-
TOA Amplifier 60 Watts	-	0	0	0	-
Time Date Generator	-	0	0	0	0
Switches & VTR Controls	-	0	0	0	0
Eight (8) Microphones & Mounts	-	0	0	0	-
Six (6) Back Box Speaker Baffle System	-	0	0	0	-
Nine (9) Speakers with Baffle and Transformer	-	0	0	0	-
Six (6) Suspension T-Bars	-	0	0	0	0
Speaker Wire	-	0	0	0	0
Four (4) HI-FI Video Recorder	-	0	0	0	-
HI-FI Video Player	-	0	0	0	-
Two (2) Monitors	-	0	0	0	0
19" Monitor	-	0	0	0	0
Switcher for Video & Audio	-	0	0	0	0
VCR Rack	-	0	0	0	0
Cart for 19" Monitor	-	0	0	0	0
Audio & Video Cable	-	0	0	0	0
Five (5) CCD Color Cameras	-	0	0	0	-
Wide Angle Lens	-	0	0	0	0
Four (4) Zoom Lenses	-	0	0	0	0
Five (5) Camera Universal Mounts	-	0	0	0	0
Six-hundred (600) Video Tapes	-	0	0	0	0
Video & Power Cables	-	0	0	0	0
<b>Total Courtroom Recording Equipment</b>	<b>68,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>13,600<sup>1</sup></b>
<b>Courtroom Modifications</b>					
Acoustical Modifications	2,000	0	0	0	0
<b>Backup Courtroom Equipment</b>					
<sup>2</sup> Cost HI-FI Video Recorder x 0.33	182	0	0	0	208 <sup>1</sup>
<b>Courtroom Conference Room Equipment</b>					
Pelco Wall Mount with Pantilt	-	0	0	0	0
CCD Color Camera	-	0	0	0	-
8mm Lens	-	0	0	0	0
Monitor	-	0	0	0	0
Microphone & Mount	-	0	0	0	-
Wiring Hardware	-	0	0	0	0
Installation	-	0	0	0	0
HI-FI Video Player	-	0	0	0	-
<b>Total Conference Room Equipment</b>	<b>4,000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>800<sup>1</sup></b>
<b>Judge's Chambers Equipment</b>					
Monitor	-	0	0	0	0
HI-FI Video Player	-	0	0	0	574
Video Cart	-	0	0	0	0
<b>Total Judge's Chambers Equipment</b>	<b>1,200</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>574<sup>1</sup></b>
<b>Clerk's Office Equipment</b>					
Three (3) HI-FI Recorder/Players	-	0	0	0	1,893
Video Monitor	-	0	0	0	0
Switches & VTR Controls	-	0	0	0	0
Switcher for Video & Audio	-	0	0	0	0
Distribution Amplifier	-	0	0	0	0
VCR Rack	-	0	0	0	0

<sup>1</sup>Estimates vary; however, identified equipment likely requires replacement in 4-5 years. We have replaced those pieces in year five (5).

<sup>2</sup>Reports and literature recommend one back-up recorder for every three (3) courtrooms.

	*Tape Storage Cabinet	600	0	643	0	738
	<b>Total Clerk's Office Equipment</b>	<b>7,164</b>	<b>0</b>	<b>643</b>	<b>0</b>	<b>2,631<sup>1</sup></b>
<b>Courtroom Monitor's Office Equipment</b>						
	Desk	200	0	0	0	0
	Chair	75	0	0	0	0
	Telephone	150	0	0	0	0
	Typewriter	350	0	0	0	0
	Personal Computer	1,800	0	0	0	2,066
	File Cabinet	600	0	0	0	0
	<b>Total Monitor's Office Equipment</b>	<b>3,175</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2,066<sup>1</sup></b>
<b>Supervisor's Office Equipment</b>						
	Desk	200	0	0	0	0
	Chair	75	0	0	0	0
	Telephone	150	0	0	0	0
	Personal Computer	1,800	0	0	0	2,066
	File Cabinet	600	0	0	0	0
	<b>*Total Supervisor's Office Equipment x 1/5</b>	<b>565</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>413<sup>1</sup></b>
<b>Monitor Training Costs</b>						
	One Month of Intensive Training for a New Monitor (1/12 of Monitor's Salary)	2,383	0	0	0	0
<b>Monitor Continual Education and Certification</b>						
	Two Weeks of Continual Education and Certification (1/24 of monitor's Salary)	0	0	1,509	0	0
<b>Supervisor Training Costs</b>						
	*One Month of Intensive Training for a New Supervisor (1/12 of Supv.'s Salary)	780	0	0	0	0
<b>Total Start-up Costs</b>		<b>89,882</b>	<b>0</b>	<b>2,151</b>	<b>0</b>	<b>20,292</b>
<b>Direct Recurring Costs</b>						
	Monitor's Salary	25,000	25,875	26,781	27,718	28,688
	Benefits @ 30% of Salary	7,500	7,763	8,034	8,315	8,606
	*One-fifth (1/5) of Supervisor's Salary	7,200	7,452	7,713	7,983	8,262
	Benefits @ 30% of Salary	2,160	2,236	2,314	2,395	2,479
	<sup>6</sup> Monitor's Office Space (64 sq. ft. @ \$10)	640	662	686	710	734
	<sup>6</sup> Supervisor's Office Space (100 sq. ft. @ \$10)	1,000	1,035	1,071	1,109	1,148
	<sup>7</sup> Storage Space per Cabinet (11 sq. ft. @ \$10)	110	114	236	244	375
	Backup Courtroom Equipment Storage Space	120	124	129	133	138
	<sup>9</sup> Archival Space for Video Tapes (1 sq. ft. @ \$10)	0	41	43	54	56
	Maintenance Costs (5% of Total Equipment)	4,027	4,168	4,314	4,465	4,621
	Estimate Cost of 1.5 Days Per Year of Equipment Down Time	8,368	8,661	8,964	9,278	9,602
	<b>Total Direct Recurring Costs</b>	<b>56,125</b>	<b>58,131</b>	<b>60,284</b>	<b>62,404</b>	<b>64,710</b>
<b>Total Direct Costs</b>		<b>145,899</b>	<b>58,131</b>	<b>62,377</b>	<b>62,404</b>	<b>85,001</b>
<b>Assumed Inflation Rate</b>		<b>3.5%</b>				
<b>*Net Present Value of Costs Using the Discount Rate of 7.625%</b>		<b>341,161</b>				

<sup>3</sup>A standard size cabinet for a medium volume court will require an additional cabinet approximately every two years.

<sup>4</sup>Management standards indicate that one (1) supervisor is required for at least every five (5) monitors.

<sup>5</sup>The cost figure reflects 1/12 of 1/5 of the supervisor's salary and benefits.

<sup>6</sup>Space allotments are figured on standard government space authorizations.

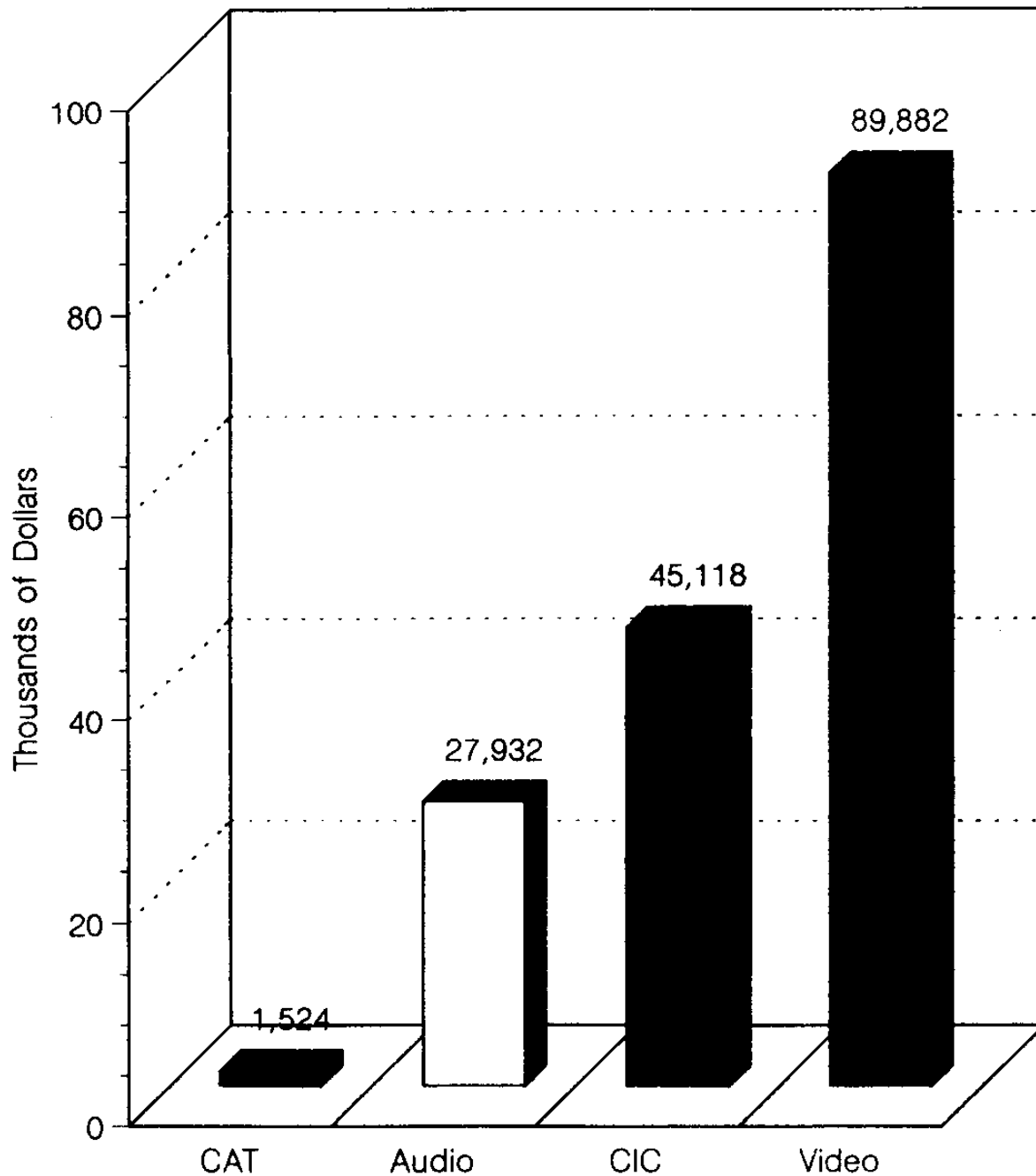
<sup>7</sup>A four-drawer cabinet occupies approximately 11 square feet of floor space including drawer-aisle access space.

<sup>8</sup>See Net Present Value description on page 17. Public financing discount rate is calculated on average rate for 15-year Treasury note.

<sup>9</sup>1/2 record center carton per month at a cost of \$5 per carton. A standard record carton measures one cubic foot. A standard records center shelving configuration holds twelve (12) boxes high.

# Start-up Costs for One Trial Court Court Reporting Technologies

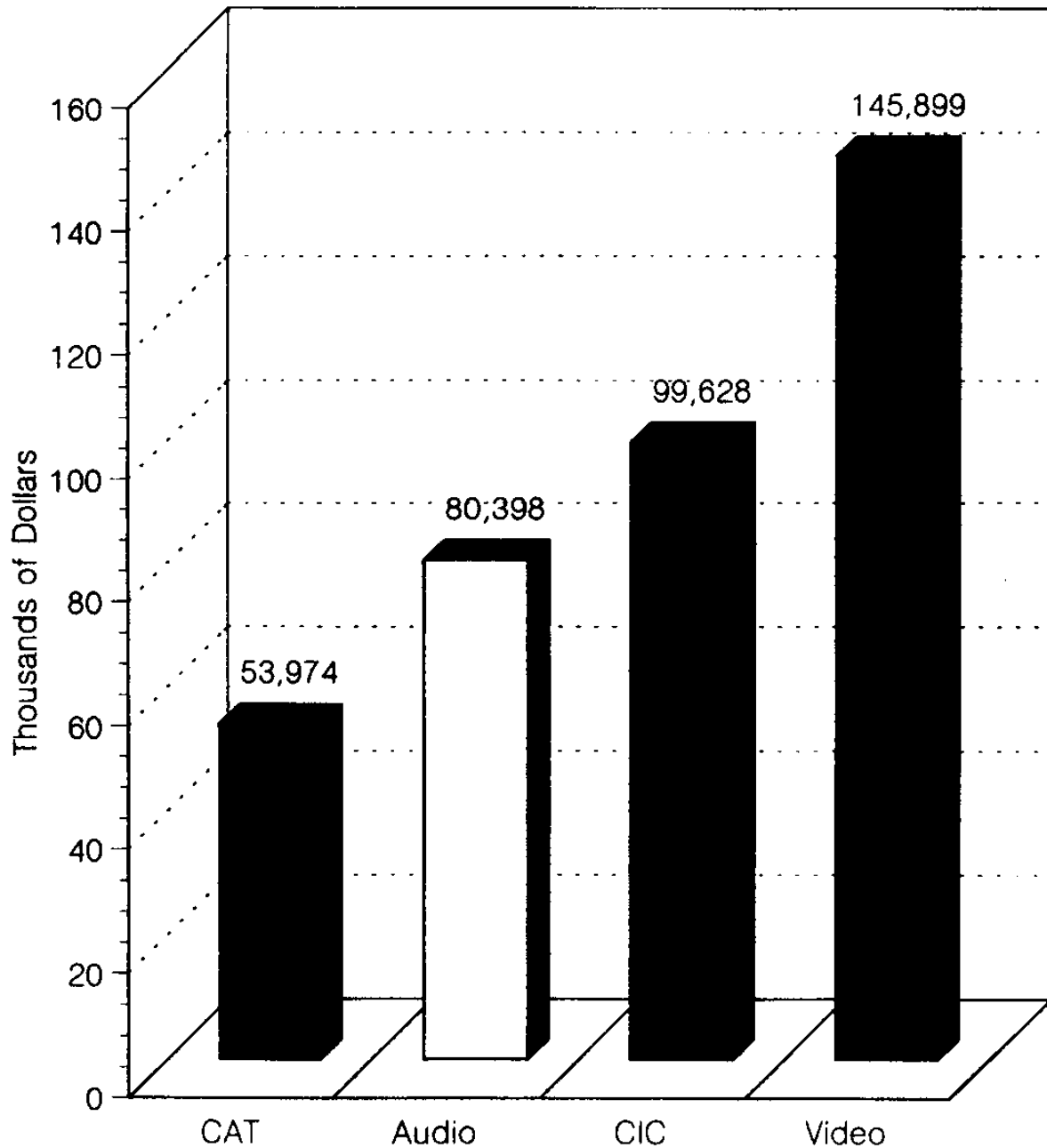
---



See cost-benefit analysis for each technology for schedule of items included in Start-up Costs.

# Direct Costs for One Trial Court Court Reporting Technologies End of Year One

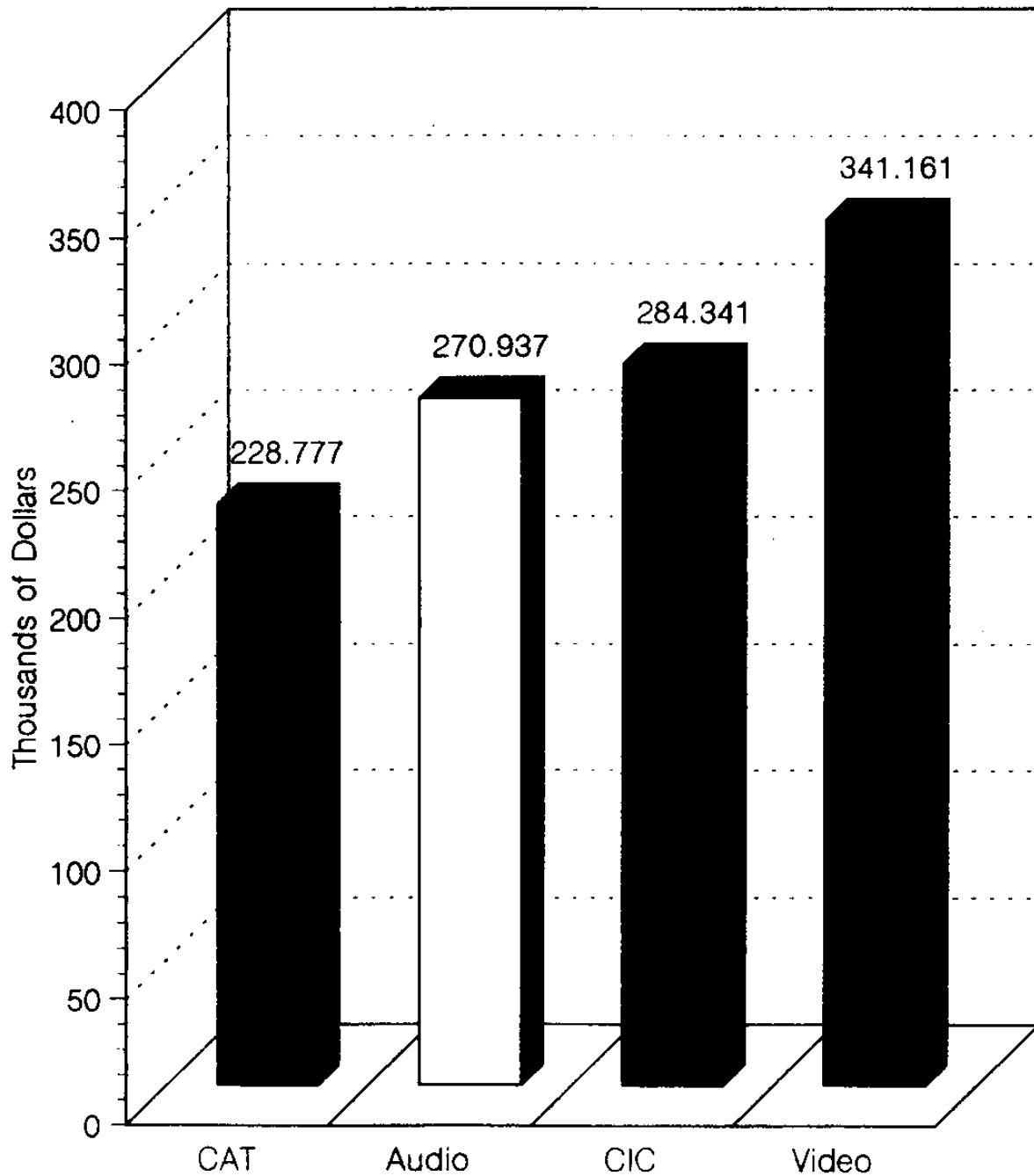
---



The costs depicted in this graph do not include Hidden and Shifting costs which are substantial in audio and video technologies.



# Net Present Value of Direct Costs for One Trial Court Over a Five (5) Year Period



The costs represented in this graph do not include Hidden and Shifting costs which are substantial in audio and video technologies. For example, the cost of video equipment for a nine (9) judge intermediate appellate court is \$31,950.

## VII. Analysis and Conclusions

As the cost-benefit analysis model reveals, the start-up, year one direct costs and the five year direct costs for CAT are lower than start-up or year one costs for audio. When the net present value calculations, again for direct costs only, are examined for a five year period, audio's costs exceed the cost of CAT by \$8,432.00 per year for one courtroom. Once administrative overhead, the shifting and hidden costs of the equipment purchases required by intermediate and supreme court judges and staff, as well as public defenders, attorneys general and penal institutions is added, and the additional professional person hours consumed in reviewing a given audio case on appeal by the earlier referenced individuals is accommodated, then the true total cost of audio expansively exceeds the cost of CAT.

Similarly, in juxtaposing the relative cost for video and a computer-integrated courtroom, we find that the start-up cost, total direct year one cost and the cost over five years are substantially less for CIC than for a video system. When we analyzed the net present value of costs over a five year period for those two technologies, we found that the per year cost by which video exceeds CIC is \$11,364.00 per year for one courtroom. Again, that figure does not reflect the additional administrative overhead expense attendant to the operation of a video court system. In one court in Kentucky where a court administrator was consumed with finding and consolidating excerpts from multiple tapes in order to prepare a record on appeal, this figure would be increased significantly. Also, recall the expense incurred by the remainder of the system for the purchase of video playback equipment and the frequently cited estimate that the record review time by all appellate participants is expanded by a factor of three to four, then the cost of video becomes substantially higher than any other method of making a trial court record.

It should also be borne in mind that, consistently, both critics and proponents identify a professionally prepared transcript on appeal as the standard for a record on appeal which is emulated and contrasted with all of the methodologies.

## VIII. Management of the Systems

It is accepted wisdom that the success of any method chosen for making a record is dependent upon the competence of the individual monitor or reporter and the effective administration of the process employed. Standards of professional competence, certification programs, and the existence of professional societies which regulate and encourage the continued proficiency of their members are indicia of competence and are of particular value to the legal and justice systems.

Training is critical to the creation and maintenance of standards which safeguard the due process import of a sound record on appeal.

In terms of daily operations, it is critical that administrative procedures are thoughtfully formulated and followed. They include the development of procedures to determine levels of quality assurance as it relates to the performance of reporters or equipment and system operations, as well as managerial oversight. Particularly important is the need to conduct periodic and random reviews of transcripts and tapes to ensure quality control of the record. This process can be most revealing in and of itself to open-minded managers and court leaders in assessing whether a particular method is living up to its sales reviews.

The ultimate truth is that all of the systems under consideration are people driven and operated. Too often recent experience suggests that court managers have acted to trade one "system" for another without sufficient attention to the training, managerial and administrative issues which can make or break any system employed.

In evaluating the system for making a trial record it is important to be able to answer the question "Who is in charge of making the record?" Is there a chain of players and equipment, or one individual who is responsible and accountable for accuracy and the integrity of the record.

## IX. Future Planning Issues

A paramount issue to be addressed in strategic and long-range planning for a court is consideration of not only the technology presently available, but all foreseeable future technologies.

In one respect, the future is known. The microcomputer is in the forefront and has invaded virtually every aspect of business and society. The interconnection capabilities of the computer have made instantaneous information retrieval for virtually any application available across the spectrum of applications at relatively low costs. The microcomputer will be the cornerstone of future technologies.

With this in mind, it is difficult to imagine that a court would implement stand-alone audio or video technology. That kind of single-purpose technology will very soon be obsolete when compared to computer-based applications.<sup>5</sup>

CAT and CIC employ the most advanced current technology for making the record. CICs solve virtually all complaints of the traditional, audio, and video systems. The CIC is not subject to undetected equipment failure, the record can be instantly edited, and a hard copy transcript of the record can be produced immediately upon conclusion of the proceedings. Additionally, since the microcomputer is at the heart of the system, the CIC should be able to adapt rapidly to any new technology. This is a major advantage over a single-purpose system, such as audio or video recording which will have to be completely replaced as technological advances in computer systems are sought or required by courts.

Stated in a summary way, we find a computer centered operation to be the decisionally sound and economically sensible direction for court systems to take now and for the foreseeable future. Anything else is a stopgap measure which will forestall systemic progress and the enhancement of computer based information transmission between courts, government and the private sector.

---

<sup>5</sup>A June 8, 1992 article in The Wall Street Journal entitled "Minnesota Court Eliminates Case Backlog" includes, among other references to the contributions of the computer to their current state, the following: "The secret to Minnesota's success is a demanding program that sets legal limits on how long cases can stay on dockets and that tracks cases by computer."

*"Computer Integrated Courtrooms - Moving the Judicial System into the Twenty-First Century,"*  
Martin H. Block, Trial, September 1990.

"Computer Integrated Reporting", prepared by StenoCAT, Inc. 1990.

"Computer-Aided Transcription Pilot Project: Final Evaluation Report," prepared for the State of Florida, April 1988.

"The Costs and Consequences of Delays in Civil Litigation," A Survey of Attorneys, unpublished memorandum, Robert E. Ward, National Center for State Courts Library, 1980.

Cost-Benefit Analysis, E.J. Mishan, Praeger Publications, N.Y., 1976.

Cost-Benefit Analysis, Issues & Methodologies, by Anandaryp, Ray, Johns Hopkins Press, Baltimore, 1984.

Cost-Benefit and Cost-Effective Analysis in Policymaking, proceedings of an International Symposium, sponsored by University of Pennsylvania, November 22-24, 1981.

Cost-Benefit Analysis, Selected Pleadings, edited by Richard Layard, Penguin Books, Ltd., 1974.

Cost-Benefit Analysis and Public Expenditure, G.H. Peters, Published by Institute of Economic Affairs, 1973.

"Cost Comparison Report on Court Reporting Options in Seminole County," Office of the State Courts Administrator, May 1987.

"Cost of Electronic Court Reporting Equipment," Memorandum to Chief Justice Bruce F. Beilfuss, from Karen M. Knab, June 11, 1979.

"Cost Projection for Audio Court Reporting in Sacramento County, California," prepared by Levy and Associates, March 13, 1992.

The Court and Free-lance Reporter Profession, by David J. Saari, Greenwood Press, Inc., 1988.

- "Court Reporters Battle Technology," The Bergen Record, by Bill Sanderson, Spring 1990.
- "Court Reporting," A Report to The Supreme Court of Florida, submitted by The Judicial Coordinating Council, January 15, 1982.
- "Court Reporting Resources: Management is the Key!," by Jill Berman Levy of Wilson, Levy & Associates.
- "Court Study Says Computerization Improves the Quality and Cuts the Cost of Justice," Press Release, National Shorthand Reporters Association.
- "The Courtroom of the Future," by Roger G. Strand, The Judges Journal, Spring 1989.
- "Courtroom Design, Annual Report," by Richard Smith, Chairman, Courtroom Design Committee.
- "Current Characteristics and Estimated Effects on Employment and Earnings of Proposed Changes in Allowable Courtroom Technology," by Dr. Joyce P. Jacobsen, Dr. Laurence M. Levin, March 10, 1992.
- "The Daily Management of Records and Information," A Guide for Local Governments, David O. Stephens, CRM, Issued by The National Association of Government Archives and Records Administrators in cooperation with The International Institute of Municipal Clerks and The National Association of Counties, NAGARA, Local Government Records Technical Publication Series, No.3, November 1991.
- Draft of Presentation Addressing the Position Taken in the Proposed Amendments to Federal Rules of Civil Procedure 26, 30 and 32, by Michael Graham, Professor of Law, University of Miami.
- "Effect of Video Transcription Upon Appellate Process: Survey of Appellate Practitioners," Memorandum of Neil Vincent Wake, Hon. Jefferson L. Lankford, to Hon. Sarah D. Grant, Chair, Committee on Video Transcription, May 9, 1990.
- "Electronic Recording Checklist", National Shorthand Reporters Association.

- "Electronic Recording Project Advisory Committee of the California State Courts Project," January 7, 1992.
- "Estimating the Cost of Judicial Services," by Dennis Weller and Michael Kent Block, Center for Econometric Studies of the Justice System, Hoover Institution, Stanford University, May 1979.
- "Evaluating the Use of Videotape for Making the Record of Proceedings in the Michigan Circuit Courts for the Sixth and Ninth Judicial Circuits," prepared by the National Center for State Courts, August 1988.
- "Evaluation of the Hawaii Judiciary Court Reporting System," prepared by Ernst and Young, May 1990.
- "An Evaluation of Kentucky's Innovative Approach to Making a Videotape Recording of Trial Court Proceedings," prepared by the National Center for State Courts, April 29, 1985.
- "Explaining Why Court Reporting is Better Than Tape Recording," by Jerry Kelley, CSR, TSRA, May 1990.
- "Federal Court Reporting System: Outdated and Loosely Supervised," Report To The Congress, by the Comptroller General of the United States, June 8, 1982.
- Filing Fees, Surcharges and Miscellaneous Fees, Conference of State Court Administrators, a publication of the National Center for State Courts, June 1986.
- "Final Report of the Supreme Court Committee on Court Reporting," Minority Report of John J. Prout, Jr., C.S.R. and Kathleen M. Shapiro, C.S.R., May 22, 1991.
- "A Financial Analysis of Electronic Reporting in Alaska," National Shorthand Reporters Association, June 1978.
- "A Guide for the Selection and Development of Local Government Records Storage Facilities," Compiled by A.K. Johnson Jr., CRM, Issued by The National Association of Government Archives and Records Administrators in cooperation with The International Institute of

## **APPENDIX A**

### **INDIVIDUALS AND ORGANIZATIONS CONSULTED**



# INDIVIDUALS AND ORGANIZATIONS CONSULTED

## Individuals

- Vicki F. Akenhead  
Managing Court Reporter  
Second Judicial District  
Albuquerque, New Mexico  
•
- J. Vincent Aprile, II  
General Counsel  
Department of Public Advocacy  
Frankfort, Kentucky  
•
- Jennifer Bean  
Freelance Court Reporter  
Albuquerque, New Mexico  
•
- Joseph Benedetto  
Chief Deputy  
U. S. District Court for the Eastern District of  
Pennsylvania  
•
- Dennis Bilecki  
U.S. District Court for Northern District of  
California  
•
- Stefany Broderick  
Stenograph Corporation  
•
- Brian E. Cartier  
Executive Director  
National Court Reporters Association  
•
- Don Cetrulo  
Director of the Courts, Kentucky  
•
- Hon. Byron Caton  
Judge  
Eleventh Judicial District Court  
Aztec, New Mexico  
•
- Sandra Corpe  
Official Court Reporter  
Toledo, Ohio
- Gary Cramer  
Official Court Reporter  
Los Angeles, California  
•
- Randall Czerenda  
Official Court Reporter  
Binghamton, New York  
•
- William E. Davis  
Court Consultant, Menlo Park, California  
•
- Vincent Defeo  
Professor, Wharton School, Univ. of Penn.  
•
- Sue K. Dosal  
State Court Administrator, Minnesota  
•
- Neil Ferstand  
Executive Director  
California Court Reporters Association  
•
- Phylis Fraser  
Court Reporter Supervisor  
U. S. District Court for the Eastern District of  
Pennsylvania  
•
- Tony Gatti  
Sacramento, California  
•
- John Greacen  
Clerk  
U. S. Court of Appeals for the Fourth Circuit  
•
- Leonard Green  
Clerk  
U. S. Court of Appeals for the Sixth Circuit  
•
- Fred Grittner  
Clerk of the Appellate Courts  
Minnesota

*Camual G. Harahan*  
Executive Director  
Council for Court Excellence  
Washington, D.C.

•  
Mike Hearn  
U. S. District Court for the Eastern District of  
Pennsylvania

•  
Frank Heft  
Chief of the Appellate Division  
Public Defender Office  
Louisville, Kentucky

•  
William E. Hewitt  
Senior Staff Associate  
National Center for State Courts

•  
Robert Hoecker  
Clerk  
U. S. Court of Appeals for the Tenth Circuit

•  
Gregory T. Ireland  
Court Administrator  
Eleventh Judicial District  
Aztec, New Mexico

•  
Sally Jump  
Court Administrator  
Franklin County Circuit Court  
Frankfort, Kentucky

•  
Laura Kogut  
Freelance Court Reporter  
Louisville, Kentucky

•  
Michael Kunz  
Clerk  
U. S. District Court for the Eastern District of  
Pennsylvania

•  
Robert A. Lowe  
Senior Staff Associate  
National Center for State Courts

•  
Cherry Macguire  
Official Court Reporter  
Anne Arundel County, MD

•  
Barbara Marshall  
U. S. District Court for the Eastern District of  
Pennsylvania

Charles Mayn  
National Archives  
Washington, D.C.

•  
Rick E. McBride  
Chief  
Court Reporting and Interpreting Section  
Administrative Office of the U. S. Courts

•  
Tim McFarland  
Stenograph Corporation

•  
Sandra Miller  
Ombudsman  
Jefferson County Circuit Court  
Louisville, Kentucky

•  
Roger Miller  
Vice President  
National Court Reporters Association

•  
Kim Misegades  
Xscribe Representative

•  
Darryl Monteleone  
Video Technology Consultant  
Philadelphia, Pennsylvania

•  
Edward C. Monahan  
Assistant Public Advocate  
Department of Public Advocacy  
Frankfort, Kentucky

•  
William Moran  
Deputy Chief  
Court Reporting and Interpreting Section  
Administrative Office of the U. S. Courts

•  
Hon. Paul R. Onuska  
Judge  
11th Judicial District  
Farmington, New Mexico

•  
Hon. Lynn Pickard  
Judge  
Court of Appeals  
Santa Fe, New Mexico

•  
Linda Pruitt  
Chief Deputy Clerk  
Eleventh Judicial District  
Aztec, New Mexico

**Stanley R. Birman**  
Official Court Reporter  
U. S. District Court for the District of New Jersey

•  
**Claire Ryder**  
Director of Information Systems and Technology  
National Court Reporters Association

•  
**Merilyn Sanchez**  
Official Court Reporter  
U. S. District Court for the District of Arizona

•  
**B. J. Shorak**  
Deputy Executive Director  
National Court Reporters Foundation

**John Spanos**  
StenoCAT, Inc.

•  
**Dan P. Thompson**  
Sales Representative  
Kol Vox, Inc.

•  
**Hon. George W. Trammell, III**  
Judge  
Superior Court of the State of California for the  
County of Los Angeles

•  
**Steve Urist**  
Deputy Director  
Administrative Office of the Courts  
New Mexico

## Organizations

**Cheetah Systems, Inc.**

•  
**Drexel University Main Library**

•  
**Federal Judicial Center Library Services**

•  
**Jefferson Audio Video Systems, Inc.**

•  
**Kol Vox, Inc.**

•  
**National Archives**

•  
**National Association of Government Archives and  
Records Administrators**

•  
**National Center for State Courts Library**

•  
**National Court Reporters Association Libraries**

•  
**Panasonic (Matsushita Services Corp.)**

•  
**ProCAT (Advanced Translations Technology, Inc.)**

•  
**Society of Motion Picture and Television Engineers**

•  
**Sony Corporation**

**StenoCAT, Inc.**

•  
**Stenograph Corporation**

•  
**Stenograph Legal Systems, Inc.**

•  
**United States Library of Congress**

•  
**University of Pennsylvania Van Pelt and Lippencott  
Libraries**

•  
**Warren County New Jersey Community College  
Library**

•  
**Xscribe Corporation**

## **APPENDIX B**

### **SAMPLE LETTER TO DATA SITES**

# JUSTICE RESEARCH INSTITUTE

516 South Third Street Philadelphia, PA 19147-2308  
Tel. (215) 574-8030 Fax (215) 574-8032

---

1800 M Street, NW, Suite 750 South  
Washington, DC 20036-5802  
Tel. (202) 331-4178 Fax (202) 785-5922

May 14, 1992

Hon. George W. Trammell, III  
104 Superior Court  
210 West Temple Street  
Los Angeles, CA 90012

Dear Judge Trammell:

The Justice Research Institute is conducting a cost benefit analysis study of the several methods of making a trial court record; namely, audio, CAT, CIC and video.

Though we have been retained by the National Court Reporters Association, we have not been asked, nor would we agree, to find a particular result. As you will see from our client listing, the Institute's standards are very high and, consequently, ours will be a straightforward and open inquiry.

Our research is broad based and includes all secondary sources available in the literature, along with numerous reports and studies which we have collected. Additionally, we have selected two (2) sites for each technology nationally for a more detailed inquiry, including your court. If you could assist our efforts by responding to the enclosed survey instrument, we would indeed be most appreciative and believe that it will contribute substantially to greater clarity in this important area of judicial administration. A stamped reply envelope is enclosed.

In the coming days, we will telephone you to inquire if you have questions, however, we are available to you at your pleasure. Please ask for me, Fernando Gallard or Charles Braxmeier.

We sincerely appreciate your assistance, and we will be pleased to share our ultimate findings with you. If it is possible to respond by Friday, May 29, we would be most grateful.

Sincerely yours,

William K. Slate, II  
President

Enclosures

# **APPENDIX C**

## **SURVEY INSTRUMENTS**

# AUDIO COURTROOM COST ANALYSIS SURVEY

## GENERAL STATISTICAL QUESTIONS

1) How many requests for copies of audio tapes has the court received for FY 90? How many tapes sold does this represent?

---

---

2) What was the revenue earned from the sale of audio tapes in FY 90?

---

---

3) How many trials have been recorded using audio for FY 90? How many proceedings does this represent?

---

---

4) What is the average number of tapes per trial for audio courtrooms?

---

---

## PERSONNEL

5) What is the average starting salary of a "courtroom monitor"?

---

---

6) What is the salary range for a "courtroom monitor" position?

---

---

7) What percentage of salary is provided in employee benefits?

---

---

8) Is overtime available to courtroom monitors? If so, at what rate?

---

---

9) How many full-time audio "courtroom monitors" does the court employ?

---

---

10) How many part-time audio "courtroom monitors" does the court employ?

---

---

11) Do courtroom monitors receive job training? If they do, how long is the training period and who does the training?

---

---

---

---

---



12) How many supervisors are involved with audio court reporting technology?

---

---

13) What is the average starting salary of a "courtroom monitor supervisor"?

---

---

14) What is the salary range for a "courtroom monitor supervisor" position?

---

---

15) How many full-time judges use audio courtrooms in the courthouse?

---

---

16) How many support personnel are involved with audio court reporting technology?  
Support personnel such as secretaries, clerks and, others. (Please list personnel by their title)

---

---

---

---

---

#### EQUIPMENT

17) Who installed the audio equipment and what was the cost of the installation?

---

---

18) What is the cost of a single audio tape to the clerk's office?

---

---

19) Please provide a detailed list of the costs and the quantity of each piece of equipment used in creating the record in an *audio courtroom*: (If the system was bought as a package, please indicate the package price)

EQUIPMENT	#	COST PER ITEM
tape recorder		
microphone		
mic. floor stand		
mic. table stand		
mounts		
microphone cable and hardware		
headset		
remote digital counter		
audio channel mixer		
equalizer		
amplifier		
speakers		
speaker cables		
jack boxes		
equipment rack		
AC surge protector strip		
Others:		

20) Please provide a detailed list of the costs and the quantity of each piece of equipment used in creating the record in the *judge's chambers*: (If the system was bought as a package, please indicate the package price)

EQUIPMENT	#	COST PER ITEM
tape recorder		
audio channel mixer		
equalizer		
amplifier		
microphone		
table stand		
mount		
microphone cable and hardware		
headset		
speaker		
speaker cable		
jack boxes		
equipment rack		
AC surge protector strip		
Others:		

21) Please describe "transcription" equipment for electronic recording *outside the courtroom*, its costs, and the number of each item?

EQUIPMENT	#	COST PER ITEM
tape duplicator		
tape reformator		

tape eraser		
transcribing machine		
headset		
foot pedal		
word processor		
personal computer		
typewriter		
AC surge protector strip		
equipment rack		
Others:		

22) Please describe "back-up" equipment for electronic recording *outside the courtroom*, its costs, and the number of each item?

EQUIPMENT	#	COST PER ITEM
tape recorder		
microphone		
headset		
table stand		
tape duplicator		
tape reformator		
foot pedal		
Others:		

23) Is the audio equipment insured? If so, what is the premium?

---

---

24) Describe the configuration of audio equipment recommended to members of the bar?

---

---

---

---

---

COURTROOM MONITOR'S OFFICE SPACE

25) Does the courthouse provide "courtroom monitors" with office space?

---

---

26) Does the courthouse give "courtroom monitors" office furniture?

---

---

27) Does the courthouse equip "courtroom monitors" with a telephone?

---

---

28) What other office supplies or equipment does the courthouse provides "courtroom monitors" with?

---

---