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## **An Analysis of Stenographic Court Reporting and Digital Recording in the Nebraska Courts**

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**JUSTICE**  
**SERVED™**

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**Introduction**

The Nebraska Court Reporters Association has retained Justice Served®, a court management consulting firm, to provide a cost analysis of stenographic court reporting compared to digital recording in the Nebraska courts for the purpose of providing sufficient information to judicial decision-makers faced with altering the method of capturing the verbatim record driven by budgetary pressures.

On the surface, it appears there are universal cost savings by replacing stenographic reporters with digital recording equipment. However, there are a significant number of factors and quality issues to take into consideration in order to make an informed decision.

This study looks at the dynamics of digital recording, the dynamics of stenography, the experience of other states faced with similar decisions, a comparison of transcript costs using both methodologies in a five-day trial, and a set of policy recommendations resulting from this examination.

The research was conducted and this report was prepared by Chris Crawford, a leading expert on judicial administration and the management of court reporter operations, and president of Justice Served®, a court management and technology consulting firm. For more information about Justice Served, visit [www.justiceserved.com](http://www.justiceserved.com).

In his 37 years of experience as a California court administrator and private sector court management consultant, Crawford worked extensively in court reporting operations. He headed the court reporting office for the Los Angeles Municipal Court with over 90 court reporters on staff. He has also written several reports analyzing court reporting technologies and verbatim record dynamics for various state court reporter associations and the Association of Federal Court Reporters.

## **Executive Summary**

Court leaders throughout the United States are making transformational decisions about how to continue delivering court services in this era of prolonged financial crisis. Among these decisions are how to capture the verbatim record and produce transcripts in a cost-effective manner, yet maintain the integrity of the court record.

46 of the 50 US states use some form of digital recording<sup>1</sup> (DR) and all but a handful use a combination of court reporters and DR. The Nebraska Judicial Branch is considering how far to expand DR beyond the current County Court jurisdiction into the District Courts or even replace court reporters altogether as a cost-saving measure. In this report, we study the question of cost savings in Nebraska courts by examining similar efforts in other states, and a side-by-side comparison of court reporting and DR in a sample Nebraska jurisdiction.

What this examination reveals is that the budgetary impact does not result from a court reporter being replaced by technology, but by equipment and replacement staffing. Even if salary savings ensue from the salary differential between a court reporter and a DR monitor, the overall costs still favor a court reporter, especially if a transcript is required, when the following issues are taken into consideration:

- Management and supervision.
- Transcript administration, production, delivery, billing, and accounts receivable.
- Court technology and network acquisition, maintenance, upgrade and repair.
- Added productivity from the court reporters' electronic work product, such as note storage, transcript storage/delivery, instantaneous, searchable realtime record, Reporter Electronic Data Interchange, and more.

The matters of transcript preparation and delivery are key components to a comparison of capturing the court record. As independent contractors, court reporters produce and deliver transcripts using privately purchased hardware, software, computer networks, supplies, shipping costs and even labor. A major shift to DR would require that Nebraska courts purchase recording equipment, hard-wire courtrooms, fund technology improvements to support the capture, transmission and storage of massive digital audio files, and become the primary administrator of transcript production and delivery operations.

The experience of other states with expanded use of DR is that this policy shift resulted in the need to address several unintended consequences to widespread DR usage, including:

- Lack of standards in regards to DR staffing to monitor the equipment and annotate the recordings; experts do not recommend that courtroom clerks performing other duties absorb these additional tasks.
- The need for the court to exert quality control over choice and qualifications of transcribers.
- Liability associated with recording of privileged conversations between attorneys and their clients.
- The need to specify what is the "official" court record - the recording or a transcript?

In low-impact cases where transcripts are not often needed in Nebraska courts, DR can be a cost-effective choice. However, the higher the stakes and the higher the need for a transcript, court reporters are more cost-effective.

Nebraska court reporters in rural district courts also serve as judicial support, so eliminating the position would have a severe impact on judicial productivity. In all district courts, court reporters attach, index and date stamp court exhibits, duties that would have to be shifted elsewhere if the position were eliminated.

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<sup>1</sup> We define digital recording in this report as both analog and digital audio recording.

## **1. The Dynamics of Digital Recording (DR)**

Use of tape recorders in courts has evolved significantly over time, beginning with analog tape used mostly in courts where either the low-impact nature of proceedings (such as traffic or small claims) or the scarcity of stenographic resources in rural and remote jurisdictions drove the decision-making. The dynamics changed in the 1980s with the widespread use of video as the verbatim record-making method of choice in Kentucky, and the evolution of digital technology in the 1990s has now rendered audio recording as a viable option. The financial crisis of the late 2000s has now accelerated the move to replace stenographic court reporting with DR using the justification of substantial cost savings resulting from the shift.

Two significant guiding policy resources address the use of DR in courts:

Making the Verbatim Court Record Miniguide, published in 2007 by the National Association for Court Management (NACM)<sup>2</sup>

Digital Recording: Changing Times for Making the Record, a white paper developed in 2009 by the Conference of State Court Administrators (COSCA)<sup>3</sup>

The salient portion of the NACM Miniguide publication is Chapter 4 *Decision Criteria / Factors – Identifying the Most Appropriate and Cost Effective Verbatim Record Method*, and in particular Section 4.2 entitled “Cost Considerations” with the following decision matrix:

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<sup>2</sup> An online version of this publication is not available, but an order form is provided on the NACM website at <http://www.nacmnet.org/publications/pubsorderform.pdf>

<sup>3</sup> A downloadable version of this white paper is available at <http://cosca.ncsc.dni.us/WhitePapers/DigitalRecording-Jan-2010.pdf>

<b>Cost Category</b>	<b>Court Reporters</b>	<b>Electronic Recording</b>
Personnel – related costs	<ul style="list-style-type: none"> <li>• Salary + benefits for record storage personnel (to the extent this function is not managed by the reporters themselves)</li> <li>• Reporter training costs</li> <li>• If a court reporter is not used, the court will have to incur the cost of providing in-house or contract transcription services and supervision of the process (and quality control)</li> </ul>	<ul style="list-style-type: none"> <li>• Salary + benefits for dedicated equipment operators and supervisors. If an existing employee such as a courtroom clerk is put in this role, then identify what portion of that person’s time is spent on this duty – including time spent managing the record (<u><i>the federal analysis calculated this to be 60.4% of a courtroom clerk’s time</i></u>).</li> <li>• Salary + benefits for transcribers, if in-house employees are used for this purpose. If no in-house transcriber is used, court will still need someone to coordinate transcript production and possibly conduct QC over transcript quality.</li> <li>• Salary + benefits for recording equipment technicians</li> <li>• Salary + benefits for technical support associated with maintaining the equipment that would be used to store and retrieve electronic recordings for transcribers and/or interested purchasers.</li> <li>• Staff training costs</li> </ul>
Temporary personnel	Per diem costs to fill in for staff reporters’ vacation, sick days, vacancies ( <i>when a substitute reporter is unavailable</i> )	Per diem costs to fill in for staff vacation, sick days, vacancies ( <i>when a substitute monitor is unavailable</i> )

<b>Cost Category</b>	<b>Court Reporters</b>	<b>Electronic Recording</b>
Equipment-related costs	<ul style="list-style-type: none"> <li>• Reporting equipment, including steno machines, and/or computers and software <i>(paid for by the reporter in Nebraska)</i></li> <li>• Reporter’s equipment service and repair costs <i>(paid for by the reporter in Nebraska)</i></li> </ul>	<ul style="list-style-type: none"> <li>• Analog or digital recording equipment</li> <li>• Digital recording software licenses</li> <li>• Installation</li> <li>• Duplicating equipment</li> <li>• Transcribing equipment, if done in-house</li> <li>• Video cameras <i>(not used in Nebraska)</i></li> <li>• Microphones</li> <li>• Cabling</li> <li>• Storage media (e.g., tapes, CD’s, DVD’s, servers)</li> <li>• Equipment service and repair</li> </ul>
Long-term storage	Depending on the applicable record-retention policy, courts may need to provide long-term storage of raw reporter notes. If paper notes are made, then boxes or file cabinets will be needed to store them. If electronic reporter notes are made, then the court may need to prepare for periodic refreshing of storage media. <i>(Raw note storage is currently the responsibility of district court clerks in each county in Nebraska.)</i>	Depending on the applicable record-retention policy, courts may need to provide long-term storage of digital records. This should entail refreshing and migrating digital audio/video files to new playback equipment and software over time.

While the NACM Miniguide offers guidelines to assist decision-makers in choosing the most appropriate method of capturing the verbatim record, the COSCA White Paper recommends DR over stenographic court reporting and cites several factors in defense of this position, including a decline in court reporter resources. However, in their portrayal of *Efficient, Timely Transcript Production and Access to the Record*, several important factors are missing including:

Whether or not dedicated staffing of DR equipment is needed – This is a significant cost factor, yet most cost savings projections are attributable to merely replacing a court reporter with DR equipment. When DR equipment *and* staffing are factored in, the cost savings rapidly diminish. According to the American Association of Electronic Reporters and Transcribers ([www.aaert.org](http://www.aaert.org)), *At all times, electronic recording equipment should*

*be overseen by an experienced reporter, who also takes simultaneous notes regarding the proceedings. In digital systems, these notes can be very extensive, indeed. (Digital annotations are time-linked to the corresponding audio, so one can instantly go to that point in the record to re-listen to the actual testimony or colloquy ...).*

Merely assigning DR monitoring duties to a judicial officer, courtroom clerk or bailiff is ill-advised and ignores the substantive duties for which these individuals are primarily responsible. As an example, a federal study indicated that DR monitoring duties, including time spent managing the record, subsumed 60.4% of a courtroom clerk's time; this is hardly feasible when courtroom clerks have so many other responsibilities such as tracking exhibits, checking in parties, monitoring the calendar, answering phones, entering dispositions in the case management system and otherwise assisting the judge in caseload management.

As a means of improving DR staffing cost savings, some DR vendors offer the ability for a single monitor to handle up to four courtrooms simultaneously, thereby substantially reducing the personnel costs associated with DR; but the COSCA White Paper offers no guidelines as to when and under what circumstances such multiple courtroom monitoring is appropriate (see Chapter 3 of this report for Florida's recommendations on the DR staffing formula). Intuitively, one would conclude that the more serious the case, the more justification for a one-to-one DR staffing ratio.

Finally, an important aspect of a court's decision to use stenographic reporting or DR is the cost and effort of preparing a transcript. Chapter 4 of this report compares transcript preparation costs comparing stenographic reporting and DR, and provides deeper background on the transcription preparation process. The bottom line is less effort is required to produce a written transcript from a stenographically reported hearing versus an electronically recorded hearing due to (1) the use of computer-aided transcription software by stenographic reporters, and (2) courts that do not now manage transcript production would have to create this administrative structure in order to do so. The COSCA White Paper sees managing transcript production as an issue of control instead of administrative overhead costs citing that (1) most proceedings do not require transcription, and (2) courts should have the flexibility to assign these tasks to internal staff or contractors. In effect, court reporters, even those who are salaried court employees, currently act as contractors for the purpose of preparation of transcripts because the Fair Labor Standards Act allows court reporters to act in a dual capacity of public (or quasi-public) sector employee to capture the record, yet act as a private sector independent contractor when preparing a transcript. Presumably, this anomaly exists to promote efficiency and timeliness (a privatization of sorts) while avoiding the need to pay overtime.

## **2. The Dynamics of Stenographic Court Reporting**

Even if they are salaried court employees when reporting the court record, official court reporters in Nebraska courts act as independent contractors when preparing transcripts. This means they bear all production costs and work mostly after hours and on weekends. These court-reporter-paid costs include: personal labor for production; purchase and use of computerized technology; purchase of supplies; hiring of support personnel; and delivery of completed transcripts. When a party orders a transcript, it is filed within the court-directed or statutory time requirements.

The Nebraska courts would be hard pressed to achieve these free-market efficiencies in terms of timeliness and cost for production that court reporters produce as private contractors working on a profit incentive. If the court were responsible for the current methodology of transcript production, court reporters would have to be paid straight salary to produce transcripts during an eight-hour workday, the vast majority of which is currently spent capturing the record in the courtroom. The result would be either (a) payment of overtime to existing court reporting staff; (b) hiring of additional court reporting staff; (c) hiring of transcription staff; or (d) a combination, all of which would increase the cost and time needed to produce transcripts.

There is another local dynamic in the Nebraska courts that exists in few other jurisdictions outside of the state, and that is the practice of requiring court reporters to act as custodians of court exhibits. These are added duties performed by court reporters that would not likely be performed by DR monitors or outsourced transcribers.

It is important to note that the court does not currently pay overtime to court reporters because after-hours time spent producing transcripts is performed by the reporter as a private contractor. This public/private employment relationship is unique to the official court reporting profession and rarely found elsewhere. It is recognized by U.S. statute in the Fair Labor Standards Act, which was amended in 1995 to allow this unique "privatization" and relieves the courts from having to pay overtime for work demands that easily exceed 40 hours per week.

Like other professions, court reporting has been dramatically affected by technology. However, what sets court reporters apart are two distinctions: First, these technologies are privately funded by individual court reporters at no expense to the courts they serve; and, second, court reporters have been "early adopters" of technology for the past 25 years -- much earlier than a vast majority of the courts they serve. For example, a vast majority of court reporters in Nebraska use Computer Aided Transcription (CAT) for reporting and preparing transcripts of proceedings. Transcripts prepared by court reporters are backed-up for redundancy, significantly reducing instances of lost records, and they are capable of storage in web repositories for wider accessibility.

The reason for this phenomenon is simple. In their role as private contractors producing transcripts, official court reporters are highly motivated to improve productivity. Investing in developing technology is a business necessity driven by a free-market incentive. The side benefits to the courts, lawyers and litigants are impressive. CAT technology not only helps the court reporter to quickly produce a transcript, but proficient court reporters are able to simultaneously create and display a rough draft of the verbatim record at the time the proceedings occur. This feat is called Realtime reporting that judges, attorneys,

litigants, and others are quickly learning to use to improve their own productivity. This instant display and text file of the spoken word allows judges, lawyers, clerks, interpreters, and others to add notes and annotations for current or later needs.

By changing the nature of their "product" from a paper transcript to a digital file, court reporters have provided several additional opportunities for cost savings and improved productivity by the court and its users. Some of these include digital storage, electronic transcript delivery, incorporation of the verbatim record into the court's case management system and electronic data interchange between the reporter and clerk to ease key stroke data entry tasks related to updating the court's data system.

Unlike other Nebraska public employees, court reporters in most jurisdictions in the state must personally pay for a wide variety of technology, and even staffing, in order to perform their dual role of court employee (to capture the verbatim record) and private contractor (to produce transcripts). As a consequence, court reporters are not allowed to use court equipment for transcript production, nor are associated costs such as office supplies paid by the state.

These annual and start-up costs for transcript production are as high as \$23,000 or more for technology, equipment and supplies, and could run as high as \$15,000, \$20,000 to \$30,000 or more for staffing. The choice to hire transcript production staff differs from reporter to reporter, and the decision is largely driven by the amount of transcript workload. A reporter could decide to hire only a scopist (editor of stenographic notes), only a proofreader, both or neither. There is no choice when it comes to technology, equipment and supplies – these are necessary and ongoing costs.

Accordingly, court reporters have made a significant investment in technology and productivity, which benefits the court in the form of low cost and rapid transcript production. A detailed breakdown of court reporter-paid costs is provided in the following tables:

**STAFF COSTS**

<b><i>Annual Volume of Transcript Production</i></b>	<b><i>Scopist (\$1 per page)</i></b>	<b><i>Proofreader (35¢ per page)</i></b>
1,000 pages	\$1,000 per year	\$350 per year
5,000 pages	\$5,000 per year	\$1,750 per year
10,000 pages	\$10,000 per year	\$3,500 per year
25,000 pages	\$25,000 per year	\$8,750 per year
NOTE: <i>The decision as to whether to hire a scopist (editor of stenographic notes) and/or a proofreader is optional and differs from reporter to reporter, and the decision is largely workload driven.</i>		

**EQUIPMENT AND SUPPLY COSTS**

<b><i>Hardware, Software, Supplies, Etc. (replacement cycle indicated in parentheses)</i></b>	<b><i>Initial Cost</i></b>	<b><i>Annual Cost</i></b>
<b>Software:</b> Transcript prep & billing (3-4 years)	\$4,100	
<b>Hardware:</b> Stenotype machine (5 yrs), laptop & desktop computers (3-4 yrs), two printers (4-5 yrs), photocopier (leased), fax machine (5 years)	10,180	\$3,000
<b>Supplies:</b> Copy paper (13 boxes X \$30), stenotype ribbons (\$15 x 3), carrying case (7 yrs), printer toner \$80 x 3, cables, serial converter, connectors (5 yrs), fax toner (\$35 X 4), binding equipment & supplies (6 boxes/yr @ \$40 per 100+shipping), office supplies, "original" & "copy" stamps, packaging material, diskettes, address labels, research material, business cards, CDs.	420	1,665
<b>Other:</b> Stenotype machine (annual maintenance, support for software, including updates), Internet provider, wheeler (5 yrs), home office furniture (5 yrs), training/seminars, training/vendor, postage, professional dues, professional certification continuing education, equipment insurance, cell phone, liability insurance.	570	3,397
<b><i>Investment in equipment and supplies</i></b>	<b><i>\$15,270</i></b>	
<b><i>Annual ongoing costs</i></b>	<b><i>\$8,062</i></b>	
<b><i>Combined costs (start-up and annual)</i></b>	<b><i>\$23,332</i></b>	

### **3. The Experience in Other States**

While technical and human error problems can occur with both court reporting and DR, there are many more documented instances of these problems in the use of DR. Having to retry a case or conduct a new hearing to recapture a lost record is a staggering price to pay for a “cost savings” that doesn’t hold up under analytical scrutiny. Here are some examples of digital recordings gone wrong:

US District Court for the District of New Jersey - (March 2010) An appeal from a criminal judgment of conviction in the Third Circuit US Court of Appeals found the trial record to be incomplete. The appellants identified approximately 10,000 indiscernible and/or inaccurate portions of the trial and sidebar transcripts, all of which required substantive corrections. After audio was recorded onto discs and later transcribed by a transcription service, the District Court was required to devote months of time reviewing the audio recording of the entire 8-month trial, including sidebars. That review found four recording discs that were defective and couldn't even be reviewed and are now being reviewed by an expert computer service. Despite the District Court's best efforts, the record is not certifiable at this point.<sup>4</sup>

Essex County, NJ – (Nov 2007) A mistrial caused by a courtroom recording failure may have cost a medical malpractice plaintiff in Essex County up to \$560,000 of a high-low settlement, stirring calls for more court reporters in New Jersey courts.

Portland, OR – (February 2004) A series of missing or inaudible recordings leads to editorials calling for a revisit of replacement of court reporters with DR. These instances include one hour of missing key witness testimony in a 2003 murder case; a retrial of a 2002 complex civil environmental case because the DR failed to record proceedings onto a CD; attorneys handling criminal appeals saying their clients’ rights are compromised by inaudible portions of recordings; and attorneys hiring their own court reporters for fear of an inaccurate court record.

Bryan, TX – (December 2000) When Judge-Elect Rick Davis considered whether to use a court reporter or electronic recording in the 272<sup>nd</sup> District Court, he compared three trial transcripts – one produced by a court reporter and two produced by a DR transcriptionist. The comparative error rates were staggering:

<b>Case</b>	<b>Transcript volumes</b>	<b>Total # of pages</b>	<b># of inaudibles / errors</b>	<b>% Error per page</b>
State v Robinson (Court reporter)	9	1,288	8	>1%
State v Smith (DR)	6	717	171	24%
State v Nutall (DR)	3	304	45	15%

The best case studies of the choice between stenographic reporting and DR can be found in the experiences of California and Florida, which follow.

<sup>4</sup> New Jersey Department of Law and Public Safety vs. Atlantic States Cast Iron Pipe Company, et al, 3:03CR852; U.S. Court of Appeals For the Third Circuit, Nos. 09-2305, 09-2306, 09-2345, 09-2346 and 09-2356

**The California experience with DR**

In the past three decades, the California Courts and the California Legislature have struggled more than a dozen times with the prospect of replacing court reporters with DR in the state trial court based upon the belief that such a change would result in substantial cost savings. These efforts are most often triggered by state budget shortfalls and the belief that advancements in DR technology render the use of court reporters to be less cost effective.

While some minor court proceedings are electronically recorded in the state, most proceedings utilize a stenographic court reporter using computer-aided transcription technology. The latest attempts at widespread implementation of DR centered on recommendations by the CA Legislative Analyst that speculated upwards of \$111 million in annual cost savings would result. *In the past three years, this proposal has been rejected three times* because legislators considered four major drawbacks to such a policy shift:

1. Replacing court reporters with DR would result in substantial cost associated with retirement and severance payments to departing court reporters;
2. Purchasing DR equipment and hard-wiring courtrooms to replace court reporters would result in substantial start-up costs;
3. Replacing court reporters with DR equipment also required the hiring of DR monitors, thereby resulting in substantially less cost savings; and,
4. The productivity loss to judges and attorneys having to review an audio versus a written record, coupled with substantial transcript preparation cost increases associated with a DR record outweighed project cost savings.

As part of this ongoing evaluation, the California Judicial Council created a *Reporting of the Record Task Force* in April 2002 and charged it with evaluating how court reporting services are provided. Over its two-year term, the task force developed recommendations for the future of court reporting in the state, covering such policy issues as transcript format, training needs, electronic transcripts, and the challenges in recruiting and retaining qualified shorthand reporters. Widespread use of DR was considered and rejected by the task force in their final report.<sup>5</sup>

Despite crushing budget deficits and tempting recommendations from legislative staff that substantial cost savings would ensue, California policy and lawmakers rejected the wholesale replacement of court reporters with DR. The CA Administrative Office of the Courts was among the many stakeholder groups testifying against such a proposal at budget hearings.

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<sup>5</sup> *Final Report of the Reporting of the Record Task Force*, February 18, 2005, <http://www.courtinfo.ca.gov/jc/documents/reports/0205item7.pdf>.

### **The Florida experience with DR**

Like many states, Florida has grappled with economic hardship for several years in a row, partly attributable to tax structure and politics, and partly attributable to natural disasters such as hurricanes. Even though limited use of DR was authorized by statute in 1995, in a continuing effort to find cost savings the state pushed the widespread replacement of court reporters with DR in July 2004, the first step of which was to shift the cost of managing the court record from local to state government.<sup>6</sup>

Despite this major push in 2004 to replace stenographic court reporting with DR, today *every circuit (general jurisdiction) court uses a mix of stenographic and DR service delivery methods*. Approximately twice as many proceeding hours are digitally recorded compared to stenographic reporting.

While all outward appearances indicate cost savings and a seamless transition to at least partial replacement of court reporting services, the Florida Commission on Trial Court Performance & Accountability (CTCPA) has issued three reports<sup>7</sup> on the subject that address several administrative policy and related DR issues, including:

- A determination was needed that the official record of court proceedings is the *transcript*, not an electronic recording;
- A rule was promulgated finding that the electronic recording was not a public record, and the court “owned” it and, thereby, controlled access to it;<sup>8</sup>
- The court needed to be immunized from legal liability associated with unintended interception of privileged oral communications by DR equipment, including attorney/client communications;
- Before a court sells a DR record, it should ensure that inappropriate content is redacted (a labor-intensive process);
- It is incumbent upon the court to provide an accurate record maintained by qualified staff – asking courtroom clerks or bailiffs to assume these chores is not the preferred solution;
- Instances of recording inappropriate content increased when DR equipment was not monitored by dedicated staff;

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<sup>6</sup> Revision 7 to Article V of the Florida Constitution, which shifted several due process costs from local to state government.

<sup>7</sup> The first report was December 2002

([http://www.flcourts.org/gen\\_public/pubs/bin/crtreporting\\_pubs1.pdf](http://www.flcourts.org/gen_public/pubs/bin/crtreporting_pubs1.pdf)) that anticipated implementation of DR, the second was in February 2005

([http://www.flcourts.org/gen\\_public/pubs/bin/crtreporting\\_pubs2.pdf](http://www.flcourts.org/gen_public/pubs/bin/crtreporting_pubs2.pdf)) and the third was October 2007

([http://www.flcourts.org/gen\\_public/court-services/bin/TCPACtReportingFinalReport.pdf](http://www.flcourts.org/gen_public/court-services/bin/TCPACtReportingFinalReport.pdf)).  
<sup>8</sup> Subsequent to the latest CTCPA report, the FL Supreme Court ruled that the DR record is indeed a public record and the trials courts had no right to restrict access to it (July 16, 2009, SC08-1658 *In re: Amendments to the Florida Rules of Judicial Administration and the Florida Rules of Appellate Procedure – implementation of Commission on Trial Court Performance and Accountability recommendations*, <http://www.floridasupremecourt.org/decisions/2009/sc08-1658.pdf>).

- Instances of equipment problems, inaudible portions and unrecorded proceedings increased when DR equipment was not monitored by dedicated staff;
- Giving DR records to parties provided opportunities for modification of the record and/or errors associated with use of untrained transcribers; and,
- Both audio and video recording has advanced technologically so that digital recording is the preferred method over analog, yet many courts still use analog equipment.

What is clear from the Florida experience is that there are a myriad of administrative issues that must be addressed before DR is implemented in a trial court. When mandated and recommended best practices accompany implementation, additional costs are incurred in the form of appropriate equipment and adequate staffing by dedicated DR monitors. The budgetary impact is not that a court reporter is being replaced by technology, but by equipment and replacement staffing - even if salary savings ensue from the salary differential between a court reporter and DR monitor. This differential increases when a DR monitor handles multiple courtrooms simultaneously, but these instances should be driven by the complexity and severity of the proceeding types, as is the recommendation in the 2007 CTCPA Florida report. The costs associated with management and supervision of DR monitors and the transcription process were not addressed.

None of this discussion concerning the Florida experience addresses the loss of productivity associated with judges and lawyers having to review electronic recordings as opposed to transcripts, the additional costs for transcription of a DR record, and the productivity gains associated with court reporters using Realtime technology to make the written record instantly available to the users.

#### **4. Transcript Cost Comparison**

The best comparison of transcript production costs is an analysis of stenographic court reporting and DR side-by-side in a five-day trial. In order to do so in a diverse state such as Nebraska, we must choose a sample court jurisdiction, in this case the 4<sup>th</sup> Judicial District, which encompasses Douglas County and the greater Omaha area. Each of the cost elements, calculations and related issues are described in detail as follows:

<i>Cost Component</i>	<i>Court Reporter</i>	<i>Digital Recording</i>
1. Personnel (5 days)	\$1,515	\$ 805
2. Transcript (1,000 pgs, Orig+1)	\$3,750	\$3,750
<b>SUBTOTAL</b>	<b>\$5,265</b>	<b>\$4,555</b>
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3. Delivery costs	\$ 0	\$ 13
4. Tech acquisition/maintenance	\$ 0	\$ 40
5. IT network upgrades	\$ 0	\$ 665
6. Added servers	\$ 0	\$ 135
7. Management overhead	\$ 15	\$ 50
<b>TOTAL COST COMPARISON</b>	<b>\$5,280</b>	<b>\$5,458</b>

1. Personnel (5 days) – The annual salary of a court reporter in Nebraska ranges from \$42,028 to \$52,456, depending upon certification level. We will use the higher salary range, increased by 30% for employee benefits and that figure (\$68,193) is divided by 225 days to derive a daily rate of \$303. The newly created position of “courtroom clerk” whose primary duties would be monitoring DR ranges in annual salary from \$24,573 to \$27,801. We will use the higher salary range, increased by 30% for employee benefits and that figure (\$36,141) is divided by 225 days to derive a daily rate of \$161. These daily rates are then multiplied by five days to calculate court reporter and DR personnel costs.

2. Transcript (1,000 pages) – 1,000 pages of transcript is the estimated output from a five-day trial. For a court reporter-produced criminal transcript, the statutory transcription rate \$3.25 per page for an original and 50 cents per page for each copy. For a transcript produced from DR, the same transcript cost is shown for purposes of comparison and thus far the courts using DR have been successful in imposing the statutory court reporter rate. However, most courts using private sector transcription services pay a higher free-market rate due to the relative difficulty of transcription of an audio tape compared to stenography. The transcript calculation is for an original and one copy, a typical order.

3. Delivery costs – The US Postal Service rate of \$13.50 covers a large flat-rate Priority Mail box carrying approximately 25 pounds of printed transcript. Court reporters privately fund these costs. Overnight rates for private carriers run as high as \$383.00 for this volume of paper, but presumably these added costs would be passed along to those demanding earlier delivery. DR would require management and tracking of these pass-along costs, while court reporters would do so in the course of their transcript production duties.

4. Tech acquisition and maintenance – The cost to purchase a single DR unit is approximately \$3,640, hardwire installation can run as high as \$20,000, and a one-year license, maintenance agreement and laptop rental is approximately \$1,100. As with all technology, DR equipment must have a life-cycle replacement, which we estimate to be every five years. If these equipment and maintenance (but not hardwire) costs are amortized over a five-year period of time, the daily rate translates to \$8.

5. IT network upgrades - DR would place a substantial added burden on a court's IT computer network infrastructure attributable to the creation, transmission and storage of large digital audio files. Costs associated with network upgrades to support DR files would be conservatively \$30,000 annually. The daily costs would translate to \$133, which are then multiplied by five. There is no need for a network upgrade to support court reporter operations.

6. Added servers - Costs associated with additional servers to support the storage area network for large DR files is approximately \$30,000 every five years, which translates to a daily rate of \$27. These estimates do not include additional IT personnel, if needed. No server enhancements are required to support court reporter operations.

7. Management overhead – This is a less scientific but “nonetheless” real cost to account for management overhead needed to support DR. Examples of these management tasks are the need to set up accounts receivable protocols to bill for transcripts, manage transcript orders, and generally supervise DR monitors who do not possess as high a level of professional training as a prerequisite of hiring compared to court reporters. By virtue of their professional training and independent contractor status producing transcripts, court reporters require minimal supervision, which is typically limited to coordination of assignments. \$10-a-day to account for overhead costs to manage DR is a reasonable assumption, while \$3-a-day is used for court reporters.

It is clear from this side-by-side comparison that even if the Supreme Court were successful in continuing to force either court reporters or some private transcription service to charge identical transcription rates as court reporters, the cost differential is still higher for DR compared to stenographic reporting to produce a transcript from a five-day trial. However, most court jurisdictions have found that transcription costs are higher for DR recordings if free-market cost pressures prevail because they are simply more difficult to produce. It is also equally clear that if a transcript is not required, the costs for DR staffing alone show a savings compared to stenographic reporting, but these savings are more than offset when the IT infrastructure improvements and management overhead are added.

Since court reporters operate largely as independent agents, minimal supervision is needed compared to DR except for coordinating assignments and some administrative support. Court reporters also privately fund technology acquisition, maintenance, upgrades and networking, while DR requires that the court substantially upgrade its computer network to support the creation and transmission of digital audio and video records, which are quite large compared to documents and other electronic files. Additional servers are also needed to accommodate storage and retrieval of these files.

## 5. Recommendations

For cost savings in low-impact cases that have reduced need for a written transcript, DR can be an appropriate choice to supplement stenographic court reporting resources. However, this practice should be select, not widespread, and should take into consideration the administrative impact and policy considerations that must accompany such a move, including the need for dedicated DR monitor staffing, qualified transcription services, technology infrastructure improvements and safeguards to reduce instances of equipment malfunction and recording of inappropriate portions of the record.

Widespread replacement of stenographic court reporting with DR would result in substantial hidden and shifting costs that may impact the quality of justice, the productivity of those who work in the system, and the timeliness of case processing, as follows:

- **Productivity** – The role of a court reporter is not merely to “capture” the verbatim record and transcribe it when needed; it is to provide enhanced productivity to judges, attorneys, parties and court staff in dealing with the court record and managing information. The most significant impact of replacing stenographic court reporters with DR is the resulting loss in productivity by judges and key stakeholders, especially when dealing with complex cases. A good example is the need for “readback” of past testimony that can be performed instantly by a stenographic reporter by a word or name search of the text-based record, while DR is incapable of this search without substantial annotation, resulting in substantial delay while the testimony is located.
- **Judicial Support** - In addition to their regular duties, court reporters in rural district courts also serve in a judicial support capacity, particularly for traveling judges, thereby playing a critical role in judicial effectiveness. The only constant with judges who travel between multiple counties are the judge and his or her court reporter. Therefore, in addition to a strict cost comparison between DR and court reporting services, the added dimension of judicial productivity associated with service by a court reporter acting in a judicial support role must be taken into consideration.
- **Exhibits** - Nebraska district courts follow a practice of requiring court reporters to act as custodians of court exhibits. These are added duties performed by court reporters that would not likely be performed by DR monitors or outsourced transcribers. Replacing court reporters with DR would require a shift of exhibit management tasks elsewhere at an added cost and effort.
- **Transcript Production** – Transcripts produced from proceedings in Nebraska courts result in substantial costs, but due to the nature of state court funding, these transcript costs are typically borne by the county in which a court is located and reimbursed later by the state. In the case of private transcription services, these costs are paid directly by the state to the contractor. Regardless of which government agency bears the cost, independent analyses of transcript production costs show that producing a transcript from an electronic recording is more costly in a free-market system and less timely than one produced by a stenographic court

reporter, most of whom use privately funded computer-aided transcription software and hardware to achieve this productivity. The statutory fees that courts pay for stenographic transcripts are relatively low compared to free-market rates, so that switching to DR on a large scale will likely drive up costs for transcript production and increase processing delays.

- **Capital Investments in Technology, Management and Staffing** – Even salaried court reporters act in a dual role of “employee” while reporting the verbatim record and “independent contractor” when transcribing that record. Accordingly, in Nebraska district courts all of the costs for equipment, software, staffing, supplies and management of these processes are privately borne, saving the state millions of dollars in cost avoidance. Moreover, these private investments have ensured that courts reap substantial productivity benefits from state-of-the-art advances in technology. With DR, the individual court jurisdictions would be charged with making these investments and keeping technology current.
- **Accuracy and Certification of the Record** – Stenographic court reporters are trained, accredited and highly skilled professionals who prepare accurate transcripts based upon firsthand experience reporting the proceedings, research as to proper names and technical terms, and extensive use of technology and private staffing to produce and proof the record. When a court reporter “certifies” the record, it is an authentication to its accuracy. A transcript produced by a third party from DR is subject to error because all that DR captures is “sound,” which could include background noise, inaudible responses and unintelligible utterances. A “certified” DR transcript is merely an indication that a typist unconnected to the record has done his or her best to discern its accuracy. Moreover, DR equipment will not inform the monitor that it is not functioning properly, and the discovery that a record is lost does not occur until it is too late. A “re-transcription” of previously transcribed audio files will reveal significant differences in “certified” drafts.
- **“Off-shoring” of Transcript Production** – Stenographic reporters are “guardians of the record” who place high value on the accuracy, impartiality and confidentiality of the court record. Selling audio files to attorneys and others could result in the use of overseas transcription services in an effort to save costs, resulting in violation of privacy, illegal disclosure of protected information, and identity theft. Selling audio files to attorneys and others also introduces opportunities to fraudulently alter the record using digital audio editing software.
- **Accountability** – Since court reporters are professionally certified, they are more accountable for their qualifications and attention to duty. No such controls exist over DR monitoring staff or privately retained transcript production contractors. Errors and delays in producing transcripts from a DR record have become a way of life in those states that have adopted its widespread use.
- **Replacing Transcripts with a DR Audio File is Not a Cost Savings** – One of the biggest myths about DR costs is that judges, attorneys, parties and court staff are able to review the audio DR files in lieu of a transcript and thereby realize substantial savings. Every study conducted on this subject shows that it takes three-to-five-times longer to review an audio file compared to a written transcript; this is especially true of DR records that have not been annotated by a monitor. Widespread use of

audio files is highly unproductive and will result in delay while transcripts are more cost-effective, especially electronic versions of transcripts that are capable of word and name searches.

- **Personnel Cost Savings will Not Occur with DR** – The biggest justification for replacing court reporters with DR is the estimated cost in the form of salary savings by eliminating court reporters. These cost savings are over-projected for two reasons. First, it assumes that most DR monitoring can be done with a single staff person handling multiple courtrooms, or no dedicated monitoring staff at all. Every reputable source recommends dedicated DR staff monitoring and differs only when it comes to a formula for how many simultaneous courtrooms can be effectively covered by a single monitor. Second, transcript production cost savings are achieved by a court reporter using computer-aided transcription software and privately paid staff, both of which (technology and staffing) would become court costs when using DR.
- **Court Reporter Technologies Yield Substantial Cost Savings** – Court reporters have privately invested in computer hardware, software, telecommunications and staffing to make technological advances available to judges, attorneys, parties and court staff, thereby increasing productivity. One of these technologies, “realtime” instant display of the record for viewing and annotation, is a substantial benefit when efficiently resolving cases. Computerized stenographic reporting produces electronic transcripts, ease of storage of notes/transcripts, printed concordance indices, condensed printed transcripts and computer-integrated courtrooms, which are substantial improvements in the administration of justice that will be lost with DR. Moreover, a court reporter’s “realtime” record allows courts to make proceedings available to the hearing impaired, while computer-aided transcription supports sight-impaired users, enabling courts to comply with *Americans with Disabilities* requirements. An emerging court reporter technology called REDI (Reporter Electronic Data Interchange) would ease the keystroke data entry chores of courtroom clerks and speed the updating of the court’s case management system by selectively marking and transferring case processing information from the stenographic verbatim record. When this feature becomes marketable, the productivity gains for the court will be substantial.
- **The Unquantifiable** - While it is important to present accurate cost figures as we have attempted in this analysis of the financial impact of shifting from stenographic court reporting to DR, there are also a substantial number of unquantifiable negative consequences for doing so. It is important to ask *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?* A court reporter is currently the central figure in charge of the record. When the responsibility for the record is shared among several parties such as a DR monitor, court clerks and court management, chances for errors and delay increase precipitously.

In short, widespread replacement of stenographic court reporters with DR does not provide universal cost savings, and the tradeoff is often negative consequences that impact the accuracy, timeliness and integrity of the record, as well as the productivity of

judges, attorneys, court staff and litigants. These policy decisions should take into consideration the likelihood of the need for a transcript and the severity or complexity of the cases involved. A set of policy determination criteria should then be developed to determine (1) whether cost savings will occur and if so (2) whether the court has the management and technology infrastructure to absorb the verbatim record enterprise, and (3) whether the quality of the end product is sufficient to ensure the integrity of court proceedings.

In low-impact cases in which there is a low demand for a transcript, DR can be a viable and cost-effective option. However, the higher the stakes and the higher the demand for a transcript, the more cost effective choice is a stenographic court reporter, which also improves the productivity of courtroom participants.