



C42 Digital Evidence in the United States Courts of Appeal

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Learning Overview: After attending this presentation, attendees will understand: (1) the most common legal basis for appeals related to digital evidence, (2) the most frequent outcomes for those appeals, (3) the most prevalent challenges to digital forensics, and (4) which appeals are the most likely to result in a affirmed or reversed decision for the defendant. Overall, attendees of this presentation will be well informed as to how digital evidence has performed in the United States Courts of Appeal and how the United States Courts of Appeal generally view the science behind computer forensics.

Impact on the Forensic Science Community: Though the use of computer forensics in criminal investigations has expanded in recent years, there is limited empirical evidence about the prevalence of the use of digital evidence in the court system and its impact on prosecutorial outcomes. One case review from Losavio and Losavio examined cases that involved ineffective assistance of counsel with regard to computers as the basis for appeal from 2015–2016.¹ In addition, Cole, Gupta, Gurugubelli, and Rogers examined 100 appeal cases that involved digital forensics, and results revealed search and seizure was the main reason for appeal.² The current study aimed at further examining digital forensics in the United States Courts of Appeals. Specifically, this presentation will impact the forensic science community by an examination of cases from the United States Courts of Appeals in which legal issues were related to digital evidence. The purpose of this research was to determine the most common legal basis for appeals relating to the introduction or exclusion of digital evidence, the frequency with which cases involving an appeal regarding digital evidence affirmed or reversed for the defense, whether certain challenges to digital evidence are more prevalent than others, and whether there are trends or areas of the law as applied to computer forensics and digital evidence needing further attention by the criminal justice system.

This analysis was based on a review of cases in the United States Circuit Courts of Appeals from 2010 through 2015. Cases were identified via LexisNexis, using the following search terms: Computer, Computer Forensics, Chat Log, Electronic Evidence, Cell Phone, Sexting, iPhone, Child Pornography, Digital Evidence, Computer Investigation, GPS, and Encryption. The United States Circuit Courts of Appeals were an ideal venue for this study for two principal reasons. First, the 11 Circuit Courts of Appeal and the associated 94 United States District Courts cover the nation. There is at least one court in each state and the District of Columbia. Second, the 11 Circuit Courts of Appeal and the 94 District Courts adhere to the same rules of evidence—the Federal Rules of Evidence.

Probable Cause was the most frequently occurring legal issue encountered as a basis for appeal at 30.61%, followed by Sufficiency of Evidence at 28.57%; Defective Warrants at 12.24%; and Warrantless Seizures at 6.12%. Other legal issues less frequently encountered included Scope of the Warrant, Probative Value, Expectation of Privacy, Scientific Merit, Exclusionary Rule, Relevancy, Authenticity, and Hearsay.

Of the 147 cases included in this study, only 22 appeals were based on the science of computer forensics, including probative value, authenticity, hearsay, relevancy, and scientific merit. In each of those cases, previous rulings were affirmed. Out of the ten reversals for the defense, five were based on sufficiency of evidence. In the two cases where judgement was affirmed for the defense, one was based on a defective warrant, while the other was based on the scope of the warrant. Results will be compared to previous literature regarding digital evidence in the courts.

The majority of challenges seen in this study were based on Search and Seizure issues, rather than the science of computer forensics. This study only examined cases heard by the United States Courts of Appeals. Future research may involve an in-depth look at cases at the federal district court level to examine this issue.

One area of concern is particularity in regard to the scope of search warrants. Particularity governs how far the government can search, based on a factual predicate. Several important cases with regard to particularity have been decided by the courts recently (*Riley v. California* and *United States v. Ganas*).^{3,4} This issue will likely continue to be central to appeals based on the Search and Seizure of digital evidence.

Reference(s):

1. Losavio, M.M. and Losavio, A. Downstream Competence Challenges and Legal/Ethical Risks in Digital Forensics. *Proceedings of the Annual ADFSL Conference on Digital Forensics, Security and Law*. 2017.
2. Cole, K.A., Gupta, S., Gurugubelli, D., and Rogers, M.K. A review of recent case law related to digital forensics: The current issues. *Proceedings of the Annual SDFSL Conference on Digital Forensics, Security and Law*. 2015.
3. *Riley v. California*, 134 S. Ct. 2473 (2014).
4. *United States v. Ganas*, 725 F.3d 125 (2d Cir. 2014).

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