

Use of Telephonic and Video Conferencing Technology in Remote Court Appearances



A Supplemental Report to a
State Justice Institute (SJI) Funded Project
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Executive Summary

The following documentation and reporting have been developed as a supplemental report to a primary report for a State Justice Institute (SJI) funded project involving the use of telephonic and video conferencing for court appearances. Greacen Associates is leading the project and providing the primary report. A **glossary of terms** has been provided in Appendix B to assist the reader with technical terminology.



The goals of this supplemental research are: **1)** to provide a summary review of current and emerging trends using technology for remote court appearances; and **2)** to provide suggestions for courts currently using, or considering, remote appearance technology based upon the research conducted.

Key Findings:

1. There are three primary categories of service, which have substantially different service models and pricing. These three primary categories are the "market niche" vendor, Unified Communication Solutions (UCS) providers with diverse products and services, and hybrid audio/video conferencing vendors.
2. Fundamental distinctions between these categories are:
 - a. **Niche vendors** focus exclusively on full service telephonic and/or video services for court appearances; court reporting, and depositions and other legal matters.
 - b. **Unified Communications Service (UCS)** providers deliver products and services ranging from specific legal/criminal justice use-cases¹ to audio/video products that could be adjusted for various court use-cases.²
 - c. **Conferencing platform vendors** provide an array of products that aren't specifically targeted at the legal sector but have been and could continue to be successfully implemented in courts using cloud-based, desktop, managed in-house servers and open systems for custom development (SDK's and API's).³

¹ For example, Polycom's Judicial Services product line provides a spectrum of hardware and software combinations ranging from damage-resistant video monitors for remote inmate appearance to judicial business administration, courtroom services, and education solutions. See product offerings, brochures and white papers at: <http://www.polycom.com/solutions/solutions-by-industry/us-federal-government/us-fed-judicial-services.html>

² See PolyCom RealPresence at <http://www.polycom.com/hd-video-conferencing/realpresence-collaboration-infrastructure.html> and Cisco Spark at <https://web.ciscospark.com/>

³ SDK's and Application Programming Interfaces (API's) can be used to build custom-tailored apps for varying cost. Some are feasible for broad scale adoption while others may be prohibitively expensive at the vendor setup or custom implementation level

3. While solutions of varying cost and benefit can be found across these vendors, a sliding scale of hybridization that incorporates features and benefits of multiple service models, with moderate unique technical development effort could provide an entry point for broader court adoption. For the purposes of this report, these types of solutions will be termed the “hybrid model.”
4. To make these providers accessible to the legal sector, each court can evaluate how the sliding scale of hybridization incorporates the features and benefits of the multiple service models, and then select an option that works with the court’s financial and resource availability.
5. Notwithstanding the associated service cost, full service, or niche market solutions, are the most likely model for widespread adoption by the courts. However, such models are not in the best interests of the litigants.
6. It is in the best interest of the courts to adopt mechanisms for remote appearances by telephonic and/or video technology that are generally accessible for all litigants (including self-represented litigants) and all attorneys (including free legal aid organizations).
7. Video is a natural extension of telephonic conference (audio), and the combination of using audio and video, when possible, is a suggested best-practice.⁴
8. The most efficient return on investment (ROI) for providing remote appearances for litigants, as well as the best option for growth and scalability is a hybrid solution if the courts are willing to shoulder a varying level of administrative tasks and handle a few more details on their end. The self-service model can work within this arena.



The following research summarizes and compares vendor services from the two primary categories and the hybrid model variant. This report concludes with commentary about proposed best practices for courts currently using these services or considering a system that provides remote appearances.

⁴ The Business Case for Videoconferencing: Achieving a Competitive Edge, Wainhouse Research - See <http://www.wainhouse.com/files/papers/wr-bizcase4vc-v2.pdf>; Video Conferencing Services to Grow WorldWide <http://www.circom.com/video-conferencing-services-to-grow-worldwide/>; "Hey Doc, Let's Talk: Consumer Communication Preferences" An iTriage® In-App Consumer Survey September 2015 https://about.itriagehealth.com/PDF/Sept2015_InAppSurveyBrief.pdf.

Current Technology Service Models for Remote Court Appearances

The three primary provider categories within this space are: **1)** "niche market" vendors **2)** conferencing platforms and **3)** unified communication/collaboration solutions (UCS).

Niche Market Vendor Overview: The niche vendors researched within this study primarily focus on providing premium services for their user base. Benefits of these premium services include the ease of a turnkey system that is customized for attorneys and participating courts; however, research indicates that systems are rarely individually customized for particular jurisdictions. In several instances the niche vendor provides a human resource administrator for the calls and/or video components of the remote appearances in court. By providing these targeted premium services the niche vendor has acquired a large percentage of the market share of courts that are currently allowing remote appearances.

Niche Market Vendor Pricing: The niche vendors typically provide premium, high-quality services where the court has to do very little concerning management of the technology, and therefore may focus on the judicial tasks in the docket. However, such services result in substantially higher costs per use than the larger telecommunication providers. The target demographic for the niche vendor appears to be focused (in the following order) primarily on: 1) attorneys; 2) courts; and 3) the litigant/self-represented litigant (*if it all*).

The minimum price within the niche vendor research sampling started at approximately \$55 per party/per line through AppearByPhone. Another leading niche vendor within the market space is CourtCall. Here, the variance in pricing is striking: the lowest price starts at \$59 per party/per line and goes to \$120 per party. CourtCall has established a large court user base with an average of \$86 per line. AppearByPhone (also branded as AppearByVideo for video conferencing) heavily models CourtCall's pricing and full-service model.

To support a premium experience, niche vendors generally require all parties to use separate lines resulting in two critical barriers: 1) multiplication of transaction cost; and 2) exclusion of mobile devices. These barriers are concerning as they create a cost barrier and resource barrier for individuals in the justice gap. Additionally, the mobile restriction will create an escalating access barrier if trends continue with the exponential replacement of mobile for household landlines.⁵

Researcher's inquiries concerning price points that may be cost-prohibitive for indigent litigants resulted in vendor responses that demonstrated little or no interest in providing discounts, tiered pricing, or workarounds for low-income litigants.

Discussions indicated that niche vendors found little or no incentive to reduce profit or administrative overhead for the benefit of indigent litigants. Although the niche vendors provide

⁵ Cell phone Only Homes Become the Norm CDC Survey Finds, 12/01/15. "People living in or near poverty levels were also more likely to live in a cell phone-only house." <http://thehill.com/policy/technology/261657-cellphone-only-homes-become-the-norm-cdc-survey-finds>; Wireless Substitution: State-level Estimates From the National Health Interview Survey, 2012, "Largely rural states in the West and South have the highest shares of such "wireless-primary" households, while the lowest wireless-primary shares are clustered in the Northeast." <http://www.cdc.gov/nchs/data/nhsr/nhsr070.pdf>

high-quality services allowing the court to focus on the judicial task, this model leaves no incentive to lower cost tiered, or pro se pricing.⁶

Niche Market Vendors Included in this Study

- AppearByPhone
- AppearByVideo
- CourtCall
- CourtRoom Connect
- ATI (VCourt by StreamWrite)
- Gore Brothers
- LiveDeposition (By MegaMeeting)⁷

Conferencing Platforms (Hybrid Solutions)

Conferencing Platforms provide services that can be used within the court system, however these companies are not developing solutions specifically targeted at the justice/legal sector.

The number of vendors that can be classed in this space vary from small-to-enterprise level companies delivering a multitude of video and teleconferencing services that range from, on premise servers and desktop applications to cloud-based SaaS platforms that run within a browser. Examples include: Zoom, Join.Me, WebEx (by Cisco), VSee, Skype (Microsoft), TrueConf Online (by TrueConf)

Typical product offerings include:

- 1) Free audio/video conferencing with limited functionality (audio/video but no document sharing, restricted to 3 connections, etc.). Normally these are browser-based or desktop applications.
- 2) Desktop clients with tiered pricing tied to the number of site licenses, feature sets and support levels.
- 3) Application Programming Interfaces (API's) that allow a range of options for modifying, extending or building complete applications based on the underlying cloud-hosted conferencing solution. There is wide variance in cost and features available to developers depending on the particular vendor.

Free Conferencing Corporation (FreeConferenceCall.com) offers both audio and video conferencing services for businesses, individuals, communities, and organizations. FreeConferenceCall.com provides a bridging service with the primary model being the scheduling of a call for a specific time with a specific number of participants, but also includes

⁶ Researchers found that it was typically difficult to engage niche vendors if they did not immediately sense a sales opportunity. Several did not return calls to their intake personnel, and/or referrals to upper-level employees were dead ends. Screening at the initial sales rep level was the norm. When upper-level representatives were reached, any discussion of price discounts, improving the process for indigent client fee-waivers, etc. had a very chilling effect. Tina Bemer at LiveDeposition was the most receptive niche rep (tinab@livedeposition.com).

⁷ LiveDeposition is a legal sector solution by parent company MegaMeeting. Through discussion with a LiveDeposition client representative it was discovered that MegaMeeting's web conferencing product is a viable solution for remote court appearance as envisioned in this report.

the option of a dedicated line (reservation-less audio conferencing service) that can be used anytime.

Audio calls can be managed with conference Web controls or through their phone app available for iPhones and Android phones. Accounts now include free screen sharing and video conferencing for up to 1,000 participants in addition to HD Audio. The new video and screen sharing features can be viewed in the linked demo video: <https://youtu.be/I4CAIZaqQZA>.

Although these vendors do not custom tailor to the court and legal arena, these hybrid solutions provide several possibilities of customization. These companies provide services that are inherently leaner, more "self-serve" models. The customization does take additional effort on the court's part to bring together the components needed for telephone and video use for remote appearances. For instance, there is not a human calling the court to ensure the docket is set for the judge, a service that many of the niche vendors provide. However, they can be far less expensive and generally require only off-the-shelf components (desktop PC's, mobile devices, web cameras and microphones). If the courts are willing to handle a few more details on their end, the self-service model can work in this arena. *See Case Example 3 - Desoto, TX.*

UCS Vendor Overview:

Unified Communication Solutions (UCS) providers, like Polycom, TrueConf and Adobe Connect provide numerous communication and collaboration services that may be used throughout the court system. These services are not generally custom-tailored for the legal market, but they can be very effective for combining communication and business process workflows for efficiency. Solutions for the justice sector are often components of large-scale hardware/software implementations with multi-party and multi-purpose functionality. However, some vendors do provide highly specialized criminal justice/legal solutions (see PolyCom's inmate appearance video system with damage resistant monitor for correctional facilities).

TrueConf, architect of the world's largest unified communications solution (Ministry of Internal Affairs of the Russian Federation), produces multiple software suites, specialized hardware, and web-based video conferencing products. However, it also provides a free, web-based video conferencing product that supports three or fewer parties and contains many features found in pay-platforms, such as chat, screen and document sharing.⁸

A court system's decision to use a UCS vendor is usually based on the following: enterprise-class vendor brand recognition, management of hardware and software with on-premises services or dedicated network/phone lines, end-user experience, and the ability to deliver highly customized solutions on a large scale. Internet and cell phone service disruption, end-user experience, and concern for high-fidelity video (warranted or not) create a rigid choice between high cost and the absence of audio/video appearance technology. Specific case types and judges' personal preferences may represent a broad range of personal and mandatory requirements, which also impact remote appearance adoption.

⁸ A barrier for court adoption of telephonic or video appearances is the concern for service quality, reliability and specific feature sets requested by the court and/or necessary for the giving use-case. This concern is especially prominent for video appearances.

As discussed below, broader adoption of audio/video for the benefit of self-represented litigants could be achieved at lower than expected cost, if courts take incremental steps with less expensive solutions. Additionally, courts will need to accept process change and accept that possible, minor issues with internet/cellular disruption are outweighed by broader access to justice (whether in the form of docket efficiency or reduction of substantial travel cost).

Analysis of Vendors & Services

The following provides individual descriptions of each vendor included in this study. Descriptions were gathered and created based from discussions with vendors, self-descriptive language from vendor's online content, and/or researcher's notes generally. The list is not all inclusive, but attempts to capture the providers with the largest share of market space within this area. Vendors are listed in alphabetical order and the vendor location on the list does not represent a ranking of the vendor services. Vendors that accepted researcher's communications were all asked to provide a description of their services.

VENDOR: Adobe Connect™



LINK: <http://www.appearbyphone.com/>

DESCRIPTION: Adobe® Connect™ is Adobe's web conferencing platform for web meetings, eLearning, and webinars. Adobe Connect is also a development platform that allows partners to create tools (add-ins) that run on top of the platform to meet the needs of vertical markets. *See StreamText Legal add-in.*

TYPE: UCS

API: http://help.adobe.com/en_US/connect/9.0/javadoc/

VENDOR: AppearbyPhone™



LINK: <http://www.appearbyphone.com/>

DESCRIPTION: AppearByPhone.com is a service that enables court appearances by phone for attorneys, their clients, and judges. Services allow participants to appear in court without being physically present for routine, non-evidential, pre-trial and hearing appearances without disrupting the business of the court.

TYPE: Niche

API: N/A

AppearByVideo

VENDOR: AppearByVideo™

LINK: <http://www.appearbyvideo.com/>

DESCRIPTION: AppearByVideo.com is a service that enables court appearances by live video for attorneys, their clients, and judges. Services allow participants to appear in court without being physically present for routine, non-evidential, pre-trial and hearing appearances without disrupting the business of the court.

TYPE: Niche

API: N/A



VENDOR: CourtCall™
LINK: <http://courtcall.com/>
DESCRIPTION: CourtCall is “turnkey” Telephonic Court Appearance that was founded in 1995. CourtCall uses a proprietary Remote Appearance Platform that can be customized by each Court and each Judge based on the preferences for conducting remote Court Appearances. They offer video, audio, or both. Not all Judges in a Court are required to join the service.
TYPE: Niche
API: N/A



VENDOR: CourtConnect™ (Remote Counsel)
LINK: <http://www.courtroomconnect.com/>
DESCRIPTION: Courtroom Connect was founded in 2001. Their stated purpose is “expanding access to legal events.” The “Remote Counsel” service provides remote, live access (video, text, and videoconferencing) for: depositions, trials, hearings, jury research, and more.
TYPE: Niche
API: N/A



VENDOR: FreeConference.com®
LINK: <https://www.freeconference.com>
DESCRIPTION: Freeconference.com offers a free service that includes free international dial-ins, 400 audio participants, 10 web conferencing participants, and 3 video feeds. They also offer subscriptions to upgrade bundles. The upgrades begin at \$9.99/per month including: the addition of call recording; an increase to 15 online meeting participants with screen sharing; and up to 5 video feeds. Features also include web interface controls (called the "in-call dashboard").
TYPE: Conferencing Platform
API: Referenced but not linked



VENDOR: FreeConferenceCall.com®
LINK: <https://www.freeconferencecall.com/>
DESCRIPTION: Freeconferencecall.com offers a basic way to make conference calls for free. The free service includes on demand conferences, unlimited minutes and up to 1000 participants per call for free (6 hour limit per call). Other features include call recording and 24/7 telephone support. Accounts now include free video conferencing with up to 1,000 participants. Recent features also include web interface controls for calls/video, user personalization, and HD audio/video.
TYPE: Conferencing Platform
API: <https://www.freeconferencecall.com/developers>

VENDOR: Gore Brothers™ 

LINK: <http://gorebrothers.com/>

DESCRIPTION: This vendor is focused primarily on depositions and presentations for court rather than remote appearances by litigants.

TYPE: Niche
API: N/A



VENDOR: Join.Me™

LINK: <https://www.join.me/>

DESCRIPTION: Join.Me is a freemium meeting software that provides web conferencing, screen sharing, online meetings and team collaboration with no registration required. Join.Me is a product provided by LogMeIn. Founded in 2003, LogMeIn™ is a SaaS provider and cloud-based remote connectivity services that uses use a proprietary remote desktop protocol is transmitted via SSL.

TYPE: Conferencing Platform
API: <https://developer.join.me/>



VENDOR: LiveDeposition™

LINK: <http://livedeposition.com/>

DESCRIPTION: LiveDeposition™ provides the delivery of audio, video, real-time text, and electronic exhibits for depositions, trials, hearings, arbitrations, and mediations. They provide local & web-based real-time streaming software and transmits live audio using built-in VoIP or Toll-free Conferencing.

TYPE: Niche
API: <http://livedepositions.com/index.php?s=hd-video-conferencing-api&l=fr>



VENDOR: PolyCom

LINK: <http://www.polycom.com/>

DESCRIPTION: Polycom is a multinational corporation that develops video, voice and content collaboration and communication technology. It is the largest pure-play collaboration company in its industry. The company licenses many codecs. Polycom was founded in 1990.

TYPE: UCS
API: <http://www.polycom.com/video-collaboration/innovations/api.html>

VENDOR: Skype™
LINK: <https://www.skype.com/en/>
DESCRIPTION: Skype is a telephony service provider that offers free text, audio, and video communication between subscribers



TYPE: Conferencing Platform
API: <https://www.skype.com/en/developer/>

VENDOR: TrueConference™
LINK: <http://trueconf.com/>
DESCRIPTION: Founded in 2003, TrueConf is the largest vendor of enterprise and consumer products and equipment for video conferencing in Eastern Europe. They are headquartered in Moscow, Russian Federation. Their service allows deployment of a secure enterprise unified communications system within 15 minutes and can hold meetings on all major platforms: Windows, OS X, Linux, iOS and Android.



TYPE: UCS
API: <http://trueconf.com/products/server/video-conferencing-server.html>

VENDOR: VCourt™ by StreamWrite™
LINK: <http://tinyurl.com/vcourt-steamwrite>
DESCRIPTION: VCourt is Streamwrite's virtual court appearance module. The VCourt Virtual Appearance module can be deployed either as an on premise or hosted solution. Features include: public and court web interface; reminders by email or text; and registration for multiple appearances by attorneys in one session.



TYPE: Niche
API: [https://msdn.microsoft.com/en-us/library/system.io.streamwriter\(v-vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.io.streamwriter(v-vs.110).aspx)

VENDOR: Vsee™
LINK: <https://vsee.com/>
DESCRIPTION: Although VSee has not entered the legal appearance market space they are a model "tele-medicine" service. VSee is a HIPAA-compliant tele-health app that aims to make telemedicine simple and secure for healthcare users around the world. VSee is used by NASA, the Navy SEALs, and US Congress, VSee uses 256-bit AES encryption to keep patient data secure. VSee is created by a team of Stanford University human computer interaction scientists and they have combined HIPAA compliant video chat, device integration and visualization, and medical work flow including reimbursement.



TYPE: Conferencing Platform
API: <https://vsee.com/api>

VENDOR:	WebEx™	
LINK:	https://www.webex.com/	
DESCRIPTION:	Cisco WebEx, formerly WebEx Communications Inc. is a company that provides on-demand collaboration, online meeting, web conferencing and videoconferencing applications WebEx products are delivered over the Cisco WebEx Cloud. It is a highly available infrastructure purpose-built for real-time web communication with worldwide data centers located at strategic Internet access points. WebEx uses multilayer security including SSAE-16 and ISO 27001.	
TYPE:	Conferencing Platform	
API:	https://developer.cisco.com/site/webex-developer/web-conferencing/	

VENDOR:	Zoom™	
LINK:	https://zoom.us/	
DESCRIPTION:	Zoom Video Communications (Zoom) is a U.S.-based company that provides cloud-based video communications. Offering both cloud meeting and webinar software, Zoom provides video conferencing, online meetings, and mobile collaboration into one platform. Zoom was founded in 2011 by engineers from the development teams of Cisco and its collaboration business unit, WebEx.	
TYPE:	Conferencing Platform	
API:	https://zoom.us/plan/api	

Analysis of Vendors & Services by Type

The following analysis divides the vendors into three primary categories of service listed previously. These three (3) primary categories are the "market niche" vendor; large Unified Communications System (UCS) providers with diverse products and services, and hybrid audio/video conferencing solutions that use a modular process approach.

Market Niche Vendor Analysis

The Niche vendors in this study focus exclusively on full service telephonic and/or video services for court appearances; court reporting, and depositions and other legal matters. There is typically a human resource that functions as an administrative go-between for the court and the parties/attorneys for the remote appearance. By providing these targeted premium services the niche vendor has acquired a large percentage of the market share of courts currently allowing remote appearances.

CourtCall™: Currently, the largest service provider for remote appearances is CourtCall™. This provider states they "created the turnkey Telephonic Court Appearance Industry in 1995."⁹ It

⁹ See <http://courtcall.com/> (last visited June 20, 2016).

currently provides service to over 3,200 Courts in 42 states.¹⁰ A Court can choose between two CourtCall service options and either may include audio or video. The selection the Court makes will have a large impact on the convenience level afforded to the remote participants. These two choices are “**Open Court**” and “**Privacy**” mode.

The ease and convenience of a turnkey solution, however, comes with considerable cost for the litigants. A single video appearance with CourtCall averages \$96 (\$86 audio + 10 for video). A live CourtCall operator will have already prepared a calendar for that day’s litigants, and the operator will connect the judge and litigant and handle adding/dropping parties.

This fee is not considered a filing fee and is set contractually at \$86 plus a \$10 service fee, \$20 of which typically goes to a trial court fund (though prices in other jurisdictions range from \$59 to +\$120). CourtCall provides any equipment required to use its platform at no cost to the Court and Court staff receive a brief training. CourtCall states that it is a ‘no cost service to courts.’ Lawyers and litigants pay for the service. More likely, is that the cost is passed from lawyer to litigant as an expense charge. Therefore, with no cost to courts and a pass through cost for attorneys the cost of this system for the courts is paid entirely by the litigants. For self-represented indigent litigants this option, that could actually provide greater access, is cost prohibitive. The restrictions on shared lines and prohibition on cell phones are possible cost-prohibitive barriers. *See Case Example 1 (CourtCall) for a detailed step through of a CourtCall use scenario. (CourtCall) for a detailed step through of a CourtCall use scenario.*

LiveDeposition™: This vendor also provides both audio and video solutions within the legal space. However, as the name indicates, their model is more focused on depositions, arbitrations, and mediations. They do provide real-time video streaming and live audio (using built-in VoIP or Toll-free Conferencing), but currently have little, if any of the remote court appearance market space.

Perhaps it is due to the lack of penetration in the court appearance market that LiveDeposition™ was the most accommodating niche vendor in regard to discussing a tiered pricing structure for self-represented litigants. However, their current primary product requires a reporter or videographer therefore this would be a future discussion.

Price points and services for LiveDeposition™ are \$99/month for up to 5 connections in one transaction: for example, a court case with opposing attorneys and litigants could need five different lines (co-locating attorney-client would provide two slots for witnesses, etc.).

Their parent company, MegaMeeting, does provide an audio/video solution very similar to CourtCall (though it is marketed as an all-purpose web conferencing application). This platform could be an interesting option for a hybrid solution.

AppearByPhone.com / AppearByVideo.com (AppearBy): This vendor uses a model and provides a service that mirrors CourtCall. National usage statistics were not available at the time of this reporting however, every indication suggests that AppearBy is CourtCall’s closest

¹⁰ See <http://courtcall.com/participating-courts/> (last visited June 20, 2016).

competitor. Once again prices vary depending on the jurisdiction that uses AppearBy, but there is a consistently lower price point found of \$59.

AppearBy also provides a no “expense or burden to the courts” model “providing all the necessary equipment to the courts for free.”¹¹ AppearBy does state that they will honor a fee waiver if approved by the judge and that they will “work with courts to increase revenue.”¹² A typical Court Conference Call with AppearByPhone™ is stated on their website as the following:

We connect one line to the court PA system or your court speakerphone, then bring in all the participants on the Conference Bridge, and keep them muted simulating a public courtroom. Our operators will manage callers online in a fully managed network. Typical uses include public courtrooms such as traffic, civil, criminal, family, juvenile, probate courts, unemployment, admin law cases, arbitration, PSC, PUC, FCC, SEC, HHS, FDIC, etc... This service has no fees for the Court Admin, government authority, or Judge. Users who wish to appear telephonically will simply pay a small fee per call regardless of the length of the call. All participants dial-in and wait for their turn while the court clerk calls the case numbers. Each time the clerk calls out a case number, the AppearByPhone™ operator will unmute the corresponding caller. Once the caller is done ... they may be disconnected.

AppearBy also offers an option similar to CourtCall’s “Privacy” setting.

Based upon your approval, we connect each case or docket one at a time and present them to you over to your chambers or in the courtroom. For this version of telephonic appearances, you will only hear from one case or docket at a time. No one is muted and waiting to conduct their business with the court. Attorneys pay a small fee per call for telephonic appearances. NO FEES TO THE COURTS.

Unfortunately, both the video and phone intake personnel failed to answer and/or return requests for additional information or referrals to higher-level decision makers.

Conferencing Platform Vendor Analysis

Conferencing Platform vendors in this study deliver web conferencing solutions via the Internet through web browser plugins or desktop clients, without the need for traditional specialized video conferencing hardware. Generally, these vendors provide live audio and video communication to multiple locations for meetings, training, or presentations. They provide similar features (screen sharing, document sharing, chat), pricing models and API’s for developing custom features and solutions upon the vendor product

It is important that providing access to the underlying service allows customers to develop integrations with on-premises solutions, create white-label products or custom tailor an offering for their needs. To disrupt the current communications and collaboration market place, open

¹¹ See <http://www.appearbyphone.com/judges/> (last visited June 20, 2016).

¹² See <http://www.appearbyphone.com/judges/> (last visited June 20, 2016).

connectivity is the driving force which affects innovation and transaction costs. Key differentiators in this segment, insofar as court remote appearance platforms, are the licensing requirements (number of participants/site caps), time limits and a product's API feature set and cost.

Out-of-the-box, these solutions are not specifically designed for the "open court" style of remote appearance, namely, one-to-unknown numbers of connections from external sites. The general use-case for these products is a known number of sites and a capped number of participants¹³ interacting in meetings, training sessions and webinars. While enterprise licenses are offered, the cost structure requires paying a fixed-fee, based on volume - volume that a court probably cannot determine ahead of time. However, these solutions can be very inexpensive and effective if the number of individual party connections is limited. Several vendors provide free solutions for 5 or less parties.

For courts willing to take on varying degrees of manual interaction, there are free and low-cost solutions (\$125 or less per month) that can be successful¹⁴, though audio-video quality, service and lack of a dedicated, vendor supplied human resource could sway a court in favor of a niche vendor or higher-quality video available through a Unified Communications/Collaboration Solution (UCS). To develop solutions that fit the "open court" model of remote court appearance, extension of the conference platform through an API may achieve fast ROIs and provide a highly tailored solution. For example, with a relatively small amount of developer coding, a non-enterprise Zoom account can support boundless (within reason) connections by assigning and reusing access tokens as users join and leave a multi-hour "open court" video conference session.

Due to a large amount of vendors, individual vendors are not detailed here, but the Case Example 3 (below) provides an analysis of Zoom and a custom Zoom solution implemented by a Texas Municipal Court. The listed conferencing platforms offer similar free/low cost off-the-shelf products and all provide an API for customization.

Unified Communications/Collaboration Solutions (UCS)

PolyCom: PolyCom is a multinational corporation with over \$1 billion in annual revenue from video, voice and content collaboration communication technology. PolyCom is one of the largest collaboration solution providers in the industry. PolyCom provides a broad range of hardware and software products specifically targeting the judicial and criminal justice sectors.¹⁵

As a large-scale provider PolyCom services already may be entrenched within a given court's infrastructure or used by another state or municipal agency. Courts are encouraged to explore these local solutions, when possible, to determine if a video appearance solution is readily

¹³ For example, a free plan may allow 25 participants and limit sessions to 40 minutes; a more expensive business plan might have a participant cap of 100 and no limit on duration.

¹⁴ Case Example: 3 (below) describes the use of Zoom's free-tier package and an API-based solution used for remote appearances.

¹⁵ See "Justice" and "Tele-Justice" brochures and white papers at <http://www.polycom.com/solutions/solutions-by-industry/us-federal-government/us-fed-judicial-services.html#stab3>

available for use or demonstration purposes. Further, courts leveraging UCS solutions are encouraged to find ways to support modest-mean litigants, such as allowing inbound connections from cellular and/or lower definition video, such as Skype, where possible.¹⁶

AdobeConnect:

AdobeConnect is a collaboration tool that includes video conferencing, application sharing, live polling, chat, whiteboards, and presentations. It allows desktop computers to host live, synchronous interactions with small or large groups.

Notably, AdobeConnect provides the ability to develop “pods” (add-on applications created by customers) to extend its feature-set. StreamText Legal¹⁷, an AdobeConnect pod, provides “a complete deposition solution” with video conferencing, video depositions, private meetings and training in one platform. While this solution is not tailored for remote video appearances, it provides a useful example of building a complex, fully featured court-specific solution upon AdobeConnect. By comparison, an “open court” or private-queue remote audio/video appearance application can also be deployed through this collaboration tool.

TrueConf:

TrueConf is a multinational, Russian company that designs and produces innovative video conferencing solutions. TrueConf was the architect of the world’s largest unified communications solution and is known for introducing a range of unique projects and services to the video conferencing market: 3D video conferencing technologies, mobile video conferencing, gesture-based controls for video conferencing systems and it was the first video conferencing solution vendor to accept Bitcoin (BTC), the decentralized digital currency. Unsurprisingly, this innovative company began as software solution designed to provide stable audio-visual communications on low and unreliable Internet connections.

Of special interest, TrueConf also provides a free, web-based video conferencing product that supports three or fewer parties and many features found in pay-platforms, such as: chat, screen and document sharing.¹⁸

Conclusion:

Explosive growth in the communication, collaboration and conferencing space precludes an exhaustive list of vendor types, options and offerings. While this vendor list is not all-inclusive, it attempts to highlight market space leaders, examples of ready-made or easily converted technology for remote appearance use and vendors that are innovative. For certain, the only constant in this landscape is change. Fortunately, this change is driving new technology forward and creating tailored products that may be implemented at lower cost.

¹⁶ Case Example: 4 details implementation of Polycom’s RealPresence as a video appearance system in Michigan state courts. PolyCom’s RealPresence product was already used by another state agency, allowing the court to choose a ‘known’ commodity.

¹⁷ <http://www.streamtextlegal.net/solution> (last visited June, 2016)

¹⁸ See <http://trueconf.com/pricing/online/free-plan.html> (last visited June 18, 2016).

Case Examples

CASE EXAMPLE 1: Niche Market Vendor CourtCall (Audio/Video):

CourtCall created the turnkey Telephonic Court Appearance Industry in 1995 and currently provides service to over 3,200 Courts in 42 states.¹⁹ CourtCall targets judges and attorneys by offering a full-service, premium phone (audio) or video experience. These are the only customer types mentioned on the company home page, primary advertising or on top-level menu options on the company website. CourtCall provides specifically for pro se litigants. There is a drop-down list that says, “Select the role that best describes you (or the registrant) from the following list of user types:”²⁰ and “Self-Represented” is a given option for both activation and registration.



CourtCall: (the Court Perspective)

CourtCall provides the equipment required to use its platform at no cost to the Court, and Court Staff receive a brief training session. Two service options are provided to the Court and either may include audio or video:

- 1) “**Open Court**” simulates an actual courtroom with all participants in listening /viewing mode.
- 2) “**Privacy**” for Judges wishing to conduct hearings privately or in chambers. In this instance, a moderator remains on the call for its duration and serves as a “virtual” clerk, bringing parties into the call as requested by the Court.

CourtCall stated it does not track judicial preference regarding “Open Court” and “Privacy” mode and could not offer statistics regarding preference. They “simply provide whichever option a Court requests.”²¹

Participating attorneys and/or self-represented litigants (SRLs) who have an existing court date can schedule a remote appearances by contacting CourtCall or using the CourtCall website. They will then receive a confirmation via email when scheduling is complete and CourtCall has notified the Court.

After an attorney or SRL schedules a remote appearance the Court is notified, and a CourtCall operator is available during the appearance to insure connectivity, audio and video are properly working, and to verify that call requirements have been met.²² Remote participants connect as instructed and wait for their case to be called.

¹⁹ CourtCall updates a nightly PDF of participating courts at: <http://courtcall.com/participating-courts/>; link format as follows, with month and year replacements as needed: http://courtcall.com/wp-content/themes/courtcall/PDF/June_2016_Participating_Courts_List.pdf

²⁰ See <https://app.courtcall.com/ccallp/register> and <https://app.courtcall.com/ccallp/activate>

²¹ Interview with Curt Child, Director of Court and Government Relations, CourtCall (May 14, 2016).

²² CourtCall Transaction Rules. To ensure the quality of the record, the use of cellular phones, speakerphones, car phones, or phones in other public places is prohibited. Prior to speaking, the participant must identify himself or herself for the record. **CourtCall participants must take reasonable steps not to allow distracting sounds, such as dogs barking or machinery noise, to be heard in the courtroom through the CourtCall conference call.** CourtCall (footnote continued)

A remote video appearance is a \$10 add-on feature to the standard audio service pricing. For example, the state of California's contract with CourtCall sets an \$86 call price, so a video session is \$96.²³ Fee waivers are available for indigent litigants presenting sufficient need based on judicial review and approval. Final waiver is granted upon receipt of a court-to-CourtCall fax prior to the client contacting CourtCall scheduling.

During the hearing the Court will have CourtCall's free Remote Appearance Platform that includes: a duplex speakerphone and dedicated phone line; and a proprietary browser-based video application where up to 16 participants per case may share video simultaneously. A user can test their video at <http://app.courtcall.com/images/vidvalidator/index.html>.²⁴

Once a Court accepts remote appearance and 'they get over the hump' they typically continue using it. There is very little for the court to do since the on-call operator handles everything: pushing attorneys into a sidebar conference, adding parties to the line, etc. "The judge doesn't have to learn what buttons to push."²⁵ Regarding CourtCall's contracts in California, it was stated that some Courts give video appearance calendar priority over both live and audio appearance; some will only do cattle-call or private options and have a requirement for solely audio or video use.²⁶

CourtCall: (the Attorney/Litigant Perspective) Remote video appearance is available for a litigant, witness, carrier or other party for hearings, mediations or other proceedings. Required equipment includes a webcam, computer, Internet and sufficient bandwidth.

Attorneys (or self-represented litigants) pay for each transaction and court appearance fees vary per Court.²⁷ Transaction fees are charged per phone line and participants are not allowed to use speakerphones, cell phones or a shared line. Thus, it will cost more to have more parties. The fee structure is different for Bankruptcy and Alternative Dispute Resolution Services: each remote participant is \$45 for the first 45 minutes and \$12.50 for each 15-minute increment thereafter. Generally, for out-of-court use or non-contracted court pricing, attorneys pay a flat rate of \$65 for audio and the \$10 video add-on. When the video is recorded as testimony, a sliding-scale fee is applied based on length.

Conclusion: CourtCall provides a premium solution at a premium price borne by attorneys and the self-represented. From the Court's perspective, it is an easy adoption: no out-of-pocket expense, minimal training, low implementation time and the benefits of remote audio/video appearance. However, a heavy barrier of entry is placed on self-represented litigants, especially those in the justice gap. Denying cellphone use²⁸ and line sharing²⁹ while shifting transaction costs to the litigant limits, in some cases eliminates, its use for citizens of limited means.

conference calls must not be placed on hold at any time. When the Court informs the participants that the hearing is completed, the participants may disconnect.

²³ Lawyers and litigants pay for the service. This fee is not considered a filing fee and is set contractually at \$86 for audio with a \$10 video fee. \$20 from each transaction is placed into a trial court fund, which may be the only source of funds available pro se discount negotiation.

²⁴ *Id.*

²⁵ *Id.* at fn 3.

²⁶ *Id.*

²⁷ <http://courtcall.com/participating-courts/>, *supra*.

²⁸ *Id.*

CASE EXAMPLE 2: Conference Platform Vendor (Audio/Video)

Zoom is a leading video and web conferencing platform used by over 250,000³⁰ companies and more than 40 million individual participants. It shows promise as a solution for broad adoption of low-cost remote audio/video³¹ in its basic configuration and as a customizable platform³² with a minimal amount of web application development cost.³³

Zoom provides account registration through its website³⁴ and its FREE product offering supports up to 50 participants in 40 minute video sessions and provides numerous features: full screen or gallery screen views; join by phone call-in, desktop and application sharing, chat and group messaging and modification through API access.³⁵ Zoom supports a broad range of desktop computers, web browsers and mobile devices: Windows, Mac, iOS, Android, Blackberry, Linux, and major web-browsers (Chrome, Firefox, Safari, etc.) other than Internet Explorer (IE).³⁶ Mobile device apps are available from their respective “App Stores.”



Upon first use, Zoom prompts desktop users to install a one-time web browser plugin or run the zoom launcher to install the appropriate desktop client. For example, because IE is not supported, Windows desktop users are prompted to run the launcher to install a software application on their local machine.

Leveraging the Free Zoom plan requires administration management at the court-level by a judge or clerk. Scheduling meetings, managing user invites, and administering conference sessions (muting disruptive users, for example) require manual intervention. Additionally, because meeting duration is limited to 40 minutes, multiple meetings may be required to fit larger court docket requirements. However, there is no cost for using the platform in this way.

Note that numerous vendors in the conference platform space provide similar free or low-cost (\$125/month or less) solutions that could be managed in a similar fashion to work around time and/or the number of users per session: Join.me; WebEx; Skype; LifeSize among others. Zoom was chosen for this case study because the Zoom API is the technology behind the innovative, low-cost solution in the Desoto, Texas case study detailed on the following page.

²⁹ CourtCall Transaction Rules. *supra*.

³⁰ See <https://zoom.us/zoomisbetter>

³¹ See <https://d24cgw3uvb9a9h.cloudfront.net/static/53942/doc/case/Zoom-Case-KBLA.pdf>

³² See <https://zoom.us/plan/api>

³³ See Judge Scott Kurth of Desoto, Texas Case Example

³⁴ <https://zoom.us/signup>

³⁵ <https://zoom.us/pricing>

³⁶ <https://support.zoom.us/hc/en-us/articles/201362593-Zoom-Launcher-Plugin>

CASE EXAMPLE 3: Hybrid/Modular Low-Cost High Volume Solution DeSoto, Texas Municipal Court: E-Court Appearance via Zoom API

The Honorable Judge Scott Kurth of DeSoto, Texas (a suburb of Dallas) improved the Municipal Court's efficiency by implementing a remote video appearance solution that could be managed by non-technical staff, was accessible to self-represented litigants and cost-effective.

Judge Kurth distributed an RFP and the resulting implementation turned into the E-Court Appearance system. The Court's website offer's defendant's an opportunity to:

"Go online and meet with the Judge using ZOOM Video Conferencing and eliminate the need to appear in person."³⁷

When it is time for the hearing the litigant visits the E-Court Appearance webpage³⁸ where the Court's static Zoom meeting ID (582-661-129) is prominently displayed. The web page also provides a link to Zoom's "Join a Meeting" page at <https://zoom.us/join>.

When court is in session³⁹ the participant enters the meeting ID when prompted and it launches the appropriate Zoom downloader (if one of Zoom's plugins or apps is not already loaded on the user's machine) or joins the user directly into the Court's current Zoom video conference.⁴⁰ **No appointment is necessary.**

E-Court Appearance allows defendants to dispose of eligible cases⁴¹ via a videoconference with the judge through the use of ZOOM either on your computer or wireless device. E-Court Appearance is completely voluntary and is offered to defendants who do not want to, or cannot, come to the DeSoto Municipal Court in person to dispose of their case(s).



³⁷ See <http://www.ci.desoto.tx.us/1584/E-Court>

³⁸ See <http://www.ci.desoto.tx.us/1667/E-Court-Appearance>

³⁹ *Id.* E-Court Appearance is available every Monday, Wednesday, Thursday, and Friday at 10:00am with the exclusion of every 4th Wednesday of the month and any DeSoto, Texas City Holidays.

⁴⁰ The court has 1 site license for this, but traditionally Zoom would require every litigant to have a license. So, developer is using the Zoom API to dynamically create a Zoom session and assigning a token to the litigant's session. This acts just like a 1-to-1 license between litigant and court. When the session ends, the token expires and other litigants have been given tokens. A volume discount has been negotiated between the court and Zoom, likely on a perceived volume basis that will adjust overtime with usage statistics.

⁴¹ *Id.* Cases that are eligible for E-Court Appearance: No Driver's License; Driving while license invalid; Driving with suspended driver's license; Fail to change address on driver's license; Failure to maintain financial responsibility (no insurance); Expired registration; Defective equipment; Failure to obey the direction of a police officer; All moving violation (i.e. generally involving the movement of the automobile); Ordinance violations; Code violations;

Attending an E-Court Appearance allows the defendant:

- **Enter a Plea of NOT GUILTY** and request a trial by judge or trial by jury on a later date. Trials are not held via the E-Court Appearance video conference and will require the defendant to appear in person at the courtroom of the DeSoto Municipal Court at 211 E. Pleasant Run Road, DeSoto, Texas.
- **Enter a plea of guilty or no contest.** Defendants who plead GUILTY or NO CONTEST via the E-Court Appearance have the same opportunities for payment plans, compliance dismissals, driver safety courses, or deferred disposition.
- **Request an extension of the due dates established by a previous judgment.** You will need to be prepared to provide extenuating circumstances to the judge as to why an extension is needed.
- **Seek resolution of outstanding warrants** via the establishment of a payment plan.

The system is extremely low-cost and the system is free to use for all litigants.⁴²

Other User Requirements:

- A device capable of accessing an internet connection (PC, MAC, Smart Phone, Tablet)
- A fast and stable internet connection
- A webcam attached to your PC or a built in camera on your device that will allow the Judge to see you during the video conference.
- Your device must have a microphone connected or built in that will allow you to talk to the judge and your device must also have speakers attached or built in that will allow you to hear what the judge is saying to you
- You must have a working email address and you may possibly need to have the ability to scan paperwork or email images or documents for the judge's review.

Right to New Trial: Defendants who have made an initial appearance on their cases via the E-Court Appearance are given the right to change their mind and be granted a new trial within ten (10) days of the entry of the judgment upon request in writing filed with the DeSoto Municipal Court. A motion for new trial is provided for use by the Defendant on the court's website under helpful forms.

Remote Payment Options/ Requirements: If you are requesting to take a Driver's Safety Course, you will be required to pay \$114.10 immediately after your E-Court Appearance at www.desototexas.gov/payticket⁴³ or by calling 1-800-444-1187. If you are requesting a Deferred Disposition, you will need to be prepared to make a down payment of at minimum \$50, but you will be encouraged to pay more than the minimum down payment so that your monthly payments are more manageable. If you are requesting a guilty judgment with a payment plan, you will need to be prepared to pay a 33% down payment on the total amount that you owe.

⁴² Total cost is \$100/month Dropbox, \$26 month in Zoom

⁴³ Payment processing by The Payment Group at <https://trafficpayment.com/SearchByInvoiceInfo.aspx?csdId=501>

CASE EXAMPLE 4: Unified Communications (UCS) Solution PolyCom



PolyCom is a large, Unified Communications and Collaboration Solution⁴⁴ provider with numerous software and hardware solutions designed for court and criminal justice needs and a broad range of multi-purpose cloud, on-premises and managed communications products and services. Polycom products are utilized in several court systems across the country.

Many of these products are based on open standards and will integrate with other vendor products and services, in addition to providing web browser or desktop client audio/video solutions in some cases. The PolyCom remote appearance solution and practice of the Michigan state court⁴⁵ serve as a model reference point for remote appearance practice, as described in the *Michigan Trial Court Standards for Courtroom Technology*.⁴⁶

Systems Design: The Michigan standards note the reality of system diversification across a state-wide organization. Courts are told to balance the benefits of design, vulnerability, cost and adoption of new technology. A fundamental system requirement is open-architecture⁴⁷ to allow interconnectivity between technical implementations. “This approach enables different vendors to supply different parts of the overall system. As such, device interfaces must conform to industry standards...[and] support standard peripheral devices used in transcription, such as foot pedals and headphones, using industry-standard interfaces.”⁴⁸

Additionally, component and performance requirements for video are detailed, including a requirement that “Open standards video technology must be capable of high-definition, full-motion video (Skype does not meet this standard).” Additionally, report parties and counsel must be able to mute audio to support private, confidential communication.

To maintain video quality, the court sets a requirement for high-definition, high frames-per-second video that excludes several alternative solutions mentioned in this report. In particular, web-based communication platforms similar to the specifically mentioned Skype platform.⁴⁹

Chapter 4 of the *Standards* specifically details “Videoconferencing Participation by Attorneys and Witnesses.” The court notes that parties expecting routing video use may consider implementation of their own dedicated video system to interface with the court solutions and offers numerous, alternative mechanisms for connecting to court technology:

1. Use the H.323 standard for audio-visual communication sessions used in courtrooms.

⁴⁴ See https://en.wikipedia.org/wiki/Unified_communications (

⁴⁵ See <http://courts.mi.gov/Pages/default.aspx>

⁴⁶ *Michigan Trial Court Standards for Courtroom Technology*, updated February, 2015 at http://courts.mi.gov/Administration/SCAO/Resources/Documents/standards/ct_stds.pdf

⁴⁷ See https://en.wikipedia.org/wiki/Open_architecture

⁴⁸ *Michigan Trial Court Standards for Courtroom Technology. supra.* Chapter 2, pg 3.

⁴⁹ The researchers argue that inclusion of lower-fidelity video options (where appropriate) could expand remote video access for self-represented litigants of limited means.

2. Polycom™ offers applications for Windows PCs, iPads, iPhones, and Android devices.
3. Apple and Android apps are free and can be found by searching for “Polycom Realpresence” in iTunes or the Marketplace.
4. Polycom™ Realpresence desktop software for Windows PCs is available as a 30-day free trial at <http://www.polycom.com/content/www/en/forms/realpresence-desktop-trial.html>

The court offers recommendation consideration of Internet speed, video recording environment, etiquette and details the process for connectivity testing - a critical component to successful workflow and reduction of video technology administration.

For several years the Michigan Supreme Court, and local court systems, have documented millions of dollars in savings and safety increases provided by PolyCom video appearances.⁵⁰ A key factor in the Court’s selection of the Polycom RealPresence Platform was the state’s familiarity with it due to on-going use by The State Police and Corrections Department.⁵¹ “The systems are almost paying for themselves as soon as we put them in...”⁵²

Numerous reference sources supported on-going, significant cost savings, however, their focus was criminal justice transportation, tele-health and other state budget line items. Current and potential improvement in court efficiency, litigant access and other benefits of remote appearance expansion do not appear to be quantified or tracked and perhaps this lack of calculated ROI stifles a strong push that would improve justice access issues.

Conclusion:

States and Courts invested in UCS technology, such as PolyCom, should first explore remote appearance solutions provided by their UCS vendor(s) or solutions that are capable of interfacing with them. The state of Michigan leveraged pre-existing platform knowledge to decrease implementation time and dramatically reduce cost. Remote appearance capability may be a simple extension of existing infrastructure and technology, requiring users to simply install mobile and desktop applications or browser-based plugins. Analysis of the cost-benefit of extending UCS solutions in both dollars and time should be accessed at the outset.

For additional consideration, transactions that arguably do not require rigid technical constraints like high-fidelity video (traffic court, for example) may benefit from rapid, inexpensive implementation of remote appearance supplementation by niche or conferencing platforms previously detailed.⁵³ Alternatively, limited custom application development as seen in the Desoto, TX case study may be appropriate in some instances. Again, thorough analysis of in-place technology and practical constraints should be the first assessment step, though ultimate findings and may point to a non-UCS alternative.

⁵⁰ See PolyCom Customer Success Story, Michigan Courts. \$6 million savings to taxpayers: <http://www.polycom.com/global/en/customer-stories/michigan-courts.html>

⁵¹ Michigan knits together far-flung courts with video vérité. Feb 02, 2014 <https://gcn.com/Articles/2014/02/03/Michigan-video-courtroom.aspx>

⁵² *Id.* At pg. 2

⁵³ Interestingly, the gcn.com article specifically references the Michigan system’s ability to interface with Skype, Facebook, Google Talk and similar applications.

Conclusion

It is in the best interest of the courts to adopt mechanisms for remote appearances by telephonic and/or video technology that are generally accessible for all litigants (including self-represented litigants) and all attorneys (including free legal aid organizations). The current niche market vendors do not provide a service that is generally accessible for all litigants. However, notwithstanding the associated service cost, the niche market full service solutions are the most likely model for widespread adoption by the courts. However, such models are not in the best interests of the litigants.

The courthouse plays a unique role in our system of democracy because it is the forum where the citizens of our nation can present their grievances against individuals, corporate entities and the government. The courthouse also serves as the physical interface for the execution of laws where a party against whom an action is brought—either civil or criminal—typically cannot opt out of the action without potentially serious financial or personal consequences or loss of liberty.⁵⁴

Now, the modern courthouse is becoming not only the physical interface for justice, but a digital forum as well. The use of technology for remote court appearances, through telephony or video, is premised not only on the critical concept of access to justice, but rather – *increased* access to justice.

Although the ease and convenience of a turnkey solution is enticing from the perspective of the court we must accept that they are not the only party with a stake in this decision. There is little or no setup fee when using a niche vendor that provides any equipment that is required to use their platform at no cost to the Court. From the Court's perspective, it is an easy adoption: no out-of-pocket expense, minimal training, low implementation time and the benefits of remote audio/video appearance. However, a heavy barrier of entry is placed on self-represented litigants, especially those in the justice gap and below. Denying cellphone use⁵⁵ and line sharing⁵⁶ while shifting transaction costs to the litigant limits, in some cases eliminates, its use for citizens of limited means.

There is a considerable cost that is borne by the litigants for this easy and convenient solution. A single video appearance ranging from \$59 - \$120 per line (meaning that if both parties were represented there would be a minimum of four lines). This model becomes a revenue source for both the vendor and the court. In fact, the two leading vendors market their services as “no cost to courts.” This statement seems to be true. Lawyers and litigants pay for the service and that cost is passed from lawyer to litigant as an expense charge. The cost of these niche systems for the courts is paid almost completely by the litigants. The court misses another opportunity to provide greater access to justice for a demographic where taking a full day or a half a day off of work for court may be the difference between whether or not rent is paid.

The question of a cost-prohibitive fee for litigants to be able to appear remotely may at first seem like a “nothing gained, nothing lost” situation. Further reflection, however, reveals

⁵⁴ Morris, Navigating Justice: Self-Help Resources, Access to Justice, & Whose Job is it Anyway? Mississippi Law Journal, Spring 2013

⁵⁵ *Id.*

⁵⁶ CourtCall Transaction Rules. *supra*.

concerns that should be taken very seriously about the role of our courts and the incredible importance of equal access under the law. The first seventeen words of our Constitution—"We the People of the United States, in order to form a more perfect Union, establish Justice . . ."—did not come with the caveat "for those who can afford it."⁵⁷ We are at pivotal moment when we can use technology to broaden access to justice or use it as yet another example of a different system for those of means and for those without.

With the incredibly important role that our third branch of government plays as the equalizer of all citizens under the law it is important to keep the equity of the court constantly in mind. A "fast-lane" for one group that can afford it and the traditional means for the group that cannot afford it, should be avoided, if at all possible.

Other solutions are possible and are likely more sustainable and potentially far more scalable than a full service model for a single phone call that may cost over \$100. Instead, courts could have access to entire platforms able to provide free or low-cost services to large numbers of users for \$100 per month. As in the Desoto, Texas case example there is a small amount of effort for setting up the system and a larger administrative overhead, arguably, on the part of the judge and clerk. Nonetheless, the benefits for litigants is clear. The additional revenue made by the court, however, is a loss. The Desoto case example used Zoom, but note that numerous vendors in the conference platform space provide similar free or low-cost (\$125/month or less) solutions that could be managed in a similar fashion to work around time and/or the number of users per session.

As a brief technical assise, there is a powerful force priming the pump for a broad expansion of remote appearance services. The collaboration and communications industry is currently in the midst of mass disruption⁵⁸ from Communications-Platform-as-a-Service (CPaaS)⁵⁹ providers like Twilio, Inc.⁶⁰ In the last few months Cisco, Vonage, and ShoreTel purchased Twilio CPaaS competitors and Avaya spun-off Zang as its own CPaaS play (Twilio recently announced an IPO valuation of \$1 billion). In essence, the entrenched communication/collaboration behemoths (including the UCS vendors in this study) reliance on expensive sales to C-level executives is eroding from 'the-bottom-up' as CPaaS providers allow developers, small businesses and lower-

⁵⁷ *Id.*

⁵⁸ "The bigger picture is that ... today's buying process ... has moved away from purchasing monolithic "UC" or "Contact Center" applications and towards buying smaller pieces that can be mashed together quickly with other pieces from different vendors. This is an offshoot of the "consumerization of the enterprise".

Without a strong CPaaS play there is a risk that Avaya, Cisco and the other legacy vendors will be excluded from innovation that is happening in a "bottom-up" way." <https://fonolo.com/blog/2016/04/twilio-tropo-nexmo-plivo-zang-what-does-it-all-mean/> (last visited June 2016).

⁵⁹ "The past few years have seen the rise of the communications platform as a service (CPaaS) market that enables developers to access collaboration functions such as SMS, multimedia messaging service (MMS), speech recognition, authentication, telephony, video and other functions from the cloud." *Communications platform as a service is a digital enabler*. Network World Apr 28, 2016. <http://www.networkworld.com/article/3063093/application-development/communications-platform-as-a-service-is-a-digital-enabler.html>

⁶⁰ Twilio named CNBC's 39th most disruptive private company. June 7, 2016. "In the fourth annual Disruptor 50 list, CNBC features private companies in 15 industries...whose innovations are revolutionizing the business landscape and becoming billion-dollar businesses, and they rushed to fill them." <http://www.cnbc.com/2016/06/07/2016-cnbc-disruptor-50.html> (last visited June 2016).

level managers to consume pay-as-you-go communication (SMS, Voice, Video and other services traditionally provided by UCS vendors).

The cost of this technology has never been lower and its use has never been so broad. Courts looking to beta-test an MVP (minimally-viable-product) can enter the waters at very low cost and are likely to find solid remote appearance solutions, in addition to replacement solutions for weathered, expensive products currently on-premises.

To make these providers accessible to the legal sector, each court can evaluate how the sliding scale of hybridization incorporates the features and benefits of the multiple service models, and then select an option that works with that court's financial and resource availability.

While solutions of varying cost and benefit can be found across these vendors, a sliding scale of hybridization that incorporates features and benefits of multiple service models, with moderate unique technical development effort could provide an entry point for a model that better balances the realities of the court's budget restraints and the fiduciary duty of the court to its patrons. Further, the lower cost of administration will result in a more sustainable system and provide broader access to all regardless of socio-economic status.

The most efficient return on investment for providing remote appearances for litigants, as well as the best option for growth and scalability is a hybrid solution. The courts, however, must be willing to shoulder a varying degree of administrative tasks and handle a few more details on their end, and then the self-service model can work within this arena.

OpenLawCall - Overview

This is a hybrid model that uses the [Twilio](#) (pronounced TWILL-e-o) web service APIs to host, manage, and programmatically send and receive phone calls by mobile handset, landline or web browser. Twilio provides a robust feature set for building conference call applications and its SMS features are a useful option for conference reminders.¹

The OpenLawCall system is fully-functional; however, it is not production ready at this time. It has been developed as a minimum viable product (MVP). Features in-development includes the following: security enhancements, conference call recording, video conferencing, and improvement in the user interface / user experience (UI/UX).

The administration interface is operated in a standard web browser and is similar to other teleconferencing services (freeconferencecall.com for example), except that it is a white label service that is highly customizable for any court considering a hybrid model. Functionality was priority for the purposes of this report as opposed to the user interface: however, a moderate amount of front-end design and layout improvement is all that is required.

OpenLawCall - Features

- Low Cost Call Fees
 - \$1 per month for each Twilio phone number
 - A standard Twilio conference line requires one phone number (\$1 for the month) that can receive up to 40 simultaneous participants.
 - Running conferences in parallel (2 conferences of 40 participants at the same time) requires 2 Twilio phone numbers (\$2 for the month)
 - Voice call rate of .0075 cents per minute applies to each INBOUND call
 - Each party calling into the conference is treated as an INBOUND caller
 - 40 participants in a 10 minute call is *slightly* above \$3
 - $(40 \times .0075 \times 10) + \1 monthly phone number flat fee. Of course, this is negligible when averaged across all conference calls in a given month.
- Group Meeting Rooms (for multiple, simultaneous hearings)
- Conference Calls Available on Demand or Scheduled
- Choose to Record and Share Any Call
- Text Reminders and Conference Call Information Scheduling
- PIN protect Conference Rooms
- Administrative users (likely a judge or clerk) can moderate calls with features like: mute/unmute; remove caller from conference; place caller(s) in a separate sidebar conference call; dial-in new callers and have them joined to the on-going conference, etc.

[Visit OpenLawCall to Schedule a Conference Call](#)

See next page for cost comparisons with a current leading niche vendor

¹ As of May 2016, more than 1 million developers use the service. In June 2016, Twilio raised \$150 million in the largest technology sector initial public offering this year. In their first day of trading, shares closed up nearly 92 percent.

Comparative Cost

OpenLawCall is an example of a very low cost, but a currently functional solution, (MVP) that provides the basic needed functionality for remote court appearances and therefore, provided us insight when comparing cost and features of the vendors researched in this report. It also provides insight into the process of the "hybrid" solutions that leverage current technologies. Cloud services have made it possible to create a communications hub that in the past required substantial infrastructure and knowledge.

Call fees are **.0075 per minute** (we are currently negotiating an even smaller transaction fee for non-profits, legal aid, and the courts).

Example One: 30 Minute Hearing w/ 2 Represented Parties

	OpenLawCall™ Cost	CourtCall® Cost
Line/Call Cost (1)	\$0.23	\$86.00
Line/Call Cost (2)	\$0.23	\$86.00
Line/Call Cost (3)	\$0.23	\$86.00
Line/Call Cost (4)	\$0.23	\$86.00
Additional Fees	\$1.00 ²	\$0.00
TOTAL COST	\$1.92	\$344.00

Example Explanation:

Due to restrictions with CourtCall that demand each participant to have a line (e.g. attorney and client must have a separate line) the cost of a hearing with two represented parties involves a minimum of four lines at an average cost of \$86 per line. OpenLawCall or any hybrid solution a court chooses would not have such a regulation unless it was self-imposed. Nonetheless, the example above used four OpenLawCall lines for sake of comparison. Additionally, the \$1 monthly phone number flat fee charged by Twilio would actually be averaged across all conference calls in a given month.³ See below for a more likely costs comparison.

Example Two: 30 Minute Hearing w/ 2 Represented Parties

	OpenLawCall™ Cost	CourtCall® Cost
Line/Call Cost (1)	\$0.23	\$86.00
Line/Call Cost (2)	\$0.23	\$86.00
Line/Call Cost (3)	\$0.00 ⁴	\$86.00
Line/Call Cost (4)	\$0.00 ⁵	\$86.00
Additional Fees	\$0.01 ⁶	\$0.00
TOTAL COST	\$0.47	\$344.00

² This represents the \$1 monthly phone number flat fee. It is represented in total for the above example but would actually be averaged across all conference calls in a given month.

³ *Id.*

⁴ This example uses only two lines since line sharing between attorney/client is expected and understood.

⁵ *Id.*

⁶ This represents the \$1 monthly phone number flat fee averaged across 100 hearings/calls in a given month.

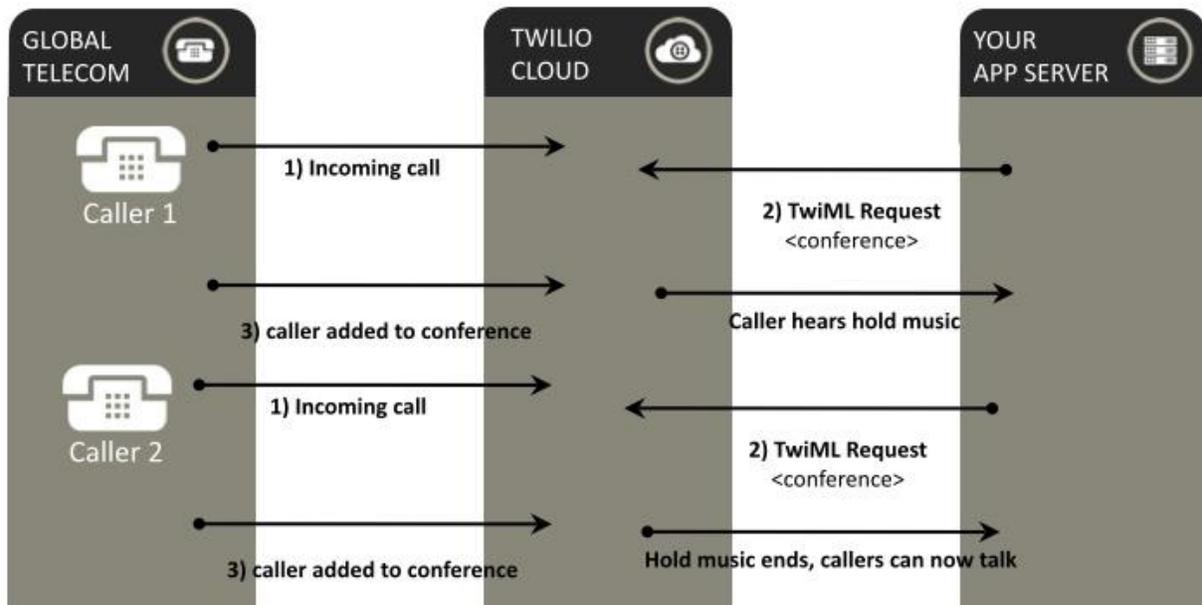
OpenLawCall - Technology

Twilio is a Cloud-Platform-as-a-Service (CPaaS) provider that exposes advanced telephony, SMS and video services to developers via RESTful web services (**R**epresentational **S**tate **T**ransfer). This allows developers to leverage infrastructure and services that were traditionally available to only the large telecoms or companies financially capable of building their own data centers and other infrastructure.

As noted in the supplemental report, Twilio and its competitors are creating a massive disruption in the Unified Communication Services (UCS) market. OpenLawCall is being developed to demonstrate the availability, low-cost and ease of application development provided by CP-a-a-S companies.

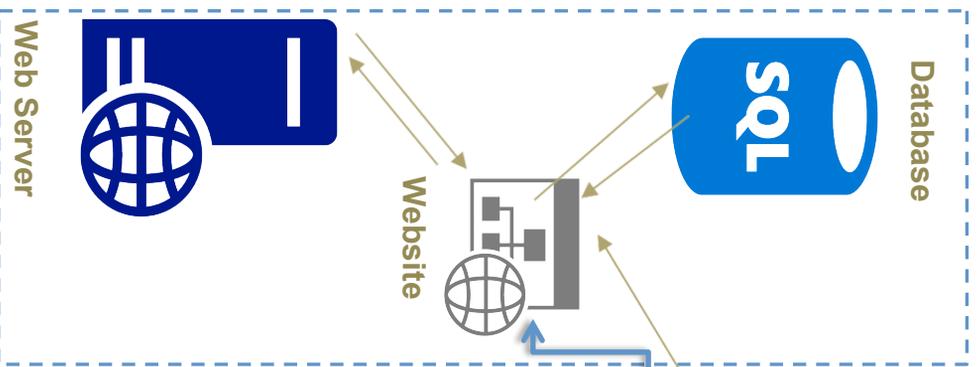
Currently, the Voice/SMS IVR system in place at Arkansas Children’s Hospital (the nation’s 6th largest pediatric facility) is processing a few thousand voice and SMS transactions per day. This system was built by one of the writers of this report, using Twilio, and it has been in operation for over 2 years with minimal downtime, massive cost and support savings compared to the prior system and has resulted in: a dramatic decrease in missed appointment slots; increased resource utilization and a significant capture of ancillary revenue. Further, a Twilio integration by this author was also featured at the 2015 Equal Justice Conference as an example of a successful voice/SMS project for legal aid (Legal Services of Northern Virginia experienced a “no show” decrease of 20% across legal aid appointments and court cases).

[Visit OpenLawCall to Schedule a Conference Call](#)



Twilio API C-Pa-a-S

Open Law Call

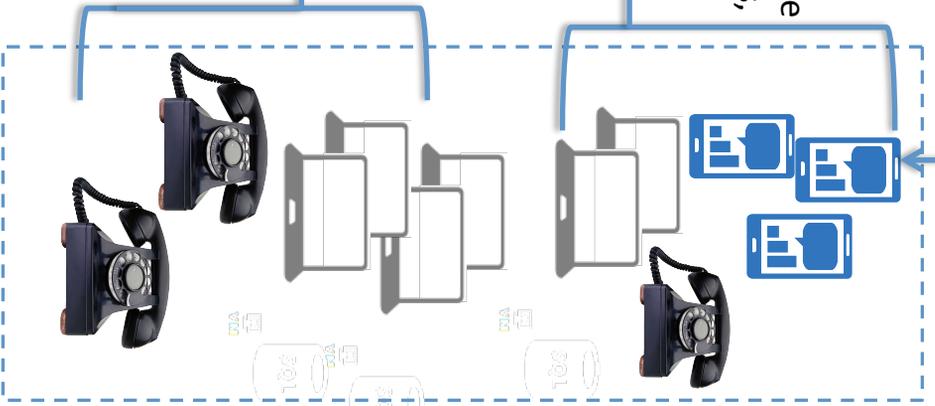


- Website for scheduling, administration, and interaction with Twilio API.
- Requires web front-end, database and a web host (on premise server); cloud-based or web hosting company

Call in 30 minutes at
333.444.5555 Enter
room 127

Conference remote parties on mobiles, landline and web browsers

Conference with court and remote parties on landlines and web browsers



Appendix (A): Glossary of Terms

Application Programming Interface: Application program interface (API) is a set of routines, protocols, and tools for building software applications. An API specifies how software components should interact and APIs are used when programming graphical user interface (GUI) components. A good API makes it easier to develop a program by providing all the building blocks. A programmer then puts the blocks together.¹

Codec: A codec is a device or computer program for encoding or decoding a digital data stream or signal. A codec encodes a data stream or signal for transmission, storage or encryption, or decodes it for playback or editing. Codecs are used in videoconferencing, streaming media, and video editing applications.

Communication Platform as a Service (CPaaS): A communications PaaS is a rich communications application development environment delivered in the form of a partitioned cloud-based platform that is remotely hosted, secured and managed by a specialized service provider. A CPaaS is a cloud-based service that may help reduce the cost and complexity of developing real-time communications applications. The platform provides cloud-based software development tools, standards-based application programming interfaces (APIs) and often sample code to streamline application development. A CPaaS may be leverage to accelerate time-to-market for communications-rich applications and services.

A typical communications PaaS provides: a development framework that supports all forms of real-time communications including voice, video, text chat, screen-sharing; a comprehensive software development kit (SDK) and Java or .NET run-time libraries for building applications on a variety of mobile and desktop platforms; standards-based REST APIs for embedding real-time communications into web-based applications; sample code and pre-built applications to jump start development; carrier-class availability and 7X24 operations and customer service; and extensive product documentation and support capabilities.²

Digital Telephony: the use of digital electronics in the operation and provisioning of telephony systems and services. Since the 1960s a digital core network has replaced the traditional analog transmission and signaling systems, and much of the access network has also been digitized.³

Enterprise Class: Although not an official certification this marketing term suggests that an application or platform is reliable and powerful enough to serve as a one-stop solution for companies of any size.⁴

Internet Protocol (IP) Telephony: IP (Internet Protocol) Telephony is a specialization of digital telephony that uses digital networking of the internet to create, transmit, and receive telecommunications sessions over computer networks. IP telephony is more commonly referred to as voice over Internet Protocol (VoIP).⁵

¹ Source: <http://www.webopedia.com/TERM/A/API.html>

² Source: <https://www.genband.com/company/glossary/paas-platform-service>

³ Source: https://en.wikipedia.org/wiki/Telephony#Digital_telephony

⁴ Source: <https://www.techopedia.com/definition/27853/enterprise-class>

⁵ Source: https://en.wikipedia.org/wiki/Telephony#Digital_telephony

Software as a Service (SaaS)

Software as a service is a software licensing and delivery model in which software is licensed on a subscription basis and centrally hosted. It is sometimes referred to as "on-demand software". The term "software as a service" (SaaS) is considered to be part of the nomenclature of cloud computing, along with infrastructure as a service (IaaS), platform as a service (PaaS), desktop as a service (DaaS), AND communication platform as a Service (CPaaS).⁶

Software Development Kit (SDK):

A software development kit (SDK) is a set of tools used for developing applications provided by a specific hardware provider, software package, software framework, hardware platform, computer system, video game console, operating system, or similar development platform. SDKs are usually comprised of application programming interfaces (APIs), sample code, documentation, etc.⁷

Telephony: the technology associated with the electronic transmission of voice, fax, or other information between distant parties using systems historically associated with the telephone, a handheld device containing both a speaker or transmitter and a receiver.⁸

Unified Communications System (UCS): A unified communications system (UCS) is a set of communication services and solutions bundled, sold and delivered together as one single cohesive solution. UCS enables the use of voice, data, Internet, video and other communication services through an integrated product or system, which is developed by a single vendor or in collaboration with supported partners. A unified communications system may also be called an integrated communications system (ICS).⁹

Voice over Internet Protocol (VoIP): See Internet Protocol (IP) Telephony.¹⁰

⁶ Source: https://en.wikipedia.org/wiki/Software_as_a_service

⁷ Source: <https://www.techopedia.com/definition/3878/software-development-kit-sdk>

⁸ Source: <https://en.wikipedia.org/wiki/Telephony>

⁹ Source: <https://www.techopedia.com/definition/26794/unified-communications-system-ucs>

¹⁰ A 2013 Pew Research Center Internet Project Report found that nearly 30% of American internet users now place phone calls online using platforms such as Skype or Vonage. This is an increase from 1/5 of Americans (20%) in 2010. See <http://www.pewresearch.org/fact-tank/2013/08/01/internet-phone-calling-is-on-the-rise/>

Vendor Services Rubric (Telephonic & Video Conferencing Technology)

VENDOR	DELIVERY MODEL	API	LOCAL REQUIREMENTS	INTERNET	PER USE COST	DISCOUNT
Adobe Connect	UCS	Yes	camera/audio	Yes		No
AppearByPhone	Niche	No	phone	No		No
AppearByVideo	Niche	No	phone/camera/audio	Yes		No
CourtCall	Niche	No	phone	No	\$89 +	No
CourtRoom Connect	Niche	No	phone/camera/audio	No		No
Gore Brothers	Niche	No	phone/camera/audio	Yes	N/A	No
Join.Me	Conference Platform	Yes	phone/camera/audio	Yes	\$0	Free
LiveDeposition	Niche			Yes		No
PolyCom	UCS		camera/audio	Yes		No
Skype (Microsoft)	Conference Platform		camera/audio	Yes	\$0	Free
TrueConf	UCS		camera/audio	Yes	\$0	Free
VCourt by StreamWrite	Niche		phone/camera/audio	Yes		No
Vsee	Conference Platform	Yes	camera/audio	Yes		No
WebEx (by Cisco)	Conference Platform	Yes	camera/audio	Yes		No
Zoom	Conference Platform	Yes	camera/audio	Yes	\$0	Free

Vincent Morris, J.D. | Partner, Open Access Law Firm, PLLC.

Vince Morris is a founding partner member of the Open Access Law Firm, PLLC. Morris co-founded this one of a kind law firm in an effort to provide a market-based solution to the problem of access to justice for all. His work includes developing innovative methods of distributing legal resources and legal advice via multimedia technologies. His passion is combining law and technology in creative ways in order to extend access to justice to all Arkansans, as well as for his clients throughout the nation.

Before entering private practice Vince Morris was Director of the Arkansas Legal Services Partnership and Director of the Arkansas Pro Bono Partnership where each day his mission was to improve the lives of low-income Arkansans by championing equal access to justice for all by expanding the reach of free legal aid to poor Arkansans. Morris worked for legal aid for twelve years beginning as an 8 week summer intern and became Director of the Arkansas Legal Services Partnership in 2011.

Vince Morris is recognized by the American Bar Association as a Legal Rebel. One of the few attorneys across the nation that are “the innovators – the folks who’ve found a different path, some new way to blend the needs of their clients or their practice, or even their own needs of personal expression, into the way they practice the law.” See Vince Morris – ABA Legal Rebel.

Morris is also an Adjunct Professor at the UALR Bowen School of Law in Little Rock, Arkansas where he teaches newly designed seminars to upper level law students. His current seminars include: (1) Justice Technology: New Models, Markets & Access to Justice; and (2) Entrepreneurship, Law and Innovation.

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Stewart Whaley is an attorney, software developer and Certified Information Privacy Professional with eighteen years experience developing and architecting software to solve real-world problems.

Stewart is an outspoken advocate for technology in the healthcare and legal sectors. His work includes delivery of technology-based Continuing Legal Education, organizing and managing the first legal technology hack-a-thon in Arkansas, lecturing at the William H. Bowen School of Law, serving as a member of the Medical-Legal Partnership team at Arkansas Children’s Hospital and delivering technical conference sessions on medical and legal software.

He was an invited speaker at Signal Conference 2015 and 2016, the premier Communications-Platform-as-a-Service developer conference.

Stewart is an honors graduate of the William H. Bowen School of Law, honors graduate of the University of Arkansas at Little Rock and completed a certificate in Asian Studies at Kansai Gaidai University, Osaka, Japan.

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