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Computer Uses in Legal Practice
Yesterday, Today, and Tomorrow

INTRODUCTION

In 1970, some forty-five years ago, Steven E. Furth wrote *Computer Uses in the Law Office* in the *Oregon Law Review*.[1] Furth was a participating member in the Standing Committee on Law and Technology of the American Bar Association and manager of information systems marketing at IBM Corporation in White Plains, New York.[2] At the request of *Oregon Law Review*, I have returned to

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[1] Steven E. Furth, *Computer Uses in the Law Office*, 49 OR. L. REV. 217 (1970).

[2] *Id.* at 217 n.*.

and reviewed Furth's original article to look at how law office computer use has since developed and evolved.

After accurately noting the legal profession's general reluctance to engage in technologic change (some things have stayed the same), Furth predicted

> that economic pressures and the need to increase the productivity of law practice will motivate lawyers in increasing numbers to investigate the availability, potential benefits, and costs of computer-based data processing services. It is the intention here to review generally the possible applications of such equipment in the practice of law.[3]

Furth both accurately perceived the legal professional's general reluctance to embrace technologic change and understood that, over time, efficiencies and economic forces would bring about technologic change despite this resistance.[4] Perhaps reflective of the author's position at IBM, Furth seemingly focused on issues of data processing equipment, notably not discussing operating system development, application development, or connectivity.[5] As I think back to my own entry into the legal profession in 1982, Furth's focus on equipment is fully understandable. I remember well that my first dedicated word processing equipment was the initial technologic game changer for me and many other young lawyers. In fact, my sense is that the word processor was a necessary precondition to the rapid growth of mediation then beginning.

In his original article, Furth discussed four areas of potential computer benefits for the legal profession: (1) administrative (such as billing and payroll), (2) services for the lawyer (such as finding files and documents), (3) computer-assisted legal services (such as prediction of outcome), and (4) legal research.[6] Furth should be complimented for his vision because there have been huge advances in all four realms. Administrative functions such as billing, payroll, and case management are now easily performed with such programs as Abacus or Clio—not only on the computer but also online from any location on any device.[7] LexisNexis and Thomson Reuters offer sophisticated legal research capacities for both large firms and solo

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[3] *Id.* at 217.

[4] *Id.*

[5] *Id.*

[6] *Id.*

[7] ABACUS DATA SYSTEMS, http://www.abacuslaw.com/ (last visited Feb. 26, 2015); CLIO, www.goclio.com (last visited Feb. 26, 2015).

practitioners alike.[8] Furthermore, software such as Picture It Settled offers sophisticated predictions of legal outcomes delivered to the smartphone in your purse or pocket.[9]

Furth's thinking was certainly limited by the computer development of his time. He did not, for example, envision flexible operating systems, application software, the Internet, broadband, wireless, smartphones, or "the cloud." Building upon Furth's thinking, there seem to be four related game-changing disruptive technologies understandably not envisioned in 1970: (1) the word processor and PC; (2) the Internet: e-mail and the web; (3) personal mobile devices; and (4) the cloud.

I

THE FIRST DISRUPTIVE TECHNOLOGY: THE WORD PROCESSOR AND THE PC

During the 1970s, typewriters such as IBM Selectrics progressed, becoming smarter and, most importantly, better able to erase our mistakes.[10] In time, expanded memory capacity and file storage abilities led to dedicated word processers and eventually ever more sophisticated and robust word processing software built for ever more powerful personal computers.[11]

A. Dedicated Word Processors

I remember purchasing my first dedicated word processing equipment (an integrated keyboard, processor, green monochrome monitor, and built-in software) made by Pilara in 1982. Suddenly, as a lawyer and mediator, I was able to save, edit, and retrieve entire documents. This was a game changer for me as a solo practice professional. Previously, whenever clients would want to substantially change their documents, I would cringe knowing the time it would take for me to retype multiple pages. With my new dedicated word processing capacity, I could infinitely modify and then print refined top-flight client documents. What a wonderful new world, even if I was still strolling down to the mailbox to send my

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[8] LEXISNEXIS, http://www.lexisnexis.com/en-us/home.page (last visited Feb. 26, 2015); THOMSON REUTERS LEGAL SOLUTIONS, http://legalsolutions.thomsonreuters.com/law -products/westlaw-legal-research (last visited Feb. 26, 2015).

[9] PICTURE IT SETTLED, http://www.pictureitsettled.com/ (last visited Feb. 26, 2015).

[10] *IBM's 100 Icons of Progress: The Selectric Typewriter*, IBM, http://www-03.ibm .com/ibm/history/ibm100/us/en/icons/selectric/ (last visited Feb. 26, 2015).

[11] *See id.*

refined word-processed documents every day by the five p.m. mail pickup so that clients and other legal counsel would receive them within three to four days. Three to four days! How crazy that now seems!

B. Enter the PC and Mac

While my dedicated word processor was great, in time it became clear that computers were not only ideal for word processing but for all kinds of administrative functions. As Furth recognized in 1970, even then computers had the prospect of assisting legal professionals administratively, most particularly with regard to billing, calendaring, filing, and payroll.[12] My interest in taking advantage of Timeslips (a new billing program) and Symphony (a spreadsheet program) led me to move on from my dedicated word processing equipment—with everything built-in, bundled, and not expandable or upgradeable—to a new IBM PC. Word processing was no longer the exclusive purpose of my equipment and was now mysteriously not done by the equipment itself. Instead, something that the user was to install called software—with new names like WordPerfect, Timeslips, and Sidekick—did the processing. I could load capacities, or software, into my machine and expand and update these capacities over time. I was thrilled to find a bunch of other uses for my computer beyond word processing and billing, including keeping my calendar, editing pictures, desktop publishing, and, of course, playing games.

As years passed, our personal computers became ever better, faster, more capable, more mobile, and remarkably more affordable.[13] Apple's Mac operating system introduced a graphical interface and new control device, the mouse.[14] Monitors moved from monochrome green to amber to full 256 RGB color.[15] With colors and fonts, users could now express emotion and design. How cool! Soon users were able to add pictures to our documents and newsletters. Software kept getting better but also more complex and bulky. I remember eagerly

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[12] *See* Furth, *supra* note 1, at 217–18.

[13] *See* Michio Kaku, *The Future of Computing Power (Fast, Cheap, and Invisible)*, BIG THINK, http://bigthink.com/dr-kakus-universe/the-future-of-computing-power-fast-cheap -and-invisible (last visited Mar. 26, 2015).

[14] Alex Soojung-Kim Pang, *Mighty Mouse*, STANFORD MAG. (Mar./Apr. 2002), http://alumni.stanford.edu/get/page/magazine/article/?article_id=37694 ("The mouse would help revolutionize computers, making them more accessible to ordinary people.").

[15] Michael Simon, *From Green to Retina: The Complete History of Apple Displays*, MAC LIFE (Jan. 4, 2011, 9:47 AM), http://www.maclife.com/article/features/green_retina _complete_history_apple_displays.

anticipating monumental Windows upgrades with the masses and stuffing seemingly endless WordPerfect discs into my PC to accomplish the many updates and improvements.

And so, beginning in the early 1980s, typewriters evolved into word processors, word processors evolved into personal computers, and an expanding marketplace of software offered all kinds of computerized legal practice management capacities. As law firms caught on, individual personal computers were driven not by their own isolated processors, but increasingly by a firm local area network (LAN).[16] A law firm's LAN provided massive benefits including the centralization of data, coordinated software updates, systematic file back-ups, virus protection, and a new capacity—the ability to easily e-mail and instant message within the LAN.[17] This instant ability to communicate with other network members—and to send them not only messages, but also entire attached files—presaged the next game-changing development: the advent of the Internet.

II
THE SECOND DISRUPTIVE TECHNOLOGY: E-MAIL AND THE INTERNET

As visionary as Furth was, he did not anticipate the Internet, nearly the entire world connected on the same network. We are now all essentially on the same equipment. How did this all happen? The answer, I suggest, is not all at once, but rather through a series of market-driven, incremental technologic gains. There is no question that the Internet has changed the world, the legal profession, and each of our daily lives.

My exposure to the Internet began in March of 1988, approximately eight years before the Internet went ".com." I had recently been hired as the executive director of the Academy of Family Mediators (AFM) and was having a difficult time effectively communicating with my dozen board members. My daily experience was one of increasing "pink-slip" phone messages and escalating

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[16] *See Local Area Network and Ethernet*, AXIS COMMC'NS, http://www.axis.com /products/video/about_networkvideo/ip_networks.htm (last visited Feb. 26, 2015) ("A local area network (LAN) is a group of computers that are connected together in a localized area to communicate with one another and share resources such as printers.").

[17] Joe, *Local Area Network (LAN) Basic Components*, NETWORKBITS (Oct. 26, 2007), http://networkbits.net/lan-components/local-area-network-lan-basic-components/; *Local Area Network Definition*, LINUX INFO. PROJECT (Sept. 13, 2005), http://www.linfo .org/lan.html; *see* Margaret Rouse, *ISSU (In-Service Software Upgrade)*, SEARCHNETWORKING, http://searchnetworking.techtarget.com/definition/ISSU-In-Service -Software-Upgrade (last visited Mar. 26, 2015).

Another intriguing aspect of the new ConflictNet proprietary network was that we were now able to take part in communications with other dispute resolution professionals and organizations, whether these individuals were part of AFM or not. Early on, I noted this ability to distribute and discuss information field-wide and, ultimately, this led John and me to form Resourceful Internet Solutions, Inc. in 1995 and our flagship websites, Mediate.com and Arbitrate.com.[20]

Between the late 1980s and early 1990s, the amount of data a computer could store (with larger and larger hard drives) and the speed at which data could move through phone lines steadily progressed. Other developments led to a richer online experience. I very distinctly remember seeing my first full-color online text communications, seeing my first transmitted picture, hearing my first online audio, and seeing and hearing my first online video. In each case, I responded with, "this changes everything." And, in retrospect, I was right each and every time.

Even during the early, clunky times—with screechy modems, attachments that did not always work, and a painfully slow Internet—it was clear that technology would evolve and improve. It was plain that, in time, anyone would be able to communicate with any other individual on the earth and do so by text, image, audio, or video, either in real time (synchronously) or asynchronously. In this incremental way, our online communicational palate formed and evolved. We no longer walk down to the mailbox at the end of each day or receive communications three or four days later. Our legal filings are now generally done online, and our professional communications are now often instantaneous.[21] With the Internet, we are all now essentially on the same computer. And, remarkably, that equipment now fits in our pocket or purse.

III

THE THIRD DISRUPTIVE TECHNOLOGY: PERSONAL MOBILE DEVICES

There was a time, a time not too long ago, when telephones were just telephones and computers were just computers. Now, computers and telephones have not only merged, but smartphones are available in just about every shape, size, and color and are continuing to

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[20] ARBITRATE.COM, www.arbitrate.com (last visited Feb. 26, 2015); MEDIATE.COM, www.mediate.com (last visited Feb. 26, 2015).

[21] *See, e.g.*, *OJD eFiling*, OR. COURTS, http://courts.oregon.gov/OJD/OnlineServices /OJDeFiling/Pages/index.aspx (last visited Feb. 26, 2015).

miniaturize into such devices as eyeglasses and watches.[22] How far we have come from typewriters, carbon paper, and the U.S. mail! And it is not just our computers and telephones that have merged and gone mobile. These same smartphone devices now commonly include all of our contacts, calendars, instant messaging, video cameras, still cameras, video and photo collections, music collections, GPS guidance, real-time tracking of our investments, real-time weather, alarm clocks, calculators, and timers while also acting as our bookstore, music store, access to social media, and more. The game changer here, on the heels of the first disruptive technologies of word processing and the personal computer and the second disruptive technology of the Internet, is that everything is personal and mobile.

When I first started practicing, people communicated to a place rather than to a person. We would send mail to a physical address and be sure to carefully address our correspondence to ensure that the right person would, hopefully, open the envelope—although we never really knew for sure. When we would call, it was generally to a place, and we would be professionally wary of leaving too much information as part of a recorded message on the family message machine. Similar to other developments, voicemail has now moved from being a machine or piece of equipment (that Furth could identify with), to a mysterious ability that just happens. Whereas our voice message recorder used to be an important equipment purchase for the family home, voicemail has now been personalized, with a separate messaging system for each family member, and it has been removed from the physical location of the home or business to wherever we are. We are now the equipment's location.

Increases in cell phone bandwidth, the ubiquity of wireless networks, and improvements in overall system capacity and speed underlie our move to personalized mobile communications. One result is that professional communications now take place across a variety of modalities. In the old world, we might have exchanged correspondence and enclosed a proposed draft for legal counsel to review and reply within a week or two. In the new world, we might send a text message referencing and utilizing multiple modalities of communication. Our text might read: "Just sent you a new draft by e-mail with attachment, track changes on. Please edit, send back, and

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[22] *See, e.g.*, Matt Swider, *Google Glass Review*, TECHRADAR (Feb. 20, 2015), http://www.techradar.com/us/reviews/gadgets/google-glass-1152283/review; *Apple Watch*, APPLE.COM, https://www.apple.com/watch (last visited Feb. 26, 2015).

call to discuss. In time, let's send PDF to clients for consideration during Skype meeting."

Legal work has thus become a strategic choreography of client and collegial communications across modalities. It would be a mistake to think that legal professionals are the primary drivers of these changes. Rather, lawyers are more commonly playing catch-up to evolving marketplace and consumer expectations. Consumers now expect full information about legal services online. They expect to be able to schedule an appointment online. They increasingly expect that valuable legal resources will be available for their own use online (LegalZoom)[23] and, increasingly, they are looking for immediate, or near immediate, legal services (Rocket Lawyer and UpCounsel).[24] And they expect this all via their smartphones.

Marketplace pressures that washed through many industries, creating dramatic new efficiencies,[25] are now gaining strength and washing through the legal industry. Historic legal industry inefficiencies and entitlements are now rapidly giving way to new expectations of "can't we just do that (more affordably and efficiently) online?" As online communications become ever better and more affordable, and as we become increasingly savvy as professionals choreographing our communications, physical meetings themselves will become increasingly rare. The ease and affordability of working online is improving every day. It does not take a rocket scientist to advise the legal industry to embrace technologic change or be left behind.

Perhaps the leading proponent pushing the legal industry to stand up and fully take note of technical innovations and marketplace expectations is Richard Susskind, author of *The End of Lawyers? Rethinking the Nature of Legal Services*[26] and *Tomorrow's Lawyers: An Introduction to Your Future*.[27] In both works, Susskind asks lawyers to examine what elements of their current workload could be undertaken differently—more quickly, cheaply, efficiently, or to a higher quality—using alternative methods of working.

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[23] *See* LEGALZOOM, http://www.legalzoom.com (last visited Mar. 22, 2015).

[24] *See* ROCKET LAWYER, http://www.rocketlawyer.com (last visited Mar. 22, 2015); UPCOUNSEL, http://www.upcounsel.com (last visited Mar. 22, 2015).

[25] Travel and financial management are two such industries in which marketplace pressure has created dramatic new efficiencies.

[26] RICHARD SUSSKIND, THE END OF LAWYERS? RETHINKING THE NATURE OF LEGAL SERVICES (2010).

[27] RICHARD SUSSKIND, TOMORROW'S LAWYERS: AN INTRODUCTION TO YOUR FUTURE (2013).

In the more recent book, *Tomorrow's Lawyers*, Susskind analyzes four main pressures lawyers now face: to charge less, to work differently, to embrace technology, and to deregulate.[28] He argues that the market is increasingly unlikely to tolerate expensive lawyers for tasks—such as guiding, advising, drafting, researching, problem-solving, and more—that can be equally or better discharged directly or indirectly by smart systems and processes.[29] It follows, Susskind claims, that the jobs of many traditional lawyers will be substantially eroded and often eliminated.[30] Further, Susskind sees an eye-opening legal world of virtual courts, Internet-based global legal businesses, online document production, commoditized services, legal process outsourcing, and web-based simulated practice.[31] Legal markets will be, in Susskind's mind, "liberalized."[32]

IV

THE FOURTH DISRUPTIVE TECHNOLOGY: THE CLOUD

The fourth disruptive technology is the cloud. For anyone who wants to know my prediction for the future of technology in the legal industry, it is a one-word answer: cloudy.

What do we mean by the cloud? For starters, it is not a real cloud; it is not nearly so much "up there" as it is "out there." The cloud is really a network of data centers that take responsibility for doing two things: (1) running the cloud applications, or environments, which are the interfaces through which you communicate; and (2) holding your personal data (and accepting responsibility for reliable access to and backing up your data).[33]

The cloud became desirable for me largely due to the ease and dramatic time and cost savings afforded by simply downloading new software, music, and videos. Software is now so thoroughly sold and downloaded online that few stores carry software for purchase, and many computers no longer have optical (CD and DVD) drives for

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28 *Id.* at 3, 29.

29 *Id.* at 109.

30 *Id.*

31 *Id.* at 23, 55–56, 99, 125, 129, 145–46.

32 *Id.* at 6.

33 Bill Claybrook, *Cloud v. In-House: Where to Run That App?*, COMPUTERWORLD (Mar. 1, 2010, 6:00 AM), http://www.computerworld.com/article/2520140/networking /cloud-vs—in-house—where-to-run-that-app-.html; Eric Griffith, *What Is Cloud Computing*, PCMAG.com (Mar. 13, 2013), http://www.pcmag.com/article2/0,2817,23721 63,00.asp.

loading software, music, or movies.[34] In addition to being able to order and download, one of the primary advantages of cloud-based software is that automated bug fixes and updates are automatically provided to all users.[35] In the old days, bug fixes and improvements required purchasing an update and then stuffing all of those disks into your computer. Now, updates just happen in the background of your computing experience.

There is an understandable degree of trepidation about relying on cloud-based providers to store personal and professional data. These concerns are elevated when one reads of large enterprise data breaches and the NSA's access to our information.[36] Plainly, there is much work to be done in optimally resolving issues of reliability, security, and privacy,[37] but it is worth perhaps also noting that the old ways were far from perfect in these regards. How good are your back-up systems? Have you ever spilled coffee on your laptop? For example, for approximately fifteen years, our business ran its own server shop. I lost sleep fearing physical break-ins, an electrical outage, a flood, or any number of other calamities that might take us offline. About five years ago, we moved our entire operations to AWS Cloud Services, and I no longer lose sleep wondering if we will go down. I know that with advances in technology, our entire business is backed up hourly, daily, weekly, and monthly; should there be a calamity, our entire operation would be shifted to another redundant system.

From a development perspective, working in the cloud is, if you will, a dream. As our cloud-based company comes up with bug fixes, updates, and new services, we are able to instantly and uniformly populate our entire system with all of the new and best programming. This is enormously liberating because it allows online capacities to steadily evolve and improve. There no longer is a need to order updates. Like back-ups, they now just happen.

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[34] *See, e.g.*, *MacBook Air*, APPLE.COM, https://www.apple.com/macbook-air/ (last visited Mar. 15, 2015).

[35] Isabel Eva Bohrer, *What Is Cloud Computing and How Does It Work*, MONEY CRASHERS, http://www.moneycrashers.com/cloud-computing-basics/ (last visited Feb. 26, 2015).

[36] Jim Melamed, *The NSA, Mediation and Digital Accountability*, MEDIATE.COM (June 2013), http://www.mediate.com/articles/DigitalAccountability.cfm.

[37] *See generally* Bohrer, *supra* note 35.

CONCLUSION

The world has surely changed since Steven Furth wrote *Computer Uses in the Law Office*. With his background at IBM*,* Furth was understandably focused on the development of new equipment technologies of the day. Furth does not seem to have appreciated the coming revolutions in operating systems development, applications development, and connectivity. Seemingly, software in 1970 was viewed as fully integrated with hardware to create smart equipment.

Certainly, Furth does not seem to have anticipated the Internet or how society would be so effectively tied together by e-mail and the web. Nor, understandably, does it seem that Furth anticipated the move to wireless networks, cellular broadband, or the ridiculous degree of device choice and mobility. Because we want to access all of our online resources from anywhere at any time on any device, it is clear that both our software and data will necessarily be housed in the cloud to allow access across devices and locations.

With the technologic advances over recent decades and their remarkable acceleration, it is clear that the legal profession needs to play a bit of catch-up by asking ourselves how can we best utilize all available communication capacities to elevate and expand the delivery of valuable legal information, advice, and services. Dream big! The future is not what it once seemed.