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Is a Flying Car in Our Future?

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Predicting the future is always a risky undertaking.   The flying car is the perfect example.   It seems plausible and practical. George Jetson never seemed particularly smart and he always drove one easily.   However, if you've ever done any work in the information technology field, you learn pretty quickly that what seems easy and logical to the client with an idea can often be much more difficult to execute in reality. The flying car is the perfect case in point. For all sorts of reasons, such as lack of air traffic control mechanisms, danger to urban environments or lack of standards, we might not see the flying car in our lifetime. But oftentimes, fantasy ideas have a kernel of truth within them.   In fact, the February issue of *Wired* magazine discusses the potential for Google's new cars of the future to "drive themselves."   If it's possible that our next car might drive itself, what might the future of legal technology, social networking and general technology hold for us?

For further reading: Tom Vanderbilt, "Let the Robot Drive: The Autonomous Car of the Future is Here"

http://www.wired.com/magazine/2012/01/ff_autonomouscars/all/1

In today's tough economic times, lawyers who can maximize their work productivity and efficiency will have a significant advantage over their competitors. It is, therefore, essential that attorneys harness technology and remain up-to-date on the latest computer developments .

In this paper, I will begin by discussing the future of legal research. I will then discuss technologies that are currently available for law offices. I will highlight current technology trends and predictions. Next, I will discuss the latest innovations in courtroom technology and what you might expect to see in the courthouse of the future. Finally, I will conclude with a list of general technology predictions that will hopefully

provide food for thought and excite you about the coming prospects of technology.

I.   The Future of Legal Research

A.   More like Google – Natural language searching has been evolving for years on Westlaw and LexisNexis.   For years now, legal researchers have asked, why can't legal research be more like Google?   With the introduction of Westlaw Next and LexisNexis Advanced, the two major proprietary databases have taken steps to simplify the search process. Both services offer a simple search box and allow users to refine or filter their search after running it by choose the type of materials such as case law, statutes, treatises, etc. to focus upon.

The infamous single search box is available for free searching of legal materials available on the web via Google Scholar.   It includes legal decisions as well as legal periodicals. As more and more law reviews become freely available via the web, the value of Google Scholar increases.

B.   More like Siri – Instead of asking why legal research can't be more like Google, in the future, we'll be asking why it can't be more like Siri? The astonishing ability of Apple's technology to interpret language has created even higher expectations for improvement in search technology.   Some have even referred to Siri as a Google Killer or the Future of Search. Siri's search experience is similar to artificial intelligence rather than literally searching for words entered into a search box. Note Siri uses Google's search technology as its back end but its user interface is a new disruptive technology that is likely to change the face of web searching.

C.   **Knowledge Management** – Effective knowledge management has long been the holy grail of law firms. Law firms seek the ability to deal with their mountains of data and paperwork.   Storing and organizing data centrally for all attorneys in the firm to access can increase productivity significantly by reducing the need for attorneys to waste time searching for answers to common questions or re-inventing the wheel on a new case.   Law firms wishing to gain a competitive edge will solve the dilemma of how to archive their legal research materials and leverage their previously gained knowledge to their advantage.

D. **More E-books** – As you know, sales of e-books are on the rise. The number of legal treatises that are now available allows law firms to be completely print free if they so desire. There is still some turf battling over the best platform for e-books. Kindle, iPad, Nook?   These are but a few of the choices. Most titles are available on several different platforms so you can choose your reader based upon your personal preferences.

II.   Law Office Technology

A.   **Cloud Computing** – Any discussion of future trends in legal technology or technology in general inevitably must include cloud computing. Cloud computing is generally defined as software that is hosted by a third party for your office and delivered via the web. In other words, consumers of cloud computing "rent" software from the vendor of choice and don't install any programs locally. Gartner Inc., a well-respected technology research firm, predicts that by 2012, 80 percent of Fortune 1000 enterprises will be paying for some type of cloud computing services. Owning software will soon

become a thing of the past.

The launch of Microsoft Office 365 last June has been a major impetus for changing the average consumer's use of cloud software. Office 365 is a web version of Microsoft Office that also integrates email, document sharing, collaboration, instant messengering, videoconferencing, voice over IP telephony and social networking. Until the release of Office 365, Google apps and Zoho were battling for domination of the collaborative cloud software market. Microsoft Office 365 provides look and feel of current Microsoft programs with documents being saved online rather than your hard drive. For a subscription fee, law firms can use Microsoft Office 365 and no longer have to worry about supporting in-house networking hardware and software with the added benefits that attorneys can access documents from any remote location.

In addition to automating general office productivity tasks, cloud computing offers specialized solutions for law offices such as online case management ande-discovery.

If you are seeking a new vendor for law office services, the Georgia Bar's website maintains a database of legal resource vendors. See:

http://www.gabar.org/manage/vendors/VendorCategoryResults.php

Caveat: When using cloud computing, you must be aware of security. Be sure you know who owns the data, under what circumstances you can access your data and take it with you, and how they are securing it.

For further reading: Nicole Black, Cloud Computing for Lawyers, ABA Law Practice Management Section (January 2012) available for purchase from the ABA Web Store.

B. More Mobile Apps and Devices – It's a safe bet to predict that the number of mobile applications and devices will continue to grow exponentially. A fact that is demonstrated by the inclusion in this year's CLE of an entire presentation devoted to mobile applications.   Revenue from the sale of mobile applications has grown more than 500% in the past five years. That is an almost unheard of growth rate for an industry.

If you still have any doubts, note it has been predicted that smart phone sales will surpass PC and laptop sales in the upcoming year.   The long-predicted convergence of technology into small portable devices is already a reality. Mobile devices currently allow users to literally carry the office in their pockets.   In fact, the trend of bringing personally owned devices (also referred to as BYOD, Bring Your Own Device) to work has become the norm rather than the exception.

As mobile apps and devices become increasingly sophisticated, one of the side benefits is that law firms can reduce their footprint in traditional brick and mortar storefronts. It has been suggested that perhaps law firm offices should be on the endangered species list since more and more attorneys want to work from remote locations.

In the public sector, mobile wallets and near field communication devices that allow vendors to seamlessly connect with consumers will become more commonplace. You may have seen travelers flashing their iPhone rather than a boarding pass at the airport. Soon, you will be able to pay for services by flashing your mobile devices.

For further reading: Tom Mighell, <u>iPad in One Hour for Lawyers</u>, ABA Law Practice Management Section (April 2011) available for purchase from the ABA Web Store.

C.   Data Mining – In the future, more law firms will apply data mining techniques to analyze their business practices and maximize their profitability.   Popular in fields such as engineering and healthcare, data mining is still a new topic for most law firms. Data mining is accomplished by using sophisticated statistical algorithms to study such key productivity metrics as billable hours, actual collections and unbilled times. By studying these metrics, law firms can gain a competitive edge. For example, does your firm know which employees are performing which tasks versus billing costs? Other trends you might analyze include determining the percentage of revenue you receive for each client; identifying referral sources that provide clients with larger percentages of revenue; and sorting clients by industry.

Currently third party vendors exist to assist law firms with data mining. Never fear thought, in the future, our mobile devices will have enough power to perform analytics for every action undertaken in the law firm.

D.   Data Visualization – Data visualization is the practice of manipulating raw data into a graphical or visual format that helps novices understand, analyze or visualize the raw data more effectively. Many industries have predicted that "big data" is a dilemma that must be dealt with in the near future.   As we become more and more overwhelmed by the sheer amount of digital information, data visualization techniques are being developed to portray data in meaningful visual displays.   Data visualization can be used to identify trends and sort through e-discovery materials as well as to portray complex data to jurors and clients.

Data mining focuses on defining relevant data as opposed to data visualization which

focuses on how to display data. Both data mining and data visualization (also referred to as extreme information processing) will allow businesses to analyze historical data and create simulations or predictions for the future.

For further reading: Sharon Machliss, "22 Free Tools for Data Visualization and Analysis," Computerworld (April 20, 2011),
http://www.computerworld.com/s/article/9215504/22_free_tools_for_data_visualization_and_analysis

E. **Client Portals** – Lawyers will develop more ways to interact with clients and provide services via the web. We all currently use online services to share information that we previously thought was highly confidential. For example, online banking is no longer viewed with suspect. Online secure client portals allow attorneys to share documents and communications with clients effectively and efficiently. For example, many common questions from clients that are currently handled by telephone and email can be provided via personalized client portals. Other tasks that clients can perform include paying legal fees online; answering basic questionnaires; and scheduling appointments. Lawyers can use portals to share documents and keep clients apprised of the case status. It's possible that in the future, artificial intelligence algorithms will be included so that clients might pose scenarios via the portal.

For further reading, visit the ABA Law Practice Management Section's eLawyering Task Force web page:
http://apps.americanbar.org/dch/committee.cfm?com=EP024500

F. **Voice Over IP (VoIP)** – Transmitting telephone calls via the Internet as

opposed to traditional public telephone switches will continue to gain momentum.

Using the Internet to make phone calls rather than a land line can significantly cut your

firm's telecommunications costs. VoIP offers many advantages such as flat fee pricing,

the ability to save phone data with other electronic data and ease of installation.

Voicemail messages and faxes are readily available and retrievable via the web. On the

other hand, VoIP is dependent upon a good Internet connection and your VoIP phone is

dependent upon a power connection (no phone calls during electrical outages).

For further reading: FYI: VoIP, American Bar Association,

[http://www.americanbar.org/groups/departments_offices/legal_technology_resources](http://www.americanbar.org/groups/departments_offices/legal_technology_resources/resources/charts_fyis/voip.html)
[/resources/charts_fyis/voip.html](http://www.americanbar.org/groups/departments_offices/legal_technology_resources/resources/charts_fyis/voip.html)

G.   Virtual Assistants – More small and solo firms will use virtual assistants to

reduce office overhead costs. You can hire a professional virtual receptionist to handle

your phone messages 24x7 much cheaper than you can hire a full time 8 5 receptionist.

Virtual assistants are independent contractors who use the web and telephone to

provide administrative support.   For example, a virtual assistant can answer your phone

remotely without the caller knowing there is no administrative assistant physically

present in your office. Greetings can be customized. Most law firms report the

employees are highly trained and personable. The best way to find a virtual assistant is

by word of mouth. However, you can also google law firm virtual assistants and many

options will be available for you to choose from.

H.   Virtual Meetings - As travel costs continue to rise and user friendly

technology such as Skype, GoToMeeting and WebEx continue to develop, virtual

meetings will become more and more commonplace. PowerPoint presentations can be easily commented upon. Not to mention, the green benefits of virtual meetings are an additional incentive.

Skype is a popular virtual meeting program, perhaps because it is free. All you need is a headset and a microphone. You can make regular phone calls, video conference using a web cam or just chat using Skype. Some law firms advertise their Skype connectivity in case their clients are interested in getting touch via Skype.

II. Courtroom Technology

Just as office technology will undergo changes in the new future, courtroom technology will also advance dramatically. The courtroom of the future holds tremendous promise.

A. Video Displays - We all learn via screens in today's world and it is likely that displays will increase in the courtroom. The majority of jurors are likely to be visual learners. More courtrooms will provide individual monitors for juries and witness to allow attorneys to have more visual contact with individuals. Jurors have already reported that having jury instructions printed on monitors as the judge reads them has helped their understanding tremendously. Additionally, monitors will employ touchscreen technology to allow witnesses to pinpoint and mark items of interest.

B.   Jury Room - Just as courtrooms become more electronic, jury rooms will become so as well. Jurors will have access to laptops, kiosk and monitors to review electronic exhibits.

C.   Self-Service Kiosks – Self-service isn't just for grocery stores any more. Conveniently placed kiosks will allow jurors to scan their ids, print juror badges, print attendance letters, answer qualification questions and automate juror service payment.

D.   Videoconferencing – The use of videoconferencing will continue to grow and will soon routinely include 3D high definition technology. As technology improves so that jurors can interpret the nuances of witnesses, testifying remotely will become the norm.   Videoconferencing can also reduce the security and expense of transporting prisoners to the courthouse.

E.   Process Serving – Courts will be seeking new ways to streamline delivery of process serving.   Will they text it to our iPhone? Is a robot service processor in our future?

F.   Virtual Reenactment - Accident and crime scene reconstruction will become more and more realistic. Perhaps jurors will eventually wear virtual reality goggles?

G.   Online Dispute Resolution and Juries - Currently online services exist to provide mediation services as well as virtual jurors to evaluate your case.   In the past, it was expensive for small and solo firms to hire focus groups to evaluate potential jury presentations. Online services offer affordable jury consulting.

For more information on current legal technology vendors, visit the 2012 ABA

Tech Show website, http://www.techshow.com/. You can browse through all of the vendors' websites and virtually stroll through the exhibit hall.

III. Social Networking Sites

You might think that social networking is limited to Facebook and is only relevant to high school or college students. Or that social media is only about socializing rather than business. Think again. Facebook is predicted to attain 1 billion users in 2012 and all major businesses have social media strategies. Social media cannot be ignored and the legal profession is no exception.

Social media sites can provide a gold mine of information about clients, rivals and business prospects. Social networks can be useful in a variety of other ways as well. For example, they can help you get to know a fellow lawyer on a more personal level so that you're more able to judge whether you would be compatible in situations such as co-counsel or client referrals.

Aside from Facebook, some of the other major social networking technologies currently used in the legal community include:

A. Legalonramp - an invitation-only, members-only online community of corporate in-house counsels and leading law firms with facebook/linked in functionality. Legalonranmp is primarily for in- house counsel. Firm lawyers may request admission based on the fit of their practice, their authoring of content, and their ability to expand the network. LegalOnramp is geared to information sharing, collaboration and negotiating honest value for legal work. As of February 2012, nearly

10,000 lawyers participate with the site.

B.   LinkedIn - LinkedIn allows you to create a free online profile which includes relevant professional background information about yourself. LinkedIn will provide you with matches of people you likely know already. You can then explore matches they have included in their LinkedIn profile.   The end result is a ready-made network of business contacts.   Sounds like a great way to locate contacts, identify referrals or develop your professional reputation, eh? The reality is that most people create a LinkedIn profile and then leave them to languish.   Sure, it's a safe, professional way to network, but don't get too excited.

C. Twitter - By now, everyone knows that Twitter allows you to send a short message (140 characters or less) to mini-blog about yourself on the Twitter website, but have you considered how you can exploit the public relations potential of Twitter? Perhaps you want to publicize that you've added an entry to your blog or updated your website. Or perhaps you'd like to ask friends for a referral for a nonlegal service.

D. Google Plus – The rival to Facebook is coming on strong. Google Plus offers all of the benefits of Facebook but also adds a few bells and whistles. You can group your contacts into Circles to divide who you share information with.   Google Hangouts allow you to use online chatting and web cams as a basic form of videoconferencing among contacts.   Google Plus is also becoming more and more integrated into other Google apps. Note Google Plus information has started appearing in Google search

results while Facebook and Twitter have been excluded.

E. 2012 Predictions for social media:

- The FTC will crack down on misleading advertising via social media

- Google Plus use will continue to rise

- Whether to allow the use of social media as evidence will continue to be litigated

- More employment law disputes over the employee use of social media

F. Up and coming social networking:

1. **Get Glue** – Get Glue is described by Inc Magazine as a type of FourSquare for entertainment. Get Glue users to check in with friends to discuss, like and critique television shows, movies, videogames, books and music.

2. **Instagram** – Instagram is technically a cross between an app and a social networking tool. Named Apple's App of the Year, Instagram allows users to seamlessly share photos from their iPhone, iPod Touch or iPad after choosing from a variety of filters.   You may have already noticed Instagram photos in your facebook stream.

3. **Pinterest** – Pinterest allows users to save web content onto bulletin boards and share their "pins" with other users. One attorney found Pinterest useful for collecting memes that simplified regulation of the oil and gas industry.   He was able to network effectively with clients by sharing these images.

For more information or tips on employing social media effectively in your law practice, the theme of the January/February issue of the ABA's Law Practice magazine is

social media.   See:

IV.   General Hardware and Software Predictions

In addition to legal technology and social media developments, there are numerous general technologies on the horizon. Some of them are practical and others are simply fascinating. A few trends and predictions that I have found interesting include:

- **Printers** – Small and portable photo printers that allow printing from camera phones are forthcoming. Additionally 3D printing is becoming a reality. Inkless printers are on the horizon. Inkless printers use heat technology to mark special paper with images.   Ultrafast printers that print at the speed of sound are also predicted.

- **Screens -** There are several innovations in screen technology evolving.
  - Touch screen technology will become more prevalent.   This trend is spurred not only by the popularity of iPads but will increase with the rollout of Windows 8.   It's possible that a touch screen television could be introduced in the upcoming year. Maybe even by Apple, Inc.
  - Bendable interfaces are also being predicted. Nokia and Samsung have hinted they might release bendable interfaces this year, although we're still years away from being able to roll up the screen like a newspaper.

- o Second screen experience – Many users have a portable device such as an iPad in their lap while watching tv. In the future, the device will interpret from the tv's audio which program you are watching and display relevant or related content.

- **Cameras** - There will be a decline in sale of cameras as smart phone cameras continue to improve. A 12 megapixel smart phone camera will be available in the near future. On the other hand, the rise of 3D cameras could revive interest in consumer cameras. Future cameras will be able to focus automatically like we do with our own eyes currently….no small feat.

- **Internet-Enabled Appliances** – Also referred to as the Internet of Things (IoT), for some time now, it has been predicted that appliances will be reachable via the web for remote programming. Finally, this prediction is becoming a reality. For example, at the recent Consumer Electronics Show in Las Vegas, the Nest Learning Thermostat (http://www.nest.com/) received a great deal of attention. Not only does the thermostat sense your presence at home and adjust temperatures but it is programmable via your mobile phone as well.

- **Voice recognition** – Voice recognition applications will become ubiquitous. The popularity of the iPhone's Siri is a clear proof of concept. There are rumors that Apple will use voice control to replace tv remotes. Until recently, voice recognition interfaces have been slow to develop.

- **Data Storage** – Capacity for portable data storage will significantly increase. Victorinox has announced plans to add a 1 terabyte USB drive on its Swiss Army knives.

- **Geo-location** – Google is extending its reach by expanding maps to include

indoor spaces.   You can now view interior spaces that have been voluntarily submitted such as airports or shopping malls.

- **E-commerce** – E-commerce will become more prevalent than traditional storefronts. A recent Forbes article describes how the consumer practice of browsing at Best Buy yet buying online at better prices is squeezing out big box retailers. See: http://www.forbes.com/sites/larrydownes/2012/01/02/why-best-buy-is-going-out-of-business-gradually/?partner=technology_newsletter

    Amazon is facing significant criticism from local retailers for their new Price Check app which is available for iPhone and Android which encourages shoppers to browse in local retailers yet purchase online. The app promotes the practice of scanning items in stores to compare with Amazon pricing. Furthermore, it encourages shoppers to share prices with Amazon so they can offer competitive pricing. At one point, Amazon even offered participants a 5% discount up to $5 on qualifying purchases.

- **Batteries** – Power for electronic devices will continue to be a problem for the foreseeable future. One of the latest developments for outdoor enthusiasts is the PowerTrekk Water Charger, a battery charger that uses water to produce energy. IBM predicts that in the future people power will be harvested so that no energy production goes to waste. When people walk, ride bikes or run, we'll capture the excess energy for productive use.

- **Near Field Technology** – Mobile cell phone readers that detect your presence and receive related information will soon experience significant growth.   Soon you'll be able to wave your mobile phone at a reader to pay for services such as transportation costs, retail services and health expenses.