Macs, PCs, Mobile Devices and the Cloud – Can they all work together?

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The rate of change within technology over the last 50 years has been staggering. We have gone from mainframes to Cloud computing (virtual desktops, Web applications), land lines to VoIP and Smartphones, PC's and Mac's to tablets. Everything now revolves around instant access to information and data, whether it be checking your schedule to which court room you are in, reviewing supporting documentation of a case or accessing a legal application remotely. Lawyers and their employees no longer want to be restricted to their desktop at the office or their laptops when travelling. They want to be mobile and use different devices from different vendors, depending on what they are doing and where they are; at the office creating content on a PC, MAC or laptop, reviewing content on a Tablet, checking email, scheduling appointments or finding your favorite coffee shop via GPS between court room sessions on their Smartphones.

Traditionally, Managing Partners, Partners, CIO's, IT departments were the drivers of technology within their firms. They stipulated what devices would be used (PC's Laptops, Mobile Phones etc.), who would use them and how they would be used. Control, security, manageability and support of these tools was everything. The technology landscape has however changed significantly over the past 10 short years, led by virtualization and the plethora of devices now available to us. With the advent of Netbooks, Smartphones, Tablets, eReaders over the past decade or so, the tables have turned and consumers are now driving the devices they prefer to use at the office, at home or while travelling. This Bring Your Own Device (BYOD) adoptions is referred to by analysts, such as Gartner , as a megatrend and is significantly changing the way Firms view, procure and implement technology. From an employee perspective, the ability to be able to choose and use your preferred devices\s is empowering, however how do we make all these devices; Mac's, PC's, Mobile Devices work together, so that we can be more productive and efficient and what are some of the challenges we may face ?

This paper will provide an overview as to strategies that can be adopted when mixing Mac's, PC's, Tablets and Smartphones within your Firm, leveraging Cloud services and vendors. The following will be covered:
- Creating and Managing documents across multiple devices
- Accessing legal applications from any device
- Accessing email, schedules and contacts
- What are some of the challenges that Firms face when mixing Mac's, PC's, Tablets and Smartphones?

Creating and managing documents across multiple devices
If you create\edit content on a Windows PC at the office and need to access that information on a non- Windows based device, then here are some options to do so:

> **Virtual Desktops**
> Virtualization of servers and desktops has been one of the most prolific changes within Information Technology over the past 20 years. Virtual desktops, specifically, have revolutionized the way Firms allow managing partners, lawyers, paralegals etc. secure access to their Firms data and applications from any device and any platform - PC's, Macs, laptops, tablets, smartphones. Before I delve into this I would like to take a moment to briefly define these 2 terms.

Virtual servers allows Firms to consolidate and store all their servers virtually on one physical server, thus leveraging their hardware and making it significantly easier to back up their servers and data and eventually migrate to a new physical server when it comes due for replacement. Virtual servers can and have been implemented on premise and the most significant adoption and implementation has been in data centers, due to more efficient and effective management of servers, cooling and cost savings.

A virtual desktop allows all staff within a Firm to connect to their Firms virtual desktop using any device and their Internet browser of choice (Internet Explorer, Firefox, Safari, Chrome etc.). Once connected, the lawyer gains access to their Office productivity suite, enterprise Email and all legal and business applications that are specific to them. The desktop is hosted, run, delivered and supported from a central secure data center with high-quality and resilient connections to the Internet. The introduction of virtual desktops does away with the traditional method of connecting to your PC remotely i.e. creating a virtual private networks (VPN) and a remote desktop session (RDP) to your PC at the office.

So what role do virtual desktops play when creating and managing documents across multiple devices? A very big role in my opinion. Picture this scene.

Wake up at 6am as you are due in court at 11:30am and need to finalize your preparation. While having breakfast, you browse through your email on your Android Smartphone. You see a note from your assistant that there has been change in the court room number. Your assistant also sent you the updated meeting request with the correct court room number – you accept the request on your Android Smartphone and it updates your schedule accordingly.

You are just about to leave home when you get a frantic call from one of your fellow lawyers. He requires your immediate assistance on a file that you have been collaborating on – there is wording that has to be changed on a contract and this has to be submitted to the client before 9am. You get another cup of coffee and fire up your Macbook Air. You connect to your wireless network at home and launch Safari. You access your virtual desktop through your browser. Once you have entered your your username and password, within seconds you are connected to your virtual desktop, with all your specific applications and firm data. You browse to the specific contract on your Firm share drive and open the document. You make the necessary changes and let your fellow lawyer know by sending them a note via email. You disconnect yourself from your virtual desktop and are now ready to leave for court. It feels as though you have had a full day already - 2 cups of coffee and 2 incidents already taken care of.

While driving to court you get take a hands free call from your fellow lawyer. They have reviewed the changes you made to the contract and have made some changes themselves which you need to verify before going into court. You see your favorite coffee establishment and pull over. Once you get your cup of coffee (your 3rd but hey who is counting), you take your Microsoft Surface tablet that you treated yourself to for your birthday and log onto the Internet via WiFi. You launch IE and once again, logon to your virtual desktop from your Surface. You browse to the client file, review the changes and let your colleague know. You think to yourself "wow, if this is how the day starts, how is it going to end?"

You arrive at the court house, double check the court room number on your Android and you are finally sitting down. The judge arrives and looks in pretty good spirits. In the court room you are able to access all the pertinent documents to the case via your Surface. Your day in court goes particularly well.

A meeting reminder pops up on your Android Phone – meeting with fellow lawyer at the office at 5pm. More coffee required. At the office you need to log onto your virtual desktop via your PC, however find that your PC is not powering up. Your first response is "oh no", as you have things to prepare before the meeting at 5pm, but then you remember that you can connect from any device from any location to your virtual desktop! Your assistant left early so you power up her PC, go to the Chrome browser and log onto your virtual desktop. Voila ! You are up and running in seconds and get done what you need to get done long before your scheduled meeting. The day is finally over and you are heading home; You think to yourself "wow this is awesome, I have been able to perform my work and be productive from all my devices (Android, MacBook, Surface and PC) from anywhere."

Dropbox – www.dropbox.com
If security and compliance are not of concern, then creating a Dropbox account will allow you to share many different file formats (images, music, movies, Word/Excel/PowerPoint documents, PDFs etc.) on different platforms. Once the account has been created, a data folder is created on your PC or Mac and allows you to place files within the folder which gives you access from whichever device you are connecting from. For Smartphones i.e. Androids and iPhones (iOS), instead of going to the web browser to log onto your Dropbox account to view files and content, you can now download the Dropbox App which gives you instant access once you click on the app on your Smartphone. Dropbox is convenient as it allows you to access data across most platforms - Mac OS, Windows 7, Windows Vista, iOS, and Android. The cost of Dropbox is free for the first 2GB and thereafter you can pay for more storage $99 per year for 100GB and for their business class service $795 per year for 5 users unlimited data storage.

Legal Anywhere - http://www.legalanywhere.com/
Legal Anywhere gives Firms the ability, through a web browser, to create a secure work space where lawyers are able to share basic documents as well as leverage other more sophisticated features such as deal rooms and litigation repositories. It also provides very granular security, calendaring features and integration with document management systems. All the documents are permission driven, so depending on the user, they may have read only access or alternatively access to read, write and edit. Users are able to share sensitive information in a more secure fashion, using whichever device they prefer.

Microsoft Office
Although there are other versions of Office productivity suites that run on both PC's and Mac's e.g. OpenOffice (http://www.openoffice.org/), a free version and Google Docs, the corporate standard for office productivity suites is still Microsoft Office. Creating and editing Microsoft Office documents, whether it is on your iMac at home or on your laptop or PC at the office is doable due to Microsoft Office developing a Mac version of Office. The Mac version for Office has been around a while. The harder part of this equation is the question of how I can get the file that I have at the office, accessible to my Mac at home? There are many answers to this question, but access methods will largely be dictated by the nature of the document and how important security and compliance is to you and your Firm. Options include emailing the file to yourself, storing the file on a USB key or else creating a VPN and RDP connection from your iMac at home to your office PC, connecting to your virtual desktop via your Mac's web browser. The latter, incidentally, being the most secure option.

Microsoft also has their Office 365 (http://office.microsoft.com/en-ca/) offering which allows people to be able to use their suite of Office 365 applications (Microsoft Office, Hosted Email, SharePoint, Lync -unified communication) on PC's, MAC's, Tablets and most Smartphones. Office 365 is an option if you want users to create documents using Office, store and share documents using SharePoint and use and synchronize email, contacts and schedules using Hosted Email Office 365. For Firms that have legal applications and need integration of those applications, Office 365 would be a stretch. Management and support of this product can be a challenge too.

There are different Office 365 packages ranging from the Small Business Premium Package (approx. $13.00 per month per user) to the Enterprise package (approx. $25.50 per month per user). Depending on which package you opt for, depends on what is included and the monthly cost. The link below defines and compares the various packages - http://office.microsoft.com/en-ca/business/compare-all-office-365-for-business-plans-FX104051403.aspx

Accessing legal applications from any device
Back in the day, connecting back to your Firms desktop so that you could access legal and other applications from a remote location, be it home, hotel or airport, was given to a privileged few. VPN and RDP was the most secure and common way of connecting from a remote device, whether it be a laptop or a MacBook. Larger firms implemented Terminal Servers which gave lawyers access to agree upon core legal applications.

Times are changing and changing fast. Legal application vendors have started making the move to the Cloud and some are now giving you the option of whether you want to purchase the software outright to install on your servers and computers at the office or to use their web based (Cloud) version. An example that comes to mind is the document management application, Worldox (http://www.worldox.com/) . With Worldox, Firms can purchase and implement an on premise network version or have the option of using the Software as a Service option (Saas) Worldox GX3 Cloud. In the past, the features of the online versions of applications were limited, as well as the integration into other applications e.g. Outlook, Word, Acrobat WordPerfect etc. Worldox GX3 Cloud is installed on whichever device you need to connect to, be it computer, laptop or tablet. The cloud version also has good integration with applications such as Outlook, Word etc. and the user will not really notice the difference between the network version or the Cloud version.

Worldox also has a Web App: Worldox Web Mobile. It is browser based and affords users the ability to access Worldox from any mobile device. It is best suited to search and view documents. If you are looking at editing documents, then the Worldox GX3 Cloud version is a better bet.

The approximate cost for the Cloud version of Worldox is $55 per user per month and this includes 3GB/user of storage. If you require more storage, it will cost approximately $2 per GB. There is also a small set up fee of $200 which includes web based end user training.

Netdocuments (http://www.netdocuments.com/) competes with the Worldox GX3 Cloud version. Feature for feature, both are pretty similar. A few differences: Netdocuments is completely browser based and can be accessed from Macs or PCs. Integration into other applications such as Microsoft Office and Outlook Word are more limited and clumsy and at this time has no integration with Acrobat X or XI. The approximate cost can vary depending on the edition and features you opt for - $20.00 to $38.00 per/per/month

Legal applications such as Practice Master, PC Law, Time Matters, Amicus Attorney Summation, Worldox and any other application you can think of, can also be accessed from anywhere and on any device. How is this possible? Virtualization of desktops! Virtual desktops with all the specific user applications loaded on it, can be accessed from any browser, using any device – yes even your iPhone or Galaxy tablet. This is extremely powerful as users are now able to use their preferred device to connect to their virtual desktop and user specific applications from anywhere! A lawyer at home can access all applications, case files and supporting documentation, simply by logging onto their virtual desktop from their laptop or tablet.

Most applications have a mobile and remote option for their software, e.g. PCLaw's Mobility service which allows users to be able to connect to the application from smartphones or tablets. This can be useful, however, in most cases the person does not get access to the full version and so can be limiting. So the question is, how can one get around this and still be able to connect from a mobile device like Smartphone or Tablet or maybe even a laptop or MacBook? Enter application streaming.

There are instances, especially when working remotely, that you only need access to one or two key critical legal applications as opposed to logging onto your full blown virtual desktop. To achieve this you can institute application streaming. Application streaming is when the applications' icon, for example Practice Master, is presented on the desktop as if it was installed on the actual device from which you are connecting from. The truth of the matter though, is that when the user clicks on the Practice Master icon on their iPad mini, the application will launch the required application on a server that resides in a data centre. Once the Practice Master application opens, the user will have to enter their username and password to access the application, its functionality and data securely. What is also really awesome about this, is that once Practice Master is launched, it will be automatically sized to fit the screen that you are currently connecting from i.e. from your small iPad Mini to your larger laptop. No more having to scroll around on the screen to view parts of the application that might not be visible. How awesome is that!

There are Saas applications which are device agnostic and their only requirement is access to an Internet browser. Clio (http://www.goclio.com/) is a good example in the legal field. Clio is a web based practice management, time & billing and client collaboration application for small- to mid-sized law firms.

The approximate cost for the Clio is $49 per user per month for Lawyers and $25.00 per user per month for support staff.

Accessing email, schedules and contacts on multiple devices
Firms who use Microsoft Exchange and Outlook as their email application are able to sync there devices to Exchange, using Exchange Active Sync. Exchange Active Sync. provides Apple and Android users with push email, contacts and calendar events. This means that if you connect to Outlook at the office on your PC and then leave to go to a meeting, you are still able to view your email, contacts and schedule on your Smartphone.

Firms have the choice of running Exchange on premise, or opting to use a hosted version of Exchange. There are a plethora of hosted Exchange vendors and the hosted version has been around for along time. Whether you use the on premise or Hosted Exchange version, Exchange has the ability for employees to connect to the Web based version of Outlook called Outlook Web Access (OWA). No matter which device or where you connect from, as long as you have access to a browser, you will be able to connect to your email, contacts and schedule by logging onto OWA. This can be useful when travelling and you need to check your schedule or email.

Challenges of mixing Mac's, PC's, Tablets and Smartphones for law Firms

Consumerization of technology and allowing staff to bring and use their own devices does come with its own set of challenges:
- Device choice and support
- Secure access to the Firms network and data
- Enforcing company usage policies
- Protecting data and loss prevention
- Revoking access
- Mixing personal devices with work
- Keeping it simple to connect

Device choice and support
In the past it was the IT departments who determined a list of pre approved workstations, laptops and even mobile\ smartphones while users were not allowed to deviate from the approved list. With BYOD, users determine what their device of choice will be and IT have to ensure that they are able to support and connect these devices. For Firms using cloud based services, it is easier to connect BYOD devices compared to Firms that still have traditional on premise IT environments.

Secure access to the Firms network and data
Accessing the Firms network and data, whether it be with a PC or iPad, does not mean that security should be sacrificed. IT needs to ensure that the devices that are connecting are doing so securely, including WiFi security protocols and VPN Access. Users connecting to Cloud based services need to ensure the providers are using SSL (security certificates). It is also important from a security perspective to be able to determine each device\user that is connecting to the network. There are management tools for this.
Enforcing company usage policies

As many of the BYOD devices are purchased by the employees themselves, there is the added complication of mixing work and personal tasks on the same device. Smartphones, tablets and laptops come to mind. When, where and depending on what device the user is using to access the network from, can be subject to different company policies i.e. at the Firms office, when working on a PC, the user will have access to all their applicable applications and data. When logging on to the network from home with their Tablet or laptop, the users' access can be restricted to a stripped down list of applications and even more restricted access to Firms data. These restrictions will be dictated to by company policy.

Protecting data and loss prevention and compliance
In the event that an employee leaves the firm or the device is lost or stolen can put a firm at risk. Mixing personal and business data on a BYOD device that is not locked down and controlled, can leave the Firm open to risk from a compliance perspective. Signing an acceptable user agreement is also a way of protecting corporate data and achieving compliance. The Firm needs to be able to control the BYOD devices which may include a secure business partition on the device which acts as a container of corporate data. This can be tightly controlled and may also include the need for deploying Virtual Desktops and to allow access to sensitive or confidential data without actually storing the data on the device.

Some of the cloud applications and vendors mentioned in this paper although meet the requirement of interoperability between different devices and vendors, would fall outside the jurisdiction of Canada. In the event that you are currently using a cloud service or application where the data resides, it would be very important from a compliance perspective to make sure your Cloud vendor hosts their applications and data in Canada only.

Revoking access
In the event an employee leaves the Firm or the device is lost or stolen, the Firm has to be able to deactivate the device and user quickly, as well as have the ability to remotely wipe the corporate data off the device, be it a Tablet or a Smartphone.

Keeping it simple to connect
Due to the magnitude of different device options out there, it needs to be simple for the user to be able to connect. Connecting from the Firms wireless network will require user credentials, however connecting from a public WiFi hotspot will require credentials, VPN and other security steps. For those connecting to a cloud service connecting using SSL will be crucial.

Conclusion
There are many opinions regarding the myriad of service offerings in the Cloud and how beneficial they may be. Whether it be a virtual desktop or a browser based web application, these solutions and services have given users the flexibility and ability to access ones legal applications, productivity suites, email and data from Macs, PC's, Smartphones or Tablets. Mixing Cloud based solutions with BYOD is a trend that is here to stay.

Resources

1. Bring Your Own Device Market By (Software, Industry Verticals, Devices & Geography) Worth $181.39 Billion by 2017 – New Report by Markets and markets

   Read more: http://www.digitaljournal.com/pr/1454676#ixzz2euuRUvzy

2. Pros and Cons of BYOD (Bring Your Own Device)

   Read more: http://www.cio.com/article/696971/Pros_and_Cons_of_BYOD_Bring_Your_Own_Device_

3. Thousands of Macs In The Enterprise – How The Big Companies Roll [Feature]

   Read more: at http://www.cultofmac.com/160154/thousands-of-macs-in-the-enterprise-how-the-big-companies-roll/#4p8gIfqTw4h3Vkgo.99

4. How to Sync Your PC, Smartphone, and Tablet

   Read more: http://www.pcworld.com/article/240749/how_to_sync_your_pc_smartphone_and_tablet.html

5. Syncdroid - sync Android with Outlook

   Read more: http://syncdroid.net./sync-android-droid-outlook-exchange-calendar-contacts-notes-tasks

6. Mac support in an Active Directory environment

   Read more: http://www.macworld.com/article/1056791/activedirectory.html

7. How To Migrate All of Your Important Data To Your New Mac

   Read more: http://mac.tutsplus.com/tutorials/os-x/how-to-migrate-all-of-your-important-data-to-your-new-mac/

8. Cisco Bring Your Own Device (BYOD) CVD Relese 2.2

   Read more: http://www.cisco.com/en/US/docs/solutions/Enterprise/Borderless_Networks/Unified_Access/byoddg.html