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## The Rise in Mobile Devices

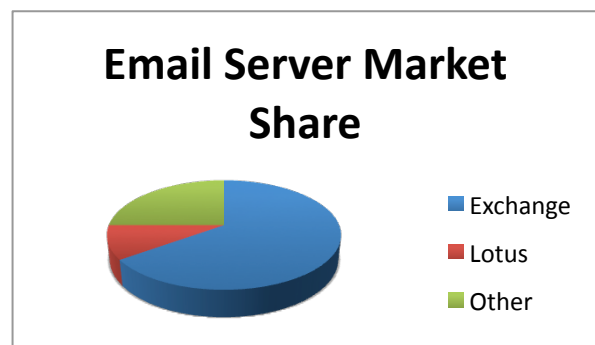
The rise of mobile devices has been exponential over the past 5 years. There are many reasons for this, but the most prevalent is that they allow people to communicate faster and more effectively than ever before. The ability to have access to e-mail, contacts, calendar, and other data has made them an extremely valuable tool for today's legal professional. Hence the rise of the mobile device as today's "always-on" business tool. Yet, there are downsides to all technologies and mobile devices are not without their share. Beginning with the multitude of devices available today to the changing landscape services, features, and functions available on each device, finding a the right device can be a challenge. Additionally, matching a device to your personal needs, technical requirements of your network, and your practice management tool can be next to impossible without assistance from an IT professional. Often finding the right device is a matter of breaking down the different features it provides.

### Email:

For many people e-mail is the most critical function for communicating with clients and colleagues. Predictably, mobile devices can provide you access to your corporate email using a variety of technologies. Typically you firm must have some type of standard email system in place in order for your device to connect to email out of the box. From a general standpoint the e-mail systems fall into three basic categories: internal hosted, external hosted, and Internet-based.

### Internal-hosted

There are numerous software packages that will provide e-mail functionality from your own, internal network. However, by far the most common e-mail system in use today is Microsoft's Exchange Server with 65% market share as of 2009 and rising. This product is the server portion of Microsoft's email system and can be found on standard Windows Servers or as a part of the Windows Small Business server package. It is the most common e-mail system found in law firms today and, due to its significant market share, most mobile devices are designed to work with it either natively, or with the addition of other server-based software.



### Benefits

The benefits of using an internal-hosted e-mail system are significant both in terms of the value it provides with regard to mobile devices and also the value it provides to the firm's general management of e-mail communications:

- Control over e-mail backup

- Ability to customize security
- Detailed control over data that synchronizes to the mobile device
- Ease of configuration for over-the-air (OTA) synchronization

### **Drawbacks**

The drawbacks here are fairly typical of any technology deployed internally:

- Up front capital expenditure
- Management of software and data (patching, compatibility, archiving, data storage, etc.)

### **External-hosted**

External-hosted e-mail generally means the provisioning e-mail functionality via a web hosting provider. The common term for this type of e-mail setup is “POP” e-mail.

### **Benefits**

The benefits of using an external-hosted e-mail system mostly involve the lack of resources required to manage the system:

- Software management is not a concern (patches, upgrades, etc)
- Availability. Though a high availability is definitely attainable within the internal-hosted model, hosting providers today typically use multiple system resources in a “cloud” architecture to deliver 99.99% availability (or better).

### **Drawbacks**

The drawbacks here revolve around loss of control:

- Cost. Over the long run, paying someone else to provide you with e-mail functionality will likely cost you far more than managing it internally.
- Lack of control. System maintenance, user changes, and other administrative tasks take longer because they have to be coordinated through the provider
- Depending on the platform the provider uses, configuration of mobile devices can be quite challenging.

### **Internet-based**

Internet-based email systems operate on the same principle as the external-hosted e-mail systems, but with a couple differences: scale of the e-mail system and the public nature of the system. Common examples of Internet-based e-mail systems are: Gmail, Ymail, and Hotmail.

### **Benefits**

The benefits of using an Internet-based e-mail system almost exclusively involve cost:

- Often, this type of e-mail system requires no capital expenditure.

### **Drawbacks**

The drawbacks here, especially for attorneys and other professionals that require confidential communications, are significant:

- The Terms of Service (TOS) for these public email systems specifically denounce meeting confidentiality requirements and often using them for business purposes is also a direct violation of the TOS in itself.
- These platforms use algorithms to read your email in order to present you with contextual advertising Lack of control.
- Mobile device configuration capabilities may be limited.
- Downtime is not out of the question given the provider has no specific uptime guarantee when the service is free.



Blackberry's have combined inboxes meaning personal email accounts and corporate ones appear intermingled in your device main inbox. This is a feature that cannot be turned off and can be a nuisance to some people, so buyers beware. On the flip side iphones keep them so separate its often 4-

Additionally, there are considerations on the phones themselves that need to be understood. For example, some phones will allow you to connect to generic POP or IMAP servers but not all phones support that functionality. As such, it is possible you will be unable to receive mail on the phone. So do not assume "email enabled" on the tag in the store is enough description. Verify your specific email system is supported. To check what system you have ask your IT staff, IT firm or if you have Outlook, you can check by going to: Tools-Accounts.and inquiring more specifically at the time of purchase.

### Documents:

Mobile devices are getting increasingly better at displaying a range of document types in readable fashions. It is now very possible to be emailed a PDF or Word document for your review and to be able to glance it over or read it completely and reply with detailed comments. Mobile devices also have increased their data capacity, now often providing 8 – 32GB of drive space. This drive space also makes these units useful as extra portable disks to take your presentations and documents on the go. Windows mobile phones and Blackberrys make it easy with tools like Media Manager, Documents to Go and Windows Explorer (respectively) to store extra documents. The iPhone and other devices have some great applications to help keep your documents in sync.

### Contacts:

All phones will keep a list of your contacts, yet their ability to sync with your case management program or e-mail system depends on the device itself and your server configuration. The important note about contacts is to look at how your device lists them. Everyone phone is different and what you see is what you get with built in features like this. So make sure this will work for your size contact list.

We recommend Dropbox, a small program you can install on any computer, your mobile device, or access through the Internet. Dropbox synchronizes your document updates on every connected device. <http://ow.ly/1KsaO>





Blackberry's typically have hard limits on the number of contacts due to its address book size (can be as low as 2,000 contacts). iPhones on the other hand have near limitless contact size capabilities, but with many contacts, speed becomes an issue.

### **Calendar:**

This is commonly the category that attorneys care about most after email. Specifically, attorneys want to be certain they can add to their calendar reliably while at court to schedule court dates and hearings. Today, all phones have calendar features or datebooks. And much like contact management features, different devices have different display mechanisms so make sure to review the calendar functions before purchasing a specific phone. Also note that your case management program may include lots of additional information on the appointment that may not make it to your phone if your device only supports an event date and name.

***NOTE: You will need to have your calendar in Microsoft Exchange (most likely) if you want access to an updated calendar while you're outside the office (requires over-the-air synchronization).***

### **Making Phone Calls:**

Interestingly enough, the actual phone functionality of mobile devices can often get overshadowed by the other, more appealing features. Assuming all phones hold calls and provide valuable, easy-to-use call features is simply not true. Clearly, call functionality is a combination of the phone and the carrier service, but mute, 3-way calling, speaker volume, and blue-tooth compatibility are also important features to consider. Keep in mind coverage maps are helpful (Coverage Maps by Carrier <http://ow.ly/1Ksj8>) but misleading. One of the best ways to confirm call coverage and functionality is simply to ask around.

### **Practice Management Software**

Compatibility with practice management applications is critical for many firms. There are two general ways that synchronization is handled by practice management applications: direct connections and via Exchange Active Sync.

#### **Direct**

Many programs like Time Matters, PC Law, and other contain some inherent functionality to synchronize with certain phones. Often this is a mark of a quality practice management program. Configuring synchronization with these programs is a proprietary process dependent upon the configuration requirements of the software itself.

### Via Exchange Active Sync

Because the landscape of phones changes so rapidly today, few, if any practice management systems synchronize directly with every possible phone. As such, most quality practice management systems will synchronize directly with Outlook which can be configured to synchronize with most phones. Though it may appear at first glance as though this system of “double synchronization” is questionable, it is, in fact, quite a stable and effective method for synchronizing data with your mobile device – particularly if OTA synchronization is desired.

### Manual versus Over-the-air (OTA) Synchronization

It is only within the past few years that OTA synchronization has become reliable and effective. Though often the advantages of OTA synchronization are easy to see, the comparison below details some of the pros and cons of each method of synchronization.

Desktop Sync		OTA Sync	
Advantages	Disadvantages	Advantages	Disadvantages
- Can sometimes have custom applications to store your data	- Device must be attached to your PC so information can be out of date	- Get new data in real time	- Can require more investment in technology
	- Computer changes can cause sync data being lost and re-setup		

### Desktop Synchronization

Desktop synchronization is done through a program that comes on a disk with each respective device (Desktop Manager for Blackberry’s, Active Sync for Windows Mobile, iTunes for the iPhone and so on). This is a manual process that requires the user to physically connect the device to their desktop and “press” a button that starts the synchronization process.

### OTA Synchronization

OTA synchronization is convenient for many reasons, particularly if you’re away from the office frequently. OTA Synchronization is accomplished by connecting your device directly to your Exchange Server or through a Blackberry Enterprise Server (if you have a Blackberry).



Smaller organizations should verify their existing network can handle the fairly significant demands of the BES before deploying Blackberry devices across the firm. If you are looking for a turnkey BES server configured and installed on your network look at ITP's turnkey BES server packages <http://itprosusa.com/turn-key-bes-server> . Download BES from:  
• <http://na.blackberry.com/eng/services/business/server/express/>

Since Exchange 2003 SP2 Microsoft Exchange has supported modern Active Sync through the web. This means that if you have a mobile “active sync” capable device and an Exchange server, your device can connect and sync Contacts, Mail, Calendar and Tasks over the air. The active sync technology at its core is really connecting to Microsoft's Outlook Web Access and reading the data to your device.

Unlike other phones, RIM (Blackberry) created their own server-based OTA synchronization technology - Blackberry Enterprise Server (BES). BES is installed on your network and gives rights to Microsoft Exchange to “Push” copies of email/Calendar etc. to your blackberry device. In this way RIM was able to avoid paying any Microsoft licensing and in the process, create a more robust device management suite. Blackberry is still the default solution for larger organizations where the extra server power and configuration of the BES server is not a burden on their existing network resources. The additional security that BES provides is often considered an additional advantage. With a properly configured BES server you can control what applications are installed on devices, firewall rules, corporate instant messaging etc.

## What is Blackberry Internet Services? BIS

For firms that don't have the internal resources to run a BES, Blackberry provides an option called Blackberry Internet Services (BIS). BIS is a service provided by RIM and/or your phone service provider which redirects email copies from any number of email accounts to your phone. This service is free and typically easy to configure, but has 2 limitations to be aware of:

1. You get copies of your email, changes on this account won't reflect at your desk
2. It does NOT sync calendar and contacts rendering it all but useless for attorneys

## How does Apple/Droid/Google do it?

Believe it or not Apple/Droid/Google has paid Microsoft to license access to the Exchange Active Sync. By using the native active sync features in Exchange these mobile devices can often connect to and receive email/calendar/contacts over the air within minutes of setting up your phone with no additional software and minimal configuration

NOTE: Most newer mobile devices require that the Exchange Server be 2003 SP2 or higher to connect devices and Exchange 2007/2010 added additional control and features.

With Exchange Active Sync available from the server you can require mobile devices to have passwords. Also, many phones now come with the ability to remotely “wipe” the phone of all data. This is especially helpful when dealing with lost or stolen phones.

## Carrier Choices

One of the most important consideration in purchasing any mobile device is the service provider. Below are some valuable criteria to consider when selecting a service provider for your mobile device:

1. Coverage. Where are you the most when you make and receive calls and what does your carrier have listed on their coverage map for that area. In addition, ask someone else who is likely to make those save travel routes and ask them their experience with the carrier's coverage.
2. Technology – Whether a company uses GSM or CDMA makes a difference in both the user experience, interoperability, phone functionality, and travel.
3. Phones – Certain devices are only found under certain carriers. The iPhone, for example, is currently only available through AT&T. Different versions of the HTC Android phones are made specifically for Verizon or Sprint
4. Price. Prices are currently quite close among carriers but when you start getting into the data plans necessary to support these modern phones there can be price differences.
5. Another item to consider is if you need data access from your laptop. Some phones can be “tethered” meaning you an connect them to your PC using USB and use the SAME data plan to gain access to high speed internet wherever you go.

NOTE: Sprint is a part of the ABA discount program providing potentially 10-15% off your service. (<http://www.sprint.com/aba>)

## Types of Carriers:

Generally we classify carriers into National and regional carriers. National carriers are Verizon, Sprint, AT&T and T-Mobile and Regional carriers are companies like US Cellular or Cellcom. Often the regional carriers will have better voice coverage in your region, but use shared towers when you travel outside the coverage area. In Wisconsin, for example, most towers are actually owned and managed by US Cellular (the regional carrier) and the National carriers have to rent space from them.

NOTE: The owners of the towers will give preference to their customers when it comes to first on first off handling of calls. The problem with regional carriers is that often they cannot invest enough in the type of national data infrastructure necessary for quality data connections.

## Cell Technologies explained

Global System for Mobile Communications (GSM) and Code Division Multiple Access (CDMA) are the two leading technologies in use today.

GSM was invented as a global standard in 1987 in an attempt to ensure continued and standard coverage throughout the globe.

CDMA was invented and developed by Qualcomm a company in the U.S. and is thus more popular in North America and some of Asia.

## GSM versus CDMA

From a speed standpoint CDMA is a faster technology but 3G and 4G standards continue to try to compete for fastest downloads. You will see Sprint, a CDMA company, now using 4G in advertising to try to clear some of the confusion. Most people know if you are in EDGE or non-3G coverage using the internet is incredibly slow.

SIM cards are a GSM-only technology. These little credit card-like objects are only in GSM phones and are required for a device to talk to a carrier. This is part of how GSM phones are “unlocked” and used on other networks. A GSM iPhone can have another SIM card put into it with some other not supported edits the phone can be made to work outside of AT&T. That same easy technology can allow you to put an international SIM card into your phone and use it for cheap as you travel Europe.

CDMA devices are all proprietary handsets and cannot be reprogrammed for another carrier. This means you cannot purchase a CDMA Sprint phone and use it with your local carrier, even if they also use CDMA.

From a very general standpoint, comparing CDMA versus GSM is a quantity over quality scenario. CDMA is better quality where it is located, less dropped calls faster speeds. Given GSM is more of a standard and cheaper GSM towers are located in more places so rural coverage is often better. If you have seen the coverage map commercials to cut through the marketing CDMA has more depth into high population areas and GSM has more breadth.

## International Coverage

As we discussed in the previous section, GSM is a standard that is used around the globe. As such, you can take your GSM phone to many countries while on vacation or for business. This provides users of GSM phones with several options when traveling abroad.

1. Travel with your GSM phone and use it. If you have not contacted your carrier you will rack of large international roaming charges very quickly.
2. Contact your carrier prior to your travel and purchase one of their preset roaming plans. These often cover voice and you can buy blocks of data and then risk overages. Even these plans carry risks of overages sometimes and blackberry services which require more constant connections struggle and often stop connecting when you travel.
3. Purchase another SIM from an international phone provider. They convert your current phone into a international phone card.
4. Purchase a single purpose international phone using a separate SIM card. Like Option 3 when you use the phone the SIM card finds a service nearest you and you pay, often on a credit card a per min rate like a phone card. We would recommend mobal.com for international SIM cards and roaming.

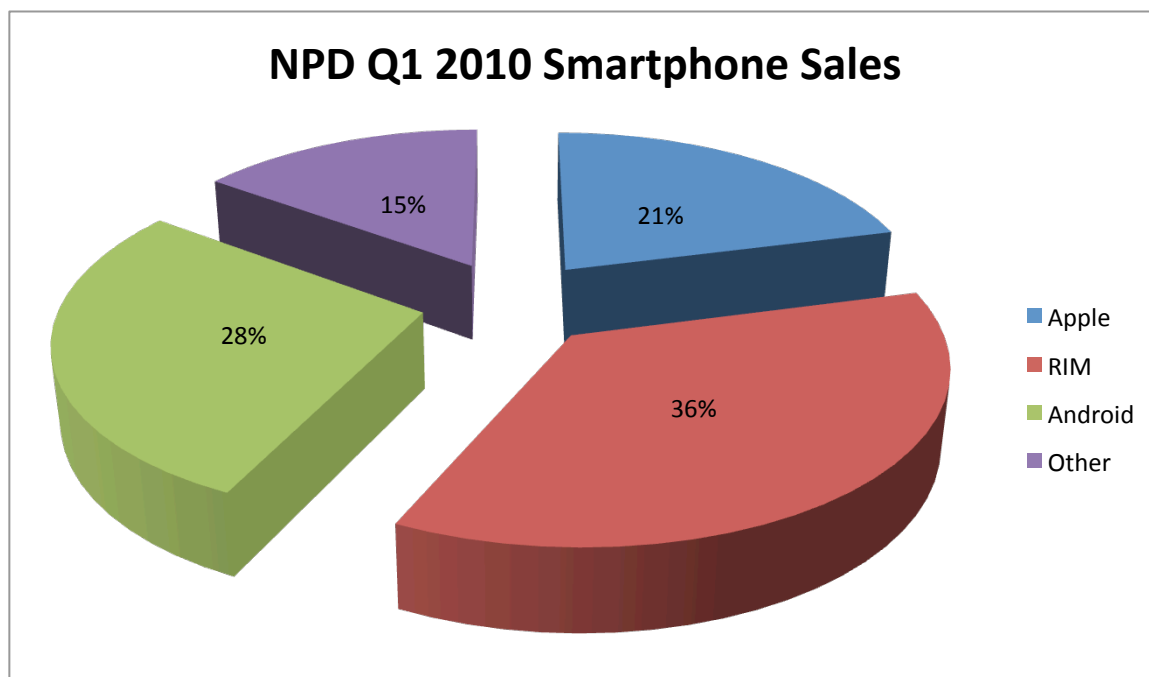
Depending on how far abroad you are traveling and your need for data access I would strongly recommend bringin an alternate phone and using wifi for data access. The risks with international

travel with client data and risk of overage fees can easily outweigh the benefits of having your specific device abroad.

## Device Choices

A market that used to be dominated by 3 companies (Motorola, Nokia and RIM) is now facing outside competition from the worlds largest and most creative companies including Apple, Garmin, Microsoft, Google and HP. For the consumer this has meant an almost overwhelming flurry of features and marketing claims, including bigger screens, abundance of applications, and greater power.

The problem is that for the mobile professional they want these devices to be extensions of their office and computing environment. Attorneys want quick access to many types of data but the phones are changing faster than the data providers can keep up causing many people to want that latest greatest phone only to find it does not provide them with the information and functions needed or that it is more advanced than the network in their office. This can effectively cripple the devices' feature set.



## Blackberry (RIM- Research in Motion)

We discussed earlier the advantages and disadvantages of BES vs. BIS services for blackberry. When BES is properly configured on a server in your network you can receive access to corporate Email, Calendar and Contacts. Administrators of the system can remotely wipe units and enforce complex it policies. The blackberry server adds a piece which is often complex for smaller offices which may not have the server capacity but provides needed access control for larger organizations.

There are also 3<sup>rd</sup> party alternatives to BES servers, in our experiences these applications work 80% of the time and are really workarounds.

- Large range of phones/features look for ones with WiFi and GPS Chips
- RIM produces many versions but fewer “blockbuster” releases
- Best keyboard platform
- Tethering allowed
- Outlook Sync through Blackberry Desktop

Blackberry’s application market is called Blackberry World Application market and contains about 700+ applications.

## Apple

Apple has the iPhone/iPad mobile application OS. It connects to Microsoft Exchange through the enterprise active sync utility providing mobile access to Email, Calendar and Contacts. From the server you can enforce a password and some less complex policies as well as remotely wipe the device.

- Paid for Active Sync License
- Direct Connection to Email/Contacts/Calendar
- Remote Wipe
- Some access control based on your Exchange Server Version
- No/little Special Server Configuration Exchange 2003 SP2 or higher
- OS 4 has some multitasking support
- No tethering at this point
- Outlook Sync through itunes
- 

Apple has the most robust application market in the iTunes app store with over 140k applications and growing.

## Palm (HP)

HP also paid for active sync license which provides direct access and synchronization options for Email, Calendar and Contacts.

- Paid for Active Sync License
- Direct Connection to Email/Contacts/Calendar
- Remote Wipe
- Some access control based on your Exchange Server Version
- May require some exchange configuration before working
- Best Multitasking support
- Tethering support wifi distribution options
- No Local Outlook Sync by Default

## Android

One of the newest entrants into the market, this device is based on the Google platform, laso. Google also paid Microsoft for the active sync license which allows easy access to Email, Calendar and Contacts.

- Direct Connection to Email/Contacts/Calendar
- Remote Wipe
- Some access control based on your Exchange Server Version
- Can Return Apps within 24 hrs (once)
- True multitasking support
- No legal tethering
- Be Advised no out of box Outlook Sync only Exchange
- Android / HTC Sense is a nice combo

Android has the largest application market after the iPhone, including approximately 30, 000 applications.

## Windows Mobile

New Windows Mobile software will soon hit the market (Windows Mobile 7) so the definitive specifications and business application of the new software is yet to be seen. However, we it will have native support of active sync for Email, Calendar, Contacts and Tasks as the previous versions have, and also support for mobile office applications like Word, Excel and PowerPoint.

- Microsoft OS so best integration with your Office Products
- Direct Connection to Email/Contacts/Calendar
- Remote Wipe
- More control based on your Exchange Server Version
- Some devices support tethering
- Multitasking coming in Windows 7 mobile

Windows Mobile application market is called the Windows Phone Marketplace and contains about 1,000 applications.

## Other Device Considerations

Battery Life: With all the communication features available on mobile devices today, battery life is a critical feature to evaluate. Some general information to consider about battery life:

- iPhones don't last all day under heavy workload (in our experience)

- iPhones have no option for larger capacity batteries which are officially from Apple, (though there are some from third parties which connect to the 14 pin connector at the bottom.
- Blackberry's and other devices allow you to swap dead batteries or get larger capacity batteries.

Touchscreen vs keypad: Some devices only have on screen keyboards, others only have QWERTY keypads, some have both. This is often a personal preference, but testing a device before you buy is highly recommended.

## Final Thoughts

When selecting a device follow these steps to ensure a positive and useful mobile platform.

1. Consult with an IT company about what capabilities your network has for mobile device support . Be very careful about taking the advice of the salesperson selling you the phone. Generally, their knowledge of configuration and setup is quite limited.
2. Consult with your practice management consultant about what support the software has for varying devices
3. Consider what data you NEED to have with you in order to be able to work effectively (email, calendar, etc.).
4. Consider what the best carrier is for your area and needs
5. Within your IT capabilities and the carrier capabilities, review the device options for a phone which has the features and operating system that help make you effective outside the office.
6. Train staff members or your IT staff on how to use and manage the phones.

**Contact Joe Ulm at Information Technology Professionals today to setup a consultation on your next mobile office deployment or about ITP's mobile device network review and training packages. Paul Hager and other ITP engineers are available to travel to your organization and provide a complete training and setup packages for your mobile workforce. 1.877.539.7274**