MEDIA ON THE MOVE:
FROM APPLETS TO CRAPLETS

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ABSTRACT

Radio and Television broadcasters have embraced the digital world and as technology continues to change, engineers lead that change. In this paper, we will examine useful, and some not so useful, mobile applets that apply to our daily engineering and broadcast work. No matter what smartphone or mobile tablet you use at your station or network this will expose you to valuable mobile applications, some of which are free, that go a long way in helping us work smarter. We will also cover some specific applets Radio Free Asia (RFA) uses 'in the trenches' to help accomplish our work.

FROM HUMBLE BEGINNINGS

In 2009 I traded in my Windows Mobile phone for an iPhone 3GS. In a few days I was surprised how much easier it was to 'stay on top of things' at work because my new smartphone was truly smarter than my previous phone. I could now manage emails from my mobile device at my convenience, plus I had the benefits of Internet access and many other tools at my fingertips.

Most engineers use one or more mobile devices to manage their lives today. As part of our profession, we evaluate new technologies; this includes software and applications, especially mobile applets. Many of us realize the benefits of certain mobile applets before they are accepted by the 'main stream.'

A smartphone is a mobile phone with advanced capabilities and often functions like a personal computer (PC). There is no standard industry definition of a smartphone but for some, it is a phone that runs a complete operating system, software, providing connectivity and has a standard interface; a smartphone lets the user install and run advanced applications. Symbian was the world's best-selling mobile operating system until the end of 2010 when Android, with over 32-million units sold, surpassed Symbian, with only 31-million sold. This major market upset is considered the proof that Android, a free operating system, is highly popular with vendors. Bought by Google in 2005, Android is based on a modified Linux kernel and provides an operating system, middleware and key mobile applications.

Worldwide smart phone market
Market shares Q4 2010, Q4 2009

OS vendor	Q4 2010 shipments (millions)	% share	Q4 2009 shipments (millions)	% share	Growth Q4'10/Q4'09
Total	101.2	100.0%	53.7	100.0%	88.6%
Google*	33.3	32.9%	4.7	8.7%	615.1%
Nokia	31.0	30.6%	23.9	44.4%	30.0%
Apple	16.2	16.0%	8.7	16.3%	85.9%
RIM	14.6	14.4%	10.7	20.0%	36.0%
Microsoft	3.1	3.1%	3.9	7.2%	-20.3%
Others	3.0	2.9%	1.8	3.4%	64.8%

*Note: The Google numbers in this table relate to Android, as well as the OMS and Tapas platform variants
Source: Canalys estimates, © Canalys 2011

Each mobile operating system has its own app store; Android Market is the app store for Android owners. Many broadcast networks, like RFA, are finding mobile websites as another way to approach and serve the widest audience possible, and at times, with a mobile app.

While the Symbian OS is common in Ericsson and Nokia phones, the BlackBerry is a brand of smartphones developed by Research In Motion (RIM) and is also the name of the operating system, BlackBerry OS. BlackBerry is best known for its native support for corporate email, through MIDP 1.0 and recently, a subset of MIDP 2.0, which allows complete wireless activation and synchronization with Microsoft Exchange, Lotus Domino, or Novell GroupWise email, calendar, tasks, notes, and contacts, when used in conjunction with BlackBerry Enterprise Server. BlackBerry OS also supports WAP 1.2.

With the proliferation of smartphones comes an even greater proliferation of mobile applets. Applets, or apps, are computer programs designed to help people perform an action. Apps can be pre-installed on a smartphone by the service provider, or downloaded from online app stores and other mobile software outlets. For the sake of this paper, applets are useful computer programs; craplets are useless computer programs. When you read the word 'apps' please know I intend to include all applets and all craptlets.

What types of apps are driving the phenomenon? In late 2010, John Tanner of Telecom Asia wrote, "For the most part, according to Nielsen, games are by far the most popular category, followed by entertainment-related apps (like Pandora), navigation apps (like Google Maps) and, of course, Facebook." There are even apps to help you find more apps. According to Mr. Tanner, one great place to do your research is AppAdvice.Com. It has App Reviews, App Charts and App Guides which are helpful in exposing new apps and as an additional aide, it ranks similar apps in order to help you find the best ones.

If one were to compare the available apps of just a few years ago to those available today, we can easily imagine how many will be available a few years from now. Better bandwidth and more powerful smartphones are a few things that will accelerate the growth of mobile computing. So, as you read on I hope you will come-away with a few useful apps and you learn of a few to avoid.

"If apps are becoming more important, does this mean that the way we use the internet as a whole will change?"
--Jason Hiner, Tech Republic
Editor in Chief

In a twist to the cliché, "One man's junk is another man's treasure," I say to you, "What is one person's craplet is another person's applet."

APPLETS TO ORANGES

As mentioned previous, a mobile applet is a computer program designed to help you perform an action; it can also be said that it is any small program that is downloaded to your smartphone or tablet which has a useful purpose. The term craplet is a combination of the words 'crap' and 'applet.' A craplet is any program you already have, or downloaded, and come to realize is useless or does not perform its purpose. A craplet can also be any unwanted app that taxes your system resources and, more often than not, effects system performance. Even a mahjongg app can be useful if it serves a purpose, but to others, it could be a craplet. (My apologies to those who enjoy mahjongg.)

In December of 2010 Electronista.Com published an article about craplets being a feature of Android phones and went on to include, "Many Android phones now actively prevent users from making modifications. On certain phones, Verizon blocks Google search software to favor Microsoft's Bing, while even the usually stock T-Mobile G2 auto-resets the firmware to prevent modifications and needed extensive hacking to begin supporting custom software controlled by users."
In simple terms:

Applets = Good
Craplets = Bad

Now you decide.

APPLET OR CRAPLET

Time Everlasting

There are free apps that come with mobile devices. One default app on the iPhone is the Clock app. At RFA we work with many time zones, including Coordinated Universal Time (UTC). While we publish our schedule using UTC, each listener likes to know the local time when RFA's programming

can be heard. The Clock app helps keep track of times in major cities around the globe. You pick the cities, and the Clock app will take care of the rest. The app also comes with an alarm clock, (great for an early morning wake-up call in Cambodia), a stop watch, and a timer which can be used when backtiming.

CalcZero: Time is another free time calculator app. While I found it a bit challenging to use at first, after a few minutes, I was able to use it. I found it more useful when it comes to backtiming a live program. CalcZero: Time lets you enter a total time in hours, minutes and seconds, subtract time passed, then quickly see the time remaining. CalcZero: Time does go a bit overboard with support for 26 different time units including day, year and century calculations, but the most important units you should ever need are hours, minutes and seconds. The buttons **M.SS** and **H.MMSS** let you enter time units quickly and easily. For example, enter 30.00 [M.SS] - 25.57 [M.SS] = 4 min 03 sec remaining. Similarly, 2.3515 [H.MMSS] would be treated as 2 hr 35 min 15 sec. Unit conversions are fast; just enter the number, tap the unit to convert from, and tap the screen again to convert to the specific unit needed. CalcZero: Time also lets you work with fractions so I found this app to be a nice replacement for the Clock app.

Have Your Phone I.M. My Phone

One basic app we use daily is instant messenger (IM). There are plenty of free IM apps avail so it is not hard to be available online all the time. Just a word first about texting; some phone plans include unlimited texting and some do not. Without trying to sound too cliché, it pays to know your phone plan. A few of the better IM apps around are Fring, Meebo, PingChat and Skype.

Fring is a mobile voice-over-IP app that also serves as an IM client. It is free and lets you communicate over an Internet connection. You can also use other IM accounts like AIM, Yahoo! Messenger, MSN Messenger, Google Talk (GTalk), and even Twitter. With Fring you can make free mobile calls, video calls, and have a live chat session. You can make inexpensive calls worldwide to those not using Fring with FringOut; calls start at around $.01 per minute. With tens of millions of users in over 200 countries, Fring must be doing something right.

Meebo has gained some ground within RFA as those who tried it first, liked it, and have stayed with it. While Meebo may be best known for its use on PCs, it is also available as a mobile app. Like Fring, Meebo supports major IM clients in addition to Facebook, MySpace and more. The Meebo app also works over 3G, 4G, or Wi-Fi, allows multi-network access protocols, automatically reconnects, has a searchable and synchronized chat history, comes with a built-in browser, and has advanced chat session management. Meebo is a fairly complete IM app that lets you switch between multiple conversations with ease, and when you rotate your mobile unit 90 degrees, it goes into landscape mode for easier reading. Meebo was rated one of the top 10 best Android apps for 2011 by Newsweek magazine. Again, as a free mobile app, Meebo brings you a great deal of power and is one of the better IM apps around.

PingChat! is another IM app that works well for the iOS, Blackberry and Android smartphones. This means that PingChat! can be installed on many different types of mobile devices and still provide seamless integration across all the platforms. PingChat! not only lets you send and receive instant messages, but pictures, video, locations and voice notes can also be exchanged with your contacts. We started using PingChat! in RFAs technical division over a year ago; it worked well from the start. While PingChat! is useful, we find that people still rely on voice mail and SMS texting to communicate.

Skype has been a used at RFA for years. Before it was mobile app, Skype was used for live audio feeds. Up until 2010, RFA used Skype as a live-to-air program line from our office in Phnom Penh, Cambodia to our Washington DC studios. Since, we have switched to using the Comrex Access for our live audio feeds between Asia and Washington DC as this increased the quality of the audio to-air. Skype audio is now used as an inexpensive backup line. Skype is used regularly by our reporters on their office PCs in conjunction with a plug-in called Pamela; together, a broadcaster can record interviews without have to use a studio. As a mobile app, Skype is loaded on our corporate iPhones. We've discovered that Skype is just as valuable on a mobile device as it is on a desktop computer. For those with an iPhone 4, they can also use Skype for video chats. Skype continues to evolve and find ways to broaden their user base. For example, in January, Skype bought rival company, Qik, so that Skype will handle video chat on an Android. Skype provides an inexpensive way of communicating and is still a valuable tool at our broadcast network.

ENGINEERING AIDES – USEFUL APPS

There are countless numbers of apps available for every mobile platform and likely countless numbers that can be applied to broadcasting and broadcast engineering. This is not an inclusive list, but a highlight of some you may not have thought to use. Try these; if they do not suit your needs, continue your research because your most valuable app may be available shortly.

Let There Be Light

Created by John Haney Software, Flashlight is one of those interesting applications that when it first came out, many of us thought, "Oh gee, what an, um, interesting app." Once we saw other technicians using Flashlight to illuminate the inside of a dark rack, we no longer felt it was a craplet. There have been countless times since when I needed some extra light. As I now carry my iPhone with me, I always have a light source. There are other similar, free apps available so there is no excuse for you not to have one on your mobile device; it might just provide the extra lighting you need in an emergency.

Taking Notes

One classic way of documenting ideas or reminders was to call your office phone and leave yourself a voice mail, or voice memo. Sometimes this means minutes of time needed to retrieve your phone, call, and then wait for voicemail to pick up. I have used this system many times myself. My smartphone replaced this last year when I started using a default app call Voice Memos. When driving to and from work, it is not unusual to realize there is something I must remind myself to do. With the Voice Memos app, I record a thought or a few keywords and then review the .M4A file later to help jog my memory. You can share your own memos by email or MMS right from the phone too. As a musician, I also use the Voice Memos app to record song ideas or melodies. There are countless other ways to use this app. Try the free version first and then define exactly what it is you need. You will eventually find the version, or another similar app, suited to you.

Broadband Testing

The FCC Mobile Broadband Test is a free mobile app that is part of a larger effort by the Federal Communications Commission (FCC) to identify areas with insufficient or nonexistent access to broadband in the United States. Made by Ookla, FCC Test provides you with information about the quality and speed of your mobile data connection. You can test the upload speed, download speed and latency of your mobile broadband connection and then share your results with the FCC using a simple email export. The test results may vary though because of several factors including location, your hardware, network congestion, and time of day. The results may be combined to analyze the quality and coverage of mobile broadband connections across the United States. Whether you are at work or home, this is a great applet for engineers.

If you are always running speed tests to check your bandwidth and to check the quality of available Wi-Fi, Xtreme Labs Speedtest mobile app and is another ways to perform those tests. According to ZDNet's Editor in Chief, Jason Hiner, "It is very consistent, although sometimes its upload speeds seem a little lower than reality." Besides using Speedtest, he also recommends verifying the Xtreme Labs results with a few other apps like the FCC Mobile Broadband Test mentioned previously, Speedtest.Net and the Cisco Global Internet Speed Test (GIST) mobile app.

Tag, You're it!

Quickly making their way into the broadcast arena are Quick Response, or QR, Codes. Developed in 1994 by Denso-Wave, a subsidiary of Toyota, QR Codes were initially used to track vehicle parts. QR Codes are 2D matrix type codes now being applied in a much broader context, including both commercial tracking and convenience-oriented applications that serve mobile phone users. You can generate and print your own QR Codes for others to scan simply by visiting one of several free QR Code generating websites.

The symbol versions of QR Code range from Version 1 to Version 40. The symbol version determines the data capacity. Each version has a different module configuration or number of modules. The module refers to the black and white dots that make up a QR Code, though they can be generated in multiple colors, with images and logos embedded and set at various angles.

QR Codes storing addresses and website URLs are now appearing more often in magazines, on signs, buses, business cards, or most any place a potential user might need quick information. Users with a camera phones equipped with the correct reader app can scan the image of the QR Code to display text, a

website URL, phone number, SMS message, email address, a VCard, events, a Google Maps location, a PayPal 'Buy Now' link, access to social media, YouTube videos and more. This linking from physical world objects is known as a hard-link, or physical world hyperlinks.

Microsoft Tag is another 2D mobile barcode that lets you connect physical resources to the digital world. The MS Tag is a High Capacity Color Barcode (HCCB) which is the name coined by Microsoft for its technology of encoding data in a barcode, or tag, using clusters of colored triangles instead of square pixels. Maximum data levels are increased by using a palette of 4 or 8 colors for the triangles, although the HCCB also permits the use of black and white when necessary. MS Tag has been licensed by the ISAN International Agency for use in their International Standard Audiovisual Number standard, and serves as the basis for the MS Tag app. A tag can be printed using a regular inkjet or laser jet printer, and it can be displayed in most any form including electronic billboards and even computer screens. The entire MS Tag process is free to use; there is no charge to use Tags, to download them, or to create them at the MS Tag website, Tag.Microsoft.Com. The free mobile app for any smartphone is available at http://Gettag.Mobi.

A few months ago, RFA started a new service on Facebook where listeners can access our broadcast schedule, frequency data, and information about current, and past, QSL cards. In our press release, we encouraged everyone with a Facebook account to join us online at RFA QSL and to visit our website, Techweb.rfa.org. First, some background information: Radio Free Asia encourages listeners to submit reception reports. Reception reports are valuable as they help us evaluate the signal strength and quality of our transmissions. RFA confirms all accurate reception reports by sending a QSL card to the listener. RFA welcomes all reception report submissions not only from DXers, but also from our general listening audience. If a listener has a smartphone, they can use the QR Code, or MS Tag, from the press release to access our automated reception report system and submit their reception reports.

As more companies make use of QR Codes or MS Tags, and as the public grows more comfortable with them, consumers will more readily access them. Standardization is bound to follow as consumers help drive what code or tag is most acceptable.

Secure the Deck!

Earlier this year, Norman Lo, Research In Motion's (RIM) Vice President of Asia Pacific, made some predictions on TelecomAsia.Net for mobility trends. He wrote, "More employees will bring their own smartphones as well as their tablets [to work] to access confidential corporate information, no matter with or without formal corporate approval. This will put sensitive corporate and customer information more at risk of being exposed to other parties if the devices are lost or being stolen." We are already seeing this trend growing at RFA as employees continue to bring personal flash-drives to work, sometimes infected with a virus. As mobile apps become more sophisticated and reach greater usage for purchasing and finance, the apps or the devices become more appealing targets for hackers and criminals. As you will read in a moment, RFA has already deployed a security suite for mobile devices; not that we have been infected with a virus through a mobile device, but more so because we know the viruses are out there and we are unwilling to gamble our systems by ignoring proper security measures. Security software is for every mobile device.

"There are even competitions now for people to submit their apps as new business ideas."
--Unknown blogger

Protection from a virus is not as necessary for Androids as it is for Windows computers, just yet. As Android's are now the best-selling mobile device globally, virus attacks will increase. Lookout Mobile Security provides important security options that make it a strong contender for deployment throughout any enterprise. Along with the antivirus and anti-malware capabilities, it also includes a phone locator for lost or stolen devices, a privacy advisory for your apps, and the ability to backup your data. Lookout is easy to install and all you need is a valid email address to qualify for free account registration; you will want this as several of Lookout's features need to communicate with you. Lookout offers a free version for basic security and a premium version for more complete protection. Lookout offers enough solid security to make it a good choice for most any smartphone. As a security app, Lookout installs deep hooks into your device, as it should, so be aware that Lookout has permission rights to your personal information, messages, location, network communication, your accounts, storage, phone calls, hardware controls, and system tools.

Trust Digital's mobile security suite is McAfee Enterprise Mobility Management (EMM) which simplifies connecting a user's mobile unit to existing services like email, VPN and Wi-Fi access. For the iPhones deployed at RFA, this is the app of choice. McAfee EMM is still available for free and lets IT managers offer employees mobile device choice, whether it is an iPhone and iPads, Android, Windows Mobile, or Symbian, McAfee EMM will work with them all while delivering secure and easy access to mobile applications. Some of the highlights of McAfee EMM are its authentication, scalable architecture, and compliance reporting. You can manage a few or thousands of mobile devices over a dispersed network, while effectively and efficiently assisting users when problems arise.

Kaspersky Mobile Security 9.0 works with the Symbian OS and, like other security suites, helps keep an employee's mobile life truly private. If someone can occasionally or secretly inspect your phone, they will only see what you allow them to see. All your private contacts and communications history are hidden from others. Like Lookout and McAfee EMM, if your phone is lost or stolen, you can easily block or wipe your data. GPS Find helps you locate your phone and Anti-Spam will ensure you are receiving only calls and SMS messages from people you choose. While Kaspersky Mobile Security is a powerful security app, it does come at a price.

Audio App-tive

In April of 2010 Apple released its much anticipated iPad. Thanks to positive reviews, over 300,000 iPads were sold on the first day. From that first day, the iPad could already use most of the 150,000 apps available for Apple's other mobile devices. At that time, there were already more than 1,000 apps made just for the iPad. While the iPad was promoted as a device for home use, those that bought it early began looking for new ways to use it; this included applications for professional audio. Just a few days after the iPad's release, Clive Young of Pro Sound News released a comprehensive list of available audio apps. Some of them include: Studio Track, DAW controller apps like Saitara Software's AC-7 Pro Control Surface, Korg Electribe, XA1P and Reforge. As these are all iPad-centric, this will be limited to a brief review of each.

StudioTrack by Sonoma WireWorks lets you record up to eight tracks on a multi-touch mixer. StudioTrack is a songwriting tool for musicians who want to capture musical ideas and record songs on their iPad. The program does work with the iPad's built-in microphone and headphones. Wi-Fi sync allows StudioTrack recordings to be downloaded to any desktop computer with a browser. Tracks can then be loaded into any recording software to continue working on songs. Realize there is a cost involved to download and install Studio Track so it may be worth your time to search for a similar but less expensive option.

Saitara Software's AC-7 Pro Control Surface for the iPad can control Apple Logic, MOTU's Digital Performer, Avid's Pro Tools, and Mackie Control protocols. It provides wireless hands-on control for recording and mixing. In his January 2011 Audio Media article, Alan Branch wrote, "Resembling a Mackie control surface the AC-7 Core has fader strips, rec, solo and mute buttons, channel selection, band and track switching, plus transport, a jog wheel that can transform to a large pan pot when a fader is held or a cursor…it's quite cheap when compared to the real hardware…"

Korg's iElectribe is a realistic recreation of the Electribe's entire sound engine and sequencer. Besides that, iElectribe comes with 64 Preset patterns available for immediate use along with 8 Supercharged effects and advanced Motion Sequencing. Motion Sequencing records all of your refinements so it is memorized and replayed as part of your prescribed pattern. iElectribe does not come free though, so it pays to shop around.

XA1p, from Mark's Recording Studio A/S, is a high-end, low latency, real-time spectrum analyzer that is not only available for the iPad, but also Apples' other mobile devices. It uses the built-in microphone and provides a visible reference for sound, which makes it a useful app for all audio professionals. When using the Headset plug for input (required for the iPod Touch), you can use a headset with mic combination or a breakout cable with 2 audio outputs and a mic input. Currently, none of the devices support line input on the dock connector, but you can connect a line signal to the mic input using a simple L-pad consisting of 2 resistors. With the XA1 or XA1p, and its visual presentation of your audio, you will always have a familiar reference to help in maintaining your sound, even in unfamiliar places. The XA1p is available in a Lite version and therefore will not cost much but be prepared to lay out some cash for the full-blown app should you need it.

Reforge, by Tibor Horvath, is a wave form editor. You can edit the wave form directly on your iPad just by touching it. With a touch of the screen you can set selections to cut, copy and paste within files or even paste from other files. It is easy to trim unwanted parts of your audio off too. While only available for the iPad at the moment, Reforge is reasonably priced and you may be surprised how powerful it is.

For professional recording, your opinion matters as broadcasters will ask what app you recommend for their mobile device. I mentioned earlier that the iPhone's Voice Memos app is useful for recording reminders and other personal memos; in a pinch, it can also record short interviews, but remember it only records .M4A files. Some other audio apps worth mentioning are Audiofile Engineering's Field Recorder, or FiRe, along with the similar Blue FiRe app. One other simple audio recording app that can be applied to broadcasting is ISaidWhat?! from Tapparatus.Com.

FiRe is powerful enough for the most experienced musicians and recording engineers; its workflow and intuitive design make it simple to use. FiRe lets you select three audio quality settings for recordings: Low (11.025 kHz), Medium (22.050 kHz) and High (44.1 kHz). Users can record in mono (useful for RFAs shortwave broadcasts) or stereo and you will see a live waveform view as you record. When a broadcaster is done with their audio, they can export it to a local server or globally using an FTP server. Before sending, the broadcasters can choose which audio format to send. The choices are: WAV, AIFF, CAF, AAC, Apple Lossless, AAC, Podcast, Ogg Vorbis, and FLAC. FiRe also works with exporting files to SoundCloud; more about SoundCloud in a moment. For a small investment, FiRe is worth consideration as an audio recording standard for any Apple mobile device.

Developed through a partnership with Audiofile Engineering, Blue Microphones offers their version of the FiRe app that is used in conjunction with Blue's Mikey microphone. At RFA, we have used the Blue Snowball and Snowflake microphones over the years with excellent results. The Mikey is made of two custom-tuned Blue capsules for stereo recording, provides a line-input, USB pass through and can rotate 230-degrees. Coupled with the Mikey, Blue FiRe provides solid recording results and lets you create editable audio markers and tag them with location data.

ISaidWhat?! is an inexpensive audio recorder that was meant to be used to record friends then use words from their sentences to make a new audio file of them saying something different, or saying something funny. But in a more practical sense, the people of Tapparatus have also provided a good, basic audio recorder for a broadcaster in the field. Yes it records audio, but it also lets the user type in a script, or paste it in from an email, or another app. Once accepted, the script is on-screen so you can start recording and read as planned. Editing is pretty intuitive; simply drag the beginning and end markers to identify the audio you want to keep. When you are done, each audio clip is saved as a snippet. You then line up your snippets by making an 'arrangement.' If you are unhappy with the arrangement, or snippets, you can correct as needed.

For those with an Android smartphone, iRecord is a free app that also lets you record audio. It is good for recording interviews, voice memos, lectures, reminders, and business meetings. iRecord is simple to use and starts recording with one touch of your screen. Any completed recording be quickly used as a ringtone and can be shared by Bluetooth or Gmail. A few other similar apps for the Android are the Voice Recorder from Mamoru Tokashiki, and Tape-A-Talk Voice Recorder by Markus Drösser; all of which are available through the Android Market.

SoundCloud is an audio distribution platform using the Internet, or cloud, to help musicians collaborate, promote and distribute their music; it can also be used to help broadcasters send their audio recordings to their station or share them with colleagues. The SoundCloud app lets you access, browse and listen to the sounds shared to you whether you are at work, home or on the go. SoundCloud also includes the ability to record audio too and instantly share it with any SoundCloud followers and friends you have on Facebook and Twitter. The free SoundCloud app is currently available for the iPhone and Android with a Symbian version expected this year.

Two Assorted, But Useful Apps

In Jason Hiner's article, 25 Must-Have iPhone Apps, he wrote that two of the more useful apps are Adobe's Photoshop Express and Navigon; he is the Editor in Chief of TechRepublic. As far as photo editing is concerned, Mr. Hiner wrote, "Photoshop is, of course, the best known photo editor in the world and its mobile app (Photoshop Express) doesn't do anything to hurt that reputation. But while the desktop version is known for having a zillion

features, the mobile app is distinguished by its simplicity. It's the best [Apple] photo editing app for simple crops, brightness adjustments, and sharpens." With Adobe's Photoshop Express, it's easy to improve your photos. Choose from a variety of one-touch effects, or just drag your finger across the screen to crop, rotate, or adjust color. You can also add filters like Soft Focus or Sketch. You can always undo and redo changes until you get the look you want and can do so without making any changes to your original file. Adobe Photoshop Express is available for the Android and iPhone and is free for both.

Mobile devices can come with a GPS app while others require a download. Also making it on Jason's top 25 list is the Navigon Mobile Navigator app for North American. Mr. Hiner writes, "I used to carry a separate Garmin GPS unit for turn-by-turn directions but I eventually got rid of it and decided to just use the iPhone instead. In researching the various apps, I eventually decided on Navigon, which is a company that makes a lot of the built-in navigation systems for many cars. Tip: Make sure your iPhone is plugged in to power when you run a GPS navigation program like this because otherwise it will quickly drain your battery." Navigon provides a realistic display of the actual course of the road including curves in a dynamic travelling animation. It not only shows you in advance which lane you need to change to, but also when. Navigon is a bit pricey as apps go, but when sending an engineer or reporter some place where they have never been, it is a relief to know they will arrive with the help of an app like Navigon.

Lastly, in Mr. Hiner's article he asks a very poignant question, "Will there still be a need for websites if there are apps available for everything instead?" Thought provoking and powerful; what is ahead for broadcasters and engineers in the future?

WHAT'S NEXT

Trying to predict the future of broadcast engineering is like winning the lottery; so few people get it right and when they do, it is usually just luck. Here is what I foresee. The growth of mobile devices and their apps will not subside for at least the next 5-years as we continue to drift away from desktop and laptop computers in favor of mobile commuting. People will still gather around their radios and TVs, but in the next decade, both will lose ground to mobile computing as listening and viewing becomes more prevalent on mobile devices. Changes in technology will continue at a rapid pace and what we accept as 'new and improved' today will be old-fashioned in a few short years. If you have been amazed by what developments we have seen over the past 5-10 years, just you wait for the next few years; brace yourself!

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