

Why the iPad Will Redefine Our View of RIAs

by Jesse Freeman

Apple has finally released the magical and mythical Mac Tablet, affectionately named the iPad.

At first I couldn't believe what I saw, it was a giant F*ing iPod Touch! Really, was that the best they could come up with? What, it doesn't have Flash? The eBooks are on a wooden shelf? It double scales iPhone apps? It's not wide screen? What is going on here?

It wasn't until the dust settled that I started to see exactly what Apple had done. There is no need to revolutionize the tablet computer when they have already changed the way we think about mobile devices. As the saying goes, *If it isn't broken, don't fix it*, and that is how we wound up with the extra-large iPod Touch. Before we really can get started on how the iPad will redefine our view of RIAs, we have to look back on why Tablet PCs have failed so far.

The slate computer is not a new idea. Apple invented the category back in the day with the Newton. In fact, the Newton is as close to the iPhone as any other device to this day. Tablet PCs, on the other hand, have had a horrible time getting off the ground. They were very expensive, had a low battery life, were slow, lacked easy input, and had an outdated version of Windows crammed into them. The last part is the most important. It's hard to imagine an operating system, dating back to the dawn of Windows, literally, working perfectly in a brand new and untested environment.

What apple has done is revolutionized the operating system, not the hardware. Now you may be thinking, no they didn't, it looks just like my iPhone, but that is the key. The iPhone OS was designed for small devices. It loads up instantly, has sexy transitions, is clean, minimalistic, and works great with a finger as the only input device. To understand truly what apple has achieved we now have to take a quick look at their flagship software, iWorks, on the iPad.

Up until this point, the iPhone was just a micro version of your computer. You had a very focused, single-task-at-a-time experience. The iPad, on the other hand, is going to take full use of its screen real estate. Showcasing iWorks on the iPad lets everyone know that this device may not be a fully fledged computer but it can be a productivity power house. Being able to complete word processing tasks, create spreadsheets, put together presentations, games, surf the web, use email, and output video to an external monitor sure sounds like a fully-fledged computer to me. Add a Bluetooth keyboard and you have a thin, light, and portable computer. When you don't have access to a keyboard you can peck

away on the virtual keyboard, but when you are stationary you are getting a full computer experience. The only difference is that the entire app is now wrapped in the iPhone's GUI, the same GUI that is easy to use with fingers, that is familiar to any of the millions of people with an iPhone or iPod Touch. Remember all of this is really running on OS X but with a completely custom touch friendly UI.

Now that we have all of that out of the way let's talk about the 800 pound Gorilla in the room: the lack of Flash. Adobe and their team of Flash evangelists are trying to get as much attention as possible to convince you that Flash has to be on the iPad. You will read many stats on how X% of the web is



Flash and you will be missing out on Y% of the experience. As a Flash developer myself, I am not happy that Flash is missing from Apple's web experience. It is ironic that Flash helped give birth to the concept of the RIA and that Apple will modernize it. Here is how...

There is an App for that

Right now, you think of an RIA as a web-based application. Air has helped break us free of the browser by allowing us to run our RIAs in a web-like sandbox that is seamless and that blends into the desktop OS. The main feature of an RIA is the connection to the internet. Rich Internet Application doesn't mean confined to a web browser, and as Air has shown us, these Internet Applications can live anywhere. The same can be said of Apple's Apps. They offer a rich user experience and many of them have passive or active connections to the Internet. Now, without Flash on the device, there is a gaping hole in Apple's version of the web. You can't go to any of the amazing sites on the FWA. You will be missing all the free TV that Hulu has. You will not be able to watch video from YouTube. Wait a second; you can watch YouTube on the iPhone. How, you ask? Well, it's simple: YouTube has a native app.

So let's analyze YouTube on the iPhone/iPad as an example of what RIAs will become on Apple's new device. YouTube made watching video on the web famous. Not only did it change the way we watch video on the web, but it also showed us how a community could be formed around that content. It broke all the

conventions of what we thought video was and it kick-started the Flash video monopoly on the web. Although it may not be the best example of a RIA, it does share many of the requirements of the classification and it is something that lived on the web and is now a native app. Since Apple doesn't allow Flash on its device, the only way you would be able to watch YouTube is to use a native Objective C app.

Seeing how YouTube works on the iPad, it is clear that anything built on the Web – especially in Flash – can be ported over to the device and created with Objective C. The largest hurdle is getting through Apple's *Spanish Inquisition* style approval process. Theoretically, Hulu could just make its own iPad app and stream video to anyone with an internet connection. Unfortunately, Apple may see this as direct competition with their iTunes store and not allow the app to be approved. This is a much larger debate and one that can't be covered in the scope of this article. The take away is that the same fancy Flash website you are making for Adidas, Nike, or the RIA you are making for a Bank, Hedge fund, or Enterprise Level Intranet can just as easily be created on Apple's iPad as a native app. Not only that, but with a built in distribution system and a way to make passive income off your product, things are looking more appealing now.

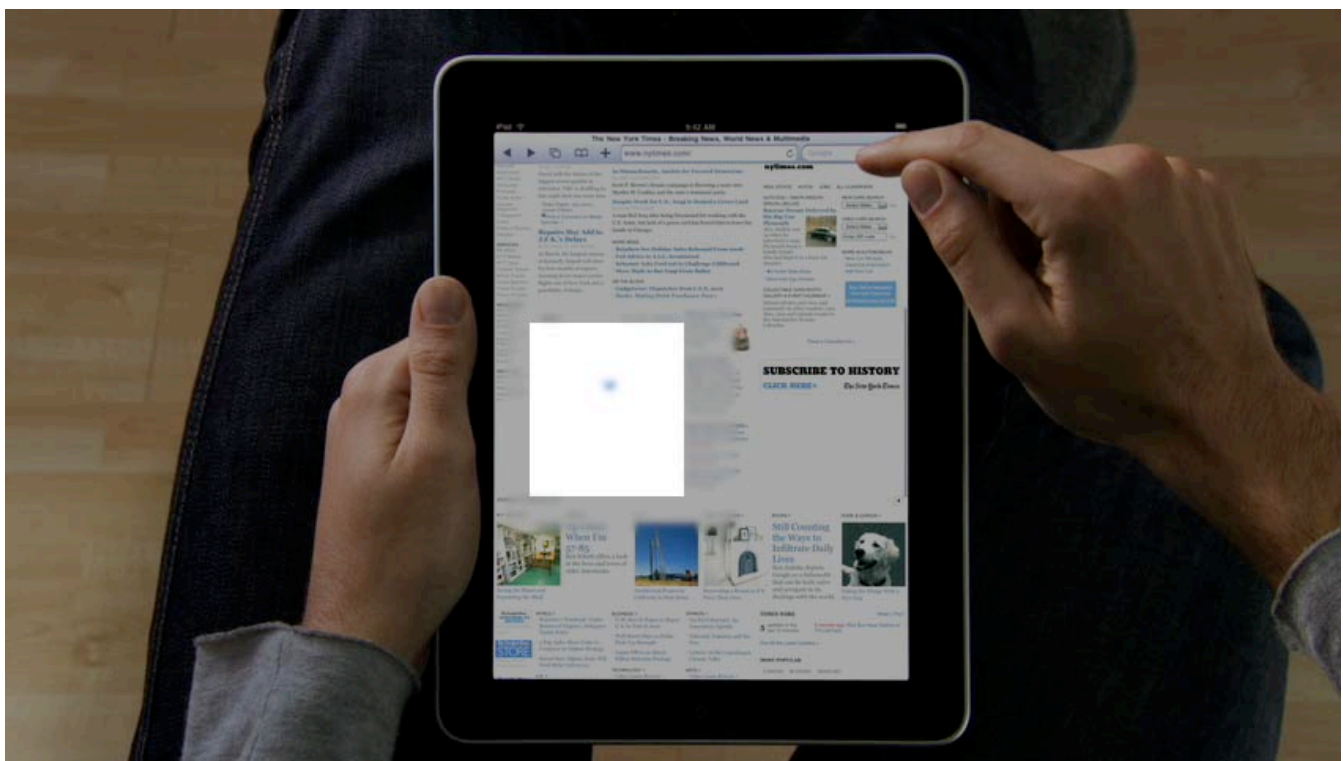
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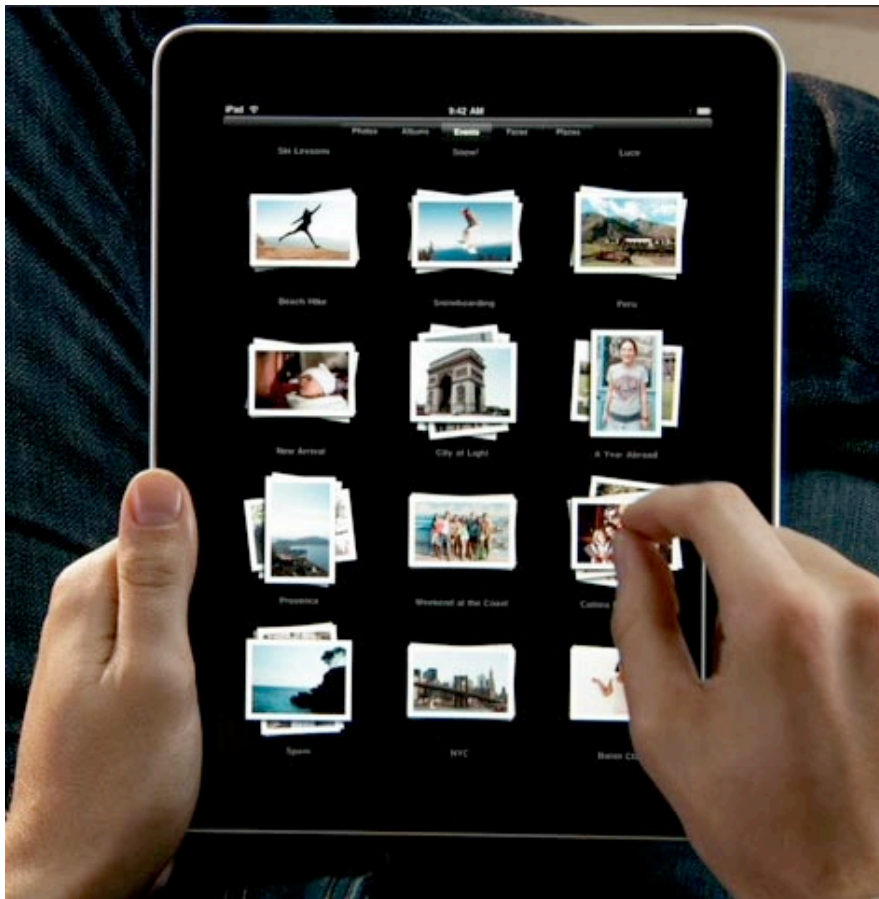
Although Flash has enabled us to create far-reaching, cross-platform, applications it has also had the negative impact of helping to kill the ability to monetize our online work.

Companies struggle to make money from the web. Sure, we all are paid to build Flash Apps but very few companies actually see that return directly from their application. If you don't believe me, look at the Flash gaming community. They are probably the ones who suffer the most from the *everything on the internet should be free* syndrome. It's incredibly hard to find a user base on the internet who will pay for a web-based game. There are subscription Flash game sites, but as an independent game developer you have very little exposure or way of charging to play your game.

Why would I pay to play Tetris when there are literally hundreds upon hundreds of clones all free? One of your only hopes as an independent Flash game developer is to wrap your game in advertising and pray it gets enough impressions make some money. If you made that same game for the iPad and sold it for 99 cents, you have the potential to make a killing. Granted having a runaway success on the iPad/iPhone isn't guaranteed, but the option is there.

Apple has helped create an entirely new market for small apps and micro-transactions. This is something that never materialized on the web because it was completely open and unrestricted. Now independent developers have the option to create rich applications they want to build with the possibility of seeing a return on their invested time. Not only can they build the same type of applications they did in Flash on the iPad, but they can take advantage of the full system's power.





been done before countless times in Flash; the iPad opens up the ability to take it to the next level.

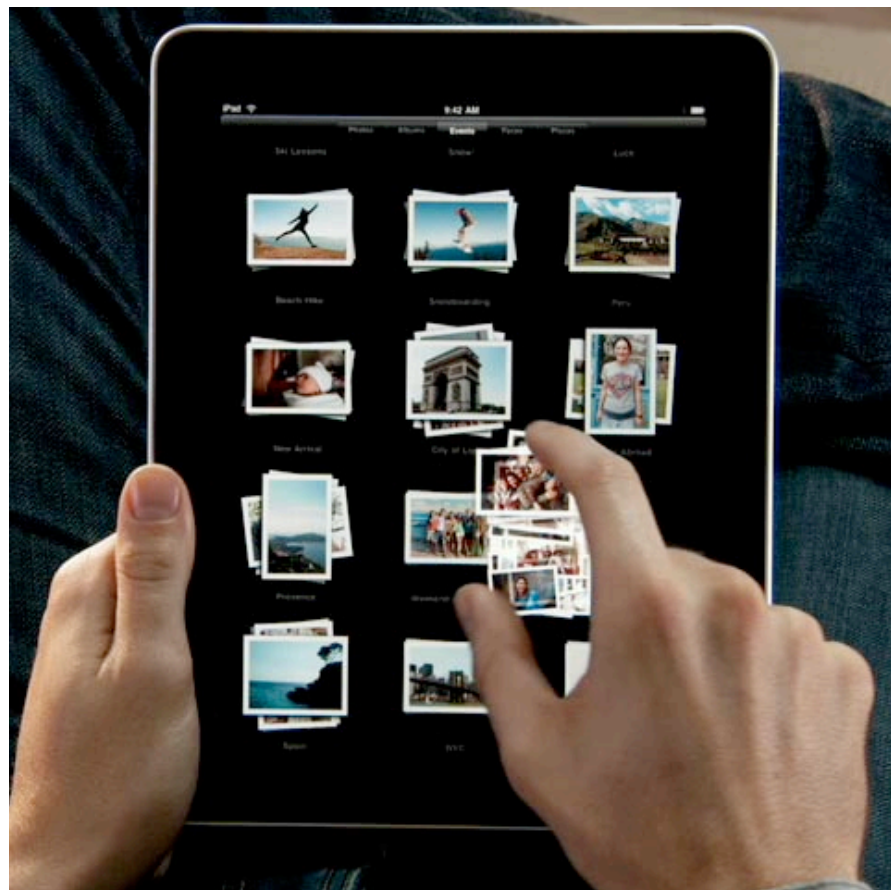
When it comes to gaming, there is nothing mobile coming close to the iPad. The iPhone 3Gs is already starting to catch up with the PSP and there isn't a sub \$500 netbook that can play a real 3-D game. Flash on the desktop still can't deliver the same immersive experience that Unity can, but the iPad has this power built in. RIAs are in no way related to games but all of this extra power allows us to make RIAs all the more immersive.

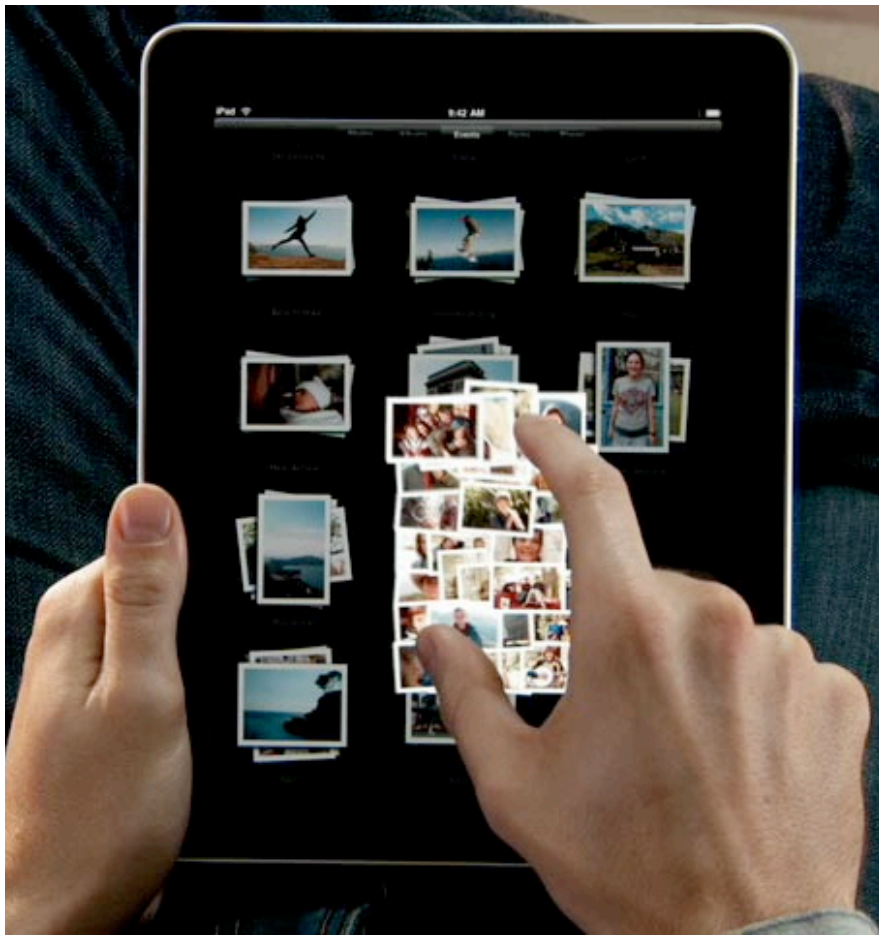
How does all of this performance benefit RIAs? More power equals a more rich and immersive user experience. Largely, RIAs designed in Flex are stale, form-based emulations of their HTML counterparts. The only immersive experience happens when transiting from screen to screen. Flash's advantage has always been in animation, design, and its penetration numbers. Unfortunately, with limited power to push more cutting-edge UI's and effects, most companies don't spend the time to polish their product the way I have seen in iPhone apps. Flipping card effects in Flash come off cheesy but on the iPhone they make sense. The iPad/iPhones' border isn't a browser window wrapped in OS chrome and scroll bars; it's the edge of the screen and metal. Apps on the iPad are fully immersive and always run in full screen mode, letting

Performance

When it comes to performance, we are limited to a plug-in, in a browser, with a small portion of the computer's resources. Although one of the biggest complaints about the iPad and iPhone OS is that you cannot multitask (Apple's own apps do run in the background) the trade-off is that you do get 100% of the system's free resources dedicated to your application. With that power, the iPad makes use of true 3-D, GPU acceleration, and a stable consistent platform that works the same on every iPad.

Flash revolutionized the way motion worked on the web. Flash gave birth to tweens, easing, and complex animation. The only limitation now in Flash is the platform itself. The complexity of creating a cross-platform, fully backwards compatible plug-in is starting to take its toll on the Flash Platform. Apple doesn't have the same bottlenecks Flash does. Apple has created a powerful and visually stunning platform from the ground up. I spent a lot of time fighting for GPU support and true 3-D in Flash and, if you want to know why, check out the video on Apple's site highlighting the iPad. Watch the transitions from app to app. Pay attention to how you see the bookshelf in iBook rotate around and the selected books fly open. Page turning looks like you are flipping a real page. And yes, this trick has





the user focus on just that app. That's enough about performance, how do we stay connected?

Always On Internet connection

The last piece of the puzzle is an always-on connection to the internet. The iPad is being hailed as a web-ready device, and it is. No matter how much we want to think Flash is the web, simply because it has an amazingly large penetration rate, the Internet is now the cloud. The Internet is where we store and retrieve data from not the necessarily the vehicle we do it with. For all intensive purposes, the iPad is a large web browser. The only difference is that you run individual applications but

all of them have full access to the internet for data; whether or not they use it is a different story.

Since Wi-Fi is built in to the lowest end models and the higher-level ones have 3G access for a monthly fee, this gives the iPad the potential to always be connected to the internet wherever you go. RIAs need internet access to work. Sometimes they are able to store data locally for offline use but by the nature of their design they are tethered to an internet connection. Is every app on the iPad that uses the internet connection now an RIA? I wouldn't go that far, but the line does get a little blurry. This always-on connection does allow us to take full advantage of the cloud, removing our

dependence on local file system storage, another thing RIAs do very well.

Conclusion

The iPad is not ever going to replace Flash; even HTML 5 is far away from kicking distance yet. It is also still up in the air how many of these Apple will be able to sell and if it will be a success. Regardless, the experience we are going to see from native apps will not only reflect the last several years of Flash UI design and animation, but I wouldn't be surprised if more and more companies pay to directly port over their full Flash based RIA's to the iPad. Given the screen real estate, power, and internet connection it is plausible. An even better scenario is that Adobe takes what Apple is doing and reinvents Flash as a more powerful, seamless experience, one that it has had trouble doing while stuck inside a browser. With several Flash ready tablets being announced, one can only hope that Flash has it's time to shine in the tablet form factor. I could spend several more pages covering how RIAs will evolve on the iPad. At the end of the day, it is important to be aware of emerging technologies and learn how to take your skills in one language and apply them to another. I don't know about you but I am finally really excited about learning Objective C. The iPad is going to be amazing to use, and I am not just saying it because I am an Apple fan. Even if it is a large iPod touch, it's still years ahead of any of its Tablet PC competitors. I am really looking forward to seeing what kinds of innovative and unique applications are created for it. I am especially interested in seeing how this new breed of apps will take advantage of the internet. One thing is for sure, that web-powered application are a huge part of our daily life and I can only hope what gets built for the iPod will spur Adobe to further innovate the Flash Platform. They have no choice; Apple is now a competitor with Adobe in the RIA space.

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With over 7 years of Flash development experience, Jesse Freeman has worked for VW, Tommy Hilfiger, Heavy.com, MLB, the New York Jets, HBO and many more. Jesse was a traditional artist for most of his life until making the transition into interactive art and hasn't looked back since.

Jesse runs a Flash blog called the Flash Art of War (<http://flashartofwar.com>) and is an active leader in New York's Flash community. He runs a monthly meetup called Developer Happy Hour (<http://developerhappyhour.com>) where people interested in Flash/Flex/AIR/Web 2.0 are invited to kick back, have a few drinks, and make new friends. He is also active in the online community as a writer for several Flash sites including insideRIA.com and can be found on twitter @theflashbum.



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