

MAC TO THE FUTURE: 'I was looking forward to iPad 2, but where are the unicorns?'

The iPad 2 might be better called iPad 1.5, but the decision to ration new features sets up Apple for market domination for the next few years.

Most English graduates end up in possession of two facts about Victorian critic John Ruskin: that he coined the term 'pathetic fallacy' (wherein a person sees his condition reflected in the condition of the world) and that he requested an annulment from his unconsummated marriage on the basis of finding 'certain circumstances' about his wife's body not to his taste. His biographer claimed that it was the fact her naked body wasn't smooth and perfectly depilated in the manner Greek statues and painted nudes had led him to expect. This is hotly debated (well, at least within the confines of those interested in Victorian literature) and perhaps apocryphal, but it does stand as a perfectly formed story about the inevitable disappointment of idealised desire.

By the time you read this, the iPad 2 will be on sale. I can confidently predict the reviews will be long, talk admiringly about it being blazingly fast and beautifully put together, but be full of moans about the fact there's no built-in HDMI, no USB, no Thunderbolt, no SD card slot and no high-resolution screen.

It's a curious kind of love that much of the tech press nurtures for Apple, an intense feeling that often tips over into resentment. Like any infatuation, part of the problem is the ideal coming face to face with the reality, and the realisation that reality can't bear the weight.

On the one hand, it all seems so unnecessary: Apple might run a tight ship when it comes to leaks, but it's certainly possible to make good educated guesses about its products, particularly when they're sequels. The last time I wrote about the iPad 2, back in October 2010, I talked about what was likely and

possible for it in terms of hardware, predicting more Ram, FaceTime cameras and a faster CPU, potentially even a dual-core model.

All three came to pass. Now, I don't claim any special genius or Jedi foresight for these picks: they were all either being discussed on the web or are just obvious given both the progress of technology or the evolution of the iPhone, with which the iPad shares so much of its DNA.

It also became clear in the run-up to the iPad 2 launch that we weren't going to see a revised screen. There are several reasons for this, all of which give you some idea of the pressures acting on Apple when it comes to hardware design. Some are basic practicalities: the desire to slim down the chassis and adding a more powerful CPU without compromising on battery life likely

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▼ A brief glance at the specs list might make the iPad 2 seem more like 1.5, but it improves in all the areas it needs to. Keeping the same screen as the original iPad is a blessing for developers, as it means there's no need to redesign apps.



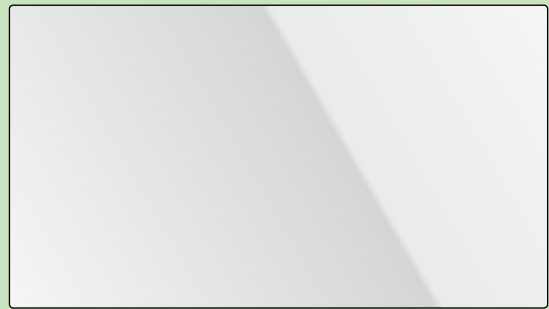
Display resolution comparison



MacBook Air 11in
1366 x 768



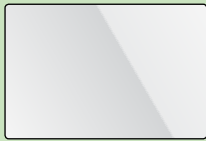
MacBook Pro 17in
1920 x 1200



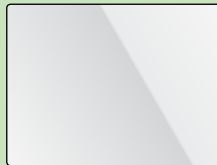
iMac 27in
2560 x 1440



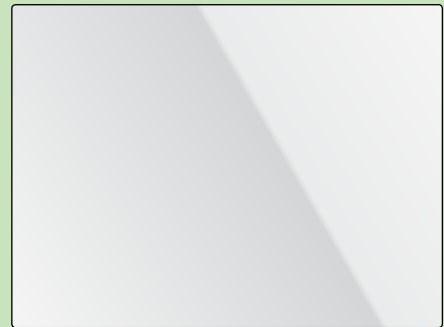
iPhone 3
480 x 320



iPhone 4 Retina Display
960 x 640



iPad 1 and 2
1024 x 768



iPad Retina Display (suggested)
2048 x 1536

played a part. So too would supply issues: Apple sold 15 million iPads in just one year, far more than anyone predicted (Merrill Lynch, for instance, predicted 1.2 million sales in the iPad's first year). Ramping up production to cope with that would have taken a lot of work and, given there are currently no supply issues, we can assume the factories are coping easily with the current panel. An updated version would be tougher to make in volume as well as being more expensive, so Apple would have two forces constraining sales: being unable to make the product in volume and being unable to drop the price.

Finally, to update the screen, Apple will likely have to double its resolution, given a change in form factor is unlikely. This is what happened with the iPhone: the first three models had 320 x 480 screens, the iPhone 4 stepped up to 640 x 960, so the iPad 3 will need to go from 1024 x 768 to 2048 x 1536. That's huge: it's a higher resolution than the 23in widescreen monitor on which I'm typing this. A 2048 x 1536 panel that's iPad sized would be extremely costly, so it never stood a realistic chance of being in the iPad 2. That didn't stop one gadget blog from lamenting its absence.

Why does Apple need to double the resolution, though? Why can't it simply go to 1280 x 1024 or 1680 x 1200? It's to do with the apps: they're not designed to be resolution independent. Their UI elements and design are predicated around a fixed size screen that runs at one resolution. It's completely different to the way in which apps for Windows and Mac OS X are designed. If we're being pedantic, neither of those are

resolution independent in the very truest sense of the word, but they can cope with and are designed to work with a dizzying array of screens and resolutions. This isn't the case with iOS apps, which are hand-crafted. Adding in a new screen size is a huge headache for app developers unless you increase it in a linear, predictable

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manner. Even then, all the graphics need to be redrawn, which in itself is no minor job (remember how long it took for all or even most apps to come with graphics for the iPhone 4's Retina Display?)

Indeed, if Apple wants to keep developers engaged with iOS, providing a stable hardware platform to target is key. The company has previously lashed out at cross-platform runtimes (most famously, Flash) but if it wants to keep developers investing significant amounts of time in native apps, as opposed to web apps, it needs to minimise the amount of work iOS is for them. Keeping the display settled for a reasonable period of time is important for this.

What about the HDMI port then? Well, a simple argument against the HDMI port is that including it in a device incurs a royalty payment. When you're selling tens of millions

of iPads, this quickly stacks up. And, unlike on a TV or Blu-ray player, not every user can be expected to use it, so why incur the penalty? Off it goes to an external dongle.

As for USB and/or Thunderbolt not making the cut, again, the reason I'd most likely advance for it is how difficult it would be to deal with in software. Apple seems unlikely to allow users access to the file system in iOS – that has been well and truly abstracted away in favour of simplicity. Photos live in the Photos app; you find videos when you tap Videos. Adding a USB port would require some very tricky decisions about files to be made, both in terms of permissions and in terms of exposing the features to the user. And if the USB connection was just for connecting peripherals, then it duplicates a job that's already done fairly well via the 30-pin dock connector.

The biggest surprises at the iPad 2 launch were the nifty-looking Smart Covers, the fact the CPU is a dual-core model, that the iPad 2 will also be available in white... and, of course, the appearance of Steve Jobs to take charge of proceedings.

None of which is to say the iPad 2 is disappointing or will disappoint when it comes to success, be that judged in sales, ubiquity or marvellous apps. The iPad 2 is everything it could reasonably have been expected to be, everything iOS as a platform needs it to be. None of this stopped people dreaming, of course. but when these dashed desires are frustrated, it shouldn't blind us to the fact that in improving the iPad and keeping its focus, Apple has likely set the stage to continue dominating tablet computing. 