Sunday, April 24, 2005

Of Course Macs Are More Expensive... Aren't They?

> There is also the issue of relative costs. Even to this day, there is a certain premium to be paid for choosing an Apple over a PC. I did two careful comparisons the other day of four systems from Dell and Apple, two desktops and two portables.... The Mac is $270 (20%) more expensive. I also compared the Dell Inspiron 9200 portable with the top-of-the-line 17" screen Powerbook G4. Again, these are virtually identical computers as far as their specs. The Powerbook is $961 (55%) more expensive than the Dell.

You know, this mythical friend of mine always does his homework carefully when selecting consumer products. And he takes great pride in that careful, intelligent approach. However, in the modern world, it's become harder and harder to know when you're comparing apples with apples, or apples with cashews. It started a number of years back for me when I was buying stereo systems. Understanding all the specifications and making sure you were comparing the same spec from two different products was very hard. It's gotten worse lately. Now, consumers can't even easily do comparison shopping for TV sets, let alone for cars, personal computers, DVD players, cell phones, etc. How can the careful consumer know when he or she is doing an appropriate comparison and making an intelligent selection?

The answer is that you can't unless you're either (a) an expert in the field, (b) know someone who is and ask them, or (c) have a source like *Consumer Reports* that you can trust to do the comparisons correctly, and follow their judgments. What you certainly can't do is just sit down and carefully compare the published specifications from two vendors... at least, not without doing a great deal of research first.

In making his comparison, my friend made several basic errors. I don't point these out to show how stupid he is (because he's not!), but rather to indicate that these are errors that any intelligent consumer could make. In the case of the Macintosh pricing versus PC pricing, the errors have led to the general impression that comparable PC's are cheaper than comparable

Macs. Now, I won't debate whether or not that's always been the case, but I will state categorically that it ain't true today and hasn't been for the last 2-3 years.

But folks like my friend keep doing their careful analyses, and similarly misguided journalists duplicate their work in a forum for the whole world to see. It doesn't take too many of these to drown out the dissenting voices like mine, who keep saying, "But wait a minute... Didn't you know that..."

The first fundamental error most people with only a superficial understanding of computers make is that the speed specifications published for Intel-based PC's are directly comparable with the speed of RISC (reduced instruction set computing) chips like the ones Apple uses, either their G4 chips from Motorola, or the newer G5 chips from IBM. They aren't. It would take an entire article to explain why, and probably more expertise than I have. But there's a fundamental difference in the way the chips process information. Basically, for every 7 steps a RISC chip (like the G4 or G5) takes in completing a process, a CISC (complex instruction set computing) chip like Intel's or AMD's takes about 15. This does not translate precisely to a simple conclusion such as "Divide a CISC chip clock speed in half to see a clock speed that's comparable to a RISC chip," but it's close, especially for the Pentium 4 chip. What it does mean is that a consumer cannot look at a Dell computer's processor speed of 1.67 GHz and think you need an Apple processor speed of 1.67 to be comparable. In fact, a Dell Pentium 4 processor speed of 2.5 GHz is roughly equivalent to an Apple G5 processor speed of 1.6 GHz.

This article from OS News provides an excellent history of the two chip architectures, as well as more technical detail than you'll probably want to absorb. But I think the author's conclusion is telling:

> x86 [CISC chip] is not what it's sold as. x86 benchmarks very well but benchmarks can and are twisted to the advantage of the manufacturer. RISC still has an advantage as the RISC cores present in x86 CPUs are only a marketing myth. An instruction converter cannot remove the inherent complexity present in the x86 instruction set and consequently x86 is large and inefficient and is going to remain so. x86 is still outgunned at the high end and perhaps surprisingly also at the low end - you can't make an x86 fast and run cool. There is a lot of marketing goes into x86 and the market -technical people included- just lap it up.

Unfortunately, this is precisely the mistake my friend made. To get a comparison with a Dell laptop running at 1.8 GHz, he felt that he needed to price out the cadillac of Apple laptops, the 17" Powerbook running at 1.67 GHz. Well, no. The Dell Inspiron is

equivalent to an Apple iBook, Apple's consumer line, not to the Powerbook, its pro line. From this error, others accumulate, but this is the most significant mistake consumers make when pricing out Dells versus Apples. The fact is, those RISC chips Apple uses in both its consumer and pro-model products are the same kind that power high-end Unix workstations and servers, whereas the Celeron or Pentium 4 that Dell uses is a consumer-grade product that is not comparable in terms of raw clock speed. (The Barefeats website is an excellent source of objective benchmarks for different aspects of computing--CPU's, video cards, RAM, hard drives, etc. This article from last September compares the G5 chip mostly with other 64-bit chips, but it also includes the Pentium 4. In all of these tests, the dual-2.5GHz G5 is about twice as fast as a 3.0 GHz Pentium 4.)

Furthermore, Apple machines that use the newer G5 RISC chip from IBM have an even greater advantage. Unlike Pentium and Celeron chips, which handle 32-bit processing, the G5 chip can handle 64-bit processing. Briefly, 64-bit chips can run longer, more complex instructions than 32-bit chips, so they will enable much more powerful data-intensive tasks such as audio and video encoding, advanced engineering design, and games. Another key advantage is that a 64-bit chip can recognize and use a lot more RAM. Windows 32-bit chips can address up to 3GB of RAM, and though that seems like a lot, it's a puny amount compared with the theoretical 1,000GB capability of a 64-bit chip. This doesn't boil down to too much practical difference today, but as always, Apple's engineers are quick to recognize a potential benefit to the computing experience and to incorporate it early into their hardware and software. Starting this week, Apple will be delivering a major update to its Mac OS X operating system that will be able to take full advantage of those G5 chips, and Macintosh software vendors will be re-working their applications to take advantage of this. For various reasons, Windows PC's are still stuck in 32-bit computing, and it'll be some time before they catch up. (For further reading on 64-bit chips, check out this 2004 article from Computerworld magazine.)

Dell capitalizes on consumer confusion about PC specs too, by providing more choices than you can possibly absorb, or need. It's like the way I feel sometimes when I go to the drugstore to pick out cold medicines. These days, there are varieties on the varieties, and maximum on the maximum strengths. I don't know enough about marketing to understand the motivation for this profusion of unnecessary choices, but I do know that it makes shopping more stressful than it should be.

By contrast, at Apple's online store, the choices are pared down to a very reasonable number, and the differences are very clear.

There's still room for customizing your selection, but it doesn't take 3 pages like it does on the Dell site! I guess a lot of consumers think that the more choices you have, the better. And that's certainly true within reason. My opinion is that the Dell shopping experience is complicated to the point of exasperating for a knowledgeable consumer, and probably just overwhelming for everyone else.

And I'm convinced that part of Dell's strategy is "bait-and-switch." In this age-old marketing scam, a shopper gets lured in by the very inexpensive option advertised loudly at the front of the store, and then a nice salesman comes along and explains everything that was left out of the product to get you that price. He talks up the missing features, and soon you're wanting the product with all of *those* features. Then he drops the ball and you realize that the product you really want--and may end up with--is twice as expensive as the one you went in for in the first place.

Dell's online store is very much like that. Virtually every option is replete with upgrade opportunities, and there are even upgrades on the upgrades! My theory is that before you know it, most people walking into Dell's store to buy one of those sub-$500, stripped-down models probably walk out with a computer that's at least as expensive as one of the ready-configured Apple PC's, and probably much more so.

Here's a brief but relevant digression on this type of behavior. I have another PC-using friend who wanted to do some high-end video and audio editing with a new PC. He wandered into a store selling Windows PC's and walked out with a $3,000-plus desktop system with all the bells and whistles. Then it sat in his house for a year, and he still hasn't figured out how to do basic audio and video editing, let alone the advanced stuff. As I told him, what he wanted to do could be done with your average G5 iMac system for half that price, and he would have been almost instantly productive to boot.

So, I went out to at least partially test this theory, and to do appropriate comparisons between Dell computers and Apple computers. I'm hardly the first one to take this challenge (some earlier ones are here, here, and here) but I've decided it's time to stop talking and taking other peoples' word for it, and go get some concrete facts to put on (digital) paper.

My going-in theory, based on earlier informal comparisons I've done in the past, was that a business-class Dell computer would be much more expensive than a professional-class Apple, and that a consumer-class Dell would be about the same price as an

Apple... after you factor in all of the choices an intelligent consumer should make in wading through that plethora of options on the Dell shopping site, as well as the choices needed to bring the systems into rough comparability in terms of hardware specifications.

My methodology allowed for what look like "permanent" specials on the Dell site. (Come on, isn't anybody else sick of this but me? It's like your local jewelry store where everything is always 50% off! Again, this is probably intelligent marketing to American consumers who always like to think they're getting a steal, but it seems like a pretty shoddy business practice to me.) However, just to be mean to Apple, it doesn't include any of the often-phenomenal sales prices you can find at Apple's "Special Deals" page. By the way, Dell's specials are labeled as "Limited Time Offers", but when you click the link to "View details" about the offer, you find that "Specifications, availability and terms of offer may change without notice." Oh, I see. So this "sale" price could end in 15 minutes, or it might last 6 months. Thanks for clearing that up for me, Dell. Despite this ambiguity, I've included these discount "offers" in the final comparisons, just to be fair to Dell.

My shopping experiment does take into account something that for some reason a lot of reviewers who attempt this comparison don't think is important: **A computer is not just a piece of hardware. It is also software.** Apple systems are loaded with high-class, extremely useful software that you just don't get in a Windows system, and I added a few things to my Dell choices to make them roughly comparable to the Apple. This is leaving aside the quality difference between Mac OS X and Windows XP. That is for another article. For the purposes of this comparison, they're roughly equal. With one caveat... For some reason, Microsoft thinks it's important to sell a version of Windows that doesn't have certain features, such as backup, remote control, remote networking, web serving, and the like. I suppose it's a way of making more money, by charging more for a version of the OS that has all of those features. Whatever... Apple sells only one version of its OS, and it has all of the features that Microsoft lops out of its consumer version of XP. But clearly, to be comparable, you need to get a PC with Windows XP Professional, which, by the way, Dell loudly recommends throughout your shopping trip.

All of the systems except the consumer laptops were standardized on 512MB of RAM, using the same speed of RAM appropriate to each pair of machines. The iBook and Inspiron notebooks were left at their default 256mb of RAM. [Added 4/25 10:55 AM. Updated 10:20 PM.]

At both companies, shipping was free (except when I shopped in Dell's "Business" store).

Support options at Dell were extremely complicated, but I tried to make selections that corresponded to Apple's much easier-to-understand support options. At Apple, everyone gets a generous, but limited 1-year warranty, and you have the option of extending that support for 3 years. It would take a lawyer to explain Dell's multitude of support options. So a lot of customers would probably take Dell's "recommended" option, which invariably would add a cost to your system. I'm sure that's what Dell is banking on, because their default warranty is basically the same as Apple's. Where I could, I opted out of Dell's extended support options, as I did with Apple's.

You can find the detailed results of my shopping trip at these links:

Dell Latitude Laptop vs. Apple Powerbook
Dell Inspiron Laptop vs. Apple iBook
Dell Dimension 8400 Desktop vs. Apple G5 iMac
Dell Precision Desktop vs. Apple PowerMac
Dell Dimension 2400 Desktop vs. Apple Mac Mini

And the winner is...?

You can check out the detailed writeups for each competition, but the results boil down to this:

Shootout Systems	**Dell**			**Apple**		**Winner**	**Diff**
Laptops							
		As Priced	Discounted				
Professional class	Latitude D810 (from 1,299)	$2,191*	$2,011*	PowerBook 15" (from 1,999)	$1,999	**Apple**	$12
Consumer class	Inspiron 600m (from 874)	1,612*	1,422*	iBook 14" (from 1,299)	1,299	**Apple**	123
Desktops							
Professional class	Precision 670 (from 1,539)		2,742*	PowerMac G5 2GHz (from 2,499)	2,619	**Apple**	123
Consumer class	Dimension 8400 (from 899)	1,870	1,780	G5 iMac 17" 1.8GHz (from 1,499)	1,653	**Apple**	12
Budget, no monitor	Dimension 2400 (from 299)	987	912	Mac Mini 1.25GHz (from 499)	822	**Apple**	9

*Note: Corrected to bring processor comparisons in line with estimates of equivalency at SystemShootouts.org. [Updated 11/25/05, 5:10pm]

So despite all the urban myths to the contrary, when you actually compare Apples to comparably equipped Dells, the Apples are not only tastier-looking, but they're less fattening, too! Every single one, which I have to admit surprised me a little bit.

And my shopping experience also confirmed my suspicions about Dell. In every single case, Dell starts you off at a ridiculously low price, only to lead you slowly and surely to a much higher one. They do make you feel better--at least, in the "home" computer section of their store--by showing you that you're still getting $250, or $350, or $500 off, but the discounted price still turned out to be higher than Apple's.

The most ridiculous case is their "budget" system. Walk into the store, and you look around and say, "Wow! Look at that, Martha! They have a computer for $299! It comes with a printer, too!" But what a crock that is. The $299 system is so ridiculously crippled that no one will ever walk out of the store with one and be happy. No, before you know it, the price has climbed way up, well above the Mac Mini comparably equipped.

How refreshing it was to step into Apple's store after the confusing mish-mash that is a Dell shopping trip. At Apple, the choices are simple, and you can make your choices and be out in a few minutes. It's very easy to understand the differences between the systems, and the choices are clearly explained without distracting you from your task. Try that at Dell! No way.

One last thing. Throughout the week I spent researching and configuring these systems, Dell seemed to change their prices every single day. It was impossible to nail down a consistent price... even the prices of the options seemed to change, and were even sometimes different from system to system. Contrast that with the Apple store, where you know what the prices are and can be sure they will be the same tomorrow as today.

Some people like to play the price game... you know, like shopping for airline tickets these days. The prices are never the same, and so you keep trying for the best one on the best day. At least, those of you who actually have the time to shop indefinitely. For me, I like shopping trips to be brief, to know I've gotten a quality product, and to feel like I haven't gotten ripped off.

At Dell, there's always some salesman asking you if you want another option for your system, each of which has to be

explained. At Apple, the products really do speak for themselves.

Oh yeah, I forgot to mention. Not only are Apple's computers actually less expensive than Dell's, they are also beautiful machines you won't mind showing off in your living room. The beauty and style come for free. They wouldn't be Apples if they weren't both well made and thoughtfully designed.

At Dell, they figure you will pay more for ugly machines, because everybody knows that Macs are more expensive... right? Once Windows users start to see through that myth, they'll have one more reason to think about making their next computer purchase an Apple.

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