MAC vs PC

A comprehensive survey of some twelve hundred reports, studies and articles.

— *compiled by* —

John Droz, jr,
aaprjohn@northnet.org
5/4/05

(URL => MacvsPC.Info)

Why this website

In mid-2000 our local K-12 school district decided to "standardize on the Windows/PC platform." At that time 90%+ of their computers were Macs. A group of local taxpayers felt that this was very unfortunate from several perspectives and started working on reviewing the merits of this decision.

I, John Droz (see page 7), was asked to be their spokesperson and to create this website. [Go to the next page for more details about our local situation.]

This 2005 edition has been my second major redesign of the site since its inception in mid 2001… In honor of the Macintosh 20th year anniversary, you'll note that I have included a few screen shots from the award winning 1984 Superbowl advertisement, as it's message still resonates today. (Go here to see the whole thing.) As I've said all along, I am **not** a professional web designer. Hopefully, though, you will find the site reasonably easy to navigate, and attractively laid out.

Also, I look at my role here as more of an editor than an author. My challenge has been to find (i.e. research) and read well over **four thousand studies, reports, and articles** that have been published on the Mac *vs* PC topic. No small matter. The majority of these are discarded for a variety of reasons (too obtuse, outdated, repetitious, etc.).

The bulk of my time was then spent with the remaining 1200±, trying to digest them in more detail, then synopsizing the material, and organizing it into the site. My last objective was to be able to transcribe all this technical mumbo-jumbo into an informative, interesting, readable – and occasionally even entertaining – document. Hope you find it so.

Before digging deeper…

- Although the information presented here is designed for schools, **it is also applicable for any business or individual who is making a Mac/PC decision…**

- We realize that "PC" stands for "Personal Computer" – which means that Macs **are** PCs. However, since common usage implies that PC means an Intel (or similar) microprocessor with Microsoft Windows as the operating system (*aka* Wintel), that is what we will mean when we say PC here.

- If you are looking for icons doing backflips, etc. you've come to the wrong place. The web site (and this document) are designed **to help you make a more informed computer purchase**, not to showcase web page design – i.e. *the emphasis is on the 115± pages (8.5" x 11") of ad-free content.*

- To make this document more useful, the links will work if you are connected to the Internet. Also, I have set up the HTML so that when you click on a link, a **new window** will open with that information (keeping your start page in the background). After you look the new page over and then close that window (a simple keyboard shortcut), you will be back at the original referencing page. This should make navigation quicker for you.

- One of the purposes of these pages is to **benefit the ENTIRE Mac community**, so if you need to reference **ANY** material here, please feel free to do so. (Please attribute proper credit.) Sending us a copy of published references would be appreciated.

- Any Windows/PC advocates who have nothing better to do than flame me, feel free to do so. However, to be accurately informed, I would suggest that you first read the **ENTIRE site** (115± pages of some 1200 referenced reports, studies, etc.).

In my Internet travels, I found a few sites (none gave direct attribution) that said something similar to the following:

In Japan, they have replaced the impersonal and unhelpful Microsoft error messages with Haiku poetry messages. This type of poetry has strict construction rules – each poem has only 17 syllables: 5 syllables in the first line, 7 in the second, and 5 in the third.

Haikus are used to communicate a timeless message, often achieving a wistful, yearning and powerful insight through extreme brevity. On each of our main section pages I will cite an example:

Out of memory.
We wish to hold the whole sky,
But we never will.

My idea of a Haiku would be something like this (remember I am a Physicist):

Choose Mac or PC?
Now everyone wants to know.
The answer is clear.

---

rev: May 4, 2005

Created on an Apple iBook in AppleWorks
with assistance from PageSpinner, CreaText, TypeStyler, and GraphicConverter.

Carteret Co. School District

In 1994 a $29 million bond (approved by Carteret County, NC taxpayers) authorized our school district to modernize their technology program and to make a substantial investment in computers. A citizen's committee was asked to assist in deciding how to spend this money.

After researching **all** aspects of the educational computer business (including having presentations by several PC assemblers), these *independent* citizens recommended that the school district standardize on Macintosh computers – and that is what happened.
Note: *None of these persons had any affiliation with Apple Computer, and few owned Macs.*

Several years after this, in mid 2000, rather "out of the blue", the school district decided to standardize on PCs, and to replace all their existing Macs (through "attrition"). Their carefully-worded plan amounts to abandoning a **$10,000,000**± taxpayer investment in Macintosh hardware, software, training, peripherals, networking, etc. This drastic change came about due to the persistence of one or two of the District's senior tech support people who were anti-Mac from the beginning.

So What?
The gist of our concerns is that our local School District is making a **significant** mistake in switching our schools' computers from Macs to PCs. We believe that this decision is detrimental to everyone involved: **students**, **teachers**, **tech support people**, and **taxpayers**.

Here is a VERY small sample of a few commentaries, etc. about this local issue:

- An article by *BusinessWeek* magazine.
- A story by MacCentral. This also has links to two prior MacCentral write-ups.
- An analysis from the always thoughtful LowEndMac site.
- A featured write-up on the Wired site.

  [In the beginning we tried to educate school board members, etc. about this issue by giving them printouts of reports concerning this matter. After copying and handing out over a thousand pages of documents it became clear that this wasn't the way to go.

  We then tried referencing them to websites where reports or studies were published. Since there were a great many of these, it soon became apparent that they weren't about to track down numerous links. My conclusion was that a single website was needed to collect and organize these reports, studies and articles: MacvsPC.Info.]

Our Position Is This:
When **all** the facts are viewed objectively, the evidence is overwhelming that **e-v-e-r-y-o-n-e** associated with the school system will benefit significantly more from **standardizing on Macintosh** computers *vs* Windows/PCs.

With this in mind, the concerned citizens have been asking the Board of Education and the school district to do just ONE THING: **to review this decision in a PROFESSIONAL manner** (i.e. *open, unbiased, thorough and well-documented*).

Why Standardize on Macs in Your School District
(instead of Windows/PCs)? An Overview...

**Studies of TENS OF THOUSANDS of Mac and Windows/PC users
have concluded that:**

Macs are better for STUDENTS
Students learn more on Macs
Students learn faster on Macs
Students are more creative on Macs

Macs are better for TEACHERS
Teachers are more productive on Macs
Teachers are more satisfied using Macs
Teachers can run Windows on a Mac

Macs are better for the TECH SUPPORT STAFF
Macs require less maintenance
Apple servers and networks have more powerful features
Macs have fewer virus and security issues

Macs are better for TAXPAYERS
It protects dollars already invested in the Mac platform
Macs provide more education bang for the buck
Macs are less expensive to own and operate

A Bit Of History
To Put Things Into Perspective

The secular universe is primarily driven by three motivators: Money, Power (i.e. Control), and Sex. As a subset of this universe, the computer world is all about **Money** and **Control**.

In the 70's, when IBM was the goliath of the computer industry, they were driven by a vision of how they expected (and wanted) the business world to work. In brief it was that: **1)** all computing would be done on mainframes [users would have terminals], and that **2)** these mainframes would be run by computer professionals (e.g. programmers, network specialists, etc.). [IBM's underlying belief was that 95+% of the population was technically ignorant, and that the only place for these people was on the fringes of the computer world (e.g. using a terminal). ***That's you they were talking about***.]

Referring back to the motivators, since IBM sold the hardware (being the only successful manufacturer of mainframes) and trained (directly or indirectly) the software people: **1)** they would take in BIG Money, and **2)** would essentially be in complete Control of the computing world. As the saying goes "Nice work if you can get it."

When a few kids came out with the first Apple, they profoundly challenged this business model in two ways. First, they contended that **real computing could be done on a self-contained desktop machine** (not a mainframe). Second, they demonstrated that **average every-day people** (i.e. non-computer professionals) **could run computers just fine** (*if* the computer's operating system was designed with this in mind).

At first IBM dismissed this as a juvenile toy. When Apple started making Money (uh-oh a threat to the Business Plan) they begrudgingly threw a "PC" out for trusting (i.e. gullible) consumers and businessmen to buy. To give credence to IBM's view of their technical incompetence, many did (and still do). Consider this: despite having some 250,000 employees at the time, IBM thought so little of this PC that they outsourced the writing of its operating system software.

When Bill Gates was hired to do this job, he was also steeped in the IBM perspective: we are dealing with idiots here so keep Control. Accordingly, MsDOS was not any businessperson/ consumer oriented operating system, but rather a simplified version of the operating system IBM was using on its mainframes (i.e. a system designed for and run by computer professionals).

And so it has continued to this day. Although the roles are now reversed (Microsoft has taken the Power from IBM) the mentality is the same. Essentially every aspect of a PC that has been consumer friendly (i.e. gives the user more Control) has: **1)** originated at Apple, and **2)** has been begrudgingly (and often inadequately) implemented by Microsoft. Microsoft is a big company with many talented people – so ***this is not an accident!***

{Please read our special [section](#) on Microsoft for more unvarnished information.}

The purpose of this site is to make you better informed. My belief is that if you are more educated then you will be better able to resist the concerted (professional, slick, sophisticated, enticing) effort that is being made by: **1)** Microsoft (along with their enabling box assemblers), and **2)** MIS people.

<div align="center">

Their main objectives are

to take as much Control as *you* will grant them,

and to take as much of your Money that *you* allow them.

It is completely up to you whether you are victimized by these efforts.

</div>

Mac vs. PC

Person behind the website

It seems somewhat strange that I have to give credentials – or need to explain "my motivation" – for presenting factual information. Nevertheless, here is an overview:

I am a property owner and taxpayer.
My wife and I split our time between our lakefront home in the fabulous Adirondacks of upstate NY (a state park with over 3 000 natural, clean, freshwater lakes like this), and our pleasant beach house on the coast of NC.

Most people would probably consider me a technology expert:
I have a graduate degree in Physics (Solid State Science), have worked in the computer field for over thirty years, have been a Macintosh consultant for over fifteen years working with thousands of Macs, have written commercial Mac software that is still selling today, have been a Mensa member, and more.

Did You Know?
I have nearly a hundred *business* clients who use Macs. The PC *sales strategy* that says "Macs are great for graphic artists" is a poorly disguised attempt to marginalize Macs into a very small niche market. BALONEY. My own business clients (who almost always *exclusively* use Macs) include lawyers, accountants, doctors, manufacturers, retailers, public relations firms, builders, restaurants, real estate offices, etc.

I am a person who has a strong interest in our education system.
I've served on a NY school board, volunteered thousands of hours of computer assistance time to students & teachers, been a Big Brother, a Foster Parent, and more…

I have no current affiliation with Apple Computer, nor do I have any other motive, financial or otherwise (other than already stated). In fact, I am comfortably well-off and would prefer playing golf to solving most computer issues…

What I find extremely disturbing is how schools, businesses, and individuals are blindly giving up control of their computers. See my elaboration (prior page) called A Bit Of History for a taste of what I mean.

**Oh yes – concerning this situation, one saying comes to mind:
"If you can remain calm, you just don't have all the facts."**

- Information presented in this site has been supplied by sources that appear to be reliable. If a documentable error is found, please email that information to me, John Droz, jr (aaprjohn@northnet.org), immediately, and any verifiable mistake will be corrected. All pages with technical information are dated to show their revision.

- Knowing that I'm a Physicist, yur probably right if you think that skillful writing is not my forte. If you want to offfer free editing services, be my gest…

PC myths debunked

Why Macs Are The Best Choice:

Our local school district's (publicly made) explanations for abandoning our $10,000,000± Mac investment, center around the following contentions:

Myth #1
"Windows/PCs are cheaper."
Response: Just not so. Despite *sometimes* having a slightly higher initial purchase cost, Macintosh computers have substantially lower **TOTAL COST OF OWNERSHIP**. Learn More!

Myth #2
"There's no real difference between Macs and PCs."
Response: There are BIG differences. For instance, compared to Windows PCs, the Mac OS is easier to learn, requires fewer keystrokes for similar tasks, and results in much higher user productivity. Learn More!

Is this still true for Windows XP?
Of course! Mac OS X is significantly better than Windows XP. Learn More!

Myth #3
"Students need a Windows/PC experience."
(Variation: *"Schools should be using Windows/PCs since more businesses do."*)
Response: Agree that Windows experience could be worthwhile! But educating students on computers involves MUCH more than exposing them to Windows. Macs can also run a Windows or Linux operating system **simultaneously**, for FREE, essentially providing two+ computers for the price of one. And there are at least TEN GOOD REASONS why schools should NOT use computers based on what businesses use. Learn More!

Myth #4
"There have been problems with our existing Macs."
Response: Macs are VERY reliable. Compared to Windows PCs, Macs are MUCH easier to support – and when **properly maintained**, they experience FAR fewer problems. Furthermore, Macs are more secure – e.g. thay are MUCH less prone to virus attacks. Learn More!

Myth #5
"Mac statistics are outdated, etc."
Response: In communications with school MIS personnel, an assortment of other Mac criticisms came out. Contentions about our statistics being outdated, about the quantity of Mac software available, about Apple single-sourceness, etc. are simply NOT LEGITIMATE. Learn More!

Myth #6

"PCs are faster than Macs"

Response: First of all, in a school setting, speed is hardly paramount. Secondly, for business and school related application usage, the performance of Macs is equal to or **better** than high-end PCs. Learn More!

And More…

Now that we're rolling, I've added some other pages to fill out the picture even more:

- MIS Management
- Everything You Want To Know About Microsoft
- Testers and Switchers
- What PC Advocates Aren't Saying
- Why Use Macs – Summary

Please note:

- In our attempt to keep things brief and to the point, our Position pages provide only a representative SAMPLE of the available research.
- The sources of the research data presented here are not only schools, but also **businesses** (i.e. the places that supposedly only use PCs). Furthermore, I have primarily chosen places that have had first hand experience with both the Windows and Macintosh platforms.
- Based on the nature of this site, I will continue to periodically add new information as warranted, and when I have the time. (Every section page has a date at the bottom so you can see its version.) As of that date all the links did work. However, since the site has over 1100 URLs, you can imagine that some of these are moved, archived, etc. every few days. If you encounter a problem site, feel free to notify me and I'll see what I can do. [BTW, I have found the Wayback Machine site very useful as a collection of former web pages. Two superior sources for what is currently going on in the computer and Mac world are MacVolPlace (the University of Tennessee) and MacSurfer.]

Mac vs. PC

What you can do

All of us are familiar with the many injustices that we see daily in the world around us. However, the sad fact is that although we have no problem with complaining, rarely do we take any **real action** to try to solve such situations – even when they are of a local nature and affect us personally (e.g. property tax matters, environmental conditions, etc.).

Why is this?
My opinion is that these are the main reasons:

- We are so overwhelmed with such issues, that we have become desensitized.
- We don't believe that our personal effort will make any difference.
- We have a busy life, so don't have a lot of time to do such things as investigate, write letters, attend meetings, etc.
- We don't like to get into issues that may be controversial or confrontational.
- We think that if there really is a problem, then someone else will resolve it.
- Many people believe that there is some truth to the adage of "No good deed goes unpunished".

One person – YOU – can make a difference!

I am not that much different regarding most of these. However, I also *firmly* believe in the theory that **bad things happen when good people don't speak up**. I don't like controversy either, but I didn't create the situation in our local school district. In fact I have spent hundreds of hours (for free) over the last several years in an attempt to prevent this from happening – but to no avail.

I am taking action on this local issue, as I know that very few other people in this community have the technical knowledge to accurately assess it. Furthermore, I know that other school districts and businesses are facing this same situation, so working together will benefit everyone.

We have received MANY generous offers for help. It reinforces for us another BIG Mac advantage: **the Mac community**.

If YOU would like to do something, here are some options:

1) Pass on information contained on the website (i.e. this publication) to other interested parties, particularly individuals, schools, or businesses contemplating a computer purchase.

2) Constructive observations and/or additional information (particularly good citations) pertaining to the Mac *vs* Windows/PC situation are welcome. Email me these at aaprjohn@northnet.org. We will update these pages periodically.

3) I have had requests for the site to be available in foreign language versions. If you would like to offer such a service, that would be great. [In the meantime, if you would like a rough language translation of any page, please try the <u>AltaVista</u> site.]

4) Sign the Apple Petition, and get other Mac users (e.g. your local Mac user group) to do the same. [Note: see the updated version of this petition <u>here</u>.]

5) Since I started this site in March of 2001, I have put well over a thousand hours into researching material, putting it all together, editing updates, creating PDFs, answering over 3000 emails, etc. I would like to think that the resulting pages are a comprehensive, beneficial, and unique resource in the very popular Mac *vs* PC debate.

But this amount of time has had a serious impact on my life: economic and otherwise. If you would like to encourage me to continue this effort – or if you find the work already done to be useful to you – *a Paypal contribution would be most appreciated:* just click on the Paypal icon below.

THANKS FOR YOUR SUPPORT!

What can Apple do?

What Should Apple Do
To Improve Its Education Market Position?

Few companies, and even fewer products, perfectly address a customer's requirements or desires. In the case of our NC school district, the current problematic situation should never have come about – and it is partly due to what Apple did and did not do.

While Apple has a history of providing innovative computers having high quality, ease-of-use, and long life, they could do better in several areas pertaining to their Education customers. To that end, in 2001 we submitted a detailed list of suggested Apple improvements, which was published at the MacCentral web site. Below is the latest version of this list, which is being monitored by Apple people, like VP John Couch. **We encourage you to carefully read it.**

In parallel with this, we have an online Petition that we are sending to Apple. If you are in basic agreement with the ideas presented here and would like to have your support registered, please sign the online version of this list. (Note: we are still making changes here, but that once posted, the petition site version cannot be edited.)

MIS Items—>
1 - Assume that the school district's head MIS person is PC/Windows oriented, and not experienced with – or too interested in – Macs.

2 - Assume that this head MIS person will **not** be asking for much feedback from teachers and students – so decisions he makes will be in his own interests.

3 - Maintain very close and frequent contacts with MIS people to lessen the likelihood of their going astray, and to better ascertain the pulse of the situation. **Do NOT wait for them to call you!** Even though the MIS person needs help, it is unlikely that he will be requesting much from Apple. If left on their own they are inclined to go their own way: PC/Windows.

4 - Give MIS people a list of web sites that are beneficial for their situation (e.g. VersionTracker, MacWindows, MacFixit, etc.); provide them with a monthly newsletter; sign them up for the **very** worthwhile (and free) Mac-Managers email list.

5 - Make Mac certification training for MIS persons, simple and **very** affordable.

6 - Provide a thorough, easy-to-understand Mac troubleshooting pamphlet for new school technology persons to follow.

7 - Make a **BIG** effort to assure that Macs can be justified as having lower maintenance costs. (E.g. hand the MIS people multiple copies of a free CD with includes all beneficial updates over and above a standard install for the four most common, good system versions: 8.6, 9.1, 10.3.9 and 10.4. Have a web site with all this info.)

8 - Provide a special software package deal for MIS people, which includes DiskWarrior, TechTool Pro, VNC, Timbuktu, Dave, IPNetmonitor, etc.

9 - Make a **SIGNIFICANT** effort to ensure that school districts use Apple OSX Servers. (E.g. give servers away for free, if need be.) Having these servers onsite will not only demonstrate to MIS people that Apple has serious hardware, but *substantially* increases the likelihood that the clients will be Macs.

10-With its UNIX servers and clients Apple has its best opportunity ever to appeal to the "geekiness" of MIS people. They can't help themselves, so play this card hard and often.

Software Items–>

1 - All schools should be offered a completely FREE upgrade to OS 9.1. (This version is especially important as it allows automatic software updates, NetBoot, etc.)

2 - Provide a free CD with Apple Software Restore and with detailed, easy-to-follow instructions. Have an Apple Education Rep visit onsite to see that either this or NetBoot is set up.

3 - Include a special education software package that would have worthwhile applications like MS Office, GraphicConverter, HyperCard 2.4.1+, REALBasic, Revolution, FUTUREBasic, iBuild, WebPrint Plus, etc. (*Furthermore, update HyperCard 2.4.1 so that it is OSX compatible.*)

4 - More strongly encourage third parties to develop better quality school teaching software. Work with existing third party suppliers (like NCSLearn) to see that their software offerings support Macs, as least as much as they do for Windows/PCs.

5 - Continue to actively develop PowerSchool (a school information management program), particularly in the area of adding the capability for fees and tuition management.

6 - Make a deal with Microsoft to allow education sites to buy the latest version of VirtualPC (with Windows XP) at **$100** or less.

7 - Arrange for free onsite demos of Apple developments that might be worthwhile (e.g. iWork, iMovie, iTunes, Bluetooth, NetBoot, etc.).

Hardware/Peripheral Items–>

1 - Offer a free three year education channel warranty. (Dell's is three years…)

2 - Make a deal with a quality RAM supplier to allow education sites to buy additional RAM at a **substantial** discount. (The deal would be that educators would be guaranteed the lowest RAM price, no matter what quantity they order).

3 - In a similar vein, make a deal with vendors who sell common supplies, like inkjet cartridges, that will also guarantee educators the lowest prices for critical provisions.

4 - Make a deal with a good third party manufacturer to allow education sites to buy 64 MB+ USB flash drives (e.g. key drives) at **$10** or less.

5 - Encourage hardware loaners to schools. (The theory is that they will like what they see and then want to buy it!)

6 - Give school districts more advance notice of product developments (non-disclosures are OK).

7 - Allow local dealers to sell Macs to local schools. This could provide better service and pricing in some situations.

8 - Let educators buy Macs at Apple retail stores (at education discounts).

Miscellaneous Items—>

1 - Most important of all is that (considering the big picture here) Apple simply MUST be **proactive**. Waiting for school systems to call up and ask for advice is folly. Apple should have a schedule something like this: for every 25 Macs at a school, there will be an onsite visit by an Apple Ed Rep for at least 2 hours, every six months. The goodwill generated by Apple *plus* the assistance conveyed by Apple *plus* the information learned by Apple would be invaluable.

2 - Do **not** abandon schools using pre OSX machines. These are future customers.

3 - Offer **very** inexpensive training on the Mac OS and primary applications for teachers.

4 - Offer a deal where schools can subscribe to *MacHome Journal* (for beginners) and *MacAddict* (students/ gamesters) and/or *MacWorld* (technically inclined) at a **substantially** reduced rate.

5 - Foster a more formal relationship between school districts and local Mac user groups. (Offer incentives to make this relationship mutually beneficial.)

6 - Have better advertising that more clearly enumerates the Mac advantages.

7 - Apple's Education Reps (in-house and field) should have the complete PDF of this site to assist them in combating the PC misinformation that they face daily.

Notes: *Apple needs to remember that:*

> **1)** *preventing a problem in the first place requires* **much** *less effort (and is* **much** *more economical) than having to solve the same problem afterwards, and*
> **2)** *giving up some of it's normal higher profit margins in the education channel is a wise economic decision – as it reaps financial benefits in several other ways (e.g. when parents of students using Macs at school buy a Mac for home use), and*
> **3)** *if it actively works* <u>with</u> *local supporters (e.g. user groups), Apple will be more successful at maintaining or increasing its presence in local school districts.*

More Notes:
The intention here is not to suggest that Apple "give away" anything – on balance. Rather the idea is to employ a marketing plan that has been proven to work for a LONG time. For instance, Kodak became one of the world's most successful companies, in no small part due to it's strategy of selling low profit, inexpensive cameras which were tied together with their high profit film. We see this today with $80 inkjet printers, which require $30 cartridges of ink…

Also, we are not advocating that Apple coerce any third party company into giving away their products either. The deal would be that Apple would enable these companies to substantially increase the volume of their sales, so end users (e.g. educators) would benefit from these volume discounts. Win-win for everyone.

We believe that **all** the items above have merit. However, we also know: **1)** that things change, and **2)** that there may be even better ideas that other experienced people may have. Therefore, every recommendation above is open to be improved on. If there is a specific item above you have less than 100% conviction about, hopefully you can still support the principle of what we are trying to do here: **to nudge Apple in a direction that they need to go**.

*With searching comes loss
And the presence of absence:
"Your File" was not found.*

"PCs are Cheaper Than Macs..."

We will not contest the claim that PCs are made cheaper than Macs.

Macs however, have never been competing with PCs strictly on the basis of purchase price, but rather:

> **1) the overall cost of ownership,** and
> **2) the quality of the computing experience**.

As an example, consider a car buyer trying to decide whether they should purchase a Ford Escort or a Mercedes Benz.

Believe me, despite both being cars, Mercedes does not feel that they are in the same market as the Escort is. Mercedes are aimed at people whose emphasis in on a **high quality, highly featured vehicle**, _vs_ those whose concern is good basic transportation.

Now let's assume that the Escort is selling at $15,000, while a new Mercedes is available for $16,000. Exactly how many people would be buying the "less expensive" car???

That is essentially the situation here comparing PC boxes to Macs: possible, small initial price difference, but **BIG** quality, performance and ease of use differences. [We say "possible", as we have seen **several** examples where when accurately comparing it to a _comparable_ PC, that the **purchase price of a Mac is less**. But, for a worst-case scenario, let's assume here that the initial cost of the Mac is slightly higher.]

As a second point, if an organization (or person) is financially sensitive, then the **Total Cost of Ownership** (TCO) should be the **only** important criteria – not the initial outlay.

Let's look at another car analogy. You tell me which new car is the better buy:

Comparing Ownership Costs of Two Cars

	Car P	Car M
Initial Cost	$15,000	$16,000
Gas Mileage	10 MPG	40 MPG
Annual Service Costs	$1000	$200
Annual Insurance Cost	$600	$300
Lifetime of Car	4 years	6 years

The message should be clear: **anyone whose primary focus is on the initial price will be making a BIG financial mistake.**

If you are in the unfortunate situation where your school (or business) is seriously considering switching from Macs to Windows/PCs, then ask the MIS people (or whoever is promoting this change) to:

1 - Please provide a written detailed calculation as to the Total Cost of Ownership of Macs _vs_ PC computers, which should (as a minimum) include:

> **a)** initial hardware cost,
> **b)** annual maintenance expenditures,
> **c)** usable lifetime of the computer,
> **d)** software costs (license, support, upgrades),
> **e)** networking expenses (hardware, software, licenses, maintenance, etc.),
> **f)** operating costs (e.g. electricity),
> **g)** teacher training costs,
> **h)** teacher preferences, satisfaction and efficiency,
> **i)** ability to provide student with an enjoyable and productive learning environment.

2 - Please provide a written detailed explanation as to how using Windows/PC computers will guarantee a discernible benefit over using Macintosh computers:

> **a)** for the students
> **b)** for the teachers
> **c)** for the technical support staff
> **d)** for the taxpayers.

Their written answers will provide you with information as to how to proceed. [And, if they say something like they don't know how to do a Total Cost of Ownership Calculation, then suggest they check out Taking TCO To The Classroom written by the independent Consortium for School Networking.]

Essentially every survey that has taken these factors into account {e.g. one by IDC (PDF)} has shown that Macs are **less expensive to own than comparably equipped PCs** – typically by something like **$400 per year per computer**.

In January of 2004, after doing a thorough analysis, the large Brookfields law office (hundreds of computers) said that they were going to buy Macs. Read where "Brookfields general manager Kevin Hall said the cost per desktop unit was lower. ' Our IT staff numbers would need to double if we were to run the equivalent amount of PCs.'"

This December 2002 Consulting Technology Newsletter report, done about Mac OSX, says: "The Macintosh has for years been known as a tool for graphic designers and other 'creative types', while Windows is what you use for real business. A lot has changed over the years, and believe it or not, for many businesses the Macintosh offers compelling ROI advantages." They then go on to delineate three areas where Macs offer cost savings: **Productivity**, **Licensing**, and **Security**.

The absolutely profound Gistics report (which surveyed over 30,000 business professionals) concluded, "One justification for substituting Wintel computers for Macintosh computers is that it would be less expensive to support a single Wintel platform. *Numerous studies, however, have shown that this common perception is false.*"

In fact this report went on to state, "In a fully accounted 36 month cost-of-ownership of a system purchase, a Macintosh user saves $2211 more than a Windows user." **This amounts to over $700 per year per computer!**

[Note: click on these links if you want to download PDF files that are a summary, or the complete (670K) Gistics report.]

This article summarizes a comprehensive study (by respected technology research company Gartner) completed in July of 2002. Their research found that "**Macs are up to 36 percent cheaper to own and run than competing Windows PCs.**"

"The report utilized Gartner's Total Cost of Ownership (TCO) methodology, which takes into account both the direct and indirect costs of owning IT infrastructure. Direct costs include all hardware and software costs for desktop and mobile computers, servers and peripherals as well as upgrades, technical support and annual depreciation. Indirect costs cover the costs of end-users supporting themselves and each other, end-user training time and non-productive downtime."

"The research was conducted at Melbourne University's Faculty of Arts, which included 4,676 Apple computers and 5,338 Windows machines. The report compares the TCO for the University's Mac environment with its PC environment. It also compared the University's Mac environment with similar-sized PC installations around the world."

Norris and Wong is a San Francisco based technology consulting firm specializing in personal computer productivity enhancement. They develop custom applications on both Macs and PCs for an exclusive clientele. Carefully read their VERY detailed study that compared Macs and Windows in regards to: **1)** Adding and removing applications, **2)** Reorganizing the desktop for convenience, **3)** Hard disk space management, **4)** Adding and upgrading hardware components, **5)** Backing up files, **6)** Troubleshooting system conflicts and other problems, and **7)** Recovery from system failures.

In EVERY CASE, the Macintosh had SIGNIFICANT advantages. They conclude, **"These differences will translate into significant FINANCIAL SAVINGS _and_ PRODUCTIVITY benefits for Macintosh users."**

Read Apple's Total Cost of Ownership report (PDF) for more info about TCO and Macs.

Read a thorough discussion as to why the Urbana school district chose to standardize on Macs. The site gives several references for Total Cost of Ownership readings. It includes a particularly good TCO reference for educators. And a North Carolina K-12 computer tech support specialist writes a very comprehensive TCO article, again concluding that Macs are far less expensive to own.

Gannett News Service tested a loaded Gateway Profile 4 XL compared to a high end iMac, computers that were similarly priced. "On paper, the Apple and the Gateway seem closely matched in features and bundled software… **When you look between the lines, though, the Gateway shows evidence of cutting some corners.** Its LCD, for example uses an analog rather than digital connection, which is somewhat cheaper to produce. The result: The iMac's picture is visibly crisper, with truer colors. In addition, the iMac's stainless steel arm provides an immensely flexible range of vertical and horizontal adjustments for the display. Despite all the leaping and jumping the Profile 4 manages in its TV commercial, you only can tilt its display vertically."

"What's more, the Profile 4 contains 4-pin FireWire ports, rather than the 6-pin variety used on all of Apple's computers. Unfortunately, a 4-pin FireWire port doesn't supply power to external devices, such as the iPod digital music player, which means you'll need an add-on power cable when using FireWire devices with the Profile… Also, while the iMac's power supply is self-contained, The Profile 4 uses an oversized power brick.
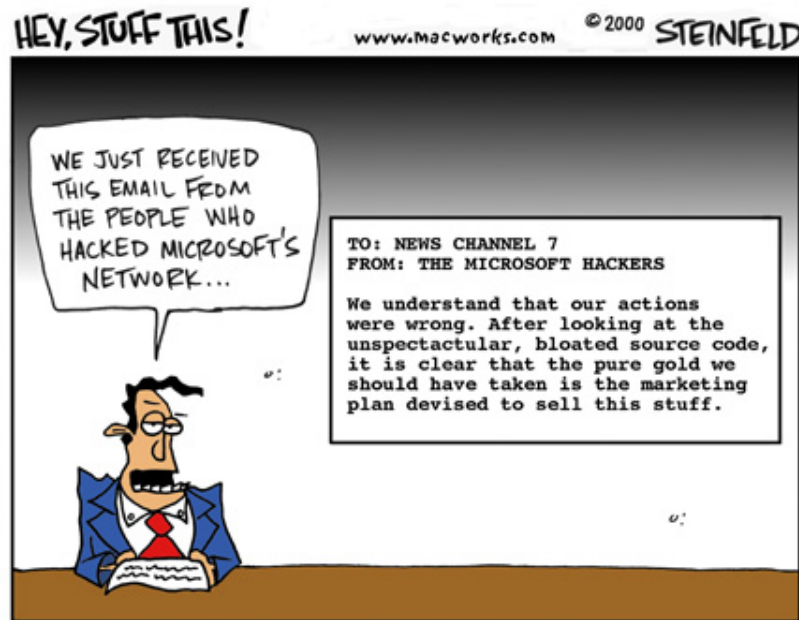
"Apple's flat-panel iMacs sales include the SuperDrive, a drive that creates both CDs and DVDs, Gateway doesn't offer a comparable option for the Profile 4. The fully equipped Gateways have a combination CD writer and DVD reader, which create CDs but only play – not record – a DVD video."

In a comprehensive IBM assisted study a few years ago, the conclusion was that the estimated Total Cost of Ownership of **Windows/PCs** (per desktop unit; Direct costs + Indirect costs) would be between **$3,520** and **$18,000 per year**. (_This annual amount sort of dwarfs a possible one-time $200 initial price difference!_)

In the Single Platform Lie report (PDF) R.M. Terence, M.S. says, "Total Life-cycle Costs are the most valid and important measure of the cost of a system. Study after study from Evans Research, Ingram Labs, J.D. Powers and other industry leaders has shown that Macintoshes are:

- easier to support than Wintel systems
- cheaper to support than Wintel systems
- more plug and play than Wintel systems
- easier for users to learn than Wintel systems
- have greater user satisfaction than Wintel systems
- longer lasting than Wintel systems

"Single Platform Wintel is incredibly stupid. **It cannot be justified from an economic standpoint**, and *it cannot be justified from any other standpoint.* If you have to go single platform anything, it should be single platform Macintosh -- at least this platform has a **proven track record for lowest life cycle costs, reliability, customer satisfaction, ease-of-use, ease-of-learning and lowest costs of support.**"

Charles Moore writes that "**None of this is new**. Study upon study over the years has shown that the total cost of ownership, user/worker satisfaction, and productivity facilitated by the Macintosh leaves the cranky, clunky Windows platform eating dust."

And, oh yes, there is considerable evidence that (in many cases) Macs are actually **LESS EXPENSIVE to buy initially**. Skeptical? Here is a detailed, 2002 example of PC/Mac price comparisons. And another analysis that concludes the same thing.

This December 2003 piece is titled "PC users are still clueless when it comes to Apple." It states that "It's time PC users dropped the propaganda about how expensive Macs are when compared to PC's. In fact, it's time for PC users to admit the truth; Macs are actually less expensive than PC's, so look for another argument. Or better yet, buy a Mac, you know you want one."
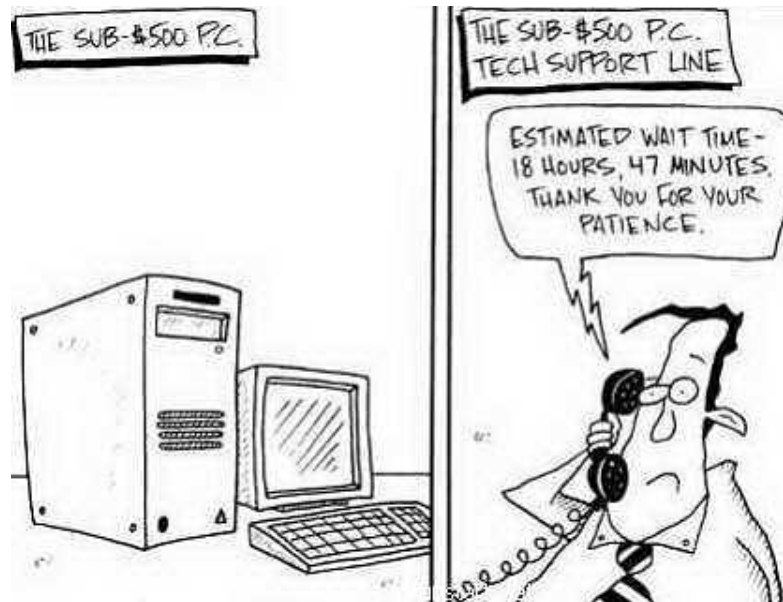
Or this December 2003 *MercuryNews* report about the Gateway 610, which they call "the closest thing to an iMac killer." Trouble is that when buying similarly featured computers, the Gateway is **more expensive than the iMac, every time**.

Of course the iMac is not even Apple's most affordable computer – the eMac is. Read this about the eMac's excellent value. Additionally ZDNet, in their September 2003 analysis, says that students who want the most **economical** good performing computer, should get an eMac. And this August 2003 *Boston Globe* article, Power Without The Premium, comes to the same conclusion.

In April of 2003 this OSCast story (PDF copy as original site has disappeared) tells of a PC person who did a thorough investigation into buying a new laptop. "What surprised me most, is that in nearly every laptop price comparison I made (seven total), I found that Apple's hardware was less expensive than Dell's – this even after Dell out-priced its PC competition. For the first time in my life, I found myself unable to justify the purchase of a Windows PC, instead discovering that **Apple offered more for the money**. If you're in the market for a new laptop, I'd suggest that you make a similar comparison before making a purchase."

Computer Shootouts is a simply **extraordinary** site where you will find EXCEPTIONALLY detailed comparisons of every Mac model, to essentially all of the "competitive" Windows/PC machines. The clear conclusion is that (when looking at the WHOLE picture) that Macs are **VERY price competitive**.

Our local NY newspaper has a column with computer advice for Wintel people, written by a PC expert. In mid 2003 he wrote an insightful piece about why cheap Wintel PCs are not as inexpensive as they may appear on the surface.

NASA Langley Research Center did a 19 page study (PDF) where they compared a G4 Mac to a Compaq Alpha and a generic Pentium III. When adjusting the systems to give equivalent performance, NASA's conclusion was: "**The G4 is roughly 8X less expensive than a Compaq XP1000 Alpha system, and 5X less expensive than an off the shelf Pentium III system… These results are impressive … and show the potential cost effectiveness of an AltiVec enabled PowerMac G4 computing system.**"

In April of 2002, Kiplingers headline says "Finally a Reason Not To Be PC." It goes on to say, "Look no further for an excuse to defect from the PC ranks. This year's new and vastly improved iMac adds value to Macintosh style and simplicity. Apple Computer has given its entry-level iMac line a new microprocessor that is equivalent to a high-end Intel Pentium 4… And it's a great value to boot… **Hewlett-Packard's newest PC with similar specs costs hundreds more.**"

A late 2002 analysis was done by Popular Science. What they wanted to know was how a high-end Sony Vaio compared to an iMac. From a technical perspective, the iMac fared favorably in every test that they ran. Their conclusion says it all: "**The new iMac delivers an elegant design and first-rate computing performance at a middle-class price tag: *1600 dollars less than the Sony.***"

Lastly, the Wall Street Journal (certainly not a pro-Mac source) published an article about the new 2002 iMacs. They said that "…it's a thing of pure beauty. You feel as if you're typing onto a gorgeous palette that's floating in the air. You're no longer conscious of the computer at all…" They then listed the price of "comparable" Dell desktops. **The iMac was HUNDREDS of dollars LESS EXPENSIVE!**

A SIGNIFICANT reason for the Mac's TCO advantage is the MUCH higher MIS support expenditures required by Windows/PCs. [Check out our more thorough discussion of the MIS problem: MIS Management.] After reading hundreds of comparisons, the range is anywhere from **four to ten times as many support people are required by the Windows/PCs.**

Here is a typical email received: "I was the ONLY Macintosh support person/ technician in a school district with an installed base of 2,500+ Macs. We had 4 PC support people for some 900 Windows/PCs." – Bill Storey (Education Consultant/ Service Provider for schools in St. Louis, Missouri)

And another: "There is a school district just north of Ft. Worth, Texas called Keller ISD. In 1996-97 the school district decided to replace all 3000 Macintosh computers in the district, with PCs running Windows 95 and have continued to upgrade since from Pentium I and IIs to PIIIs and Win98SE, etc. When the Macs were in place they had three (3) techs managing those 3000 machines without any difficulty. Today, with the same number of boxes they have 18+ techs on the payroll. And at a minimum fully benefited annual salary of $30,000…do the math."

(*Ed: The answer is that just the extra MIS expense alone adds over $150 to the cost of each Windows/PC, per year.*)

This report (Why The Price Of The Computer Means So Little) provides a detailed calculation and explanation showing how the initial cost is dwarfed by subsequent expenses, especially MIS costs… This LENGTHY OSData write-up (with **dozens** of references) concludes the same thing, as does Children Are Power Users.

Carefully read this **whole** 2002 ZDNET article, written by a tech support person, at a school that switched from Macs to Windows/PCs. In part he says:

"Regardless of how often technical-support people come (to look at our PCs), or how many things they fix, more problems show up as soon as they leave. If it's not bad memory, it's bad power supplies. If it's not bad motherboards, then it's bad hard drives. And when it's none of those, it's a software glitch that nobody has a clue how to fix.

"THE TOTAL AMOUNT of staff time required just to keep these machines functional **is an order of magnitude higher than what we experienced with the Macs.** *It almost defies belief.*

"**Worse, the false economy of PCs is mostly buried under a ton of paper somewhere in the yearly budget document.**In our case, personnel costs come from an entirely different piece of the budget pie than computer hardware."

Conduit Systems Inc. Executive Vice President Dan Tully certainly seems to think so, and he would know: Conduit Systems specializes in providing Information Technology (IT) services to small Boston-area companies that would rather hire an outside firm to manage their computer systems than keep a full-time IT person on staff. From his perspective, it's more economical and more convenient to do that when it's an Apple environment. Tully estimates that "a company running a Windows-centric server environment will spend about two thirds less time and money managing its IT resources by doing the same things with Mac OS X Server and an Xserve instead."

In the business world, the industry standard for Windows systems is **one support technician for every 40± computers**. By contrast, the standard for Macintosh support is **one person for every 160± machines.** McDonnell Douglas Corp found that **PC support costs are at least 8 times higher than Mac** costs!

Even at Intel, where many employees are **true computer experts**, their Data Processing department assigns **one support person for every 30 Windows computers**. [Their DP department was astonished to learn that one Intel division had 120 Macs and got along fine with a single support person…] In other words, the higher percentage of Macintosh computers, the lower the technical support costs.

In late September of 2002, I received the following email from a technical consultant. His company was trying to decide whether to add more Macs. To determine whether this made economic sense, he had done research about Mac vs PC support costs which included asking a list of cross-platform managers what their experiences were.

"Here's a small summary of the mails I received regarding to the cost of maintenance of Macs vs PCs. The majority of mail indicated that Macs generate fewer problems than Windows machines and thus need less people to support them. **The figures range between 1 person for every 150 - 250 Macs vs 1 support person per 50 - 60 PCs.**

From the information that I read on the web I concluded the same thing, including increased productivity because the Mac OS hinders one less while doing his/her work than Windows does (which confirms my personal experience)."

In a parallel universe, this site (August 2002) compares the price of a Mac server and a comparably equipped Dell. "Apple's announcement of new dual-processor, DDR memory (double data rate -- super efficient memory), gigabit-Ethernet PowerMacs made me ask: what does it really cost now to buy a fully equipped Mac server with this new architecture versus Dell, one of the cheapest and best Wintel providers. The answer honestly surprised me." **The Mac was hundreds of dollars less.**

Just in case you think I would pick a site that has some Apple bias (!), read what **LinuxWorld's** very thorough discussion of servers says: "Apple's Xserve …**costs substantially less than roughly comparable Dell hardware with a Microsoft OS… Performance** is, of course, a hot issue here because the entire systems architectures, from CPU type to operating system file management, are very different between these two classes of machine. Recent benchmarks by xinet show the **Apple server well ahead of the Dell** running Windows 2000."

And this eWeek report says Apple's Xserve "is impressive" and "more economical when compared with similar Intel-based offerings from Microsoft and Novell."

While we are on networks, here is an interesting article about how an experienced business person made up a super low cost network with used legacy Macs. His conclusion is: "I have used networks with Windows NT, 98, and 2000 OS under Pentium III and 4 servers at my former corporate employer; with none of them was transfer data any faster than on my network. The Pentium III and 4 networks required weekly technical support for log-in errors, screen freezes (the blue screen of death randomly appearing), and loss of network printing capabilities.

"Not once has my network had any difficulties running OS 7.6.1 with the G3/450 server and the 604e 200 MHz stations. **The Macintosh is an extremely stable network that keeps the total cost of ownership low, as most Macintoshes do not need technical support repairs weekly. It is a pleasure to use the Mac hardware and OS."**

Another of the many reasons why the TCO for Macs is less, is that **Macs last longer.** Several educators have written us something to the effect that "Most Macs are in service running the latest software for up to 10 years. The average Windows/PC can't run the latest software after being in service only 4 years."

A detailed survey by PC Magazine (August 2001) bore this out when they determined that the **average** useful life of Macs was 3.9 years, while the average useful life of the top seven PCs was only 2.4 years… In other words, they found that Macs typically last sixty percent longer than Windows/PCs…

This is important as when calculating the total cost of any item, the incurred amount is spread over the lifetime of that item. So the longer the lifetime, the bigger the denominator of the equation is. Furthermore, the longer the lifetime, the less frequently the $1000± initial purchase price factor will be encountered. Both of these effects add up to **BIG** financial savings for Mac owners.

A less often considered Mac cost benefit is the utilities cost of operation. In the vast majority of cases, Macs use less electricity (and generate less heat) than do comparable Windows/PCs. The net affect is often startling.

For instance, the computer our school district was choosing (Dell Optiplex GX-110 + 15" monitor) uses 50 watts more power than a comparable iMac. Multiplying this out (3500 computers x 8 hours per school day x 200 school days x 7¢/KWH) results in enough savings to get some **25 brand new iMacs for FREE: EVERY YEAR.** And this does **not** take into account the extra cost of air-conditioning. THINK about this…

There are now more people picking up on this fact. Read about this university report… Also, Terra Soft co-founder and CEO Kai Staats told NewsFactor (March 2002) "A NASA JPL lab was forced to spend $15,000 on new electrical circuits and air conditioning due to a small, 32-node Pentium cluster. **That would not be required if the system had been PowerPC,** and that money could have been spent on more nodes."

This school district published a brief summary of why they bought more Macs, and included **ten different reasons** – one of which was less utility costs.

An important part of the financial equation is to consider the Windows (i.e. Microsoft) aspect. According to several published reports, Microsoft has announced planned increases of their software licensing fees. It seems that part of the deal is that organizations that upgrade **less frequently** will see their costs go **higher.(!)** The Gartner Group probably puts it most clearly by stating that:

"The substantial, complex changes Microsoft has made to its licensing programs will affect **ALL Microsoft software products and customers**… Microsoft believes it has simplified its licensing. Gartner believes Microsoft confuses simplification with the elimination of options. Either way, **most enterprises will pay much more.**"

THE POLICE STATE – 2004

YOUR LICENSE AND REGISTRATION. PLEASE.

A similar Reuters report stated that Microsoft is changing the way it licenses its software, a move that will "reduce its dependency on sluggish PC sales and squeeze more revenue from existing users. Microsoft will now be requiring customers to continue paying for software like the Windows operating system and Office suite of business applications even after original contract send..."

These fees inspired a strong article on NewsFactor titled "Why Schools Should Shun Microsoft."

A thorough ComputerWorld discussion states "Analysts and users have viewed the move as a less-than-subtle attempt to induce customers to upgrade more often and provide Microsoft with a more steady and predictable cash stream as revenue growth wanes."

And this Microsoft mentality will be adversely affecting a school near you. The Oregonian reports that "school districts are considered guilty of software piracy until they can prove they're in licensing compliance." Read why another article says that "Microsoft should go to the bottom of the class", and still another (from PC World) that Microsoft is "Bullying schools... and has earned a failing grade."

Among several new tactics employed by Microsoft, I find one particularly enlightening. Microsoft requires schools to register any machine capable of using its products. Sounds OK on the surface. What is new is that they now require schools to include Macintoshes! (Get it? Microsoft agrees that Macs are capable of running Windows.)

Here are a few other facts to ponder:
-> A study by the Law Practice Technology Center shows **total cost of ownership** for the Macintosh is significantly lower than for Windows, DOS, or Unix: by **21%** to **61%**...

-> The average Wintel home user spends **over 50 hours each year troubleshooting** their computer. The average **Mac user spends less than 5**.

-> A single NT server Microsoft service call costs **$195**. A **year** of Apple support for their high-end X-Serve server only costs **$255**.
[This includes 30 minute response, 24/7 by senior technical support staff via telephone and email, as well as four-hour onsite response during business hours...]

-> As one astute observer asked: "If switching to a Windows/PCs saves money, how come no IS manager that went all Windows has EVER asked for a cut in budget and/or staff?"

Go here to read a very reasoned explanation of why Macs cost less than PCs.

Conclusion: ***Standardizing on Macs will result in a <u>lower</u> total cost of ownership than standardizing on PCs <u>or</u> in having a mixed environment.***

This section's Haiku
(see the bottom of page 1 for more explanation):

First snow, then silence.
This thousand dollar screen dies
So beautifully.

— Section #3 —

"PCs Are The Same As Macs…"

We will not contest that Windows/PCs have continually tried to copy both the Mac interface **and** its hardware innovations.

In fact, in the very important Federal lawsuit of Apple _vs_ Microsoft a few years ago [35 F.3d 1435 32 USPQ2d 1086 (9th Cir. 1994)], Microsoft **did NOT contest** Apple's primary contention that **most of the Windows operating system had been copied from the Mac operating system**.

(Since it was indisputable that they **had** copied as much as they could, Microsoft's daring arguments were: 1) that the US Government had made a _mistake_ in granting Apple _some 100 patents_ on the Mac operating system, and 2) that Apple had granted Microsoft the right to copy Apple's operating system. Surprisingly, the judge actually bought these desperate claims… Read a sample legal discussion about this puzzling court decision. Read more of what we have to say about Microsoft.)

[BTW: if you are of the belief that this theft was OK since Apple similarly stole from Xerox, well you are misinformed. Read this to see a more accurate accounting of how Apple had predeveloped most of its features _prior_ to their Xerox encounter, and then **PAID** Xerox for the rest – to accelerate things. Of course, even if Apple had stolen something, we all know that Two Wrongs Don't Make A Right.]

Once again a car analogy is appropriate.

Let's pretend that a non-automotively astute, but financially sensitive, person is shopping for a new car. At a dealership they see both a new $15,000 Escort and a new $16,000 (let's just say) Mercedes Benz.

The clever salesperson dude says, "Well, if we can make a deal here, then let's go for the Escort, as I can **save you $1000**. And there are two important things you should know: **1)** the Escort is the best selling car in the world, and **2)** *the Escort is essentially the same as the Mercedes.*"

Even the non-technical buyer may be a little skeptical about the latter claim, and ask something like "Really? I've heard that Mercedes are better cars. Why do you say that they are the same?"

Salesperson: "Glad you asked. Consider these similarities, they both have: four wheels, a spare tire, four cylinder gas engines, stereo radios, automatic transmissions, disk brakes, power windows, yadda, yadda…"

At this point the technically challenged buyer is often swayed by this extensive list of "identical" features. Of course, what the salesperson is very careful to avoid, is the **long** list of *differences*.

Another perspective would be to compare the "PCs are the same…" assertion to someone proclaiming that "All women are alike." Sure, there are **many** similarities, but – believe me – despite being similarly configured, all women **ARE NOT ALIKE**!

See the excellent "[Broader Take on the Mac vs PC debate](#)" (12/03), which highlights BIG differences.

My large ISP's chief MIS person (a PC/Windows expert) awhile back sent all subscribers this message:

To turn off file sharing in Windows 95/98/ME:

    1. Click on the Start menu.
    2. Go to Settings, and click on Control Panel.
    3. Double-click on the Network icon.
    4. From the Network window, click on the bar labeled "File and Print Sharing." A dialog box will appear.
    5. Make sure that neither of the check boxes is checked. Click on the OK button.
    6. Click on the OK button for the Network Control Panel.
    7. You may be prompted to insert your Windows XX CD, and you **will need to reboot** your computer for any changes to take effect.

To turn off file sharing in a Mac:

    1. Go to the Apple Menu.
    2. Select Control Panels and File Sharing.
    3. Click on the "Stop" (File Sharing) button. (Note: no reboot is necessary.)

I received an email from a foreign language teacher in Michigan, saying "Given the increasing use of MS PowerPoint for our international language classes, we note that the Mac version of this program permits easy input of special characters (German ß, Spanish ¿ and ¡, French ç, diacritical marks (á, à, ä , ê, ñ, etc.), and international punctuation (German, Polish quotation marks: ? . . . .?); however, **the Windows version is significantly more difficult to use for creating international presentations.** In Windows one is forced through the tedium of selecting the insert symbol menu to access a character chart – a daunting, tiresome, and very slow process. Windows' Powerpoint lacks the keyboard shortcuts for entering characters found on the Mac."

Another MIS person wrote: "**This is the Windows way. Many things on the Mac that take one step take three in Windows.** A lot of things that take two steps on the Mac take five in Windows, etc. Multiply this times the number of things you need to do with your computer every day, and you'll see how serious this problem is. Again, I'm telling you this from personal experience. **I am constantly astounded that intelligent people actually choose to work with the Windows OS every day, and the amount of money they choose to waste by doing so."**

Read this report by a school tech person comparing the time and effort to set up 30 Dell computers (six hours) to 30 iMacs (one hour).

Read this unusually **detailed** OSOpinion article that goes through **many** examples of how and why Windows is more complicated to use than the Mac OS… And then there is this.

In November 2002, I received an email from an electrical engineer who has used PCs from DOS to Windows 3.11 to NT to 2000, HP UNIX, IBM mainframes, and HP 3000 minis. He expressed frustration as to why more people do not get the clear superiority of Macs over PCs.

"A good example of the differences between these systems came out after the 2000 Presidential election. Before the election most people would have said that the butterfly ballot used in Florida was perfectly fine. You could have talked forever without convincing them that there could be a problem, and that there were better designs. *Now everyone knows.* To me this is the same as the Mac vs PC situation, where many folks erroneously think that PCs are pretty much the same as Macs. **Not!** My view is that Windows is not a true GUI but a command-line interface done graphically!"

The MIS director at a University of CA campus wrote me "I concur with your assessment of the situation. You should point out the direction Apple has taken with their open-source BSD UNIX core. This is effectively the continuation of the standards-based TCP/IP networking revolution that created the internet, and is going to dramatically alter the software industry. It is a very strong argument in education that since it is open source and standards-based, it is extremely attractive since you are not locked in to a single source (anything that is written for one flavor of UNIX is easily modified for another, e.g. LINUX, FreeBSD, etc)." *(Sounds like rather big platform differences.)*

Carefully read consultant Norris and Wong's VERY detailed study that compared Macs and Windows in regards to many everyday activities. In **EVERY CASE,** the Macintosh had **SIGNIFICANT** advantages. *(Seems that if things were the same, there wouldn't be any differences in these common areas…)*

An engineer writes: "Most everyone runs out of computer space eventually. PC users cannot just install the OS, drag and drop applications and files from their old drive to their new one – **Mac users can.** This is because the Mac associates files with the application that they run in, not with a pathname (C:\xxx.xxx) on the drive someplace. In addition, Windows has a registry with all kinds of garbage stored away in it which prevent users from simply copying their old data to their new drive and having it work. **The Mac is seamless in this respect.**"
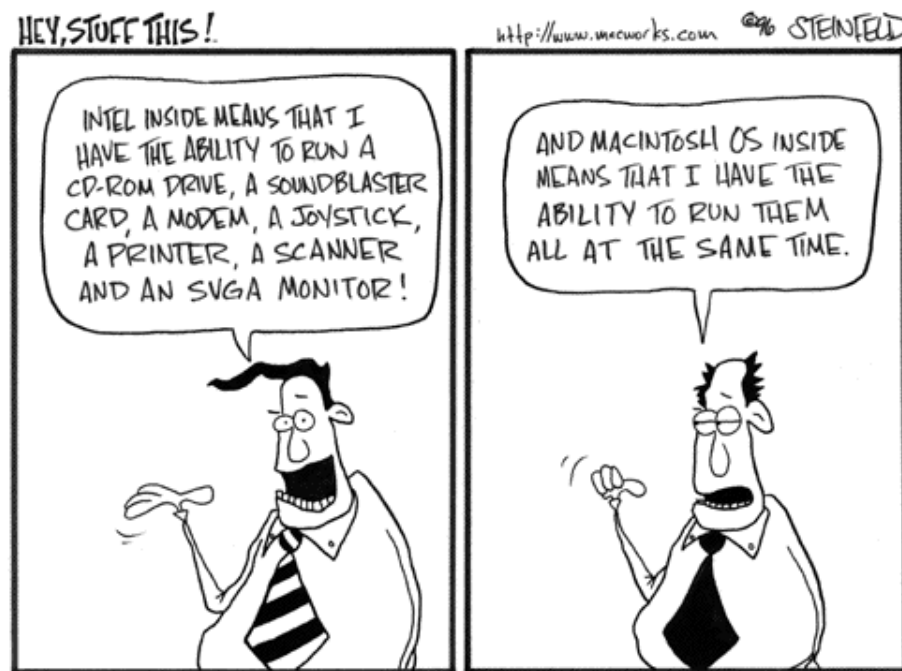
Another professional wrote me "… There is no serious color management on PC's. There is no scripting like Applescript on the PC. You can not automate events between non MS products on PCs and you can't run scripts over IP networks either. Applescript on Macs is the only reason that USA Today and Wall Street Journal can produce some many daily editions customized for local markets…"

Consider this quote: "Market acceptance notwithstanding, **Windows is far, far behind the Macintosh**." [*Computer Reseller News*] (*Seems that if things were the same, that wouldn't be any "far behind" aspect to it. And this is a Windows/PC publication…*)

I received an email from the director of technology of a large VA school system. He said that for every 400 Wintel computers he had one tech, while a Mac tech could maintain some 900 Macs. (*Seems like some significant underlying differences to me.*)

Ok, how about viruses? There is a laughably large difference here says the *Wall Street Journal* (10/03). The *NewsObserver* (10/03) explains that "because Mac OS X offers superior security, and because Microsoft's security efforts have not produced better defaults, Windows will **continue** to be a prime virus target." And then there are RATS. (*Seems that if things were the same, there wouldn't be any such differences, but…*)

Consider this [article](#) by Stuart Alsop. Stuart writes for *Fortune* magazine, and is a Windows/ PC expert. The article explains the typical challenges faced by <u>all</u> Windows users - ***none of which apply to a Mac***. Furthermore he states **"Microsoft's operating system is what has led to our <u>loss</u> of <u>control</u> over computing".** (*Just think about the **profound** implications of that!*)

And in a more recent [article](#) Stuart explains that he now bought a Mac because it just works… "Windows, on the other hand, still doesn't seem to work. Now, of course, you can turn on a Windows PC and have it operate. But you can't do so without a guaranteed level of frustration, which will definitely increase the more you use the computer… If your Windows experience is like mine, programs will fail or crash; the machine will start acting funny; tasks won't get completed; you'll wait around a lot hoping the machine will work after this reboot." (*Sounds like this experienced professional can see a VERY clear difference!*)

Consider this recent email I received: "John: I am a computer technician for Metro Public Schools in Nashville, TN. When I was hired five years ago to fix the PCs in the school system I had never even seen a Macintosh. I quickly learned how to repair Macs. **I was shocked at how superior the Mac is over PCs.** They are easier to use, troubleshoot, and repair. **I wish all people could see Mac quality and performance.**" (*Another PC person now appreciates that they are **not** the same!*)

Consider this July 2002 [eWeek](#) article titled "For Plug-and-Play, I Pick the Apple". Peter Coffee goes on to explain about "how I learned the hard way about the difference between mere IEEE 1394 compliance and genuine, FireWire-class plug-and-play convenience. There's also a moral to the story, one that may change your perception of evolution versus revolution in personal computing platforms." (*Just because they SAY they are the same does not mean that they ARE the same!*)

Consider this [article](#) about a former Mac user who exclusively went to a Windows machine for a few years. Now he really gets it. (*And now he REALLY knows they aren't the same!*)

Consider this October 2002 [report](#) where *PC Magazine* chose the iMac as its Editor's Choice. In a sister [article](#) they go on to say that "With its newest addition, the 17-inch iMac, Apple has done it again – achieved that delicate balance of design, performance, and ease of use that, we stress, is a fundamental part of innovation." (*Did you say **PC Magazine**???*)

Consider this July 2002 [BBC report](#). It says, in part: "In the 21st Century, computers have truly gone multimedia. Whereas once we got excited about writing letters with word-processing programs and designing shopping lists on spreadsheets, the fun has long gone from those activities. Now it is all about music, video and photographs. Today even the cheapest computers come with the faster, larger hard drives necessary for storing hours of video or thousands of images. **The undisputed leader in the multimedia field is Apple, which has refashioned every one of its machines into a digital hub.**" (*Seems like those obviously biased people at BBC have found some differences.*)

Consider this report: a Westinghouse study showed that engineers doing design work are about **twice as productive using a Mac compared to those using a Windows PC**. (*Again, seems that if things were the same, that productivity would be the same too…*)

Consider this June 2002 USA Today story, which says a mouthful: "For Mac Users, Life Is Less Complicated." (*Seems like that would be a GOOD thing.*)

Consider this analysis: A **business Mac user gets $24,000 more work done per year,** their computer is **down 14% less, and it costs less to support than any other platform**: Gartner Group (*Seems that if things were the same, then the profitability and the amount of downtime would be the same too…*)
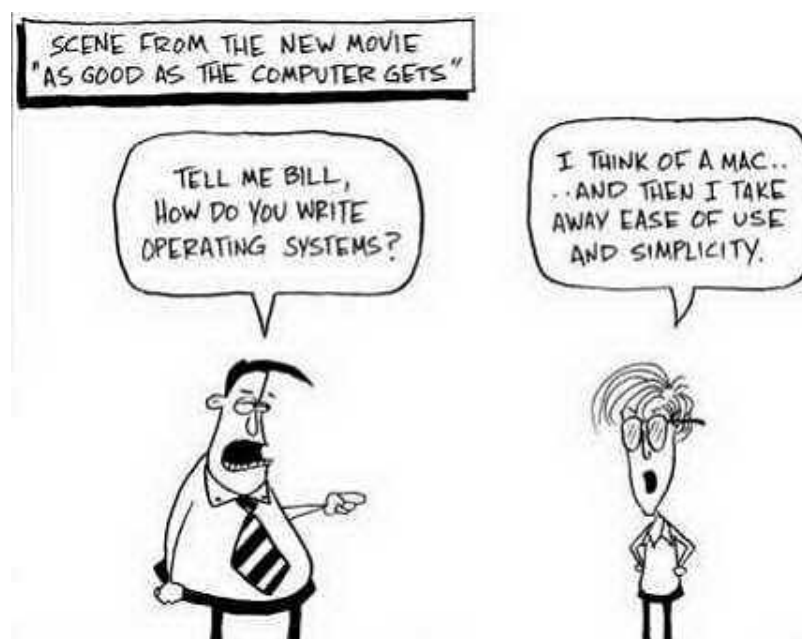
Consider the Pfeiffer Report that explains that "on a superficial feature by feature comparison, the Macintosh and Windows NT provide similar functionality. **It's only when one looks below the surface that important differences emerge."** The report then goes on to enumerate several Macintosh advantages, like reduced maintenance costs. (*Seems that if things were the same, then the maintenance, etc. would be the same too…*)

Consider the Evans Research Associates report (PDF), which surveyed **150 people who regularly use both Macintosh computers and Windows/PCs in** business, home, and education. Overall, people who use BOTH systems **rated the Macintosh computer higher in overall satisfaction, user productivity, creativity, and a wide variety of attributes** (ease of setup, ease of troubleshooting, ease of connecting peripherals, etc.). (*Seems that if things were the same, then the opinions of dual users would be evenly divided.*)

Consider the very exhaustive research done by Dr. Michael J. Johnson, Deputy Superintendent for Instruction and Technology for the Conroe School District, a northern suburb of Houston. He set out to conduct an objective analysis as to which computer platform was better for education users, and this study involved three researchers working for **three years** with **200 educational technology projects** in **14 states**. The decisive conclusion of the report was that everything in education that could be done on a Windows/PC computer, could be done **cheaper, simpler, and better** on a Macintosh. (*Doesn't seem that would be the result if Macs and Windows/PCs were the same.*)

Consider this March 2002 LA Times analysis. It says that the typical high-end PC will "include Microsoft's Windows Media Player and Windows Movie Maker and the MusicMatch Jukebox MP3 program. These programs lack the features and elegance of Apple's i-ware. Windows Media Player can't create MP3 tracks, Windows Movie Maker can't record finished videos to tape, and MusicMatch Jukebox has a brain-addling user interface… The iMac and Apple's software have a design elegance that's missing from the Windows world."

The story then continues: "I use both Macs and Windows XP computers daily, and the Mac is less frustrating, less commercially intrusive and more elegant. **Quite simply, the Mac is a better computer."** (*Seems like pretty clear differences to me…*)

Consider this March 2002 story by NewsFactor Network, where they interviewed several knowledgeable people as to why they preferred a Mac. Some sample quotes: "Rob Enderle, vice president and research fellow at Giga Information Group, told NewsFactor that unlike such companies as Microsoft and IBM, Apple speaks to its user and continues to speak to its user throughout [the Macintosh's] lifecycle. Most PC vendors gave you the product, and you have to learn to live with it. The Mac was and is distinctive. The PC was the machine you had to have, while the Mac was the one you wanted."

The article continues: "Alan Promisel, portable PC analyst at research firm IDC, told NewsFactor that people continue to gravitate to the Macintosh because Apple's industrial designs are hands-down the coolest available on the market. They have cornered the coolness market and set the standard by which other vendors try to achieve coolness." (*Seems like these cross platform experts get it.*)

A lawyer's computer user group's site says: "A recurring request from Members and Prospective Members is paraphrased as follows: *Our managing partner is considering switching from Macs to Windows. Can you tell me where to find information I can use to persuade him not to?*

"We do not subscribe to the herd mentality. We have not accepted the commonly held belief that one operating system is better for graphics and publishing while another is better for business applications – because we know the truth: **An operating system which is easier to use and more dependable will be more productive in ANY business environment.**" And, of course, they were speaking about a Mac, and they enumerate several reasons why the Mac is superior. (*If lawyers can figure this out…*)

Consider the TechWeb Report that says that the Aberdeen Group, a Boston- based consultancy, has produced numerous case studies about companies migrating to NT and has concluded that they **suffer greatly increased costs and user dissatisfaction.** (This link is now apparently moved, but it was "http://content.techweb.com/wire/story/TWB19980720S0006". *Seems that if things were the same, then the costs and the degree of user satisfaction would be the same too…*)

Closely read these to see **detailed** discussions of why PCs are not the same as Macs, and this, and this, and in this business (where the requirements are for "high quality, 24/7").

In this insightful column Mark Collins asserts "Windows uses primarily language to communicate its interface. The Macintosh uses primarily symbols (graphics) to communicate its interface. Well, isn't one easier than the other? No. However, right-brained people feel more comfortable interfacing with symbols, and left brained people feel more comfortable interfacing with language."

"Windows is also a lot more structured than Mac OS 9. (Mac OS X's columns hierarchy may be an attempt to make Windows users feel at home on a Mac.) Mac OS 9 is so flexible in the layout of files and directory structure that it's nearly formless, except for the form you give it. This frightens structured minded people. They are always thinking of what the correct thing to do is, not thinking in terms of what they want to do. For these left brained people, it's about procedure, not expression. And that is the difference between Windows and Macintosh… "

This cross-platform user doesn't have any trouble is seeing the differences. In an article in the Spokesman he says (in part): "Mention Mac and Windows in any polite conversation and it's guaranteed to become a name-calling, hair-pulling platform war. "Well, I'm here to end the debate and stop the fight. Simply, **the Macintosh is the best computer built today — bar none.** I've used them both, and based upon personal experience, PCs running Windows XP can't hold a candle to the elegant user experience provided by a Macintosh running Mac OS 9 or OS X. Macs have style, class, elegance and the best hardware and software available. Sure you can compute using a PC. But why not go in style?…" The article goes on in MUCH more detail.

For a brief but informative historical perspective on WHY Wintel PCs are NOT the same as Macs, you will find Alex Patterson's site most worthwhile. His conclusion is that **The superiority of MAC OS over WINDOWS emanates out of their respective beginnings…** It is worth noting that practically ALL the innovation that PC users now take for granted emanated out of Apple (or the Macintosh fraternity), and virtually NONE from Microsoft."
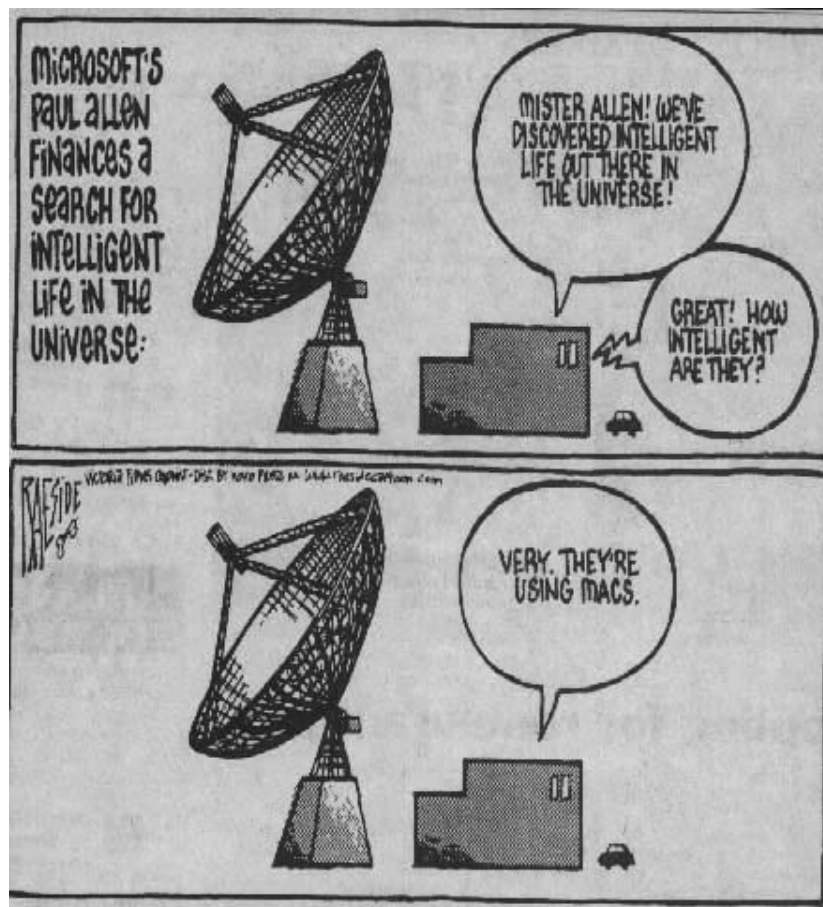
In the same vein, I received an email from a computer design engineer who said, "The PC is designed from off-the-shelf component parts. In order for it to work, those parts need to be generic (not to mention cheap). The OS for a PC needs to run on those generic parts, so the OS is designed to run on the hardware it is given. That is, *the OS supports the hardware.*

"The Mac, on the other hand, was designed thus: First, Apple designed how the software ought to work, from a human-engineering standpoint; then they designed the OS that would support that ease of use; then they designed the hardware that would support that OS.

"In short, **from the git-go, the Mac is designed to support the people using it; the PC is designed so that the people need to work within the constraints of the hardware.**"

In an insightful email I received in September of 2002 from Jean-Marc Verniajou, he states (in part) that "The main goal of a graphical human interface is to ease the use of a computer through a visually consistent presentation of data, related information, objects to perform actions and relations between entities of all kinds. *Consistency* is what makes possible learning what a computer can do through a natural everyday use of all kind of software. **The Macintosh graphical human interface is,** by nature, by programmer's habits and by traditional users vigilance, **calibrated to ensure consistency.** It helps acquiring visual shortcuts naturally. This makes the perception of a situation more ' a snap' and the system makes you as comfortable as possible to make a decision at any time.

"**The Windows graphical human interface is different. Some objects have been made intentionally globally redundant.** The close box of a window being the same as the ' Cancel' button most of the time and same as the ' OK' button in other cases is a good example. This is an example of what makes consistency in Windows more a free bonus functionality than a guideline users can rely on. Moreover, some programmers don't use this redundancy twice the same way and a close box sometimes does ' OK' in a window where ' Cancel' should be the behavior the user thinks is right. (Too bad – try again!) The most puzzling for the user is that they have to remember when the thing happens (and probably to learn it is changed in the next revision of the software)."
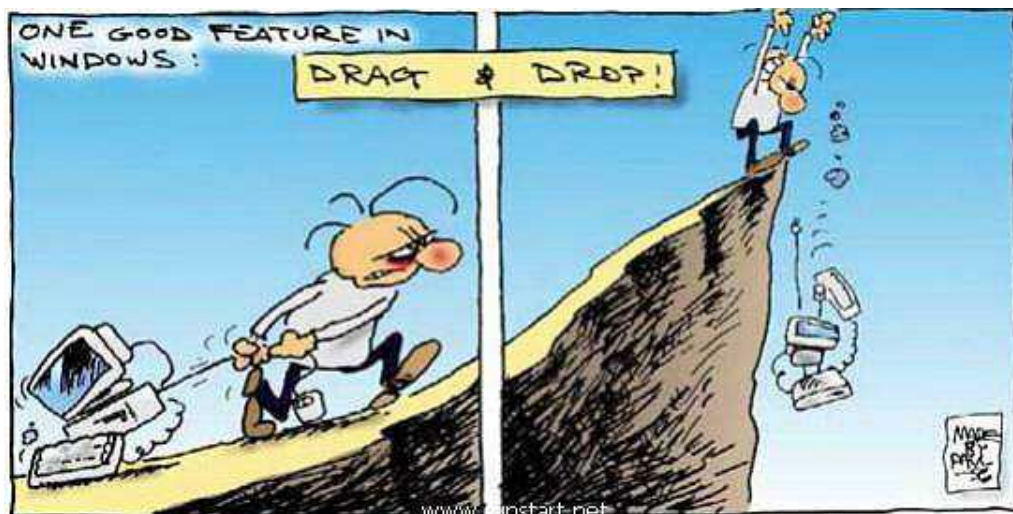---------------------------------------

When cornered by the facts, another witticism I occasionally hear is "Well, what you feel is the better computer just depends on what you're used to." I ask you, how come such non-sequitors are so rampant in the computer world, where they would be openly laughed at if used on other everyday matters? (Personally I believe it relates to the fact that most people are technically challenged, and are very cautious to speak up to a perceived "technical expert".)

Let's say that you and a friend were discussing what kind of television to buy now. You are suggesting that an HDTV is the best quality option, while this less well-off associate is saying that a black and white TV is perfectly fine. If his argument ends up being "Well, what you feel is the better TV, just depends on what you're used to", what would your reaction be to that thinking? Clearly this TV difference has nothing to do with experience: **there are discernibly different FACTS**. Ditto for computers.

You've undoubtedly heard of Virtual PC emulation on a Mac, but are you aware of this lower-priced alternative? At Emulation.Net they show how the power of the Mac makes it an exceptional base to emulate almost *anything*. And, similarly, this shows you how an enthusiastic Machead got 55 (yes that is FIFTY-FIVE) operating systems to work on his Powerbook! *Do not try this on your PC at home…*

Another reason why Macs are **not** the same as PCs is that Apple leads the computer industry in innovation. In December of 2003 *ComputerWorld* said "Apple isn't a computer company, but a solution company. Apple delivers innovative, elegant and friendly solutions." Then they make a long list of recent innovations like Quicktime Streaming Server, DVD Studio Pro II, The iSight camera and iChat AV software,Mac OS X 10.3 (Panther), X-Serve RAID, etc… And there is Rendezvous, which enables a local network of devices to configure themselves – which *PC Magazine* calls a "Best Kept Secret."

For examples of exciting hardware see the new iMac and G5. Then check out the fabulous iLife software package introduced in early 2004. No comparable PC package exists… See why Fortune (May 2003) says "Steve Jobs Keeps Rocking My World." This July 2003 *USA Today* article says that iChat/iSight blows away the competition. MSN Messenger has poorer audio, poorer video, poorer setup, poorer performance… and compared to Apple's offering is "for the dogs."

The OSX oparating system has ignited a flurry of creative new third party developments the likes of which have never been seen on ANY platform. Check out Konfabulator, iFile, Fink, Wine, GNUstep, Gentoo, etc. *Exciting stuff!*

Wired (November 2003) says "Like a comet that passes Earth every few years, Apple Computer consistently comes out of the blue with products that alter the trajectory of the technology business and leave observers rubbing their eyes in amazement. To change an industry once is impressive. To do it as many times as Apple has is phenomenal. For three decades, Apple has blazed a trail for the computer world. The company does the inspired work of figuring out new ways to entice people to buy its machines, only to have other vendors crank out inelegant imitations for the masses. It seems unfair, both to Apple and to the hordes saddled with second-rate gear."

Have you heard the one about where some people think that the latest Windows bugs fix (*aka* Windows XP) is almost as good as the Mac OS X? Just in case you might have, make sure to read our section for the real scoop: OS X vs XP.

I don't know about you, but it sounds to me like there are a **LOT** of significant differences here…

Oh yes, one more thing. It's interesting to hear that many of the people promoting PCs say something like "The computer is just a tool." Well, there certainly is some truth to that. But let's say that I'm constructing a backyard deck and need to put in several hundred screws – so I buy a battery-operated screwdriver.

Am I better off with: a) a tool that requires me to read twenty pages of assembly and operating directions, and periodically stops working if I don't follow every instruction just right, **or** b) a tool that I snap together and start working with immediately (no classes required!), and which performs flawlessly throughout the job?

So for people who are insightful enough to make the "tool" observation, it would seem like they would then also grasp the idea that if there are **TWO possible tools for a job, then** *USE THE BEST ONE.* A Mac is very powerful, yet MUCH easier to use – which makes users more productive. **The Mac is simply the superior tool:** the Swiss Army Knife of computers.

Conclusion: *PCs are NOT "the same" as Macs! Standardizing on Macs will let you get an extremely powerful computer that is less expensive, easier to maintain, and results in more productivity.*

This section's Haiku
(see the bottom of page 1 for more explanation):

Yesterday it worked.
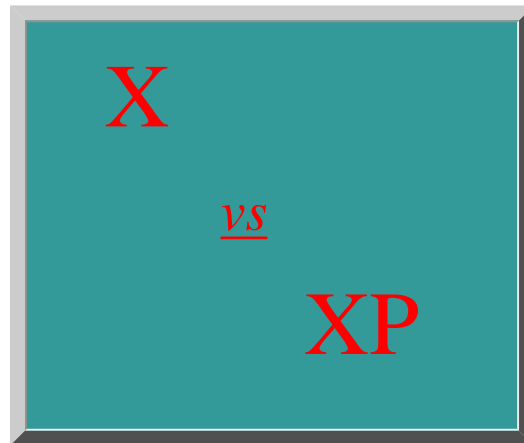*Today it is not working.*
Windows is like that.

rev: July 16, 2004

— Section #4 —

X

vs

XP

There has been a LOT of press about Apple's new Mac operating system, OS X. (Note the "X" is the Roman numeral for ten, so you can also call it "OS 10".) The new OS X is based on the well-regarded UNIX foundation. **The benefits include more performance, even better system stability, conformance with a system familiar to businesses and MIS people, adoption of an open source architecture, etc.**

The core of OS X, called Darwin by Apple, combines a UNIX kernel based on Carnegie-Mellon Mach 3.0 and FreeBSD 4.4 (which, in turn came from UC Berkeley's BSD). [Suggest reading this easy overview: An Introduction to Unix. Go here for a very worthwhile, FREE online OS X tutorial.] So OS X now has the industrial strength benefits of UNIX (preemptive multitasking, full symmetric multiprocessing, memory protection, etc.), combined with significant digital media architectures (QuickTime, OpenGL, PDF, etc.), and all this power has the world renowned, intuitive Mac interface. *Quite a package!*

For more information on Mac OS X read these sample articles about its initial version from places as diverse as Smart Money to Network Computing to iGeek. Their praise was universal. Even PC World said: "Mac's Hot New OS Boasts Brains and Style to Spare". This InfoWorld story wrote "The Mac OS X combines the power and flexibility of Unix with Apple's classy end-user sensibility. It's a stunning achievement that creates new options for the agile enterprise."… Here is a collection of OS X screen shots so you can see what it looks like.

Here is a quite reasoned and very detailed assessment of OS X – along with an analysis of how it compares to Windows and Linux. Who is the independent author? His resume shows that he is a true operating systems expert (e.g. an engineer at IBM, former engineer at Bell Labs, columnist at PCWorld, has received several patents, been awarded national technology prizes, etc.). Even though he finds some faults with it, his bottom line conclusion is that Mac OS X is the "most worthy client platform in my opinion: the only operating system currently in production that, within reason, lets you have your cake and eat it too."

For more technical assessments of the initial OS X release, this Stanford University White Paper (2002) explains a good deal of what is going on underneath the surface. Additionally, this is an insightful discussion of Debunking Mac Myths -*NIX Edition… There is an interesting team composed of lab administrators from 25 higher education institutions that has a VERY informative site about setting up Mac OS X labs. This page of theirs discusses why to use OS X in the first place.

This report from eWeek says, based on their lab tests of OSX, "**we were impressed** with Apple's smooth implementation of the open-source Samba Windows file-sharing and Common Unix Printing System components, as well as with the operating system's interface performance… One of the most intriguing things in the new operating system is **Rendezvous,** a networking technology Apple released under its Public Source License, which is intended to forge links among disparate devices with minimal configuration required… A variety of network printer,consumer electronics and other device and software manufacturers have announced plans to support the technology in their products. "

In Reality Check, CNET reports that Rendezvous "makes child's play out of connecting to network-based resources (storage, printers, databases, etc.) including those bound to Windows systems." For more details see this. Among other lavishly praised Apple developments are QuartzExtreme (Mac OSX's high end image rendering engine) and Expose, the most innovative window management tool available anywhere at any price.

> The latest version of OS X [10.3.3] is called Panther, and (consistent with Apple's aggressive approach to innovation) it sports some 150 improvements from the prior release (the very successful Jaguar). USAToday says "For the second time in just over a year, Apple Computer is out with a major upgrade of the Mac OS X operating system, packing it with features Windows users won't see for years… The most noticeable changes take advantage of the Mac's advanced graphics, which leap over the capabilities of Windows-based machines." Read similar comments from Forbes, and BBC, BusinessWeek, and the SunSpot, and NewsFactor, and PC Magazine.
>
> This comprehensive, ten page December 2003 review "…is being targeted towards recent or potential Switchers from Windows or a Unix-style OS such as Linux." Two excellent critiques are from the O'Reilly Network: here and here. And the more technically inclined wil appreciate this arstechnica piece.
>
> This December 2003 article nicely sums it up by saying "Apple has once again lapped Microsoft in the operating system race. With Windows 'Longhorn' still three years away, the smooth interface and robust underpinnings of Panther leaves XP's cluttered 2D interface eating dust – and signposts the road we expect Windows and Linux to follow in the years ahead."

A Wintel person? Then how about Business Week. A Linux fan? Then you'll really relate to this LONG Linux Journal article: UNIX Under The Desktop. They say such things as "OS X gives us the first popular desktop OS that fits into a prevailing Linux environment and also into the prevailing marketplace. On the bottom, it's UNIX. On the top, it runs Microsoft Office and the whole Adobe suite." They go on to emphasize another significant distinction of OS X: **it is basically open-source.** "Apple also has attracted some top talent from the open-source ranks. Brian Croll, who runs OS X engineering for Apple, was recruited from Eazel. Jordan Hubbard, the world's foremost BSD hacker (and a founder of FreeBSD), actually pitched his way into a job working on Darwin at Apple."

And for Linux advocates, here is a bonus: Linux guru Dr. Moshe Bar has a lot to say at Byte: "If you have been using Linux for some time and just love its stability and performance, and find it a natural platform for development, **you'll feel right at home on the Mac OS X.** On the other hand, if you feel at times frustrated by the difficulty with which modern devices (like wireless, DVD, or FireWire devices) work on Linux, then you might find Mac OS X to be what you've been longing for. I for one, am convinced: I am switching my laptop to Mac OS X." He went on to say the conversion was "trivial".

Now that you are warmed up maybe you'd like to check out how Gentoo is on a Mac, or GNUstep, or Fink, or Wine, or Darwin, or more than you could have imagined.

Get the idea?

"Windows XP is now equal to the Mac OS!"

I know what you're thinking, but no – this is **not** a quote from the late Rodney Dangerfield!

One of my favorite sayings is "People who do not learn from history are doomed to repeat it." I have found it more than amusing when I heard something like "Windows has now caught up with the Mac", following the introduction of Windows 3.1, 95, 98, NT, 2000, ME, XP, etc. Yet every one of these Macintosh-Wanna-Be versions of Windows has been not much more than a second rate copy of the Mac OS.

Every indication is that this RELATIVE difference will continue for the foreseeable future, based on one fundamental fact: **Apple is the technology leader of the personal computer industry, while Microsoft's primary claim to fame is that it has mastered the skill of copying well.** Read more of what others have to say about Microsoft.

If you choose not to take my word for how XP compares to the Mac OS, then you should do some reading. Here are a few sample places to start (note the diversity of sources, **none** of which are Mac sites):

> Windows XP - Breaking Things [Forbes]
> Microsoft Does Not Understand Security [Gibson Research]
> Why We Should Chuck XP Out The Windows [The Observer]
> My Trip To Windows Hell [ZDNet]
> Windows XP Home: Don't Go There [PCMagazine]
> Windows XP - A Complete Disaster [Fab Net]
> XP Means Extra Pain [Fortune]
> Mac OS X Takes Some Polish Off Windows XP [USA Today]
> There Will Be No XP For Me [InfoWorld]
> Mac, Linux, Even DOS Fans Diss XP [Reuters]
> Windows XP Gotchas [PC World]
> Meet The Dark Side of Windows XP [ZDNet]
> Why I Have Bought My Last Windows-based Computer [Vanderwal.net]
> Sleeping With The Enemy [Los Angeles Times]
> Windows XP Isn't Worth The Trouble [CNET]
> XP - Feel The Pain [Anandtech]
> The Problems With XP [Issues Magazine]
> Microsoft Admits XP Media Player Spies On Users [News Factor].
> Top Ten Reasons To Steer Clear of XP [Internet Week].

The Detroit Free Press put it into perspective by saying: "The new OS X for Mac runs circles around Windows XP, booting up faster, recognizing digital devices easier, burning CDs better and playing digital music and video cleaner. Mac's iMovie video editing feature is simply astounding and so simple that it makes the Windows XP video editor look clumsy and complicated…"

HEY, STUFF THIS!   www.stuffthis.com   ©2001 STEINFELD

MICROSOFT GRACIOUSLY ANNOUNCED, TODAY, THE RELEASE OF A PATCH THAT WILL FIX MANY VULNERABILITIES IN ITS OPERATING SYSTEMS. THE PATCH IS CALLED "WINDOWS XP" AND CAN BE DOWNLOADED FROM THE MICROSOFT WEB SITE FOR $395.

Here is an exceptionally detailed, current (2004), and objective OS X side-by-side XP comparison that concludes that OS X is the better choice.

The gist of these articles is that "Windows XP is a downgrade of Windows 2000", which itself was no match for the Mac OS (especially OS X). [Example: ref Windows 2000 Bugs.] And note that the Anandtech XP - Feel The Pain article cited above shows that, as tested, Windows XP is some **25% slower** AND more-resource-hungry, than the already-demanding Windows 2000.

Even a self-proclaimed fanatical Windows promoter, John Dvorak, says about XP: "I do sense that, **like many Microsoft products,** XP suffers from software entropy. Each new patch fixes one thing **but also introduces new bugs. These second-generation bugs tend to go unnoticed at first and are seldom, if ever, fixed.**" He then goes on to elaborate on several more XP deficiencies…

Additionally, there have also been **many** reports of **serious security issues** with XP (e.g. for a slightly different type of discussion see The Death Of TCP/IP). And read this **profoundly comprehensive** write-up about Microsoft security in XP, which concludes "It is apparent that, for unfathomable and never articulated reasons of their own, **Microsoft is DETERMINED to ship an inherently unsecurable, consumer-targeted operating system,** containing the openly accessible Internet research interfaces known as Full Raw Sockets. I think that's **really** dumb."

This disturbing but interesting story at *New Scientist* discusses a serious Windows liability. "An **' unfixable' flaw** that leaves your desktop PC open to serious abuse has been exploited in the Windows operating system. The trick could be used by an attacker to discover your passwords, copy your files or even format your hard disk… a Microsoft VP Jim Allchin told a court (May 2002) that errors had been identified in Windows but should not be revealed for security reasons…**The flaw is part of the fundamental design of the Windows operating system… and has remained unchanged since 1993.**"

If that weren't bad enough, this recent article says that not only do Windows XP error reports have dubious value, but they can convey private information about you to Microsoft. This 16 page 2003 piece says "Microsoft learns a lot about your computer, when you connect to Windows Update. Newer versions of Windows Update send a significant amount of data to the Microsoft update server". And this story makes a similar conclusion about XP's "product activation process". And then "XP's Wi-Fi software may tell hackers an access point's hidden SSID. But it doesn't stop there, it's possible to "spoof" the XP machine into believing it has connected to a familiar network."

Another scientist phrased the security problem from a slightly different perspective: "In biology, if the members of a herd are too genetically similar, a single disease can wipe them out. Ditto with computer systems. As Microsoft becomes increasingly dominant, the users of its programs are open to weaknesses that they may not know exist – until it is too late… If nothing else, the problems of macro-viruses have shown the weakness inherent in Microsoft's dominance of both business software and home PCs."

Consistent with this, in a technical study released in November of 2002, it was reported that 2002 "has been the worst on record for overt digital attacks, with 57,977 attacks to date. Microsoft Windows suffered the highest percentage of overall attacks, 54 percent, followed by Linux, with 30 percent… The Mac OS suffered only 31 overt digital attacks, only 0.05 percent of the total."

With all this negative publicity, one would think that by now Microsoft would be REALLY sensitive to security matters, and would be going out of their way to see that any new OS would be **super** secure. *Guess not.* So if they are that cavalier about something as important as YOUR security, what might that tell you about the quality of the rest of their OS???

The ever-more control that Microsoft is attempting to take over computer operators (forcibly and without the user's awareness) is also a VERY disturbing trend that continues unabated with XP. (Note.) Then read this lengthy and very reasoned discussion. It says (in part): "Microsoft Windows XP connects with Microsoft's computers in **at least sixteen hidden ways!** It is expensive to evaluate the present privacy and security vulnerabilities of these connections and **impossible to evaluate the future vulnerabilities.**

"The issue is not that the connections are always bad for the user. The issue is that Microsoft has moved from making operating systems that are independent to **making operating systems that are dependent on Microsoft computers.** Besides privacy and security vulnerabilities, this raises numerous concerns. For example, if Microsoft decided to remove the support for Windows XP, users might be forced to upgrade. Or, Microsoft could decide to ask for monthly payment for the use of its computers."

This open letter to the FTC says: "On July 26, 2001, we submitted a complaint to the Federal Trade Commission endorsed by fifteen leading consumer advocacy groups detailing the **serious privacy implications of Microsoft Windows XP and Microsoft Passport,** and alleging that the **collection and use of personal information by the company would violate Section 5 of the FTCA.** On August 15, 2001, the groups submitted a supplement to the FTC further detailing the specific ways in which Microsoft XP and Passport would harm the consumer interests you have been charged with protecting... Subsequently, Microsoft announced plans to make Passport more open to other companies, and **falsely** claimed this as an improvement in privacy. Although this change may address other legal concerns, it does not address the major privacy and unfairness objections in the groups complaint."

And then there is the issue of **stability**. No contest here. This tech alert by Symantec tells why Windows NT/2000/XP hard drives **cannot be properly defragmented.** It explains in some detail why "Two features of Windows NT/2000/XP can prevent full defragmentation of a drive. These are the unmovable entries on the drive, and the buffers at the beginning of each file..." This fragmentation could lead to instability.

"In mid 2002 we undertook a simple test. The purpose of this test, which we called the ' Mac Challenge', was to do a direct comparison between a Wintel PC and a Mac. The test's **primary focus was on stability,** with secondary emphasis on performance and usability. For 30 days, I used an iMac exclusively, running Mac OS X; for the next 30 days, my sole computer was a Dell running Windows XP. Both were configured with similar hardware and software applications." The fascinating story details exactly what happened every single day. The net result: one problem with the iMac (with Microsoft's Word application) and ten with the Dell. Also see the follow-up.

Writer Mikey Kaus says: "In late 2001 I predicted that Microsoft's introduction of Windows XP would spark the nation's economic recovery because, unlike its predecessors, XP won't crash. Having now purchased a Windows XP computer, I can say I was wrong – not about the recovery but about XP, at least as evidenced by my machine. It crashes all the time! It crashed, in fact, while I was writing this item... How's that?" I find it very interesting that Mike understands the connection between Windows and our economy. Not many people have been able to grasp that.

In a revealing collection of comments by cross-platform users, here is a VERY good example attempting to explain the stability gap: "I think that you can achieve a level of stability with Windows, but it takes a lot of tweaking. With the Mac, stability is there from day one, and some tweaking just makes things better. Microsoft insists on intertwining/tangling all their programs with the OS in order to support their illegal monopoly position – this is what may be causing a lot of the instability. Apple has made a brilliant OS with X, and when you add the programs, they aren't intertwined with the OS. **Eventually the desire for total control proves to be insane, unstable and unworkable.**"

The Washington Post (evidently an Apple shill) ran a detailed article studying how the Mac OS X handled digital photography, as compared to the Windows XP methodology. (This area was chosen as the Post says that it is accepted as being an important part of the computing experience, and will be even more-so in the future.). The long two-part story says such things as "Apple's **much richer system** offers multiple ways to view your shots…**Apple takes a decisive lead** at putting your photos on the Web…XP's two integrated Web-publishing options are lame in comparison…" and concludes with "The verdict: If you're shopping for a new machine, **you'll probably be much happier with iPhoto" on a Mac.**

Here is a well-written article that identifies a very fundamental reason why X and XP differ – and a reason you might not have given enough thought to.

"The operating system of any computer has one basic function. It is supposed to operate the computer. It's supposed to be in charge. But the central problem of Windows is something else: **Windows is not in charge**… It allows any program to mess up any other program at any time. This is bad enough, but Windows does something much worse. **It allows any program to mess up the operating system's own files at any time**…

"The fact that Windows is so badly behaved while being so widely used tells us more about ourselves than about Microsoft. It tells us we have no common sense. We have a choice. We can exercise that choice. Microsoft's biggest worry is that **we will stop accepting the status quo.**"

After absorbing this you might be thinking something like "Well, OK, Windows XP is crap – BUT Microsoft will certainly be coming out with an improved operating system shortly." Wrong. The XP Upgrade (bug fix) is known as Longhorn. After several delays the official word from Microsoft is that it will not be out until

2006!

And it might well be worse than that. In December of 2003, Gartner, the well-respected computer research firm, stated that its best guess was that there was only a 50 percent chance Longhorn will be available in 2006, and a 40 percent chance it won't be available until 2007.

That amount of time delay in the computer world is simply stunning. In the eWeek story "Will Panther Make A Meal Of Longhorn?" among other observations, the author says "The ' Longhorn' code name once suggested a powerful stampede – but whose leisurely pace now seems more like that of placidly grazing cash cows."

Of course, as always, if you simply MUST play with XP, the best option is probably to do it on a Mac. In fact with Virtual PC 5+, there are those who contend that *XP operates BETTER on a Mac than on a PC!* See this Wired story as an example. And, by the way, this article also says: "Over the last year a new trend has emerged: more and more Windows users are changing over to a Mac."

For information about this trend, and even MORE comparisons of how the Mac OS X stacks up against Windows XP, read our section called Testers and Switchers.
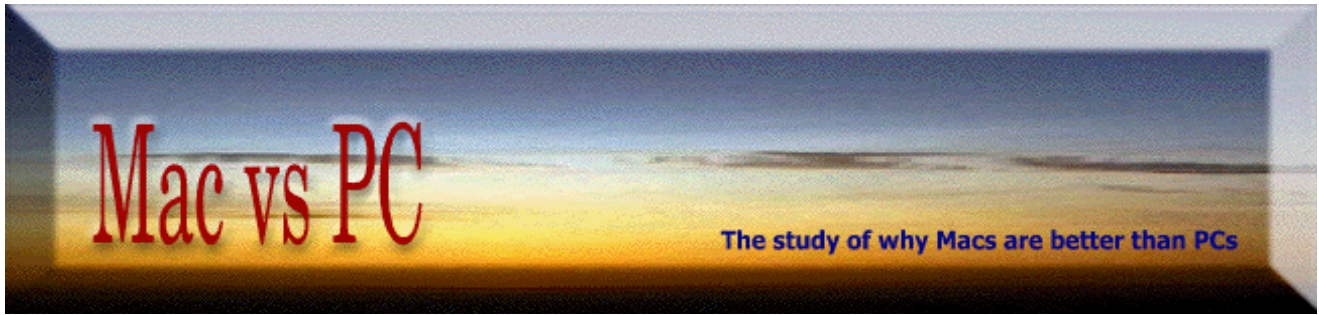
This section's Haiku
(see the bottom of page 1 for more explanation):

Windows XP crashed.
I am the Blue Screen of Death.
No one hears your screams.

— Section #5 —

"Students Need A Windows Experience."

We **firmly** believe that having Windows experience available for students is worthwhile – just like offering an optional course on Driver-Ed is worthwhile.

But *wait just a minute now*. Aren't the people who are saying, "students need a Windows experience", the same people who are saying that PCs and Macs are identical??? Well then, using a Mac will give them their Windows experience!

Oh, you want even more than that? OK, then, let's do it.

First of all, this argument's most popular version is *"Our schools should be using Windows/PCs since the majority of businesses use Windows/PCs."*

Pertaining to this line of thinking, one insightful correspondent wrote: "As phrased, that statement cannot satisfactorily be responded to, since it is really asking ' why shouldn't we do what everyone else does?' The idea of not ' doing what everyone else does' **frequently elicits tension among groups of Domesticated Primates**. So the ' argument' represented is actually sub-rational, thus less susceptible to purely rational counter arguments… I can't help but hear my mother saying ' if all your friends jumped off a roof…'"

Dr. Frank Lowney, director of Electronic Instructional Services wrote me: "Your Mac *vs* PC site contains the most succinct rebuttal of the Windows mythology I've yet seen. Good work… The underlying theory (parallel training) is that the training environment should parallel the application (work) environment as closely as possible. **There are several horrific and unexamined assumptions embedded in this theory.**"

Here are ten (10) reasons why this PC thinking is seriously flawed:

Reason 1: Schools have a different objective

By and large, a typical business compares to a typical school like this:

Business	School
adults	children
get paid to work	pay (taxes) to be educated
all year long	part of the year
one supervisor	multiple supervisors (teachers)
providing a service (or product)	receiving a service
to generate a profit	to learn

HUGE Differences!

Regarding computers, there is a twofold objective for having technology in the classroom:
1) to educate students **about technology,** and
2) to educate students **how to use technology in learning**.

Both of these are <u>much</u> more fundamental – ***and important*** – than teaching them how to use Windows.

Learning **about** technology is learning the mechanics and concepts (i.e. how to take care of a complex piece of electronics; developing keyboarding competence; understanding word processing, spreadsheets, charts, multimedia, the Internet, etc., etc.). In short, part one of the school's technology job is to help students understand the computer's capability as a powerful tool, and to be *comfortable* with it.

None of these skills are platform dependent — other than they ALL have been demonstrated to be easier to learn on a Mac! [E.g. reference the very detailed IDC report (PDF)].

Learning **how to apply the computer tool** is the next important, logical step. Here the school gets into things like problem analysis and creativity. This phase is especially significant, as **imaginative uses** of software applications (*vs* all students doing the same thing) is what leads to real learning. In short, part two of the school's technology job is to help students utilize the computer in everyday life. And Macs do this better too (e.g. read this, and our more detailed discussion of this issue).

[As an aside, there is good evidence that most school districts are also **not** doing a good job of teaching the teachers about computers. Read this excellent article from the *Educational Technology Journal* titled How Teachers Learn Technology Best.]

This 2004 report (written by a district's Teacher of the Year) says "I write an educational tech column. I try to be professional and objective about it, but I just keep coming around to two basic facts: The no-Mac rule in my district is being implemented without regard to educational consequences because teachers were not consulted about it; and any proposed cost savings from going to a single Wintel platform have yet to be detailed to us." … Here is a two-part article about what some other teachers had to say.

Here are just three out of hundreds of similar emails I have received on this aspect:

"In the last few years I've been noticing that many students, in order to answer a question, almost immediately start uttering many different, mutually incompatible responses. It resembles, strikingly, the behavior of the average windoze user, who keeps clicking everywhere until something satisfying happens.

On a broader sense, I have the impression that the average windoze user is intimidated and frustrated by their previous failures, so that, in many cases, they do not ' strive for perfection' but stop as soon as a reasonably decent result is achieved, well conscious of the fact that, as we say in Italy, **' Better is the worst enemy of Good'.**"
– Andrea Perego, Nuclear Physicist, University of Florence, Italy.

"I am an applications engineer/ instructor, I have been using computers for the last 15+ years. I work with: Unix, Macintosh OS, and Windows NT. One of my past job responsibilities was working as a computer advisor at a large Florida University. I worked with students and faculty, using various applications. **"I found that it was easier to teach students on the Macintosh platform than on the Windows/PC. The Mac ALWAYS appeared to be less intimidating when instructing the students."**

"I am currently the **technology director** at Lumpkin County (GA) Schools. 15 years ago I was assistant superintendent for Lumpkin County Schools and left that position to be the Director of a regional Dept of Education Technology Training Center. In 1994 I developed the Georgia State Report Card.

"While director of the training center I noticed that the **Mac schools were getting connected to the web much faster and easier, they were running many more applications, and media persons (not IT experts) were managing networks. At the same time, the PC schools were still trying to print.**

"When I looked at the schools in Georgia, and the schools that were more the 50% Mac, these are typical of the results I found:

> "3rd grade ITBS composite scores:
> Mac Schools 58.39   Windows Schools 53.63   State 54.1
> "8th grade ITBS composite scores:
> Mac Schools 55.83   Windows Schools 52.79   State 53.2

"As you can see the **Mac Schools are <u>above</u> the state average and the Windows schools are <u>below</u> the state average.** To me this says that **students learn better on Macs."**

Conclusion: Macs do the best job for what schools are really there for —LEARNING.

Reason 2: School computer users' needs differ from those of business users

Although most people are probably not aware of it, students in school have **much higher technology requirements** than typical business users do!

Studies have shown that the average business user works with only three or four rather basic applications (e.g. MS Office, Internet Explorer). The net affect of this is that a business user can get by with a very basic computer.

On the contrary, the typical student computer user is involved in six plus applications, which are usually more demanding computerwise (like video and multimedia authoring). Students, after all, are **learning. This means that they are exploring the limits of technology.** The net affect of this is that a school user needs a technologically **advanced** computer – or their learning experience will be significantly stifled. (One of several articles on this topic is: Children Are Power Users.)

Conclusion: Schools need high-end computers, and Macs are the most technologically advanced computer choice —in all price ranges.

Reason 3: Schools and businesses have different security issues

Another detail not usually considered, is that in a normal business setting, each person has their own computer. (It would be rare that a computer would be shared by two employees.) Security concerns are then primarily **between different computers.**

In a school environment, the situation is **completely the opposite.** Almost every computer is shared by MANY users (e.g. students) throughout the day. Furthermore, they may well be simultaneously working on very different types of projects, requiring a wide range of applications. This means that in addition to the standard security concerns **between** different computers, schools now have to deal with security concerns **within each computer**, between different users of that computer.

So what? Again, the more sophisticated, flexible and secure computer would be the most desirable. Macs are not only easier to customize, but they have more secure multi-user settings built in. For more info take a look at our brief discussion of this issue, and also our references to articles about Windows XP security.

Surprised? Don't be. According to this Tech News article, security issues are inherent to how Microsoft has set up Windows, and it will not get much better in the near future.

Conclusion: Schools need high end, secure computers, and Macs are the most technologically advanced and virus-free computer choice.

Reason 4: Who knows what businesses will use in the future?

It will be some seven years from now that the average K-12 [Kindergarten through 12th grade] student will graduate from high school. Based on the rapid pace of computer evolution, it is more than presumptuous to say that Windows experience will be a job "requirement" in seven years.

In fact, let's go back seven years, to 1998. Which sixth grade student from 1998 would now be the more computer-qualified employee: one who learned Windows 98 or one who learned the Mac OS?

The answer is the one who learned Mac OS. Why? **Because Windows XP is more like what the Mac OS was in 1998 than it is to Windows 98!**

Every indication says that this trend will continue: the Mac will have hardware and software innovations and the Windows/ PC assemblers will try to copy them.

(If you were absolutely forced to make a bet on what would be a requirement in seven years, putting your money on UNIX would be a safe call. Surprise! That's what Mac OS X is based on. For more info take a look at our discussion of Mac OS X.)

Here's is an abbreviated example of one of the many emails I received on this topic:

"If you look back 10 to 15 years at what computing looked like, it was arcane – except for the Mac. In fact, essentially every innovation Apple has ever marketed eventually became the standard. If you want kids to be prepared for tomorrow's mass-market computer technology, expose them to Apple's technology today. (Take a look at Windows XP. Microsoft didn't even try to hide how much they have copied the Mac OSX's interface.) Some examples of Macintosh firsts followed later by PC's:

> Mice
> 3.5" Floppies
> Graphical Window-based environments
> Vectored Graphics and text (Postscript)
> Desktop Publishing; Networked Laser Printers
> Hyperlinks
> Microsoft Word; Microsoft Excel
> Built-in Networking
> Built-in Ethernet
> Peer to peer file Sharing
> Dial up remote access
> LCD Monitors
> Built-in CD-ROM
> Built-in wireless networking
> Firewire (IEEE 1394)
> Renaissance; Rendezvous
> and MANY others.

"And lets not forget that the WEB was basically invented on a NeXT computer – and the NeXT OS is the core of Mac OSX…" Go here to see a much more comprehensive listing of Mac innovations, which isnt't even up-to-date.… Read this interesting comparison showing how some key aspects of the Mac and Windows operating systems evolved.

Conclusion: the best way to insure that today's sixth grader will be computer competent in 2012, is to have him learn on the latest Mac OS.

Reason 5: Schools have more financial constraints than businesses do

In particular, schools cannot afford the luxury of having a large support staff. In the business world, numerous studies have shown that the support costs alone are typically **four times greater for Windows/PCs than for Macs.**

Why? Because Windows/PCs are more complicated and problematic. (For thorough evidence of how this is so, see the Norris and Wong report). Even though this analysis is a few years old, the same relative situation exists today.

How about one more example to ponder: what business has the **best, most expensive PC technical support staff in the world?** Microsoft! Here is a QuickTime movie that shows Bill Gates himself not being able to get a peripheral to work on his Windows/PC… Genuine plug-and-play is one of the several major advantages the Mac has over Windows/PCs.

A school district technology director wrote me: "We have installed 5 iMac Labs, 2 wireless iBook labs, one Gateway lab, and one Dell Lab in the new high school. The five iMac labs have an OS X Server that is being administered by the teachers. The teachers are using Apple Network Assistant and they love it. You can shut down the lab with 2 key strokes, view what students are doing, send them messages, take control of their computer, etc.

"The Gateway lab costs 5 times what the iMac lab does… The teacher can not administer the NT server in this lab… The Dell lab cost almost three times the iMac labs and the software was to be installed by a vendor…"

For a more detailed discussion of other reasons why Macs cost less, see our cost page.

Conclusion: Since school districts are very cost conscious, they should buy a quality computer with the lowest Total Cost of Ownership — a Mac.

Reason 6: Using Macs means less competition for IT/MIS personnel

A Miami correspondent made a good point that is not often considered (until it's too late). He writes: "One of the downsides in exclusively supporting the same platform that is used by the majority of businesses, is that it puts the school district in direct competition with local businesses for IT/MIS employee retention.

"I know of no school district that can afford the going rate for IT/MIS professionals. **So why do they insist on supporting a platform that increases their need for support AND puts them in direct competition with the private sector?**

"*Local businesses may push school boards to standardize on the PC platform, since it reduces their training costs by hiring away the school's IT/MIS people.*

"If a school district standardized on (and actively supported) the Macintosh platform, the district would have a higher chance of retaining employees because they would be attracting people who are there BECAUSE they want to work with Macs."

And just to show that this reality has also reached the other coast, in a 2001 U.C. Berkeley White Paper they say that it is "easier to hire and retain Mac-oriented technical staff, possibly due to the lack of competition from the business world."

Of course, Macs open up one other interesting possibility: for many situations you may not need an IS person at all! Here is a site that helps answer any question about setting up and maintaining an OSX lab. (Of course this is the exact reason why many IT/MIS people are anti-Mac. See more here.)

Conclusion: Standardizing on Macs should result in higher IS employee retention.

Reason 7: Copying businesses will result in schools experiencing the same problems that businesses have

This September 2003 article in the *St Petersburg Times* says it well – and humorously.

One of the many emails I have received on this item says it all:

"…More institutions are using Macintosh computers as they are harder to hack into. I work for the Federal Reserve Bank system and we are using Macs to keep hackers out. Plus, we have NO down time for viruses. We constantly have problems with the PC computers here in the Fed."

Be Careful What You Ask For –
You May Just Get It…

The FACT is that, by design, Macs Are Inherently Safer and more secure than Wintel machines. The critically key word is INHERENTLY. In fact the conclusion among industry professionals is reflected in the title of this October 2003 story " Windows Is More Flawed Than Ever."

Conclusion: Schools have enough issues of their own to handle without asking for more.

Reason 8: There are MANY businesses using Macs

The "needs Windows" argument also assumes that all businesses use Windows PCs. **False.** There are tens of thousands of businesses using Macs in the US (and throughout the world) – in ALL fields.

As I noted on the introduction page, just in my little Mac consulting business I have customers who are doctors, lawyers, retailers, restaurant operators, construction contractors, wholesalers, manufacturers, real estate brokers, public relation firms, etc. For the most part these companies **exclusively use Macs to run every aspect of their business.**

Since there are WAY too many businesses to list here, read about this one representative example. According to a current American Bar Association survey, **Mac usage in US law firms has increased by some 250% from 1998 to 2001**. They also report that between 30% and 40% of law students use Macs. These are hardly trivial numbers. This 2004 report says that "Macs are becoming a familiar sight in law offices."

In fact if you extrapolate the increase in Mac usage in law firms over the next thirteen years (when the average current K-12 student will get their law degree), Windows PCs will have long since been out of the picture!

Exactly why would a business use Macs? Read what this company says. They cover a whole gamut of reasons… Here is a Fortune article discussing why many small businesses are switching to Macs… And a May 2003 CNET story touches on similar reasons.

This 2005 report says "How often does a non-media, non-graphics business go ALL Mac? More often than you think. Here is the story of a Washington state CPA firm that's now all Mac, all the time."… This 2004 piece says that "cost is a compelling reason" for any business to consider the switch… And this article says that "Macs are superior in the workplace."

This story in the Boston Globe interviews several scientists who are relating why Macs are becoming very popular in the scientific and engineering community… *Bio IT-World* says "life science is Apple's fastest-growing business market."…OK, I could go on here, but just one more. This *USA Today* story explains why Macs are an ideal business computer.

Conclusion: There are many, diverse businesses that DO use Macs — and with Macs now being UNIX based, more businesses will be using Macs in the future.

Reason 9: Macs CAN provide a Windows experience

Giving students (grades 11 or 12) the option to have some Windows experience makes good sense.

Note that in our discussion here, it is not so much the computer (hardware) that we are referencing: this is a S-O-F-T-W-A-R-E issue. The software in question is: **1)** the operating system [OS], and **2)** business applications.

Regarding the OS, some PC advocates insist (incorrectly) that the Windows operating system is just like the Mac OS. (Although it is a copy, it is a poor one. See our detailed discussion debunking this idea.) In any case, (as we said at the top of this page) if they **really** believe their own argument, then teaching a student on a Mac will give them a Windows experience. In fact, with later versions of Virtual PC (a Microsoft product), there are those who contend that *Windows operates BETTER on a Mac!* See this Wired story as an example. (And here is just one of several [lower-priced] alternatives to Virtual PC on the Mac.)

Please make sure that you understand this point: with Virtual PC, **Macs can run up to ELEVEN different operating systems… and at the SAME TIME!!!**… And, *without* Virtual PC, this shows you how a creative individual got FIFTY-FIVE operating systems to work on his Apple Powerbook!

Clearly the better solution is to teach Windows on Macs running the inexpensive Virtual PC program. This has the benefits of: **a)** providing true Windows activity, while **b)** maintaining all the benefits of owning and operating a Mac. This option also gives students the opportunity to move and translate documents between platforms – on one computer.

Just in case you may think that I am overstating the ease of transition here, please refer to Microsoft's own Mac Compatibility Center website, which says: "Those who have had little or no exposure to Windows but have worked with the Macintosh operating system will find themselves at home with a minimum of retraining." They should know since they make both Windows *and* Virtual PC.

Furthermore, when laypeople talk about businesses wanting students to have "Windows experience", what they are *really* saying is that businesses need students who have experience with Windows *applications* – like Word, Excel, Photoshop, etc. Essentially **ALL major applications have always been cross-platform.** (In fact several – like Ms Word and Ms Excel – actually **STARTED** on the Mac.)

Regarding their business applications, Microsoft has fully committed to Mac software products like MS Office. For example, here is there site about Office 2004X, which has features not available on the Windows version. The result is that files and functionality (and associated learned skills) are **totally** interchangeable between the platforms. (Read this January 2004 article as an example of Microsoft's commitment to the Mac.)

Lastly, the majority of businesses are becoming more Internet oriented – and the Internet is entirely **platform independent.**

You might want to read a discussion of what one Wyoming school district calls buying two platforms for the price of one (using Macs) which turned out to be "**the most cost saving ingredient in the district's technology plan.**"

Conclusion: teach Windows by having a lab of Macs in high school with Virtual PC on them.

Reason 10: What businesses *really* want

Ask any experienced employer what are the MOST important things that they are looking for in an employee, and they will say: **dependability, integrity, good work habits, flexibility, willingness to learn, good communication skills,** etc.

The importance of having Windows familiarity would be WAY down on the list – if it were on it at all. So if schools wish to provide the best employees for businesses, they ought to focus on assuring that ALL of the **really important** items are met before worrying about an incidental like Windows experience.

An educator wrote that these are some of the terms fellow educators would like to use to describe their students. Notice that **none** of them refer to actual computer programs or platforms.
    Creative and effective users of productivity tools,
    Communicators,
    Collaborators,
    Decision-Makers,
    Continuous Learners,
    Problem Solvers,
    Information Seekers,
    Analyzers,
    Evaluators.

Read what this investigator wrote, about a year after I published the prior three paragraphs:

"…I repeatedly ran across teachers caught in a fog of delusion about what their students were actually accomplishing with this machinery. In the younger grades, students in class after class are spending days, to their teachers' great delight, mastering children's versions of PowerPoint, the ubiquitous business presentation product sold by Microsoft. Yet the work the students produce with these products is **stunningly superficial**. It's usually far less creative than what students used to do…
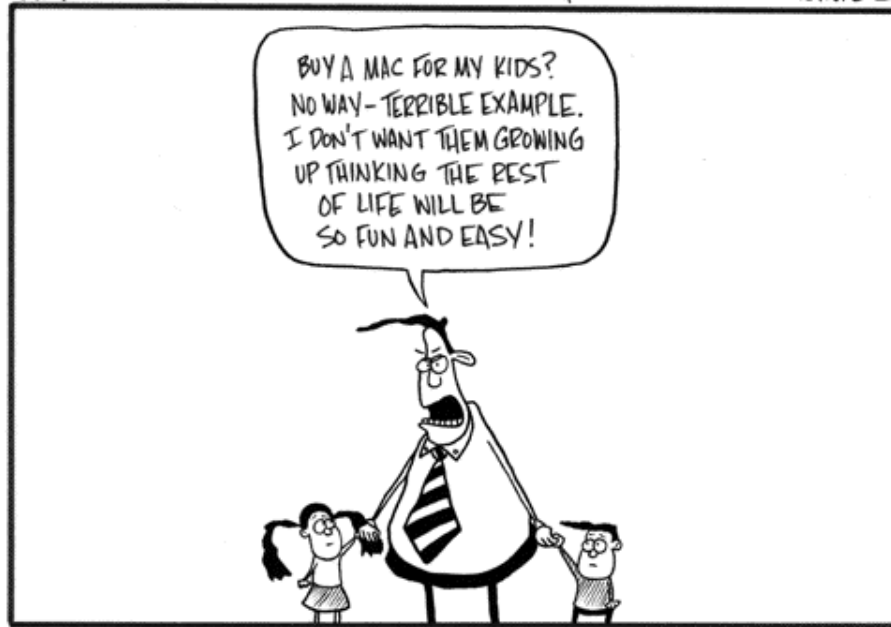
"One of the most common selling points for computers in schools is to prepare youngsters for tomorrow's increasingly high-tech jobs. Strangely, this may be the computer evangels' greatest hoax. **When business leaders talk about what they need from new recruits, they hardly mention computer skills**, which they find they can teach employees relatively easily on their own. Employers are most interested in what are sometimes called "soft" skills: a deep knowledge base and the ability to listen and communicate; to think critically and imaginatively; to read, write and figure, and other capabilities that schools are increasingly neglecting."

(*Ed: Sounds like the exact point I have been making in Reason #10.*)

This 2003-2004 report says, a pilot project in England using Apple computers resulted in "Improved knowledge retention; increased enthusiasm and motivation; improvements in collaborative work skills." *Sounds like a **real** good thing!*

Conclusion: In the overall scheme of things, for a prospective employee to have Windows experience is relatively unimportant.

HEY, STUFF THIS!   http://www.macworks.com ©96 STEINFELD

BUY A MAC FOR MY KIDS?
NO WAY — TERRIBLE EXAMPLE.
I DON'T WANT THEM GROWING
UP THINKING THE REST
OF LIFE WILL BE
SO FUN AND EASY!

For more on this subject, please read the informative website entitled What Schools Should Do, plus Wes George's report about Apple's Vision For Education Part 1 and Part 2, Frequently Asked Questions by parents of college students, as well as Dr. Tim Hillman's editorial on MacOS X In Education, and MacInTouch reader reports on the same subject. And this extensive documentation about using OSX in K-12 is superb.

So there are **many GOOD reasons** for schools **NOT** to use the same computers that businesses use. In fact, using Macs gives students the "horizon-broadening" opportunity to know and understand that there is an "alternative", and that (at some point in their life) they will then have the ability to decide for themselves which is the most applicable platform for the kind of computing that they would like to do. From the Mouths of Babes department comes this Think Different posting by a 14 year old. If educators can convey this understanding, a **very** worthwhile learning experience will have been accomplished.

<u>Conclusion</u>: *standardize on the Mac platform throughout the school district — which will result in the lowest cost of operation. In a high school lab, set up a room full of Macs with Virtual PC on them, and offer a class on Windows.*

This section's Haiku
(see the bottom of page 1 for more explanation):

Serious error.
All shortcuts have disappeared.
Screen. Mind. Both are blank.

— Section #6 —

"There Are Problems With Existing Macs..."

Macs are the most problem free computers on the planet.

The internationally respected _Consumers Reports_ magazine comes to this conclusion in their December 2004 magazine (subscribers can read the full report online, but here is 2002's study, which is similar). They report on a survey of more than **60,000** computer users where they looked at three issues: 1) Repair History, 2) Technical Support, and 3) Buying Computers. Let's see what they found out:

Repair History results were that Apple Macs were **by far** the most trouble-free computers made.

Regarding Technical Support, _Consumers Reports_ examined four aspects: **1)** was the problem solved, **2)** how competent was the support staff, **3)** how long was your wait on the phone, and **4)** how good is the company's web site support. Apple again was rated number one, and received **extremely** favorable ratings in **ALL FOUR** parts, which was enormously better than any PC assembler. (Dell, for instance, was not rated favorably in **ANY** of these categories.)

On the third issue computer users rated _buying_ computers from Apple to be the best of all manufactures (who were rated by **price**, **selection**, **help**, and **knowledge** of service personnel).

Consumers Reports concluded their exhaustive report by saying that "our findings have been consistent over the years." _Exactly what else do you need to know?_

In an August 2004 study the University of Michigan in Ann Arbor measured the attitudes of consumers in several different computer categories. Their findings were that Apple's customers are the most satisfied of any PC vendor. They said that "Apple's success comes from a focus on innovation and improving tech support. Just about every other PC vendor received technical support scores that were less than the scores they received for the quality of their products, but Apple was the only company that received high marks for both quality and support."

In their July 2003 report, _PC Magazine_ says that Apple was rated as the top vendor (A+) in the desktop _and_ portable _and_ business (!) _and_ server categories by its readers. They go on to also state that "we've seen a rise in criticism of the products and customer support of Dell." Further on they remark that their readers say that the Mac OS crashes less often than Windows XP.

OK, here's another perspective. Three years ago _PC World_ magazine (yes, _another_ PC publication) surveyed buyers of **18,000 personal computers** representing 23 brands and asked them to rate the computers in nine categories relating to reliability and service. The categories were:

- **overall problem rate**,
- system DOA rate (problems with motherboard, disk drive, etc.),
- non-system component DOA rate,
- time to reach a support staffer,
- time to resolve a problem,
- percent of problems never resolved,
- willingness to buy again based on service received,
- overall satisfaction on service.

Apple received the highest rating (5 stars) in **every** category [except component DOA rate, in which Apple rated 4 stars]. Its total score exceeded the score of **every** PC box assembler.

In October of 2002, *PC World* magazine did another survey, this time of some **30,000 computer users.** No surprises here: Apple again was rated number ONE. See their lengthy fifteen pages of conclusions, which includes a special write-up that they called "**Dell's Fall From Grace**."

How about hearing it from still another source? ConsumerAffairs.com, an independent Web site dedicated to providing consumers with a wealth of unbiased information regarding products, services, and dealers said: "Surely there is no product that enjoys greater customer loyalty than Apple's Macintosh line of computers. **Apple remains the gold standard in building brand loyalty.** Apple users don't just like their machines, they adore them. They are loyal to the core, and rightly so. Very few Mac users defect to the Wintel world, and a look at hundreds of user reports (see samples) tells why – Apple machines work right out of the box and when there's a problem Apple fixes it … pronto. Can't beat that."

A Georgia school was keeping a live update chart on the web comparing repair rates of Macs to Windows/PCs. See it here, and then email their technology director (Pete Seabolt) for more details. Their experience is that Windows/PCs have a failure rate almost **FOUR TIMES HIGHER THAN MACS!**

Considering these (and many other similar surveys) if anyone in a school (or business) environment is having Mac "problems", the most likely cause is insufficient attention to their Mac.

All computers are **very complex** pieces of electronic equipment. Not performing basic preventative care is akin to driving your car without any oil changes. Regardless of the quality of the car (e.g. Mercedes, Ferrari, etc.) **all** cars will sooner or later fail without an oil change. So it is with computers.

To make things easy for you (or your MIS people) to understand, we are including our opinion (based on working with thousands of Macs) of what these basic steps should include, on the following pages:

1 - Keeping Macs Healthy

2 - Apple Updates-9.1/iMacs

3 - Apple Updates-8.6/iMacs

[Note 1: no OS X Update page is needed since any school with OS X will likely have a cable Internet connection. All they need to do to update their Mac is to choose the Software Update option under the Apple menu.]

[Note 2: to see which Mac's will startup with OS 8.x or 9.x, see Apple's list.]

If the MIS people are **not** doing **all** of these (mostly free and easy) things, you should insist that they do, as these amount to nothing more than basic good maintenance practices. That is their job.

Furthermore, if the MIS people are not doing **ALL of these** things, then they are **CAUSING** Macs to have problems (which, in some cases, may be their agenda).

On the other hand, it might be that your MIS people will indicate that they are already doing a thorough job of maintaining the existing Macs. Great - hope that it is so.

However, if you have some suspicions, or just want to double check, here's a list of questions you might want to ask them. Their answers will give a good indication of just how professional a job they are doing. [*Note that these questions were prepared for our local school district, which essentially had all Macs, and mostly Windows/PC servers. Edit the questions to fit your situation.*]]

<p style="text-align:center;color:red">Some Questions
for Your Local School System's Technology Staff</p>

1 - Please provide a copy of the existing, detailed written procedure for keeping the school district's Macs up-to-date with: **a)** the latest possible, best performing version of Mac OS software, and **b)** the most current free Apple software supplements to that OS.

2 - Please provide a copy of the existing, detailed written procedure for keeping the school district's Macs loaded only with the *minimum* Extensions, Control Panels, and Fonts.

3 - Please provide a copy of the existing, detailed written procedure for keeping school district's Macs up-to-date with third party commercial software.

4 - Please provide a copy of the existing, detailed written procedure for troubleshooting the school district's Macintosh computers.

5 - Please provide a copy of the existing, detailed written procedure for exactly what each school's technical person can do (*on their own*), in their effort to maintain and troubleshoot the Macs in their school.

6 - Please provide a copy of the existing, detailed written procedure that explains good computing practices for teachers and students to follow.

7 - Please provide a copy of the existing, detailed written procedure that explains how teachers and students transfer Mac files to PCs, and the reverse.

8 - Please provide a written detailed explanation as to why Windows/PC servers have been used instead of Apple servers.

By the way, if they say that some of these things are esoteric (i.e. not necessary), your reply should be that they are **all** important, and that understanding intricate details of the computers they are servicing *is their job*.

Again, nothing on this list is complicated <u>or</u> unreasonable <u>or</u> time-consuming <u>or</u> expensive. One other page to reference is our list of possible suggestions (based on what information you get here) that you might want to make to your local school board. Again, please edit it to your situation.

I also maintain a more detailed explanation of Mac troubleshooting ideas, with several links. For most situations however, the basic procedure (from above) is sufficient. The always informative Tidbits website also has a worthwhile two part article on Mac troubleshooting. See: Part 1 and Part 2.

Occasionally one hears a few MIS people complain about the difficulty of servicing iMacs. As usual there is a tiny bit of truth to that, due to the iMac's compact design.

However, the big picture is that **1)** iMacs rarely need servicing in the first place, and **2)** when they do, it is not *really* that hard. For example, *MacWorld* published an article (with pix!) showing a layperson how to do such things as replace an iMac's hard drive. If a non-tech person can do these projects, it would seem that a professional MIS person should have no problem.

Here is an excerpt from an unsolicited email I received in February of 2002: "I am a computer technician for Metro Public Schools in Nashville, TN. When I was hired several years ago to fix the few PC's in the school system I had never even seen a Macintosh. I quickly learned how to repair Mac's. **I was shocked at how superior the Macintosh is over PC's. They are easier to use, troubleshoot, and repair.** I wish all people could see Macintosh quality and performance."

For some additional discussion of MIS issues, see our MIS Management page.

If you really want to talk about PROBLEMS with computers, a good personal health analogy would be that Mac issues are like having body odor (superficial, primarily caused by the person, easily fixable), whereas Windows/PC issues are like having cancer (systemic, often unknown cause, difficult to solve). Want more examples? Here's a VERY comprehensive discussion of typical everyday Windows issues.

What really hits home (and applies to users dealing with ALL versions of Windows) is the author's observation that when he complains about these pervasive problems to his Wintel-using associates, their responses fall into three general categories:

> "**1. 'I've gotten used to Windows' problems.'** This is the most common answer, one that I've dubbed the "Surrender Response." Translated, this person is saying, "You are right, Windows has lots of problems, but there's nothing we can do about it." Which is obviously a silly answer; unless the computer salespeople are forcing you to buy PCs at gunpoint, no one is stopping you from using something else. If you ask me, I'd recommend a Macintosh, but even Linux is a workable alternative.

> "**2. 'You're just expecting the computer to work the way you want it to.'** Well, of course I am – I'm spending almost forty hours a week with this PC, it better work the way I want it to. Engineers customize their work areas to have their references where it's best for them, and choose their tools according to what they're more efficient with.Why should computers be any different?

> "**3. 'Deal with it.'** This is the macho equivalent of the Surrender Response; it usually comes from the self-proclaimed grizzled veteran of the office, the one who remembers life before personal computers. This is a response that sneers at all criticisms as pampered whining, and says that "real men" (women rarely say this) don't need luxuries like ease-of-use or intuitive design.

> "This argument falls apart at the inherent hypocrisy involved. If these "real men" don't need such comforts, why are they using computers in the first place? Toss out those spreadsheets and compilers and word processors – let's give these digital frontiersmen their punch cards and abaci and typewriters already! Not that they would surrender their PCs, of course; the whole point of using computers is to do things better and faster and more efficiently than you did before. But then, why shouldn't an operating system/user interface be subject to the same demands for improved efficiency?"

For more information about the benefits of iMacs for students, read this.

Conclusion: *If your school or business is having Mac "problems", the almost certain solution is to check out how they are being setup and maintained by your MIS people.*

This section's Haiku
(see the bottom of page 1 for more explanation):

The Tao that is seen
Is not the true Tao, until
You bring fresh toner.

— Section #7 —

Mac vs PC

The study of why Macs are better than PCs

How to Keep Macs Up and Running

Inexpensively, Simply, & with Little Effort

For OS X Clients:

1 - See that all Macs are running 10.3.9, or the latest version of 10.4, with at least 512 MB of RAM

 {Note: this is an easy to do assignment where ".x" updates are __free__.}

2 - Arrange the Hard Drive sidebar into **eight, logical,** and **easy to understand** folders: Applications, Documents, Pictures, Music, Internet, Games, Utilities, and Downloads. Set each of these to open in list view. In the Dock, delete lesser used items, adding more commonly utilized applications (e.g. AppleWorks and Disk Utility). This setup may seem somewhat trivial, but it is helpful.

 {Note: this is a one-time simple project that is __free__ and easy to do.}

3 - Adopt the KISS philosophy and only have the **minimum** items loaded in the system (especially Fonts). In Apple's included Font Book application, deselect lesser used fonts. Similarly, check System Preferences −> Accounts to verify that unnecessary startup items are unchecked.

 {Note: this is a one-time very little effort task that is __free__ and easy to do.}

4 - Keep all Macs up-to-date with the current free Apple updates by using the built-in software update utility (or Apple's OS X downloads site).

 {Note: this is a low effort mission that is __free__ and easy to do.}

5 - Buy only well-written, well-reviewed and **fully Mac supported** commercial software, and keep it up-to-date. (In a school environment, don't allow other third party software to be loaded unless it is on your approved list.)

 *{Note: this is an easy, low effort job that is **low cost** over the long term.}*

6 - Make sure that a good system Password is selected. For extra Internet security, in System Preferences −> Sharing, enable Firewall protection.

 {Note: this is a free, one-time effort that is easy to do.}

7 - Do preventive maintenance by monthly running basic test utilities:
  a) e.g. OnyX
  b) Apple Disk Utility.

 {Note: this is a very low effort activity that is __free__ and easy to do.}

8 - In the *rare* case where a problem persists, then have an external Firewire drive prepared (with an image made with Apple's free Disk Utility application, or the also free Carbon Copy Cloner program) that will reformat the hard drive and reset-up the computer, customized to your specifications (and should take *less than 10 minutes*).

*{Note: this is a very low effort undertaking that is **free** and easy to do.}*

In the special situation where a manual checkout is preferred, have a **written, detailed, logically progressing troubleshooting procedure** to resolve the problem. This would include testing with DiskWarrior, TechTool Pro, etc. A detailed procedure is here. [Another good source for Jaguar troubleshooting information is here, and for Panther is here.]

*{Note: this is an easy, **low cost,** moderate effort, but is rarely necessary.}*

9 - Have a simple well-written procedure for teachers and students that identifies good computing practices for them to follow.

*{Note: this is a low effort assignment that is **free** and easy to do.}*

10-Have only Apple OS X Servers (XServe) with OS X clients. (Using Netboot (PDF), the simple steps #1-#5 can be done **much** easier, as updating the server will update all networked Macs.)

*{Note: this is a straightforward job that is **low cost** over the long term.}*

For pre-OS X Clients:

1 - See that all Macs are running the latest pre-OS X version possible (9.2.2, or 9.1, or 8.6.).

*{Note: this is an easy to do one-time moderate effort assignment that is often **free**.}*

2 - Arrange the Hard Drive into **six, logical,** and **easy to understand** folders (icon view): System, Utilities, Games, Applications, Internet, and Documents. Set each of these to open in list view. On the Desktop (icon view) have a few aliases (e.g. *AppleWorks, Netscape*), printer icon, a "Downloads" folder (connected to Netscape & NAV), and the Control Strip. This setup may seem somewhat trivial, but it is important! (See sample pix.)

*{Note: this is a one-time simple project that is **free** and easy to do.}*

3 - Adopt the KISS philosophy and only have the **minimum** items loaded in the system folder (especially Extensions, Control Panels and Fonts). Use Extension Overload to identify items, and Extension Manager to arrange sets (if desired). Manually create your own "Fonts (disabled)" folder, and drag lesser used fonts into it. Here is a sample article that discusses this matter.

*{Note: this is a one-time very little effort task that is **free** and easy to do.}*

4 - Keep all Macs up-to-date with the current free Apple updates for their system software (e.g. ref Version Tracker and our pages for what is necessary for: 9.1 and 8.6).

*{Note: this is a low effort mission that is **free** and easy to do.}*

5 - Buy only well-written, well-reviewed and **fully Mac supported** commercial software, and keep it up-to-date. (In a school environment, don't allow other third party software to be loaded unless it is on your approved list.)

*{Note: this is an easy, low effort job that is **low cost** over the long term.}*

6 - Make sure that adequate RAM is assigned to every frequently used application and utility.

*{Note: this is a one-time very little effort check that is **free** and easy to do.}*

7 - Do preventive maintenance by monthly running basic test utilities:
   a) TechTool
   b) Apple Disk First Aid (current version is 8.6.1).

*{Note: this is a very low effort activity that is **free** and easy to do.}*

8 - In the *rare* case where a problem persists, then have a CD prepared (with an image made with Apple's free [Software Restore](#) program) that will reformat the hard drive and reset-up the computer, customized to your specifications (and should take *less than 10 minutes*).

> *{Note: this is a very low effort undertaking that is **free** and easy to do.}*

In the special situation where a manual checkout is preferred, have a **written, detailed, logically progressing troubleshooting procedure** to resolve the problem. This would include testing with DiskWarrior, Norton DiskDoctor, etc. (See our sample [Mac Troubleshooting Procedure](#).)

> *{Note: this is an easy, **low cost,** moderate effort, but is rarely necessary.}*

9 - Have a simple well-written procedure for teachers and students that identifies good computing practices for them to follow.

> *{Note: this is a low effort assignment that is **free** and easy to do.}*

10-Have only Apple OS X Servers ([XServe](#)) with OS 9.x or OS X clients. (Using [Netboot](#) (PDF), the simple steps #1- #6 can be done **much** easier, as updating the server will update all networked Macs.)

> *{Note: this is a straightforward job that is **low cost** over the long term.}*

— Section #7-a —

Sample Mac OS 8.x/9.x

Troubleshooting Procedures

Method #1: to fix standard problem situations in a school environment (i.e. a situation where there are many computers, all having basically the same setup).

With Apple's free Software Restore program (ASR), the school district should make hard drive images (one for each of the recommended OS versions that they are using: each modified [i.e. *minimized*] as YOU would prefer, with YOUR approved software added, with folders set-up and laid out as YOU would like, etc.), and then burn these into a Repair CD. Using this Repair CD, *a Mac can be **reformatted** and have everything properly reinstalled within* **10 minutes!**

Check out a more detailed explanation about how the easy-to-use Apple Software Restore program works. If you would like even more info, here is a more detailed procedure (PDF) I wrote for some local schools.

An alternative in this situation is to use Netboot. Netboot is applicable when the school is using an Apple OS X Server, has all OS 9.1+ clients, and has a good 100Mbs ethernet system. The benefit here is that updating the client from the image on the server is even quicker than the CD option – especially doing incremental updates. The downsides are that running most everything from the server can cause a performance hit, and when the server has problems then everything may grind to a halt. A modification of Netboot works well for OS X, see this.

Method #2: to troubleshoot problems in a situation where more detail is needed, or there is uniqueness to the computer at hand.

1- General:

- Check that the System Folder is in the proper place, correctly labeled.
- See that there are no other System Folders on the Hard Drive (*with Find*).
- Verify that the OS used is the latest possible of the two most stable pre-OSX versions.
- Set Icon Views to "Always snap to grid", and List Views to show "Version".
- Create a Utility folder and put utility programs (test, etc.) on the Hard Drive into it.
- Organize material on Hard Drive so it is neat, logical and easy to back up
  (i.e. six folders, with work **only** in "Documents").
- Remove or compress excess files if not at least 10% free space on the Hard Drive.

2- **More Editing of the System Folder:**

- Check "About this Mac/Computer" for system version, amount of RAM installed, and system memory usage.
- See that all Apple system updates (these are free) have been installed. (Reference our other pages for what is necessary for: 9.1, 8.6, and 7.6.1.)
- Disable rarely used (delete potentially problematic) Extensions and Control Panels with Extension Manager (or create a new set).
- Check unknown items with Extension Manager or Extension Overload.
- Create a new "Fonts (disabled)" folder (within the System Folder), and drag rarely used fonts into that.
- Review all Control Panels (esp. Memory) and see that they are setup correctly. (Cache = 1/16 of real RAM, or "Default", with Virtual Memory generally On).
- Put miscellaneous unused items in "Unused…" folders in the Utility folder.
- Trash problematic or unused preferences, (including "Finder Preferences" if there is unexplained behavior).
- Check out invisible files on Hard Drive (e.g. with Ghost Hunter, ResEdit) and remove any suspicious or unnecessary files.
- Update Apple Hard Drive driver (or third party driver if applicable).
- Rebuild desktop with TechTool. ***Restart***.

3- **Startup the computer with a Mac utility CD-ROM** (of your own making, or a commercial product):

- Run DiskWarrior and Norton Disk Doctor.
- Defragment Hard Drive with Norton Speed Disk, if needed.
- If there are potential viruses, check with an updated version of NAV.

   (Also advise setting up a Safe Zone "Download"folder on the desktop.) ***Restart.***

4- Check out applications and utility software most frequently used, making sure that these programs are complete, and are the latest revision (check at VersionTracker). **Also verify that the memory allocation of these programs is sufficient**.

Only if the above methods do not solve the problem, then try these one at a time (in sequence):
   a) Start-up the computer with Extensions, etc., OFF (hold Shift Key down).
   b) Within Extensions Manager, choose the "Minimum" OS set.
   c) Zap PRAM with TechTool. [Reset Power Manager on Powerbooks].
      (Note: some Control Panels [like Memory, Date, and Startup Disk] will need to be reset after this.)
   d) Check with TechTool Pro, especially if there is newly installed RAM.
   e) Check that the internal battery is OK (with battery software). Replace if needed.
   f) Do a clean reinstall of problematic software.
   g) Replace Finder file.
   h) If still a problem (i.e. a last resort), do a clean reinstall of System Software.

Some Other Very Worthwhile References:
   a) Mac Troubleshooting Info at MacFixIt
   b) Book (one of many): *"Mac & Power Mac Secrets"* (Pogue and Schorr)

— Section #7-b —

Mac vs PC

The study of why Macs are better than PCs

Examples of FREE Apple Updates
for iMacs and/or System 9.1 users

When Macintosh computers (e.g. iMacs) are shipped from the factory, they have a standard set of system software (e.g. Mac OS 9.1) installed on them.

Subsequent to that time, Apple issues updates to many of the components of this standard package. In almost all cases, these incremental updates are available for <u>free</u>. {These updates are easily – or automatically, with the Software Update Control Panel – downloadable from Apple, or manually downloaded through Mac software sites (e.g. <u>VersionTracker</u>).}

The reasons of these updates are: **1)** to improve performance, and/or **2)** to add features, and/or **3)** to correct errors. The benefits of utilizing these <u>free</u> updates are often **substantial**.

Below are some notable (i.e. where Hardware, or System Extensions are modified) iMac and 9.1 updates (all free). Although using all these updates is usually beneficial, the **bold** *items below are the most important ones.*

System Extensions (to add, delete, or update)

Extension	Original Version	Updated Version
Airport	1.2	2.0.4
Apple CD/DVD Driver [<u>download</u>]	1.4	1.4.8
AppleScript	1.5.5	1.8.3
Authoring Support	1.1.1	1.1.5
CarbonLib	1.1.1	1.6
Joliet Volume Access [<u>not an Apple item</u>]	None	2.0.3
iTunes	1.0	2.0.4
iMovie	2.0	2.1.1
MJRLib {+ related items}	2.2.3	2.2.5
ObjectSupportLib	1.2?	Remove
OpenGLEngine {+ related items}	1.2	1.2.1
Open Transport	2.7.4	2.7.6

QuickTime { + related items}	4.1.2	6.0.3
Theater Mode	1.0.1	2.0.3
URL Access	2.2.1	2.3

Miscellaneous Mac Utility Software Updates

Utility	Original Version	Updated Version
Drive Setup	2.0.3	2.1
Disk First Aid	8.6	8.6.1
Mac OS ROM	6.1	7.9+

Miscellaneous iMac Hardware Updates
(applicable to certain models)

iMac CD Update 2.0   **DVD-ROM Firmware**

iMac Firmware Update 1.2 or 2.4 or 4.1.9   **Apple Modem Updater 2.0**

iMac Update 1.1 or **iMac PM Update 1.1**   Apple DVD Player 2.2

The bottom line is that any iMac or OS 9.1 Mac that is _not_ using most of these free updates, will _definitely_ be more prone to conflicts, **and** will have poorer performance.

[Note: 9.1 is a very dependable version, and is the minimum OS that should be used where possible. It can be installed on any Macintosh that originally shipped with a PowerPC processor that has at least 32 megabytes of physical RAM (more RAM is very beneficial). <u>See</u> for more info from Apple.]

— Section #7-c —

Examples of FREE Apple Updates
for iMacs and/or System 8.6 users

When Macintosh computers (e.g. iMacs) are shipped from the factory, they have a standard set of system software (e.g. Mac OS 8.6 for older iMacs) installed on them. Ideally (if there is adequate RAM) these should be upgraded to at least OS 9.1.

If for some reason this is not possible, these computers should at least take advantage of the Apple updates to OS 8.6. In almost all cases, these incremental updates are available for free. {These updates are easily downloadable from Apple, or through Mac software sites (e.g. Version Tracker).}

The reasons of these updates are: **1)** to improve performance, and/or **2)** to add features, and/or **3)** to correct errors. The benefits of utilizing these free updates are often **substantial**.

Below are some notable (i.e. where Hardware, or System Extensions are modified) iMac and 8.6 updates (all free). Although using all these updates is usually beneficial, the **bold** *items below are the most important ones.*

System Extensions (to add, delete, or update)

Extension	Original Version	Updated Version
Apple CD/DVD Driver [download]	1.2.2	1.4.8
AppleShare	3.8.3	3.8.8
CarbonLib	None	1.6
ColorSync	2.6.1	3.0.3
DrawSprocketLib*	1.1.4	1.7.5
Font Manager Update	None	1.0
InputSprocket Extension*	1.4.1	1.7.3
Joliet Volume Access [not an Apple item]	None	2.0.3
MJRLib { + related items}	2.1.1	2.2.5
[in Modem Scripts subfolder]	Misc	Per Modem Type
NetSprocketLib*	1.1.1	1.7.1
ObjectSupportLib	1.2?	Remove

OpenGLEngine {+ related items}	1.0	1.2.1
Open Transport (slot iMacs only)	2.0.3	2.6
QuickTime {+ related items}	3.0.2	6.0.3
SoundSprocket Filter and Lib*	1.0	1.7.1
URL Access	1.0.1	2.3
USB Printer Sharing	None	1.0
USB Storage Support	1.0.1	1.3.5

*Part of GameSprocket 1.7.5

Miscellaneous Mac Utility Software Updates

Utility	Original Version	Updated Version
Drive Setup	1.7.2	1.7.3
Disk First Aid	8.5.2	8.6
Mac OS ROM	1.4	3.8+

Miscellaneous iMac Hardware Updates
(applicable to certain models)

iMac CD Update 2.0	**DVD-ROM Firmware**
iMac Firmware Update 1.2 or 2.4	**Modem Updater 1.3.5**
iMac Update 1.1	Apple DVD Player 2.2

The bottom line is that any iMac or OS 8.6 Mac that is <u>not</u> using most of these free updates, will <u>definitely</u> be more prone to conflicts, **and** will have poorer performance.

PS: *As a point of reference, Microsoft's site shows that there are some* **100** <u>Windows 98 updates</u> *needed to that OS during the same time period. Most were listed as "critical".*

[Note: Whenever possible, all 8.6 systems should be upgraded to 9.1 – a very dependable version. It can be installed on any Macintosh that originally shipped with a PowerPC processor that has at least 32 megabytes of physical RAM (more RAM is very beneficial). <u>See</u> for more info from Apple.]

rev: May 1, 2005

— Section #7-d —

Some Possible Solutions for

Your School System's Computer Issues

1 - Considering the uniqueness of technology's: **a)** substantial **academic significance**, and **b)** enormous **financial costs**, the School Board should establish an *independent* committee of informed citizens who will monitor the district's performance in this critical area.

2 - Assure that the head MIS person is a competent, open-minded individual who is **unequivocally** committed to support what is in the best interests of the students, teachers and taxpayers.

3 - Have the head MIS person subscribe to the **free** Mac-Managers email list. (Members are cross-platform managers who will answer essentially **any** technical question, for free.)

4 - Have a detailed written procedure for having the school's Macs use **only the latest of the four most dependable Mac OS versions** (8.6/ 9.1/ 10.3.9/ 10.4.x), and keeping these up-to-date with the most current free Apple system software.

5 - Have a detailed written procedure for seeing that the school district's Macs are loaded **only with the minimum items (like Fonts).**

6 - Verify that the school has a procedure to assure that it **only** purchases **well-reviewed** and **well-supported** third party software, and that they keep their Macs up-to-date with this software, in a timely manner.

7a- **Load each 10.x Mac** with the following basic and free (or inexpensive) programs:
  a) AppleWorks 6.2.9 or iWorks [powerful wordprocessor, SS and database]
  b) RealBasic [extraordinary, simple programming application]
  c) GraphicConverterX [$20 shareware program that almost equals $500 Photoshop]
  e) Stuffit Expander [latest version of this decompression program]
  f) Adobe Acrobat Reader [latest version for reading common Internet PDF documents]

7b- **Load each 8.6 or 9.x Mac** with the following basic and free (or inexpensive) programs:
  a) AppleWorks 5.0.3 or 5.0.4 or 6.2.5 [powerful wordprocessor, SS and database]
  b) HyperCard 2.4.1 [extraordinary, simple programming application]
  c) GraphicConverter [$20 shareware program that almost equals $500 Photoshop]
  d) Netscape Communicator 4.8 [very useful browser and email program]
     [when email, is not needed, substitute Internet Explorer 5.1.7]
  e) Stuffit Expander 7.0 [or latest version of this decompression program]
  f) Adobe Acrobat Reader 5.1 [for reading common Internet PDF documents]
  g) Calculator+ [superior, free Apple Menu item calculator]
  h) MacVerter Metric [quick conversions to/from any metric unit]
  i) the district's recommended Extension Manager and Sherlock sets
  j) TechTool [for monthly rebuilds of the desktop]
  k) Apple Disk First Aid 8.6/8.6.1 [for monthly hard drive testing]

8 - For problem situations: **a)** have copies of the recommended Mac OS versions you use, customized on your Apple Software Restore **Repair CDs**, and **b)** have a **detailed written procedure for troubleshooting** the school's Mac computers: in a logical, thorough manner.

9 - Have a detailed written procedure to allow each school's semi-technical person to do **basic maintenance and troubleshooting** of their school's Macs, on their own.

10-Have a detailed well-written procedure that **explains good computing practices** for teachers and students to follow. **This should include specifics as to how a person with a PC at home should transfer and convert files.** (Need to know more? The excellent MacWindows site provides tutorials for just about every cross-platform aspect imaginable.)

11-**Actively**, and **open-mindedly**, <u>encourage</u> inputs from teachers.

12-Provide teachers with a subscription for *MacHome Journal*. Have teachers become familiar with Teacher Mentor internet asklines, dealing with educational software and Mac hardware.

13-**Replace all Windows servers** that have Mac clients with the newest OS X Apple servers (XServe).

14-Collect all existing PCs into a small lab at each high school. Have one high school course for PC/Windows experience training. [Install latest version of Virtual PC on more powerful Macs if more PC stations are needed.] *Note: with Virtual PC 5+, Macs can run up to ELEVEN different operating systems! At the SAME TIME!!!*

15-When getting quotes for new computers, in addition to the up-front cost take into account a <u>specific</u> dollar amount for:
    a) annual maintenance cost,
    b) usable lifetime of the computer,
    c) software costs,
    d) networking costs,
    e) annual operating costs (e.g. electricity),
    f) teacher training costs,
    g) teacher preferences/satisfaction/ efficiency, and
    h) ability to provide students with the most productive and enjoyable learning environment.

— Section #7-f —

Miscellaneous Mac Complaints

I've collected here all the other odd-and-end "reasons" I've heard people come up with, to explain why they don't use Macs. If you have any others to contribute, I would be glad to add them to the list.

These studies are out-of-date.

Occasionally I get a thoughtful email from a Windows/PC proponent that says something to the effect of "Your arguments are convincing, except for the fact that a lot of the reports and studies appear to be ' out of date'".

First of all, none of the studies reported here are more than five years old. Secondly, anyone who says something akin to "I won't consider any studies more than two years old" is immediately exposing themselves as an uninformed individual. Exactly what magical happened 24 months ago to suddenly make prior research "inapplicable"? Clearly setting such a standard is extraordinarily arbitrary, and again, tells us a GREAT deal about the pronouncer. A person genuinely interested in the truth would be **anxious** to review **any** study, because they can always glean *something relevant* from it.
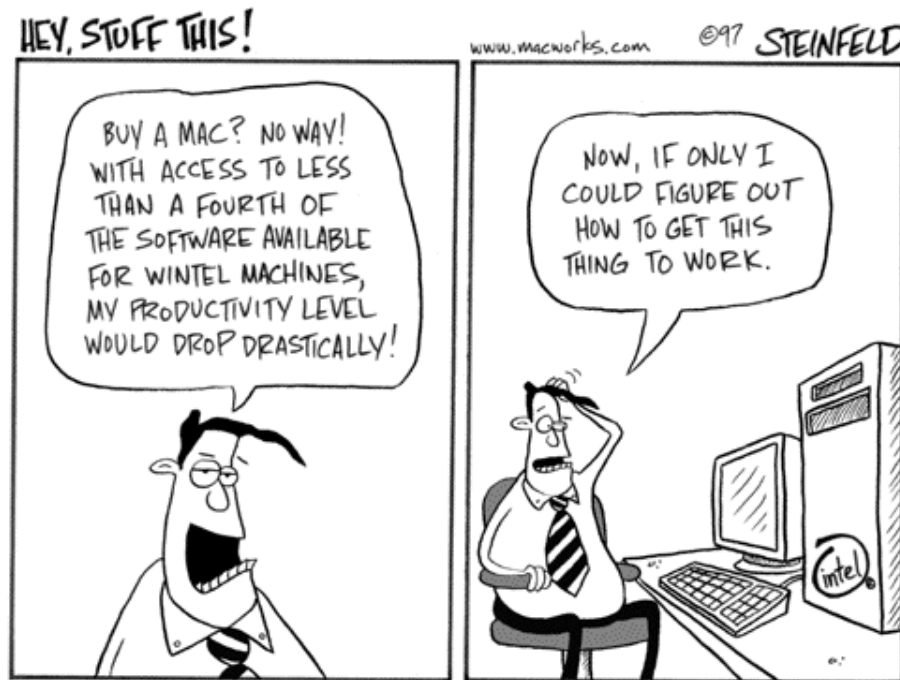
Furthermore, since the people making these types of remarks are usually longtime PC users, I find this response rather disingenuous. If their primary complaint about a study that proves Macs are better than Windows/PCs, is that it was done in 2000, my question is this: WHAT WERE THEY USING IN YEAR 2000? *Oh, a Windows PC.* Well why weren't they using the better computer then? *Because they were equally close-minded at that time.* **To these types, this issue is not resolvable based on what the facts are, so NO amount of studies will change their mind, regardless of the date!**

It is true that many of the some 1000 reports, studies and articles cited on these pages were not just completed last week. However, I continue to reference the pertinent ones, as the **relative difference between platforms remains approximately the same as when these reports were initially done.** (Some would contend that the differences are now even more in favor of Macs with the UNIX based Mac OS X. See our [Mac OS X](#) discussion.) I've also now taken the extra step of labeling most references as to the date so you can see for yourself how many are *very* current.

The reason that the differences stay comparatively the same is because the major players have continued to perform consistently: **Apple is still the innovation leader, Microsoft is still the copier, and the Dells of the world are still box assemblers.** This fact is obvious to all but the oblivious, but don't take my word for it.

In January of 2002, the *[Wall Street Transcript](#)* published an interview with David C. Bailey (vice president and research analyst with Gerard Klauer Mattison and Co.) as part of a 47-page Computer Hardware report. He says, in part: "Apple continues to lead the PC industry in innovation. The company completely revamped its portable product line in 2001, and we expect Apple to make significant enhancements to its desktop offerings in 2002… Apple has rolled out an entire suite of software products that enable consumers to capture, edit and distribute digital audio and video using very powerful but easy to use applications… In the Wintel PC market, innovation has almost ground to a halt…"

Windows/PCs have more software than Macs.

Yawn. OK, **one** more time…

- It's the **QUALITY** that counts NOT **quantity**. Best guesses are that some eighty percent of Windows software is second rate. The net effect of this inferior software is a <u>substantial cost</u> to users. So many of those PC advocates who are trying to save $50 by buying a cheap PC, end up spending hundreds of dollars (*plus* their time) with poor quality software.

  One attentive observer wrote: "The problem with the ads in PC magazines and on commercials is that when they say PCs have thousands more applications than Macs, it's because they're adding all the applications from their antiquated OS's, including DOS, Windows 3.1, Windows 3.11 for Workgroups, Windows 95a, Windows 95b, and so on, MANY of which will not work on the newest operating system, WinXP."

- The typical Mac user has six to eight applications that they utilize; the typical Windows user four or five. What difference does it make if there is more software available if it isn't used? There are over **ten thousand** Mac applications. Just how many do YOU need?

- Almost all important applications are **cross-platform**. Furthermore, many of them (like MS Office) originated as Mac only software. *Originated as Mac only software!*

- Recently I received this email "I'm a technology coordinator for an elementary school in Honolulu. As such I deal with all sorts of computers on a daily basis and I'm often asked for advice from parents, students and teachers as to what kind of computer that they should buy. One of the most frequent objections I hear to buying a Mac is that there isn't very much software available for the Mac compared to Windows.

  "I somewhat accepted this as true myself, but then I started to think about my own situation. I can't think of a single application that I would like to have that isn't available for the Mac. Then I realized that many of the applications that I use everyday are shareware and freeware. This is one of the great, unknown secrets of owning a Mac: **our shareware/freeware offerings are much better than those of our Windows using friends**."

- Now that Apple's operating system is UNIX based, this opens the door for Macs to use the voluminous quantity of Open-Source software. Read about the <u>Fink</u> and <u>Darwin</u> projects as examples of extremely interesting developments in this exploding area.

In fact, this detailed November 2004 discussion of this topic in LinuxInsider says (compared to Windows software) "Outside of a few specialized areas, the Mac software markets offer a greater range of choices and, including available Unix freeware, both more functionality and lower total cost."

- With the simple addition of Virtual PC, Macs can run Windows software as well as Mac software. In fact a Mac (with Virtual PC 5) can run ELEVEN different operating systems (also including Linux, UNIX, OS2) – *simultaneously*! And that#8217;s not all: a Mac user also has the choice of using Wine, or Bochs, or Guest PC, or iEmulator to do the same or more as Virtual PC, for less cost.

Oops, that means that if you are fighting the software quantity war, **Macs WIN!**

Macs don't have floppy drives or serial ports.

Astoundingly as it may seem, some schools have chosen not to buy Macs because they do not have an internal floppy drive. (Of course an external just won't do!) A similar mentality exists some places regarding the Mac not having a serial port. (Naturally, a USB-serial converter just won't do either.)

We would equate this foolishness to not buying a good car because it didn't offer an eight-track tape player as an accessory.

As expected the gist of the issue is that Apple has taken the technology lead and have dropped such legacy aspects of the computer, some time ago. (Legacy = antiquated.) An underlying rationale that would explain the resistance to progress phenomena, is that **PC proponents have so much trouble learning how to use the basic technology they have, that they are often reticent to abandon their prior efforts to begin learning something new...**

Apple moved on for many good reasons. For instance floppy drives hardly hold anything of consequence, a 100MB Zip drive would cost about the same as a floppy drive, and flash (key) drives are even more powerful (and less expensive). And floppies in a school setting have been identified as one of the main sources of virus propagation (from the student's home computer, etc).

Surprisingly, at Microsoft's and Intel's PC Design Guide site, they have recommended abandoning these outdated technologies (e.g. ps/2, ISA, mpu-401 [midi] and game [joystick] port, serial, and FDC [floppy diskette controllers]) since 2000!

Evidently some people didn't notice this as it came as a shock when the Register published an October 2001 article saying that Intel is planning to officially abandon serial ports and floppy drives by late 2002.

The article also has the courage to specifically state another of our contentions, that "PC types seem to hang on to their outdated technologies with rather more passion than their Mac counterparts...".

This Brandeis University story says "Friends Don't Let friends Use Floppies." Here's a good discussion (PDF) about Dell and floppies – where Dell says that they are being held back by their Wintel customers. But even they seem to get it now.

Macs are not sufficiently " backward compatible."

First, let's define this terminology. As commonly used, "backward compatibility" would refer to a situation where third party software you used before would still work *after* you upgrade your operating system (OS).

The **facts** about backward compatibility are these:

- When buying new computers or software, any school or business should be looking **FORWARD**, not backward. This article Backward Compatibility is Backward, says it well.

- Apple and Microsoft are both continuing to improve their operating systems. Some people have noted the gains that Microsoft has made (compared to the industry standard: Apple's OS) in the last few years. However, these are noteworthy primarily because Windows had such a long way to go in the first place. Furthermore, Apple has continued at a brisk pace of improving its OS as well. The net affect (as we have demonstrated elsewhere) is that Apple still has a significantly better OS. (Read our Mac OS X vs Windows XP discussion.)

- Whenever Apple **or Microsoft** makes changes to their OS, there may be modifications necessary that third party software developers need to make to be compatible with the OS upgrade.

- Apple **and Microsoft** have no control over third party software developers, who are independent companies. If a third party company decides not to upgrade a product to take advantage of OS improvements, Apple or Microsoft can't force them to. That's just the nature of the computer business. (Note: Part of the US government's lawsuit against Microsoft is that they allege that Microsoft **did** try to force other companies to do thing's Microsoft's way – which is illegal.)

- It is the END USER's obligation that they THOROUGHLY investigate software that is mission critical, **before** they commit to it. In addition to the OS upgrade aspect they should get assurances that the software developer is committed to timely modifications of their software based on user inputs as well (i.e. a different issue than OS upgrades).

- Historically, Apple has been MUCH more conscientious about maintaining hardware and software compatibility. For instance, that's why 286 machines can't realistically run Windows 98, but Mac LC's can run system 8.x. And in their latest BIG improvement, Apple's new OS X has a "Classic Mode" that will run all third party software that ran under the OS 9.x.

- So the bottom line is that backward compatibility can be an issue on ANY platform, but in the past it has been **more of a problem with Windows PCs.**

Apple is a single source for Macs.

I just don't get it. For some reason the same person saying this profundity will shell out $50,000± for a Mercedes and never give it a thought that he is purchasing a "single-source" product. And a rather expensive one at that!

So let's say that Mercedes goes out of business. What will the car owner do for parts and service? My guess is that the car will still run fine and there will be parts and service availability pretty much just as before.

Apple is a **very successful**, multi-billion dollar company with literally **billions** of dollars of cash on hand. Furthermore, hopefully we have all learned by the last few years experience that a company's stock value has NO direct relationship to: **1)** the quality of their products, or **2)** the financial health of the company.

But let's be REAL imaginative here and say that the one-in-a-million circumstances occur where Apple does go out of business. What happens to the school district that has 2000 new Macs? Well:

- The Macs would continue to work well the next day – and for years later – just like they did before.

- A likely development would be that another company (e.g. IBM) would purchase Apple's patents, etc., and continue on selling Macintosh computers (one of the premier name brands in the world).

  Remembering that there would still be over 50,000,000 Macs in circulation…
- The third party software applications would still function, and the vast majority of these developers would still be in business.

- Almost all of the third party hardware developers would continue to make peripherals (remember that USB and Firewire are cross-platform).

- Service would still be available from almost all of the sources that existed before.

  So, although there would be some bumps, things would go on almost exactly the same as before. In fact, if one was to be concerned about company survival in the future, it seems like it is Microsoft that is being threatened with a breakup by the federal government. What effect might that have? **Isn't Windows a single source product???** I don't hear these sky-is-falling observers worrying about that…

Actually, the single source situation is really a BIG benefit to Mac owners, as it results in **total integration of software** (operating system, applications, etc.) **AND hardware** in Apple products. It is a **patchwork quilt in Windows** – which is one of the reasons why hardware Plug-and-Play has been so difficult for PCs to achieve.

Additionally, it has allowed Apple to actively regulate the software user interface so that it is consistent! No such central authority exists in the Windows/PC world – although lord knows, Microsoft has tried to assume the role. The net affect of this problem is that **Windows applications do NOT have consistent user interfaces.** Who cares? YOU SHOULD, as it is YOUR time that is being wasted to learn the differences!

Apple's overall market share is small.

There are at least three reasons why the reported numbers for Apple are in error:

1 - **There is no 100% accurate data!** What you see is full of **BIG** (and often questionable) **assumptions**, as well as **LARGE approximations.**

There are many indicators that say these numbers should be suspect. For example, Nielsen/NetRatings periodically monitors the visitors to commercial sites. In Mid 2003 they issued a report regarding computer manufacturer's websites. They found that not only did "Apple Computer Inc.'s Apple.com **lead all computer hardware sites in number of shoppers**" for the monitored week, but, astoundingly, when looking at the total of the unique visitors to **ALL** computer manufacturers' hardware sites combined, 73.7% of these people went to Apple.com! Another snapshot they made in November of 2003, showed similar results…

And here is a September 2002 report of research that says that the market shares are quite different from what you hear reported:

         11.6% Apple
         10.4% Compaq
          9.8% Dell
          9.1% IBM
          7.3% Hewlett-Packard
          5.1% Sony
      All the rest are under 5%.

2 - **Statistics can lie.** Here is a good example. Let's say that the reality of the situation *is* that 90% of computer users are Wintel owners, while 10% have Macs. Let's also say we want to look at the purchases of a group of 100,000 such users.

Before we do so, another fact that needs to be added to the equation is that **Macs last much longer:** typical reported average usages are 6 years for Macs and 4 years for Wintel computers. That would mean that Mac users would typically buy a new computer **twice** in twelve years, while Wintel users would buy a new computer **three** times during the same period.

So using this twelve year timeframe to demonstrate this point: 90,000 Wintel users would make 270,000 purchases (i.e. three each), while 10,000 Mac users would make 20,000 purchases (i.e. two each). In other words, out of 290,000 computers bought, 20,000 would be Macs. So the statistics would say that there are 6.9% Mac users.

Oops! But we started with the FACT that we KNEW that there were 10% Mac users! **The net effect of this ONE example of a statistical oversight is that Mac users are under-reported by at least 50%.**

Here is an article titled Debunking the Linux-Windows Marketshare Myth that explores a few of the reasons why statistics can be misleading. Some of the issues discussed there also apply to the Apple situation.

3 - The influence of businesses using Wintel machines effectively as **terminals**, **significantly** skews the numbers. A good example is Point-Of-Sale terminals (POS). There are tens of MILLIONs of these used in gas stations, restaurants, bars, retail outlets, airlines, etc. Since there is minuscule computing done with these "computers", these businesses buy these boxes based on ONE over-riding criteria: *what is the cheapest.* (Consider this analogy: how many taxicab companies do you see owning Mercedes – or even Chrysler 300s?) The point is that terminal type usage should be *excluded* from the statistics, but it is not.

(If needed, go here for further elaboration.)

Even if we assume (incorrectly) that a 5% figure is close, think about this:

1 - The quality of the computing experience is the ONLY thing that matters. That's why you would buy a Maytag washing machine, or an Amana refrigerator, or a SONY TV, and not give a hoot about what percentage of the market these companies have. (BTW, their reported percentages are all **smaller** than Apple's.)

2 - Things change. Consider this January 2004 story in the *New York Post* which says "Buoyed by a host of winning machines, from the iMac to the iPod, Apple is enjoying a renaissance. It's been challenging Microsoft in the corporate environment with a new flexible operating system to rival Windows… These new beachheads have Apple's fortunes looking brighter than they ever have."

And indeed they are. Anyone remotely following the business news over the last few years knows that Apple has received a LOT of positive press. One of the fallouts from this is that there is almost universal agreement that Apple's computer market will increase – quite possibly substantially.

The primary reasons for this are:
a - Many of the people who have bought the runaway hit, the iPod, are also considering
   a Mac. The press had dubbed this the Halo effect. This USA Today article is typical.
b - Apple has been in the news a lot, and has received a substantial amount of good
   publicity. In addition to the iPod, many articles are about the success of its stock,
   and there continues to be favorable projections from numerous financial analysts.
c - The low price Mac mini has likewise been widely and well-reviewed, and many price-sensitive
   PC users are giving it a look. It is particularly attractive to PC switchers as they can throw away
   their bland beige box, plug in the Mac mini, and keep their existing monitor and keyboard.
d - The primary switch cause (in my experience) is that PC users have simply had it with
   the incessant viruses and spyware that they are subjected to in the Windows
   platform. The facts are that in the last four years or so there have been some
   80,000 viruses identified for Windows, and ZERO for Mac OS X. Here is a
   sample discussion of the situation. This profound difference is a powerful motivator.
e - With Tiger now available, some PC users will appreciate even more, how much better than
   XP the Apple OS is. That is Merrill Lynch's position. This will have more resonance with PC
   users who are exasperated that the next Windows upgrade is some TWO YEARS away!

3 - SO WHAT? As we've expounded on before, it is universally recognized that at least 95% of the public is "technically challenged". (Jives nicely with purported market share, no?) [Want to test your friends: ask them what a transistor is or how it's made, or to explain the differences between ROM and RAM, or what TCP/IP means, etc.] Putting aside the artificially polite PC terminology for a moment, **exactly why should I buy a computer based on what technically ignorant persons do?**

Apple is no longer the number one supplier of education computers.

An October 2003 market data report compiled by a leading research company (QED) says otherwise. However, as we just said about statistics: these numbers are not all that accurate, so who would care?

Who sells the most is not as important as who has the **best**. Just because Ford sells MANY Escorts, should you buy one? In this case, Apple has the premier (AND most cost efficient) product, and that is why it is the right choice.

Competitors like Dell are desperately trying to get a foothold in the education market by selling computers at cut-rate prices. REMEMBER that the initial cost is only a small fraction of the TOTAL COST OF OWNERSHIP, **and just say no.**

Conclusion: *None of these "reasons" hold any water. Don't let misinformation keep you from buying the most powerful, easiest to use, and lowest cost computer available: a Mac.*

This section's Haiku
(see the bottom of page 1 for more explanation):

Chaos reigns within.
Reflect, repent, and reboot.
Order shall return.

rev: May 5, 2005

— Section #8 —

Which Computer Is More Powerful:

Mac or PC?

Calculating computer performance is a tricky issue, and there are a variety of methods that attempt to do this. Most of these focus on very narrow tests, like floating-point calculations, etc. A major limitation of many of these tests is that they are actually more dependent on the software used in the test than the hardware of the computer itself. **To date, there is NO industry standard measurement method that gives a real world indication for an average user as to which computer is faster or more powerful than an other.** [Here is a reasoned discussion of some benchmarking issues, and another at *USA Today.*]

However, since we need to get *some* reasonable indication, **one accepted way to measure computer processing power and performance is by looking at MTOPS** (Millions of Theoretical Operations Per Second). You may not have heard, but when Apple's G4 machines were first introduced it almost caused a major international incident. The root of the problem was that the US government has severe restrictions about exporting Super Computers to certain other countries. The government says (not Apple Computer) that what determines whether a computer is categorized as a "Super Computer" is its MTOPS performance.

Apple's G4 was the first desktop computer to break the Super Computer barrier. (By the way, the government's solution to the export issue was to rewrite the specs to raise the limit.)

If you check out Apple's specs and Intel's specs, and then AMD's specs you will see that there is a surprisingly BIG difference in MTOPS performance. Pretty obvious from this perspective which is more powerful.

Microprocessor	MTOPS
Intel 3.2 GHz Pentium 4	9,067
AMD dual 246 Opteron	13,667
AMD quad 846 Opteron	26,667
Apple 800 MHz G4 Power PC (e.g. iMac/eMac)	11,450
Apple 933 MHz G4 Power PC	13,400
Apple dual 1000 MHz G4 Power PC	27,000
Apple dual 1420 MHz G4 Power PC	38,340
Apple 1800 MHz G5 Power PC	21,753
Apple dual 2000 MHz G5 Power PC	45,000

Don't be fooled by the "speed" (i.e. MHz) numbers posted by Intel and the PC assemblers! Many tests show that Macs have superior performance to Pentiums with **three times** the MHz rating.

Why might this be? Consider this example:
two cars are traveling from Los Angeles to San Francisco.
Car A will average 65 MPH, while car B will average 50 MPH.
Assume they start together and neither car makes any stops.
Which one will get there first?

If you subscribe to the misconception that speed is the most important specification, then you'd pick car A — and you would be wrong. The variable we did not discuss is the **route** each car would take. In our example, Car B is going the most direct route, while car A is going through San Diego (i.e. quite indirect).

I know, you ASSUMED that both cars would take the most straightforward route. Many people have undoubtedly assumed the same thing when comparing Pentiums/Athlons to PowerPC microprocessors – and that assumption would be incorrect. The fact is that for several reasons (e.g. that they were designed from day one to operate a Graphical User Interface) that PowerPC microprocessors are more efficiently designed.

In 2001 MacCentral published a VERY detailed write-up about the Megahertz Myth that is still well worth reading. (Make sure to go back to the Part I and Part II links.) Here are some additional articles (from other sources) on the same subject: *Washington Post* (9/02): Processor Speeds Almost Passe, and TechNews: Does MHz Really Matter Anymore?, and iGeek: MHz and GHz, and MHz and GHZ Have Lost Some Meaning, and Mr. Software Fights the MHz Myth.

Another person wrote "RPM is a better automotive analogy for MHz: a Viper at 2000 RPM smokes a Neon at 5000 RPM"… Apple also has posted an eight minute QuickTime movie demonstrating how a 1.7 GHz Pentium 4 is **considerably slower** than several lower MHz G4 versions. Check it out!

Still another writer proposed: "If Intel wants to be the de-facto standard then let them. We'll call that standard ' IntelHertz'. On each new box leaving Apple, there will be a sticker next to the standard MHz telling the consumer that this 1000 MHz Mac is equal to a 3000 MHz Pentium or 3.0 ' IntelHertz'. In every advertisement and promotional material Apple produces it will be there, plain as day, it's chips equal to ' IntelHertz'. This new standard will bring us on par with Intel and show the world how the Mac is more than equal to the PC offerings."

This article explains AMD's new plan in its battle against the PC megahertz myth. (AMD makes the Athlon microprocessor chips that are the prime PC competitors to Intel's Pentium microprocessors.) It seems that the new AMD Athlons will be specified by model rather than by GHz.

Model A1600, for instance, is a 1.4GHz Athlon, which AMD views as equivalent in performance to an Intel P4 1.6GHz. AMD now demands that no motherboard/BIOS maker ever reveal the actual clockspeed of the chip, and even goes as far as to forbid the printing of the CPU's clockspeed in the motherboard's reference manual.

Hmmm. Seems like some PC people are now also catching on to the Megahertz myth…

Here is a relatively new standard you might not have heard about. *NewsFactor* reports that "Apple is getting some help from the Embedded Microprocessor Benchmark Consortium (EEMBC), which in 2002 published statistics for the MPC7455 – Motorola's latest incarnation of the G4 – that is used in the dual 1 GHz Power Mac. The EEMBC tested 46 different kernels and **found Motorola's G4 to be faster than all other contenders across all five specific target markets.**"

Also included in the information Apple provided to NewsFactor were details of a test involving BLAST (Basic Local Alignment Search Tool), an open source biotechnology application used to find similarities in DNA and protein sequences.

Apple compared the performance of its dual 1 GHz Power Mac G4 running A/G BLAST to that of a Linux workstation with a 2 GHz Pentium 4 processor running NCBI BLAST. Both computers given the task of seeking similarities between human and mouse chromosomes.

Depending on the type of search performed the Power Mac delivered anywhere from **3 to 50 times the performance of the Linux workstation.**

In mid-2002, because Gateway ads were touting its Profile 4 as being much faster than an iMac (i.e. the low end of Apple's computer line), Gannett News Service tested a loaded Gateway Profile 4 XL, and compared it to a high end iMac, computers that were similarly priced. Their conclusion: "The comparison chart says it all. While the Gateway toasted the iMac in 3-D game frame rates at a resolution of 640x480 using Quake III Arena, the scores were much closer when the crisper, more realistic resolution of 1,024x768 was used. The Gateway registered 66.2 frames per second, while the iMac scored 62.5 frames per second, **an insignificant difference** for casual gamers."

They also "applied test routines employing nine common Adobe Photoshop functions. **Here the huge megahertz gap was mostly surmounted.** The iMac's 800-megahertz G4 sprinted through the tests in 49.6 seconds. The Gateway's 2.8-gigahertz Pentium 4 completed the same tasks in 44.7 seconds."

Obviously these performances in no way correlate to a 2800 MHz *vs* 800 MHz difference. It should also be clear to see that a more powerful Mac (e.g. a dual 1250-megahertz G4) would beat the 2.8-gigahertz Pentium 4.

Popular Mechanics has a well-written June 2002 article that says for a computer salesperson (or anyone else) who tells a typical user (i.e. one who does "basic word processing, e-mail, Web browsing, maybe some digital camera stuff") that a higher MHz Pentium will be any more suitable than an iMac is a "classic case of speed bigotry in which computers are judged not by the contents of their systems, but by the speed of their CPUs. **This is an incredibly limited view on how to choose the right computer system.** The dirty ' secret' of the computer industry is this: Chip speed doesn't matter much anymore."

They go on to say that there are several items that are more important to the performance than the microprocessor's MHz rating. "**RAM is much more important than chip speed for almost everything your computer does**… The speed of your hard drive is the next choke point on system performance, and it's a critical component for digital video and audio because writing to or from the disk always takes time.… Like RAM, video cards are vital… Finally, the speed at which you connect to a network can affect how fast your computer feels." They conclude by saying that "Despite all this, chip speed remains central to computer manufacturers' marketing plans. That's because chip speed is the easiest way to catch your attention: misinformed consumers figure the faster, the better."

All true. In addition *Popular Mechanics* could also have mentioned that the speed of your connection to **peripherals** has a big influence on your perception of your computer's performance. In an attempt to compete with Apple's wildly successful Firewire (IEEE-1394) Intel has been promoting USB 2.0 as a higher speed alternative. As usual, when you look below the surface, this is just not so.

In the July 2002 article entitled The Numbers Game the author explains "The crucial difference between USB 2.0 and FireWire is this: **FireWire is faster <u>and</u> more reliable.** The reason is subtle, and not mentioned at all by the proponents of USB 2.0. Moving data around using USB demands the involvement of a processor. FireWire doesn't. If you're trying to download a digital video from your camcorder on to your hard disk to edit it, then with USB 2.0 each chunk of data has to pass to your processor and then to the hard disk. With FireWire, the hard disk and the camcorder talk directly to each other."

The bottom line is that Macs are **very competitive** in any performance test, and typically perform equal to or better than PCs advertising twice the MHz rating.

With all the advertising we see, it's not surprising that the typical consumer might conclude that the Pentium 4 is a superior microprocessor. Don't be taken in by Madison Avenue. Here's some technical observations you may not have heard before:

A PC company's CEO (in an **extraordinarily** detailed analysis) concludes that "the new Intel architecture has serious fatal flaws that in some cases can throttle the speed of a 1.5 GHz Pentium 4 chip down to the equivalent speed of a mere 200 MHz Pentium MMX chip of 4 years ago, **even slower than the level of any Celeron, Pentium II, or Pentium III chip ever released!** It's a huge setback for Intel…"

A Techweb analysis says: "For today's buyer, the Pentium 4 simply doesn't make sense. It's slower than the competition (including a Pentium III) in just about every area; it's more expensive; it's using an interface that won't be the flagship interface in six to nine months; and it requires a considerable investment outside of the price of the CPU itself…".

An August 2002 PCWorld article reports that there is a class action against Intel (and selected PC assemblers) about them over-stating performance specifications. The plaintiffs claim the companies deceived the public when marketing Intel's flagship processor and allege that it is a "material fact that there is no benefit to consumers in choosing the Pentium 4 over the Pentium III, as **the Pentium 4 is less powerful and slower than the Pentium III…**".

There is considerable excitement about Apple's latest release: the G5 computer, which uses a 64-bit microprocessor from IBM: the 970. [This January 2004 article gives a bit of history here.]

Here is an a sample release by IBM about the 970. This gives more details how IBM's 970 compares to it's larger Power4 chip sibling. More good news is that IBM is well along on the next generation, the Power5. Here is a late 2003 writeup on the Power5. IBM is saying that the Power5+ will be shipping in 2005 and Power6 in 2006. (Here is their official roadmap.) All of these advances will be reflected in upgrades to the 970 version.

[Where does all this leave Motorola, you ask. Good question. On the one hand there are articles like this. On the other hand there is this. My guess is that due to Motorola's slowness in updating the G4 plus their continued business problems companywide, that the latter may be more likely.]

Not familiar with the ins-and-outs for the 64 bit architecture – then read this *PCWorld* piece Are You Ready For A 64-Bit PC?. This September 2002 *eWeek* story goes into some detail about the IBM 970 chip, and the connection with Apple. iGeek gives even more info on the IBM chip, as does Real World Tech. This analysis of Apple's G5 says "Suddenly The Leader", and, in a similar vein, this January 2004 article calls the G5 "The Hummer of the Computer World." This story call it the "Ferrari of Computers." Take your pick.

How fast is the G5? Naturally there are some conflicting reports. Apple says that it is the world's fastest PC, and backs this up with some impressive test results. Here is an independent snapshot. As you might expect, some PC ubergeeks are distraught with this situation, and have been looking hard for stones to throw. (For example, here is the perspective from *PCWorld*.) "The Smell Of Fear" story makes some good points. Note that usually only in the small print do you see mentioned the fact that the applications often used on a comparison test have not been optimized for a G5, while they typically have been for a Pentium 4. Read "Benchmark Silliness" for another discussion. See what NASA says.

Here is a lengthy, technically detailed, and reasoned discussion of the situation by *InfoWorld*, published on December 31, 2003. This independent December 2003 analysis states that "the G5 is notably faster than high-end PCs." And this January 2004 independent testing concluded that "Apple G5 Smokes Intel Competition." This series of tests shows how the G5 compares favorably to the AMD 64 bit Opteron. Sounds like a consensus to me.

[An amazing, lesser known feature of the latest G5 is that it uses only 25% of the power that Intel's state-of-the-art Prescott processor uses!]

This January 2004 *Forbes* story says "When noted biologist David Botstein was lured from Stanford University to head the Lewis-Sigler Institute for Integrative Genomics at Princeton, he had his choice of computing systems. But Botstein says he outfitted the entire center with Apple computers and servers, which are used for everything from desktop applications to comparing lengths of genetic code." His explanation for choosing Macs was that he wants maximum power for minimum cost.

If that is not enough to convince you, then you won't know what to make of these next stories. "November 20, 2003--Engineered Intelligence (EI) introduced its new Parallel Programming Software offering at the Supercomputing 2003 conference. EI's CxC(R) parallel programming software allows scientists and engineers to easily create programs for Apple's Power Mac G5, **the world's fastest personal computer**."

(Related to this, there is still another outstanding Apple leadership effort in XGrid, which some are calling "The Future of Computing". There is also exciting work being done in a similar way with Pooch.)

Or the undisputed FACT that Virginia Tech has stunned the supercomputer world building the **third fastest computer in the world**, within a **few months**, and at about **10% the cost of a typical supercomputer** – using only stock Apple G5s. Here is a super inside summary which includes photos, a slide show, etc.. With literally hundreds of reports about this amazing accomplishment, it is difficult to select something representative, but here is one story, and another. Here is what their Dean of Engineering wrote in January 2004. Apologies to the rest.

Less well known is that Dell is trying to compete in this area, and supported a similar effort at the University of Texas. This report is about their $38M Dell/Linux cluster that will achieve 3.7 Tflops. Compare that to Virginia Tech's $5.2M Apple/Mac OS X cluster that achieves 17.6 Tflops. Cost per Tflop: Dell = $10.3 million, Apple = $295,000. Conclusion: Apple is the fastest **and** lowest cost.

This is an excellent collection of articles concerning microprocessors, entitled "Let The Chips Fall Where They May! – Mac Processors & Wintel Processors: A Resource"

In another progressive effort to improve performance, Apple is one of the founding members of the HyperTransport Consortium Consortium of companies backing this new standard. Apple will use HyperTransport as a high-speed link between the two processors that make up the chipset in new desktop Macintosh systems, sources said. A chipset is a group of chips that manages the internal functions of a computer. (The companies include AMD, Cisco, Sun Microsystems – but not Intel.)

In a related area, there is periodic speculation about whether Apple will port Mac OS X to run on Intel or AMD type microprocessors. For years this has been a favorite rumor, as there is just enough plausibility to make it interesting. Here is a good discussion of the topic, and another, plus a somewhat more technical one. There are a variety of reasons why this change would be **1)** difficult, and **2)** undesirable. Here is a sample from that side of the fence, plus a follow-up. To my knowledge, these are Apple's latest comments (November 2003). Stay tuned.

One contributor accurately pointed out that "It makes absolutely no difference if your machine is 'faster' if you are blankly looking at the screen, trying to figure out what to do next. **For most users in most tasks, a consistent interface, ease of use, and easy to learn software are much more important than raw horsepower.**

"The minute differences in time taken to do average tasks between 'fast' computers and not-so-fast computers are not important for most people in most applications. Who cares if a task is performed in the blink of an eye or three quarters of the blink of an eye? I am writing this on a 250 MHz machine. Can I tell that it is not a 450 MHz machine? No."

Another author observed "You can have the fastest computer on the planet, but if you type 50 words a minute, it'll be the same 50 words a minute regardless of the potential of your PC." In a similar vein read this **entertaining** story of how one individual's Mac compared to the Dell of his friend, when running similar everyday tasks.

A third person wrote in: "Were there enough time, **I could spend an entire month with all the anecdotes of suffering I experienced as a PC user.** I wasted a good part of 13 years, using 22 PC operating systems – all in the name of trying to find a computer that I hoped would do the same things my Mac now does effortlessly.

"Regardless of issues of personal preferences and priorities, my bottom line for getting a Macintosh was that I was losing time by not being productive. This is not a matter of a few hours here and there – it is much more a matter of many months, **if not years** trying to accomplish with Windows what the Mac has made a matter of due course.

"**There is no comparison study or benchmark that adequately equates the amount of lost time, frustration and utter despair I experienced as a PC user compared to the joy, satisfaction and relaxed peace of mind I've been able to receive as an owner of a brand new Mac.** At every opportunity I point out how Macs save time, money, and effort in **every task a person would seek to undertake using a computer.** Those numbers tell a story that leaves a lasting impression on everyone I've spoken to. In short, there are a lot of people who have switched to Macs and a lot more who want to when the time is right for their particular financial situation.

"I never would have considered myself someone to evangelize, but I now do so at each and every chance I get, with all the vigor and passion I can muster. **Macs are that good — and better.** I have now gotten my life back and I can sleep without any of the anxieties I used to face with Windows staring back at me."

Still another said "The measure of 'power' is not absolute speed, but rather **the net combination of the positive element of productivity plus the negative element of lost/down time.**

"Productivity is enhanced by a consistent and powerful interface design, multiple applications being readily available, doing more than one thing at a time in a true multitasking environment, and the ability to integrate a diverse tool set through scripting, programming, etc.

"Negative elements include reboots due to system crashes, lost data due to crashes, time spent wasted trying to figure out what settings will allow me do accomplish a task (printer selection, network interfaces), and how I go about controlling those settings, time lost due to viruses, downtime for maintenance and reconfigurations, etc.

> "Apple's Macintosh computers do a much better job than Wintel PC's in terms of personal productivity. With OS X, I can have dozens of applications simultaneously open, the system never crashes or hangs, and things 'just work'. An these are just some of the **free** productivity tools I have access to: Apple script, the Cocoa Development Environment (C,C++, Java, Objective-C, or Applescript Studio), Perl, and a Unix Shell."
>
> I couldn't have phrased it better! My observation, putting it again into the car analogy, would be to compare the Pentium/Athlon to a Corvette, while the Mac is a Lexus. The Corvette may have faster 0 to 60 acceleration or higher top end speed, but what does this **really** mean to the everyday driver? Furthermore, the trade-offs for owning the Corvette are many: higher gas mileage, much harsher ride, less trunk space, more frequent repairs, etc., etc. **So it is in the computer world.**

Although we have talked a lot about hardware as it relates to speed, the operating system itself is, of course, a major contributor to performance. You should know that, in addition to offering more features, Apple's OS revisions are also aimed at improved performance (e.g. by making more things 'native'). Here are some November 2003 test results that show their progress.

Please read this 2002 Wired article. *The whole thing.*

Particularly interesting are the remarks by physicists at UCLA, who explain that they have been grouping Macs together (clustering) to get an even more powerful machine to perform complex scientific calculations. They use Macs because "Not only was the performance faster than the Pentiums but it was comparable to the performance achieved on some Crays."

This is a simply astounding observation! A Cray Super Computer (costing in the millions) is a true no-holds-barred super computer…

The article continues by saying "Most clusters are based on Pentium machines that run Linux. But according to these UCLA Physicists, Linux clusters require a PhD to set up and to run. By contrast, Mac clusters are so easy to make, even teenagers can do it.

"There's a book called *How to Build a Better Beowulf* that's 230 pages long and tells you how to set up clusters with Linux. We have a **one-page manual** that shows you how to do it on PowerMacs. We've had high school students do it. We've had junior high school students do it. We even had a sixth grader in Hawaii do it.

"It took NASA's Jet Propulsion Laboratory two weeks to put together a 16-node Linux cluster. We could do the same thing with Macs in less than an hour."

They go on to say that "Linux clusters are also extremely fragile: If all the machines in the cluster aren't running the same version of the kernel, everything grinds to a halt. By contrast, a Macintosh cluster can be made from a mix of G3 and G4 Macs running Mac OS 9 or X."

This August 2002 article in the Boston Globe makes the same point when it interviews several different engineers. For example: "…Craig Hunter, an aerospace engineer at NASA's Langley Research Center in Virginia, is replacing Silicon Graphics workstations with Macintoshes. Hunter uses computational fluid dynamics software to simulate airflow over the wings of an airplane. It's extremely complex work that he sometimes runs on a Cray supercomputer with 64 processor chips. But Hunter says the PowerPC G4 processors used by the Mac are as powerful as those in the Cray. ' If I put together 64 G4s, we'll get the same performance as the Cray for a lot less money'."

If you want to see how easy it is to set up your own Mac cluster, go here.

Here is somebody else that picked up on Mac performance. Terra Soft co-founder and CEO Kai Staats told NewsFactor (March 2002) "in real-world applications, PowerPC processors are better equipped for Linux than their Intel counterparts. **When considering the price/performance/power consumption/footprint ratio, PowerPC wins nearly every time.**"

In another technology area, Jeff posted this on Java.Net in November of 2003: "I run JBuilder and CVS on both my Mac laptop and my Wintel box, and use CVS to move code between them quickly and easily... The Mac VM in unique among Java VMs currently in that it shares static data between versions of the VM. Thus IME once you have a first VM up, launching subsequent ones is like greased lightning.. In short I think Apple's got a lot of support for their claim that they are the 'best Java desktop environment around.'"

Awhile back I received an email from the Department of Physics and Astronomy at Oak Ridge, Tennessee. It said, "We are a group of computational astrophysicists here at Oak Ridge National Laboratory and UTK. **We all use three or four of the top 20 most powerful computers on the planet almost daily. We are all, to lesser and much greater degrees, computer experts.** We are computational, not computer scientists. By that I mean we USE computers to get complicated tasks done and hard problems solved. **And... we are completely a Mac shop — including laptops and home machines, throughout.** "

If Macs perform well enough to satisfy the demanding users of some of the most powerful heavyweight computers in the universe, they should do just fine for YOU...

Conclusion: *If you want the most powerful, productive, and easiest to use computer available: buy a Mac.*

This section's Haiku
(see the bottom of page 1 for more explanation):

Aborted effort:
Close all that you have worked on.
You ask way too much.

— Section #9 —

Mac vs PC

The study of why Macs are better than PCs

MIS Management?

[Note: *MIS = Management Information Systems, sometimes called IS or IT or something similar. These people are usually in charge of such technical matters as network operations, computer setup, computer troubleshooting, etc.*]

After hearing about HUNDREDS of cases (and seeing many first hand), the inescapable conclusion is that MIS persons are responsible for the majority of the: **1)** Mac problems in network installations, and **2)** PC replacements of Macs.

When you look at the many technical advantages of Macs one would think that technically oriented MIS persons would be attracted to such an option. But often that does not seem to be the case.

My personal conclusion is that *it appears that many school (and business) technology resource people are making decisions based on what **they think is in their interests,** rather than acting as a service group that exists solely to benefit the computer users and owners.*

Well why not just keep these people in the background (i.e. providing a service)? Easy with a Mac system, but **not possible with Windows/PCs.** To avoid overwhelming you with hundreds of citations, here is just one example of a technically competent user trying to make everyday changes on his Windows/PC. The interesting ZDNet/eWEEK article is aptly called "Messing with PCs: It's the Devil's Work." Conclusion: once you choose the Windows/PC route, the MIS dependency is inescapable.

Just so you do not get the mistaken idea that this is only my view, in the Single Platform Lie report (a PDF file) R.M. Terence, M.S. puts it even more bluntly by saying that "The hard and true fact about platform selection is that MIS managers who support the Single-Platform Wintel argument do so, **not** because they objectively feel that they are doing what is best for their company and users -- but because *they simply happen to personally prefer using and supporting Wintel systems.* **This is not in the best interests of their employer.**

"And their 'reasons' for standardization are merely after-the-fact rationalizations for their actions and opinions. These lame, weak justifications do not stand up under close analysis.

"The test for the single platform lie is simple: any MIS manager who supports single-platform Wintel should be brought before his management and made to bring out all of his departmental and user task-time studies and requirements analysis documentation to **PROVE** that he had an objective reason for choosing Wintel, and prove that there were cost savings in support, acquisition, training, and life-cycle cost of ownership.

"As there is ample evidence in quality publications by independent sources to challenge such an assumption, the lie becomes obvious."

HEY, STUFF THIS! http://www.macworks.com ©96 STEINFELD

THEY MOCKED US IN GRADE SCHOOL. KICKED SAND IN OUR FACES AT THE BEACH! BUT NOW, MY FELLOW MIS DIRECTORS, IS WHEN WE TAKE CONTROL OF THEM! GO BACK TO YOUR COMPANIES, GET RID OF ALL THE MACS AND SWITCH EVERYONE TO WINTEL MACHINES. THEN, FINALLY, THEY WILL BE AT OUR COMPLETE AND UTTER MERCY!!

Charles Martin, from Chapel Hill, NC succinctly writes:

"An IT department survives by making itself useful and increasing its budget. How does it do that, you ask? Well, the inherent problems in the Wintel architecture make the IT department very useful when those problems arise. And they arise frequently, which makes the IT department happy.

"Now, if the budget does not grow commensurate with the problems, the IT department dies. It survives by getting more funding because it proves itself very useful in solving those nasty Windows problems (or at least hiding them under the carpet until the next inevitable time when the problems rear their ugly heads again).

"And how do they ensure more Windows problems – right – by recommending the purchase of more Windows computers. And the IT department lives happily ever after because it makes itself look good.

"Choosing Macintosh computers would not enable their survival because most of the Mac users would know how to solve their own problems (on the few occasions when they do arise on Macintoshes)."

From another IT Manager "I agree strongly with your basic feeling that too many MIS personnel have poor attitudes that can appear self serving… Too often MIS personnel are not familiar enough with the end use of the data so they concentrate on the other half of their responsibility – **control**." See how this dovetails with my "A Bit Of History" comments.

This August 2003 article on the PBS website says "It comes down to the IT Department Full Employment Act… Macs threaten the livelihood of IT staffs. If you recommend purchasing a computer that requires only half the support of the machine it is replacing, aren't you putting your job in danger? Exactly. Ideally, the IT department ought to recommend the best computer for the job, but more often than not, they recommend the best computer for the IT department's job."

The UNIX Guide… argues that "the present mess, in which most systems expenditures produce frustration and unmet expectations rather then the quietly effective solutions promised, arose mainly because **the incentives given systems people contradict their service mandate.**

"The incentive is to grow by expanding the systems budget and you don't do that by being effective, you do that by balancing on the knife edge of continuous near failure, because that gets you executive attention and user pressure to increase your budget. Someone whose living depends on fighting alligators is, after all, more likely to breed them than to drain the swamp."

An Atlanta consultant says: "The MIS world is divided into two distinct groups. The first group (fairly small I am afraid) is savvy on multiple systems. They love to learn and experiment with whatever new comes along. The people I know in this group have generally proven to be very respectful of the Mac and many use a Mac as their personal machine.

"The second group seems to unwilling to touch anything but what they were trained to use down at the local votech. These people will go to their graves clutching their Netware or Windows paradigms and certifications. I find this group completely unwilling to even look at something different from what they know."

Another experienced educator writes: "Here is my opinion of what the problem is:
1. Tech people only know networking: and that is normally Windows NT or some version of it. These are the most influential people when it comes to schools and technology. They know more than anyone else (or at least that's the impression they want to convey).

2. Tech people don't know software. Nor are they interested in the art of creating. Their only goal is to use Windows, to get a computer to turn on, to allow people to work with Word or some other Microsoft product.

3. When you start talking about kids doing real creative projects with their computers these tech people are of little help..." mainly because this is outside their area of expertise.

Still another technical person in the trenches comments that "Unfortunately computer decisions will continue to be the personal opinion of some computer geek who is impressed with himself for knowing the 12 parameters of the DOS print command rather than any real objective analysis. Been there, heard that.

"In as much as the word of a school's (company's) resident asocial, self-absorbed technophile is gospel, I suggest Windows is becoming more popular because of its complexity and un-ease of use, in contrast to it's implied claims. Fortunately, there's a critical mass somewhere. Oh, well, at least Wintel is keeping lots of folks employed!"

Dan Loebl in an *OSOpinion* piece, insightfully, says "IT people are involved in careers that involve the management, maintenance and integration of computer systems in a specific environment, among them business and schools. Such IT people don't make decisions based on a computer's external design or even its software availability. **They make their purchasing decisions and throw their support behind systems and technologies that will enhance their careers and increase their job security and earning ability.**

"This is the missing human link in this battle. PC salesmen are not just selling computers, they sell careers. IT people working on Microsoft networking or Internet technologies, using Intel-based servers and other technology (VBScript, SQLserver, etc.), also acquire certifications and skills on these technologies that they can take with them on their next job search.

"A Macintosh salesman cannot offer any of those things. They cannot sell a career to an IT person. 'Selling a career' is against the very nature of Macs."

John Bell, a technical writer, said "With the advent of Windows NT, in-house techs got an operating system built just for them. Rather than the lowly desktop user being in charge, NT put the MIS person in charge. The MIS person had all rights to the machine, and could dole out rights to the user accounts on a user-by-user basis. Add to that the ability to control an NT workstation over the network, it meant that an MIS guy could affect your workstation without ever setting foot in your office. MIS people became god.

"Naturally someone used to playing god with NT workstations reacts negatively to a Mac, which puts the power in the hands of the user at the keyboard. Put simply, **Macs put the power of choice in the hands of the people, whereas NT puts the power in the hands of the MIS person.** "

Check out this [commentary](#) which asks why lower priced Macs are bypassed for higher priced Windows/PCs. "It's called the fine art of specification writing. It's one of the principal reasons why you can see so many Dells in government offices rather than no-name PC clones that integrators can provide more cheaply. In other words, if one is skillful enough in writing the specifications one can pretty much dictate what one gets **despite procurement laws specifically designed to prevent this.**

" Who writes the contract specifications? The staff of an IT department does, of course. While contract officers or buyers may question specifications or ask for a justification, they are frequently **easily bluffed by IT people**… Apple, with it's purposefully small number of computer models, is a sitting duck for those who do not want to give Apple a chance *via* the specifications method.

"Why on earth would an IT department in an educational institution want to write out Apple, especially if teachers, students and parents are clamoring to retain Macs in schools for educational and classroom efficiency reasons? **Arrogance, ignorance and greed are some of the motivations that come to mind.** Ask yourself how well public schools pay when compared with the enterprise market. What IT technology monopolizes the enterprise market where the big paying jobs are? Now, certainly not all IT people in educational institutions are so self-serving that they put their interests above those of teachers and students but there are enough…"

An interesting reading report from [Aberdeen](#) makes the case that sometimes the MIS people are also the victims. The report explains how a Windows NT migration caused "a one-third decrease in performance accompanied by a fifty-percent increase in management costs. This does not include production time lost because of workstation freezes, transmission drops, or the constant re-booting needed to keep the server operational." (Ed: *Astounding that this made it into print!*)

And they go on to say that the culprit is management, not MIS people: "For the Company, the senior business executives decreed both the what and the how. They made a business decision to go with Microsoft irrespective of its various products' strengths and weaknesses, assuming all were "good enough" to meet the business' needs. The decree, in effect, tied IS' hands and prevented it from finding the best solutions available – and now IS finds it politically incorrect to make their bosses aware of the massive problems the decree has caused."

Another writer submitted a different perspective as to why many technical support individuals making computer platform recommendations may not be able to produce an unbiased report for the school board to evaluate:

"If your IT people have taken Microsoft Certification (MCSE) classes, they are required to sign a statement that they will not make public statements critical of Microsoft Corporation or its products. MS went after an individual a couple of years ago, legally stripping him of all of his certifications, after he produced a personal home page examining bugs in Windows."

As you can see by now, I have received MANY letters on the Mac *vs* PC issue (some 3000). To keeps things brief, I have only quoted selectively from a choice few. Here is the entirety of a longer one that I can't adequately abbreviate. This email eloquently discusses an aerospace program manager's experience when his company switched from Macs to PCs, based on a misguided management push.

And, speaking of MIS people being victimized, this November 2003 PBS story gives them the ultimate bad news: these MIS people who had a huge part of Microsoft being successful are now being phased out **by Microsoft**. Guess what happens when you play with a rattlesnake?

> Of course there are many objective MIS persons who are willing to give the Mac platform its credit. A good example is from the Denair (CA) School District.. In this well-written article their Technology Coordinator discusses why the Mac is lower cost, is easier to educate users on, is less expensive to set-up and maintain, has better longevity, etc.
> * * * * * *
>
> This IT manager wrote me in September of 2002: "I've been a Mac user since March of 1984. In 1995, I bought a PC and have focused much of the past few years learning how to exploit the best features of the PC world. My last position was as IT Director for a PC-only company – so it's not as if I'm a Mac bigot. My belief is that one should use the best tool for the job – after all, we're choosing a tool, not a religion. Me, I jumped with 2 feet into the PC world because PC jobs pay a whole lot better than Mac jobs – because there is added complexity on this side of the fence. Personal preferences don't necessarily line your wallet."
>
> However, he has no doubt that the Mac is the better computer, and goes into detail on four reasons: "**1)** Macs are and have been more technologically advanced than PCs. **2)** Innovation is lacking in PC software programs. **3)** Learning how to use a Mac first actually HELPED me to learn more about PCs. **4)** Research has shown me that Mac users know how to use more programs than PC users."
> * * * * * *
>
> Tim Molnar who runs a high school lab of mixed PCs and Power Macs in Canada says, in part: "There are many pressures on decision makers to go with what is considered ' mainstream' (i.e. PCs). **If the school board wants a faster obsolescence in their computer purchase, then buy PCs. If they want to have more networking issues crop up over the life of the networks they will create, then buy a LOT of PCs.**

"If, on the other hand, a school board wants machines that will continue to be productive whether on networks or not, for many years past their purchase date, then choose Macs. I have classes doing very good course work, in many cases on six year old Power Macs.

"If a school board really cares about productive teaching/computing environments where more time is spent on learning than on fixing computers and network related situations then get as many Macs as possible.

"I am not anti-Pentium/PC/Windows. I use these machines every day, and they are fine. **But I am pro-productivity and quality learning, and so for me this means getting as many Macs on to my networks and into my classrooms as possible."**
* * * * * *

Brad Stanford, system administrator, (Advanced Lightning Technology) recently stated in an email: " **I can tell you that the more Macintosh computers you have, the better.** Amongst all of the hoopla and politics out there about platforms, it comes down to a simple decision about the goals of the school district. **If the goal of a school system is to train children and do business in an efficient and timely manner, then use as many Macs as you can.**

"If, on the other hand, the goal of a school system is to open a computer repair and upgrade facility, then purchase as many Windows machines as possible, and be prepared to make the computer system the focus of your collective lives instead of education."
* * * * * *

Ken Tuley, manager, Learning Technologies, Albuquerque Public Schools, Albuquerque, NM recently was quoted as saying: "In Albuquerque Public Schools, we have **85,000 students, 12,000 employees, and 17,000-plus machines**…

   (Ed: *This is not a typo –***17,000 computers.** *Should he be credible?*)

"I believe that the Windows platform adds the extra expenses of additional people, downtime and training to any technology budget. We could all save a lot of time and money by moving to a single Macintosh platform. Moving to a single Windows platform is just the wrong direction for a tax dollar supported institution that needs a transparent instructional tool that just works."
* * * * * *

A business IT manager, Cory Rau, says "I am constantly looking for ways to reduce the number of help desk calls we need to answer. I maintain that one of the most effective ways to achieve this is to install Macs wherever possible…

"Putting more Macs in your office is likely to cause your users to thank you immediately. Your help desk will thank you as soon as they realize that something which looks like a gumdrop can kick Pentium-butt and make their users happier at the same time. Oh yeah, and you can forget about those missing .dll and .ini files."
* * * * * *

Claude Baines, CBET, CRES (the manager of a Biomedical Engineering department, with 20 years of experience in computers) writes in support of the lower support costs, etc. of the Mac OS:

"Unless administrators come to an understanding of these facts and lead their MIS departments into evaluating and **using systems that require less support and integrate information better across the enterprise, their efforts at cost containment will fail or be severely limited.**

"It will take real men and women of integrity in MIS departments to stand up and say ' The King has no clothes.' This will not be easy. Humans, **once they have committed themselves down a path, will spend any amount of time and money to make it work rather than admit that possibly, just maybe, there is a better way.** "

And, by the way, since Apple is committed to provide **superior hardware** to MIS people, they continue to upgrade their offerings. As an example, read what PC Magazine says about Apple's most recent server hardware and software: "The Xserve comes bundled with an **unlimited license** for Mac OS X Server, Apple's robust server software based on BSD Unix. This means that you can buy an Xserve and offer files, Web services, and audio/video streams to an **unlimited number of users at no additional cost.**

"The Xserve package also contains Apple's WebObjects Web applications development and deployment software, Apple's QuickTime multimedia server suite, and **scores of open-source packages,** including the Apache Web server and the Tomcat Java application server. **All of this makes the Xserve a well-appointed and economical server solution.** The base configuration is **several hundred dollars less than a similarly equipped Dell.**"

In this January 2004 article, *ComputerWorld* comes to the same conclusion: "What's stunning isn't that Apple Computer's engineers can design a server with two 2-GHz G5 processors, 1GB of memory, storage capacity of 80 to 750GB and loads of other goodies all in a slim 1U package. No, what's stunning is that Apple is pricing the Xserve system at $3,999. That makes the XServe the price leader for dual-CPU servers. And when you add in Windows per-client pricing, the savings become **huge**. Apple sells its systems with no per-client fees for Mac OS X. In contrast, a 25-user enterprise license for Windows adds $2,495 to the price of a dual-processor PowerEdge 1750 server from Dell Inc."

eWeek says that "Apple offers a well-crafted graphical operating environment, on an open-source-based operating system, supported by best-of-breed, standards-based development tools such as **Borland Software's JBuilder**."… And speaking of the many goodies included, an *SD Times* September 2003 story praises the free **XCode** programming language that is packaged… Another about Sleepycat Software's powerful **Berkeley DB**… *InfoWorld* says "Apple Computer's server division is gaining momentum among ISV partners and corporate users of its Xserve and OS X operating system… It is a breakthough product."

Network Magazine gives Apple one if its "2003Products Of The Year" awards. In part it says "File system journaling increases the potential availability, restorability, and all-around reliability of files and transactions. Mac OS X Server also includes an array of Internet and multimedia capabilities, including Apache Web Server; Java 2 Platform, Standard Edition (J2SE); Secure Sockets Layer (SSL); JavaServer Pages (JSP); support for Simple Object Access Protocol (SOAP) and Extensible Markup Language-Remote Procedure Call (XML-RPC); WebDAV; Webmail; Quicktime Broadcaster; and Quicktime Streaming Server."

For more on Xserve see Apple's data and pricing information, and this ZDNet article titled "A Sign Of Good Things Ahead For Apple" and this report says "The XServe is taking the industry by storm…" and goes on to explain four major reasons why, and these Xinet server benchmarks, and NewsFactor says (among other compliments): "…But the Xserve's most compelling attribute may not be its small form factor, powerful server software or its tight integration. Rather, the company's service and support may be the deciding factor in a company's decision to switch. "

The well-respected RickWise company recently had this to about Apple's XServe: "We started with the **goal of providing reliable, high volume, real-time risk management services for mission critical operations** in internet companies, banks, and other credit lending organizations. Cost was also a key factor. Volume would be expected to ramp up over time necessitating a scalable architecture capable of growing with the business. Many different platforms were considered including mainframe, largeunix, and other personal computer systems. Most systems presented large up front costs to achieve the required performance. The less expensive systems often lacked the features or performance to make them practical. Of the available systems, the Macintosh offered the best overall value. Support of industry standards such as TCP/IP, SCSI and PCI coupled with the performance of the PowerPC processor and its ease of use put the Macintosh far ahead of the competition."

Network World Fusion has a long article that elaborates even more. And an ExtremeTech story says "It's pretty clear that the new Mac OS is being built for business integration with the new features being added in the MS-Windows support area… like Apple **supporting a welter of cross- platform protocols,** including ActiveDirectory, LDAP (Open Directory), Bluetooth, SMB browsing and sharing, IPV6 and IPSec, the CUPS print engine, and Virtual Private Network (PPTP)…"

The *Network World* article goes on to say "**Apple even moved to take the lead in some areas** that should be close to enterprise users' hearts. Consider **Rendezvous,** a new API that can let a variety of computers and other devices seek out each others' IP addresses for file sharing, printing or even streaming media. In the enterprise world, how many times does a project sit waiting because a key person is out of contact? Lack of communication stalls and stifles productivity. The same could be said for files and other content; many times in a collaborative environ, the network infrastructure is made more complicated than necessary simply to support information availability."

Read where "The Office of Management and Budget on Aug. 26, 2003 released a revised version of its Technical Reference Model (TRM), smoothing out details and adding widely-used technologies to make it more useful for people developing information systems across government. OMB oversees the Federal Enterprise Architecture, designed to foster information technology collaboration and coordination among agencies and help reduce redundancy in programs, systems and investments. It has five reference models, including TRM.

"The biggest change to the TRM is the addition of Apple Computer Inc.'s Mac OS X and Linux to the operating systems, or "supporting platforms," section of the model. In the previous version, the only platforms were Microsoft Corp.'s Windows 2000 and .NET, and Sun Microsystems' Java 2 Micro and Enterprise editions." In a related matter Lockheed Martin announced that they were buying 260 Apple XServe servers to go into Navy submarines.

All this would clearly say that any MIS person who is not **seriously** evaluating Macs for at least the server end of a network, is more than delinquent in their service responsibilities.

What about Novell networks? Well, Novell is considered one of the "good guys", when comparing the choices in the field. Here is what one of their documents, titled "*What Microsoft doesn't want you to know*", says: "Microsoft wants more money from you. And they'll do whatever it takes to get it…" Who can argue with that? Read the whole article, it's interesting!

Other good reads about problems with Microsoft Exchange on Novell's site are: "Press and Analysts Speak Out", "Whitepapers and Ferris Research Insight Bulletin", and "Top Ten Exchange Headaches".

The biggest (Mac related) problem Novell had, is that they dropped the ball for Mac support a few years ago, when they fell behind in upgrading their Netware server software. To fill that void, they licensed a third party company, Prosoft, to make Mac client software. The problems with this solution are that it added a layer of complexity, plus considerable cost. Novell now again offers Native File Access for Macs, but the damage has been done. I was hoping to be able to find a White-Paper comparing these two server options, but was unable to. (The closest I came was at the very interesting OSData site.) So here is a draft version of my Apple UNIX vs Novell Netware comparison – and thanks to the contributors that helped create this!

BTW, in my exploration for server platform comparisons, I came across this, which does an insightful comparison of Windows-NT to the 30± year old CP/M operating system (i.e. the basis of MsDOS).

What about Microsoft's new product? In March of 2003 CNet said "Windows Server 2003 is Microsoft's high-end operating system the company hopes will help drive sales to the enterprise. But analysts remained cautious about widespread interest in Windows Server 2003. The Redmond, Wash.-based software giant delayed the launch of the product three times, compelling many companies interested in it to upgrade to Windows Server 2000 instead, said IDC analyst Al Gillen.

"In October 2000, Microsoft said the product would ship in the second half of 2001. In April 2001, the company pushed back delivery of the product, which is an essential component of its .Net Web services strategy, to early 2002. In March 2002, it again postponed delivery until the second half of that year. But in November, it held back delivery for a third time, setting an April launch date.

"Microsoft may also have confused customers by renaming the server software three times. The product started out with the code-name Whistler, but was renamed Windows 2002 Server in April 2001. In June 2001, the name was changed to Windows .Net Server, in line with the company's .Net Web services strategy. In August, Microsoft renamed the software Windows .Net Server 2003, but in January removed .Net from the server software's name."

Now that it finally has been released, *ComputerWorld* says "Some IT managers aren't happy. Others are more understanding. But all of those planning to upgrade to Windows Server 2003 will find that many older versions of Microsoft Corp.'s most popular server applications won't run on the new operating system."

Shortly thereafter there was this: "Microsoft acknowledged a **critical vulnerability** Wednesday in nearly all versions of its flagship Windows operating system software, the first such design flaw to affect its latest Windows Server 2003 software." *Yawn.*

In a comprehensive discussion of many Mac advantages, the author states that "Another kind of emotional negative reaction to the Mac sometimes comes from the tech support, training, maintenance, and service industries (IT/IS professionals), which comprise the largest sector of the entire computer industry. These are companies and individuals whose businesses rely on customers' dependency and are therefore **threatened by the reliability, ease-of-use, and power of the Mac**.

"It is important to note these are people who drive the majority of purchase decisions for businesses, government institutions, schools, and often consumers as well. This constitutes a symbiosis between the difficulty of using and maintaining Wintel machines and the robustness of the tech support, maintenance, service, and training industries. Wintel and these megalithic industries simply feed each other in a tragic and ever-expanding market feedback loop at the expense of global productivity and technological innovation.

"…public school systems often waste millions of taxpayer dollars purchasing Wintel hardware/software packaged with tech support/maintenance/training services, services largely unnecessary were Macs involved instead. Still more taxpayer dollars are then wasted by the loss of productivity on the user end. "

Conclusion: *MIS people need to be educated (and held accountable) as to what their real function is: A SERVICE ORGANIZATION.*

Once they grasp that idea, Macs will be a relatively easy sell.

This section's Haiku
(see the bottom of page 1 for more explanation):

Stay the patient course.
Of little worth is your ire.
The network is down.

rev: February 2, 2004

— Section #10 —

Microsoft

— All You'll Ever Want To Know —

Of course it is impossible to discuss the Mac *vs* PC matter without bringing up Microsoft. I will briefly share with you my opinion about Microsoft, and then we'll hear what some others have to say.

Microsoft is a very financially successful company.

To many people, that's the bottom line, and all that matters. I say that this limited perspective is a sad indictment of the values of our society, and is exactly the attitude that has lead to the Enron's and Worldcom's we have experienced.

Microsoft Corporation, 1978

Do you want these people to run the computer world?

Sure the primary reason for a business to exist is to make money, but: **1)** there are legitimate and illegitimate ways of making money, and **2)** there are other good reasons for a business to exist besides just to make a profit.

Regarding the first point, in my opinion, making money by **stealing someone else's ideas is not a legitimate basis for a business**. In Microsoft's case, that is essentially what they have done. I would speculate that MsDOS, Word, Excel, Internet Explorer, and Windows would comprise some 90% of Microsoft's income base over the last twenty years. **Yet Microsoft did not really develop ANY of these products!** They (of course) would never say that they "stole" these items. I believe that their favorite euphemism is "**reverse engineer**."

If you are skeptical of the fact that Microsoft has ' reverse engineered' essentially all of their major products, check it out for yourself. For example, as I stated on a prior page, in the extremely important Federal lawsuit of Apple *vs* Microsoft several years ago, **Microsoft officials conceded, under oath, that most of the Windows operating system had been copied from the Mac operating system.** If you would like to find out even more, here is relatively brief, but an **extraordinarily detailed** history of Bill Gates and Microsoft (September 2002), and another.

Ironically (or expectedly) what has been happening more recently is that Microsoft has been aggressively suing companies who Microsoft claims have stolen from them where (for the most part) these businesses are doing no differently than Microsoft did to Apple, WordPerfect, Netscape, etc. Read this informative piece on Microsoft and patents, etc. which says "When CNET News asked Bill Gates about software patents, he shifted the subject to ' intellectual property,' blurring the issue with various other laws. Then he said anyone who won't give blanket support to all these laws is a communist. ".

As far as business's having other reasons to exist besides just making profit, this is not some altruistic belief on my part. I have owned a business for many years, and have a strong opinion that a VERY important reason to operate such a business is to provide tangible, genuine, bona-fide benefits to my customers, and society in general. [Ironically, shortly after I originally wrote this, a major article appeared in *Money Magazine,* about the blended value concept. Worth reading.]

In my opinion, **the net effect of using Microsoft products is** reduced productivity (compared to using alternative software). This is no small matter, as the intended (and advertised) reason to buy **any** of their products is to *increase* your productivity. Of course the only way that happens is if the comparison is made to your having no computer at all.

The second big negative consequence of using Microsoft applications is that billions of dollars of computer expenditures are wasted. See this, which says "Microsoft is charging monopoly prices for its operating system, resulting in consumer overcharges of tens of billions of dollars, according to an analysis filed with the Joint Economic Committee by the Consumer Federation of America." Even though this was a few years ago, the situation continues unabated.

But just in case you don't feel that I'm the most objective person on this topic, read what this Stanford University law professor said in April of 2005. Among other things he called Microsoft "a threat to businesses and the economy as a whole."… And for an insider's view on this situation, read what a former Microsoft technical manager has to say: "Addiction to Windows revenue, mediocre products, and missed opportunities could doom Seattle's most successful company." Interesting stuff.

Again, just one example of this is the absolutely **PROFOUND** Gistics report (which surveyed over 30,000 business professionals) and concluded "Due to a more efficient computing environment, the Macintosh business user gains, per year, an average of 234 prime time authoring and composing hours than a Windows user… The Mac user generates 7.14 times ROI over three years, while the Windows NT user generates 2.02 ROI… **Clearly for profit oriented firms, deployment of Macintosh technology constitutes a fiduciary responsibility.**"

Read that last sentence again, s-l-o-w-l-y. Oh yes, I know that this report was done a few years ago, but so what? The relative facts are still the same – if not more so. For instance, the Windows comparison was to NT, which was a big seller until recently. Furthermore, Window NT hasn't changed significantly during this time period, even while the Mac has made **enormous** improvements.

But let's go back to the time that the Gistics Report first came out. I ask you: why wasn't this a headline story in the *New York Times* or the *Wall Street Journal*? I ask you: how many businesses *did* their fiduciary obligation and changed to the Mac OS? And I ask you: **what did Microsoft do to acknowledge and correct the poor productivity of their products?**

The more I think about it the more I am concerned about *millions* of individuals and businesses giving up **Control** of their computing experience. I wrote a few words to this effect in the introduction.

I remember awhile back reading a surprisingly serious and technically detailed article entitled something like "Why I Hate Microsoft". Since I didn't have a copy I searched for that *specific phrase* in Google. I was genuinely shocked to see that Google reported over **2000 sites** having that *exact phrase!*

I looked at a handful of these and was very impressed by the fact that these were **not** ravings by some lunatics, but rather were mostly **thoughtful analyses by competent people** genuinely concerned about our computer welfare. Here is a good example… This is a great article. The author goes into details about a variety of Microsoft related issues, like: "Some of Your Cherished Beliefs About Microsoft are Myths". [Note: he also has a section titled "How Microsoft Products Harm Your Productivity", so you can relate that to my prior personal observations.] If you want more, here is a sample collection of anti-Microsoft sites.

Another intriguing thought is this: if Microsoft programmers are so smart (as some people evidently believe) then (since they START by copying somebody else's RELEASED software products) why isn't Microsoft software MUCH better? One observer's on-point comment is that "**their fundamental design flaws are completely hidden by their superficial design flaws.**" And if you look up the term "bloatware" in the dictionary, you are likely to see a picture of some Microsoft product.

Starting sometime after 2000, Microsoft decided that the next Big Thing that would impose on our society is what they call ".Net". Since it has already begun, you should look at this basic definition, or a somewhat more technical discussion about what the situation is, plus read these very candid *ComputerWorld* comments . Here is an example of typical .Net problems (*ZDNet*) plus an article about other concerns. And this November 2003 concern. The best news is that it looks like Microsoft will not succeed here.

If that threat isn't bad enough, Microsoft's **Palladium** (aka NGSBC) comes in as a close second in the area of upcoming concerns. This report says, "This is the most outrageous thing that has so far happened in the computer world... Palladium requires users to place a huge amount of trust (!) in Microsoft. You don't get to decide what runs on your computer – *Microsoft does.* **You can't even open files unless you've been authorized by Microsoft,** or by a third party. And that puts a huge amount of power into the hands of these corporations." Palladium won the Most Invasive Product of the year award (2003). Here is a ZDNet piece, and a more detailed, insightful explanation by Ross Anderson (August 2003). Although three were several reports that this effort at intrusion had failed, more recent information (April 2005) is saying that it will just be resurrected (not surprisingly) in a different manner.

And then there is the Internet. In an email I recently received, the author states "As more and more web based business and content creators move to the Microsoft content creation and development tools, fewer third party operating systems and browsers will work with MS branded sites. Microsoft is set to conquer covertly would it could not overtly. Since Microsoft is stopping standalone development of its Internet Explorer browser and is tying it to its next OS ' Longhorn', if you want to access content or services created with MS products you will need a Microsoft OS with a Microsoft browser."

And in a similar type of scheme, this 2004 CNET article says "Microsoft applies for patents that could prevent competing applications from reading documents created with the latest version of Office... XML-based capabilities have been one of the main selling points for the latest versions of Office. By saving documents as XML files, the new Office will allow back-end computing systems such as corporate databases to retrieve and reuse data from documents. XML support also allows Office to become a client for viewing and manipulating data from Web services and complex enterprise applications, such as customer relationship management software."

<p align="center">As I keep saying, with Microsoft it is all about Money and Control.</p>

One of the most disconcerting aspect of the control issue is Microsoft's dismal record in providing secure software. These experts say MS "Deserves an F" for security. One of Microsoft's pat defenses for the innumerable weak links that have been exposed in its software, is that users should install the fixes (many) provided by Microsoft. As this 2003 CNN piece explains, Microsoft itself was recently victimized by a severe attack – and an investigation revealed that Microsoft had not installed its own patches.

And hey, whatever you do, don't tell the Truth. This 2003 story states "The chief technology officer for a technology firm that works closely with Microsoft lost his job after he helped write a study critical of the insecurity of Microsoft software." And that the "firing was reflective of Microsoft's far-reaching ability in Washington and across the technology industry to silence experts who complain about weaknesses in its software or its aggressive business practices." This response should come as no surprise as Microsoft has a history of spreading FUD (Fear, Uncertainty and Doubt), which usually flies in the face of Truth.

What about Microsoft's legal issues that you have heard about? Some people attribute the monopoly case as some type of "government interference" with an open-market business. **They could not be more misinformed.** If you really want to know some of the truth of the matter, take a look at Judge Jackson's very readable (but long) Findings Of Fact (or PDF), and also the Conclusions Of Law.

Here is a small assortment of comments out of the thousands submitted to the Justice Department following the February 2002 proposed settlement – some fascinating reading there! An example is strong words by an executive of one of their Wintel partners: Gateway (and in another report) said that "**Microsoft contracts keep a stranglehold on computer makers by not letting them give customers a choice of operating systems.**" (Duh – this is something new?) Another stunning exchange occured, under oath, when a former top Intel executive admitted to calling Microsoft an "evil company." Additionally he recounted a top level Intel meeting where another Intel executive said the company was hungry for new partnerships and another described Microsoft as a "fellow traveler." Putting Microsoft in those terms "made him think of the Donner party" (referring to a stranded group of settlers in the 1800s who resorted to cannibalism).

Here is a good (small) assembly of media reactions… And Microsoft's legal issues have gone way beyond the government: here is an unusually informative historical collection.

In November of 2002, the new judge only marginally increased the penalties on Microsoft. This CNET story gives some details. A good assessment said: "This is a miscarriage of justice, and the Bush administration's DoJ has clearly abrogated its responsibility to the American people. Microsoft has continued the very practices that were found to be in violation of the law, yet the DoJ's settlement does not address any of those practices. During and after the trial, Microsoft has held that it did nothing illegal, despite the ruling to the contrary being upheld by the appellate court, and the company has since behaved accordingly. Today's decision gives the company the green light to continue to do so.

"In short, though Microsoft has been found to in fact be a predatory, abusive monopoly by a lower court and an appellate court that upheld those findings, none of those abusive practices have been addressed in the settlement OK'd by Judge Colleen Kollar-Kotelly… Windows XP is full of such practices, and only the threat of this judgment, which was still in the hearing process, prevented the company from being even more aggressive… We are embarrassed at this turn of events." … Here is another reasoned article on this serious legal mistake. And another.

Most states threw in the towel saying either that they had better uses of their resources (doubtful considering the implications here), or that we should give Microsoft a chance to become a good citizen (might as well have set up Bonnie and Clyde with an ATM franchise)… Fast forward to January 2004 and the Justice department concludes that Microsoft is still not in compliance (imagine!).

A **BIG** **THANK YOU** goes to Massachusetts Attorney General Thomas F. Reilly for being the state attorney general who has persisted most in this important matter. His position is this. As of early 2004 this Washington Post report says that he is investigating Microsoft being "engaged in a campaign against Internet search engine and document companies reminiscent of its efforts to crush the Netscape Navigator web browser." Translation: **Google and Adobe are now in Microsoft's sights.**

My question to YOU is this:

at what point will YOU become concerned enough to do something about this?

In one of several semi-positive articles on this topic, this September 2002 NewsFactor piece asks "Are the Floodgates Opening on Microsoft?", and then gives several citations that might be indicators that it is… Contrary to the layperson's perception, Microsoft has had many product failures. This *Seattle Weekly* piece lists quite a few and says "some observers say Microsoft's biggest failures are still in progress." And this November 2003 PBS story has the optimistic theme about Microsoft not being forever (but they will be milking every dollar from you that they can in the meantime).

And **Microsoft doesn't always win in court**. In July 2003 "A California judge gave preliminary approval to a landmark settlement under which Microsoft will pay $1.1 billion to settle a class-action suit that claimed it overcharged consumers for Windows." And in this 2003 verdict Microsoft was fined $750 million for their actions against Netscape. And another encouraging article mentions one of the several important ongoing lawsuits against Microsoft (this was the latest I could find: June, 2003) – in which the judge also ruled **against** them.

And kudos to the European Commission, which, based on pathetic situations like this, fined Microsoft **$665 million** in 2004, and in 2005 has not only denied Microsoft's attempt to undermine the settlement, but threatened to increase the fine amount. It also has two more substantial cases pending against Microsoft.

In April 2004 this *CBS News* story says "Microsoft is paying $440 million to InterTrust Technologies to settle a 3-year-old patent infringement lawsuit over technology for protecting music, movies and other digital content against piracy. Monday's announcement marked the second settlement this month by the world's No. 1 software company. Microsoft agreed about two weeks ago to pay Sun Microsystems $1.6 billion to settle a private antitrust suit and resolve patent claims."… In December of 2003 RealNetworks sued Microsoft, accusing them of "unlawful tactics including product bundling, restrictive licensing, exclusive dealing, predatory pricing, refusing to sell unbundled operating systems and discriminatory disclosure…"

In 2005, a US District Court is blocking Microsoft Corp. from using a networking feature planned for the future operating system code-named Longhorn as well as a service pack for Windows Server 2003 that had been scheduled to come out in 2004. This *ComputerWorld* report says that the injunction is based on evidence that Microsoft stole another company's technologies. Imagine that! (Speaking of *ComputerWorld*, they have published this extensive (but not comprehensive) list of Microsoft's "Legal Battles".)

You might think that you would need BIG bucks to even stand a chance against Microsoft in a lawsuit, but this 2005 case says otherwise. "Microsoft's army of lawyers was no match for a kid from Kent State" is the title of this quite revealing story.

And one more, because it could affect you, personally. In late 2003 a potentially important class-action suit was filed. The attorney is no ambulance chaser, but is Mark Rasch, a former head of the U.S. Department of Justice computer crime unit. His words: "This represents the first salvo for consumers to say to software makers: ' Wait a second, if you are going to put out software that needs be patched three times a week, take responsibility for it.'" *You go Mark!*

One might conclude that these legal results would give Microsoft pause, and that they might consider changing their ways. Not likely. In fact one of their most recent responses has been to get one of their lawyers appointed to head up the American Bar Association Antitrust Committee. Read about some of the implications of this move.

With all this in mind, maybe you can relate to this Bill Gates movie, a take-off on the Matrix films.

Just in case you feel I have an unreasonable bias here, please read this very serious and **remarkably** detailed dissertation about Microsoft, from a Wintel person.

Please read it ALL!

The author's no-holds-barred parting comment is:

<div align="center">

"Mr. Gates, Mr. Ballmer:
I've upped my standards, so up yours."

</div>

After reading this section, the clear question that SCREAMS OUT is: "how has this whole Microsoft mess been allowed to happen?" Unfortunately the equally clear answer is:

<div align="center">

we have seen the enemy, and it is us.

</div>

Four unrelated camps have been the major contributors: **1)** millions of technically challenged laypeople have mindlessly bought into the Wintel charade, combined with **2)** thousands of self-promoting semi-technically competent business MIS persons who continue this farce, **3)** IBM (in the 80's and 90's), and **4)** two or three judges who are clueless (NOT the courageous and insightful Judge Jackson).

<div align="center">

* *

I am here to tell you that the emperor has no clothes!
Get a Mac and your vision will be remarkably restored.

* *

</div>

<div align="center">

This section's Haiku
(see the bottom of page 1 for more explanation):

A crash reduces
Your expensive computer
To a simple stone.

</div>

rev: May 2, 2005

<div align="center">

— Section #11 —

</div>

Testers and Switchers

I have never contended that a Mac was for EVERYONE, anymore than I would insist that a Mercedes is the best car for everybody.

What I feel do strongly about is that a Mac is a better computer for MOST people who use Wintel machines – and the main reason that they are using Wintel boxes is that they have never truly tried out a Mac. All I would expect of any computer buyer is that they give a Mac a **fair trial**.

Fortunately, that seems to be happening more these days, primarily for these four reasons:
1 - Many of the people who have bought the runaway hit, the iPod, are also considering a Mac. The press had dubbed this the Halo effect. This USA Today article is typical.
2 - Apple has been in the news a lot, and has received a substantial amount of positive publicity. In addition to the iPod, many articles are about the success of its stock, and there continues to be favorable projections from numerous financial analysts.
3 - The low price Mac mini has likewise been widely and well-reviewed, and many price-sensitive PC users are giving it a look. It is particularly attractive to PC switchers as they can throw away their bland beige box, plug in the Mac mini, and keep their existing monitor and keyboard.
4 - The primary switch cause (in my experience) is that PC users have simply had it with the incessant viruses and spyware that they are subjected to in the Windows platform. The facts are that in the last four years or so there have been some 80,000 viruses identified for Windows, and ZERO for Mac OS X. Here is a sample discussion of the situation. This profound difference is a powerful motivator.

Of course none of these reasons would be effective if people were genuinely happy with their Wintel experience. Not surprisingly, many are not.

In other sections of this site I have referenced many of the inherent shortcomings of the PC choice. But, just in case you feel I have an unreasonable bias here, please read the specifics of our **short** summary about Microsoft – most of which is from Wintel people.

Peter Burgel says it well: "Probably the most irritating aspect of the ongoing Mac and Windows debate is the fact that **people who have never worked in a Mac environment are the most outspoken about how ' bad' the Macs are. Go figure!** … People are creatures of habit, and what we're comfortable with is always considered better than the dreaded unknown. Some people equate comfort level with quality (ya think?). If I don't understand it – I don't like it! That's why most of our parents drove either a Chevy or a Ford in the 50's and 60's. A Chevy owner wouldn't be caught dead admiring (or worse yet, driving) a Ford. We've just taken this debate to the next level."

Here is a sample of some recent stories appearing about people who have made the forward migration switch:

In April of 2005, Paul Graham says that "All the best hackers I know are gradually switching to Macs. My friend Robert said his whole research group at MIT recently bought themselves Powerbooks. These guys are not the graphic designers and grandmas who were buying Macs at Apple's low point in the mid 1990s. They're about as hardcore OS hackers as you can get. The reason, of course, is OS X."

Charles Cooper (an executive editor for CNET News) recently wrote Switching to a Mac – ain't ever going back, in which he says: "Twenty years after logging on for the first time, I'm logging off – forever. No, I'm not retiring but I am finally through with that soul-stomping repository of bad karma known as my PC. And after chucking the machine down the dumpster, I won't ever look back because, folks, I've switched to the Mac… So it's goodbye protected mode. Shalom Ctrl-Alt-Delete. Auf weidersehen application registry. Meet me at autoxec.bat's silver anniversary party."

At the *LegalTechnology* website, this January 2005 report from a Linux and PC user says "…As an experiment, I started playing with a Mac this year, and **the experience has been an eye-opener**. Over the course of the year, I've found that the Mac has a number of advantages over Windows-based systems, not least of which is the fact that most viruses and spyware are specifically designed to exploit weaknesses in Windows… After six months of using an Apple PowerBook as my primary computer, I am sufficiently impressed that if forced to select between a Windows-based system and a Mac, I would chose the Mac."

This is a well-written story (Feb 2004) about virus and spyware experiences on Macs and PCs… In Remembering Why I Switched, this former PC person tells a painfully similar tale.

Up until May of 2004, David Blumenstein was the **Chief Technology Officer** of a global advertising agency. As he relates: ."A good portion of my life has been spent managing enterprises running Microsoft Windows and Unix networks, and while the latter never ceases to amaze, the former has proven to be an endless parade of mind-numbing and costly annoyances. The amount of time spent fighting worms and viruses, combating spyware and malware, and applying countless security and system updates finally took its toll on me… I am now a Mac-head. Somehow it crept up on me. Now I cannot envision myself latching on to an Intel/AMD machine running Microsoft Windows."

According to a 2004 survey of iPod users by financial analysis firm Piper Jaffray, Macs are basking in the reflected glory of the iPod, with some who own the music player saying they have already or are intending to ditch their PCs for Macs. Gene Munster, Piper Jaffray senior research analyst, said the iPod halo effect will make a difference to Apple for a while to come. "We're in the very early innings of a multiyear trend," he said.

Dru, at his Druware site, says "I am a developer. I am a ' Switcher' to a Mac. I am, for the first time in a long time, happy with the computer that I do my day to day work on. Oddly enough, this comes as a complete shock to me. You see, **I am a Windows developer**. I write code that targets the Windows platform every day. I have been doing so for several years now. Over the years, I've used, and developed on the Microsoft platform, because it was what I could afford and what I knew. It was not because I was happy doing so. I can say that at times I enjoyed working on the platform. These times are usually followed by bouts of severe annoyance and anger at poor design, poor documentation, or more often the Microsoft Marketing Machine pulling the rug out from under the legs of the small developers…"

This revealing article talks about hidden switchers, or voyeurs. "A cabal of Mac fanatics is working at Microsoft, and Lenn Pryor, a ***director of Windows platform evangelism***, is one of them." Phillip Torrone, director of product development for advertising company Fallon Worldwide, says "I live in Seattle and know a lot of Microsoft people. Lots have Macs. I see tons of Microsoft people at the Seattle Apple stores. I've heard Microsoft people admire and talk about Apple a lot, and sport iPods…. I think a lot of Microsoft people want Microsoft to be more like Apple…"

Ernie the Attorney is now over one year into his Mac switch. His position is clear: "computers should be easy to use and they should, as much as possible, configure themselves. Having used Macs and PCs extensively over the past 10 years, I can tell you it's not even a close contest. Apple computers are easier to use and configure."

In mid 2004, in what may well be Apple Computer's largest coup in the Australian enterprise space, the NSW Roads and Traffic Authority (RTA) announced that it will deploy 1200 Apple G4 iMacs across 140 registry offices. A statement Computerworld obtained from the RTA reveals the G4s will be used as point-of-sale terminals for its counter staff to handle RTA customers transactions across "prepared business applications" as well as for "collecting data and payments and issuing licenses, registration certificates and receipts for various transactions". The move away from Wintel desktops also appears to reiterate the recent strong stand by the NSW government to seek alternatives to wholly proprietary operating system kernels – and the licensing models that go with them – where cost effective and viable alternatives exist. To this end, the RTA is making no bones about its preference for open standards and open source, with what appears to be more open source action slated for the near future.

James Kahan is the IT Director for Cegedim USA (Philadelphia), and is a recent Mac convert. He explains his reasoning in a detailed three page article, which includes "There are quite a few functions in OSX that allow you to do things that are unimaginable in Windows. For example if you want to grab a picture off of a website you just drag and drop it to your desktop… Of course there are always the Linux benefits too. There are almost too many to mention. The Apple download section is filled with great freeware or shareware and if you are a developer the possibilities are endless. RealBasic (pro version) will allow you to convert your existing Visual Basic projects into OSX or Linux executables… I know this article seems like a long advertisement for Apple, but now I understand why Mac users are such zealots. I am so amazed by the fact that everything just works that I feel the need to convert everyone I know. "

This server user relates his experiences here. He started out trying a Mac by getting an iBook. "My Sony notebook weighed twice as much and lasted a third as long.… It took me a year to go from a die-hard Windows user and Apple dissident to a proud Mac user… Right now (December 2004) the Mac is the tool that works best for me."

At Amazon they are reporting that a VERY high percentage of Apple computer buyers are former Wintel users – maybe as high as 48%. (PS - Amazon has very good prices for Macs.)

Also at Amazon, this is a typical purchaser's review (this one posted December 2003): "After 15 years of PCs, I got a Powerbook last year and fell deeply in love with it. Then I decided to get the dual G5. At work, we had just bought PCs for all the software developers (8 months before) and the bloody HELL we went through when we had to take them from 1GB to 2GB of RAM was insane. Since getting my G5, I've easily gone up to 3 GBs of RAM. Having the room to go to 8GB is wonderful. I have NOTHING bad to say about this machine, it's the best setup I've ever used, and I have a database loaded on it, doing Java development, and using Final Cut Express and iTunes, etc. Connectivity is superb. And Panther is a joy – **no question the best OS I've ever used**."

Dr. Barrall is the CTO, Executive Vice President and co-founder of BlueArc Corporation and the principal architect of its core technology: the SiliconServer Architecture. He has found the light. He explains here how a diehard PC person was amazed at the **power** and **ease of use of a Mac**.

Ken Newquist, a webzine editor, posted Why I Switched To Mac in July of 2003. In part, this long explanation says: "What did the Mac offer that got me to spend my hard-earned cash on their computers instead a Windows box? It's a lot of little things that added up to one towering incentive, and that incentive can be summed up in two words: **user experience**… I use PCs and Macs every day… Despite all the hype to the contrary, I find Windows XP Pro to still be crash-prone… for me, Macs are about as perfect as a computer can be."

Stuart MacKenzie is a software engineer and a self-proclaimed geek. He details his 2003 [oddessy](#) in a three page article on *OSNews*. In recounting his switch he says that "… There were pleasant surprises around every corner." He was won over by the "**beauty**, **functionality**, and **sheer simplicity** of the Mac's operating system and software… I don't think of my PowerBook as much as a computer as it is a tool that helps make my daily life integrated and simpler."

George Emerson wrote this 2003 *Globe and Mail* story [Mac-ceptional](#), where he says "The battle for home-computer supremacy is finally over: **Mac wins — by a mile**. Apple's newest desktops and laptops are probably the **best personal computers ever made**. I say this as someone who, until recently, was a pro-Windows person." He then elaborates why Macs **cost less** *and* **save you time** *and* **enable you to do more**. He concludes saying "All in all, there's no compelling reason not to switch… You won't go wrong with a Mac."

In January 2004, Steve Johnson (who has a Degree in Computer Information Technology, and twelve years of exclusively PC experience) [wrote](#): "Something I have learned by switching to the Mac platform is that it truly is different from the Windows world. I have learned to work differently on my computer and also gained new interest in things like multimedia. It still amazes how elegant my iBook is compared to other PC laptops – there is no comparison. I have switched and I will never look back."

This [PC Magazine](#) piece says, "Apple iMac: Bold New Look, Software Bundle Woos Converts." They go on to say "**If the crowd in our labs is any indication, Apple has a success on its hands with the new iMac.** Even jaded veterans of the platform wars stopped by to admire the machine's innovative design, attractive hardware complement, and excellent software bundle….**It's an exceptionally well-designed product at a reasonable price.**"

In this [accounting](#) Charles Wagoner offers the tale of how he took his company from a fairly large Wintel network to the Mac. Better yet, when he began the process he had been a convert to the Mac platform for only 6 months. In part he says: "**Isn't it amazing, with all the frustration, which comes seemingly as a feature of Windows, just how much people are willing to put up with?** Having worked for a Wintel-based PC company, I saw my fair share of this. The biggest problem was my boss' arrogant ' time is money' philosophy, which in return sacrificed quality. All of his clients, due to not knowing any better, not only settled for the many technical problems, lost e-mails, lost files, and eventually, lost money, but would dismiss it as something that went hand-in-hand with using computers. That is very unfortunate… I love the Mac platform and the awesome community of users behind it! **I'm glad I made the switch.** It has made my work life as a network consultant a lot more enjoyable."

In [Dude I'm Getting Rid Of My Dell](#), pre-law student Andrew Carson says, "After years as an uneasy PC user, switching to a Mac has been nothing short of a study in usability. **Before a friend introduced me to the refined simplicity of OS X, I had always assumed that the way computers worked and the way my mind worked had to be at odds. Windows worked a certain way and it was therefore my job to bend my mind around its redundant complexity. But OS X was immediately different…**"

Tech writer Tom Yager writes in this 2003 *InfoWorld* piece [Windows Doesn't Live Here Anymore](#), and says the switch is permanent. [Here](#) is an earlier related story.

Mark Morford writes in this October 2003 [expose](#) in *SFGate* about his first Apple experience. After admiring the superb engineering quality of the Mac (noting that he handled it with "astonishment and even a trace of reverence") he then experiments with OSX for awhile. After easily putting it through its paces he observes "**Where's the pain?** Where's the hassle and the 3,000 setup steps and the sense that I'm drowning in a sea of programmer jargon and ubergeek hell?" Where indeed!

Not to be outdone, Chad Dickerson, CTO of *InfoWorld* pens this story in September of 2003: [Moving To A Mac](#). He starts off by admitting that he has written unfavorably about the Mac in the past. No more, now that he has *really* tried it. "My experience with OS X felt like crossing a chasm." He ended up replacing a Linux server and a PC client with one G4 Mac, because "**I did more with less.**"

Internet security specialist Douglas Schweitzer writes about his conversion in this September 2003 *ComputerWorld* story A PC Guy Goes Mac. He observes that "After using it for a month, I can truly say that it is as fast, as stable and as secure that Apple promised that it would be… All in all, I'm very pleased with my new computer a nd glad I took a ' byte' of the Apple."

In their February 2003 issue, *Kiplinger's* has a detailed article (fee to see it) titled: "Make Mine A Mac." The thrust of the story is "**Lower prices and better software have made switching from a PC practical**." The piece gives several examples, like "When it comes to video, pictures and music, Apple's TV ads hold true: Getting a PC with Windows to deal with such media files is cumbersome and involves downloading and tinkering with software and drivers – like dancing with an elephant, and the elephant is leading. But you'll feel like Fred taking Ginger for a whirl with Apple's multimedia software programs: iMovie, iDVD, iPhoto and iTunes. And that ease of use applies to using a Mac in general: **the Mac OS operating system is far simpler than Windows**."

In Back To Mac Alan Graham had extensive Wintel experience as a VP of Business Development and Sales of an Internet company He now says, "**I would like to take this moment to personally thank Dell, Toshiba, and Microsoft for helping me to change my mind and move back to the Macintosh platform.**" And now that he has switched "not only has the productivity and quality of my business improved, but during that time I successfully switched my wife (a designer and long-term PC user) and my in-laws over to Mac OS X." He concludes with "My switch back to Macintosh was not just a good business decision, it was a life-changing experience. Being a Mac to Windows to Mac user, I can honestly say that **the Mac changes you from being a victim of technology to a master of it.**…"

The headline of this Seattle Times story (registration required) reads Try A Mac: You May Find One Taste Is All That It Takes. In a lengthy discussion about switching, it states "For some time, upgrading PC users with an **open mind** have considered switching to the Mac… The purpose of switching is **to improve upon,** not necessarily duplicate, the PC environment." The same paper also had another worthwhile article: A 5-Step Recipe for a Well-done Apple Switch. (In case you don't get the significant implications here, **Seattle is Microsoft's home base.**)

A ZDNet piece says, "Back in January of 2002, I took on a big challenge. After years as a committed Windows user, I resolved to work exclusively on a Macintosh, to see how the two platforms compared." This PC person says that the iMac that he switched to was "a whole lot more fun than my Windows machine, and a great creative tool… **On the Mac, the computer just doesn't get in the way of my work as much a PC does**… the Mac is a vastly superior platform for digital movies and photography." Read the several referenced links to other related stories he wrote, for much more detail, including an article where he answers common questions a potential Windows convert may have.

This Gannett story says, "While Windows XP comes with a similar selection of utilities, **they do not have the simple, uncluttered interfaces of the Mac OS X equivalents, nor the sophistication…** Jaguar comes with a built-in Windows file server, allowing for easy file sharing in both directions. Once enabled, use the ' Connect To' feature from the Mac OS X Finder's Go menu to locate available computers on your network, regardless of whether they are Macs or Windows PCs…"

In the November 2002 issue of *Money Magazine,* writer Brian Clark reviews three state-of-the-art PCs. He gives the most praise to the iMac, saying "The new **iMac is a beautiful thing.** Paired with Jaguar, it really does give Windows users a **compelling reason to make the switch."**

The [Check Out This Tough Competitor For Windows PCs](#) author says, "I installed the Mac alongside my trusty Windows 2000 PC with the idea of doing my digital video editing on the Mac while using my Windows PC for everything else. Silly me! I made my first DVD the day I opened the box the Mac came in. I made the second one the next day, after editing two hours of vacation videos in three hours with the Mac's built-in video-editing software, and then sat for hours in front of my dual-barrel machine while playing Pop Goes the Web Page on the Net. I got my mail working in less than a minute – **I doubt that I'll ever forgive Microsoft now that I know what the word ' easy' really means.** Could I possibly relegate my double-gig delight to a secondary role? No way."

Longtime tech writer, Sandy McMurray, talks about his Mac conversion in this June 2003 article "[Lower Your Blood Pressure](#)", at Canada's *GlobeAndMail* site. "Mac OS X is stable and reliable, and does what it's told. I don't have to deal with unexpected system crashes and blue screen errors. I don't have to reboot twice a day." Etc.

For years on his NBC news channel reports and on the radio, Mike Wendland has been known as "PC Mike." He explains [here](#) how he found religion in 2003.

A [Miami Herald](#) writer decided to try the crossover herself. She labeled the iMac **"the consumer world's most cleverly designed computer", and the default OS X operating system "Equally attractive and sleek, simpler to learn and run than Windows XP."**

The editor of [Gizmos Weekly](#) (the "magazine for people who like to make stuff") wrote in this November 2002 report (registration fee required): "I made the switch. Apple's new line of laptops, plus one-step migration software made a convert out of me."

In the [Journal Sentinel](#) Stanley Miller says, "Most of my experience with computers revolves around Windows PCs, but the release of the OS X 10.2 operating system – which is also known as ' Jaguar' – provided a tempting opportunity to really get to know the Apple experience. **How sweet it is..."**

Read this [accounting](#) of how a Linux Guru came to see the light. After checking out Mac OS X in detail he says, "I realized that **the dream of Unix on the desktop had been realized. It is indeed possible to have the best of both worlds."**

Andrew Sullivan is a former editor of *The New Republic.* In the last four years, Sullivan has also worked as a contributing writer and columnist for the *New York Times Magazine,* a regular contributor to the *New York Times Book Review,* and a weekly columnist for the *Sunday Times of London.* He has appeared on the Fox News Channel, CNN, MSNBC, and many other ' pundit' shows. As the webmaster of the [Daily Dish](#), he talks about his conversion and says, **"Since I've used my Powerbook, I've had zero crashes.** My only problem was using AOL in London. But that is AOL's fault for not adapting to Apple overseas. Otherwise, **my Mac is a dream."**

In the August 2002 Pittsburgh [Post-Gazette](#) Don Lindich relates that he made the switch last year, and is very happy about it. "With a Mac, programs and peripherals install without fuss, and there are no more missing .dll files, hardware or software conflicts, system slowdowns or surprise crashes. The last time I was forced to reboot my Macintosh was eight months ago, and it was my fault that it crashed. When I use a Windows machine, I have to reboot two or three times a day... **In short, if you are looking for a new computer and are open to a superior ownership and computing experience, look at an Apple before you buy."**

The Mercury News reports on a somewhat typical Wintel user. "Chris Pascual is sick of his Windows PC, an eMachine running Windows XP, because it keeps crashing. Pascual, a 20-year-old college junior, is saving up for a new computer, and he's interested in a Mac, saying ' Macs are intriguing. They catch my eye. **I'm tired of calling technical support.**'"

In PCWorld (yes, *PCWorld*) Stephen Manes promotes the idea of a Wintel to Mac switch. "**Windows users just get used to annoyances that Mac users don't have to put up with.** Exhibit A: the Registry. That nightmarish Microsoft innovation means it's far easier to move applications between Macintoshes than it is to go through the grueling reinstallation process that keeps PC users clutching their current machines rather than upgrading."

John Myers of the Richmond County Daily Journal relates: "A newspaper publisher once told me, ' There's no justice in the world. **The Mac OS is vastly superior to Windows,** but the whole world is using Windows and doesn't know how good the Mac is.' I agree, but we must live with what is, not what we wish it should be. So, which is better, Mac or PC? No question for me, it's Macs."

Thomas Vanderwal has put up an impressive page on his experiences with Windows and Mac OS X, which says in part: "Why have I bought my last Windows-based computer? My problems revolve around the years of headaches of horrible business and technical practices that Microsoft breeds. Their concern is not the customer and their well being, but their pockets. In the 10 years that I have had my own Microsoft OS-based computers (four of them) I have had four complete meltdowns resulting from MS patches or incompatible MS software... **My laptop running OS X has been a dream.** I don't know that I would call this an operating system as it has been headache free, it has not conflicted with other software, it allows quick software loads (which are also pain free), and things just work. **This is unlike any operating system I have ever used...**"

This Houston Chronical article relates a real story of how the writer let his Dell PC neighbor borrow his iMac to do some multi-media work – with typical results.

This consultant for ABC News says that his entire staff has switched.

This NewsFactor story ("Windows Dissatisfaction Bolsters Mac") discusses several of the reasons why businesses are leaving Microsoft products for the Mac.

This CNN technology writer has written a July 2003 article titled "Succumbing to a Mac attack." In it he says: "I am thrilled with my Apple Titanium portable, especially the light weight, the slimness, the ultra-wide screen, the ease with which I can custom-burn CDs with iTunes. After 10 years as a Windows person, the new Mac operating system does take some adjustment, but not much."

The [Some Users See Through Windows](#) article talks about a few conversions, including that of a PC diehard, who (after some Mac experimenting) said: "**OS X 10.2 (Jaguar) is the best personal computer operating system available. Period.** In fact, if my job didn't require writing about Wintel hardware and software – and if I had the funds to replace all my gear and programs – I'd probably have been a Mac user starting with 10.1."

Here is an interesting [SlashDot](#) story that talks about "My Migration from a Dell Win2k laptop to a TiBook G4" by a web applications developer. After his upgrade "I fell in love with the Mac OS right away. I started working right away. **I became immediately more productive than I ever was on the Dell...** And, yes ALL my ' Windows' files opened-up flawlessly under various OS X applications. Dot zip, dot xls, dot doc, dot ppt, dot pdf, dot you-name-it… Work. Fun. This thing does it all."

There are now quite a few blogs where converts are proclaiming there new found insight. Joi Ito's is somewhat typical when he says: [See Ya Later Windoze](#). "It was much easier than I thought. Now, having switched, I feel euphoric."

In a few sample cases posted at the LEM website, Alan O'Neill [writes](#) that an "Internet Article Leads to Mac Addiction." In a similar vein, Adrian Carter simply [says](#) that "Macs Are the More Sensible Option." And Martin Spenceley writes about his computer development [history](#) in "Sinclair, Unix, NeXT, and Macintosh."

Don Andrews (ref his [homepage](#)) wrote me saying "My background has consisted of 35 years in broadcasting, including senior management and **host or co-host of four computer related shows** in Toronto, Canada. I've interviewed Microsoft, Apple, Adobe, CE Software, Palm, and all the rest. I've owned approximately 10 computers over the years, on various platforms. Years ago I began to learn computers in BASIC and DOS (about 3 machines), but quickly learned of the shortcomings of those systems. Over the years I've upgraded to the Mac platform and have never looked back…"

I have received many emails from enthusiastic switchers (WAY too many to post here). But here is one from Karl, March 2003: "… I bought an Apple about a year ago in an organization which is Wintel-centric. Out of 1400 employees at our site I was the **only one with a Mac**. Twelve months later my partner has since bought one (after finding OS X so easy to use and fault free, with not a virus in sight) and there are now about **40 staff members** who use Macs! (and more who are harassing IT for new hardware of you-can-guess-which particular flavour). I don't see myself as a fanatic though, the machines tend to sell themselves…"

In late 2003, MacNet had an [article](#) where they analyzed the main reasons PC people (who had contacted them) had switched to a Mac. Quite a few people then wrote educational comments about this article. Awhile earlier, MacCentral also ran a story about people who switched, and why they use Macs. A lot of good quotes are found [there](#). Here is an interesting [collection](#) of letters (read part one as well) from former Wintel people who are enthused about living Microsoft Free. Some insightful observations here! Another superior resource on this topic is the collection by [MacSpeedZone](#).

Here is [Apple's](#) overview presentation to switchers. It includes some information on actual [switchers](#)… Here is an informative [interview](#) by *OSNews,* of one of the Switchers that appears in an Apple ad. The [West Branch Times](#) has an additional easy-to-read background story about another person who appeared in one of the ads..

OK, so you're intelligent enough to want to give the Mac a try. Your first question is probably: which one? Two articles may help: [Which Desktop Mac Is For You?](#) and [Which Portable Mac Is For You?](#)… Apple [answers](#) what may be your second question: how well will my Mac play with PCs?
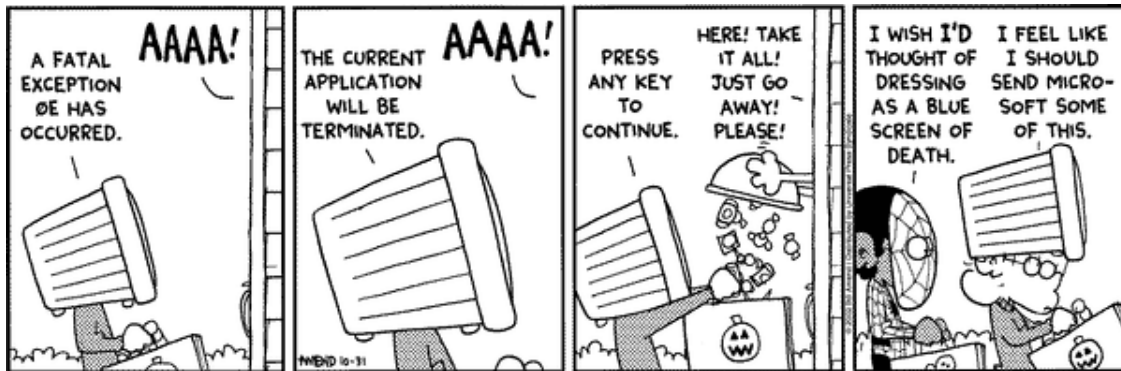
Let's assume you keep moving forward. Written by a web producer Terrie Miller, this informative [O'Reilly](#)

series of articles is about "I've Switched from Windows, Now What?" To also feed the same demand, this November 2002 story answers several typical questions Wintel users usually have. This report goes into considerable detail as to how Windows users can make a smooth transition to the Mac world. And this useful 2004 one is about "Switching To A Mac On A Budget."

Not to be outdone, CNet has had stories about "The Great OS Switch", plus the Mac Starter Kit which says that it is child's play to make a switch. "To make things even easier, we picked out the gear that you'll need to you handle your Mac like a lifelong pro right off the bat. With the right equipment and Apple's built-in options, you'll be on your way in no time. And remember: **once you go Mac, you never go back…**"

They could have added that there is now specific software for Wintel users, Move2Mac (and a story about it), that will move their files and preferences over to a Mac. The company says that transferring 500MB of files is a process that takes around 15 minutes. Lastly, if a Windows person has some special attraction to Commander, then they can get Disk Order and be a happy camper.

Microsoft just wouldn't be Microsoft if it couldn't copy Apple in almost everything. No exception in this area. In early October of 2002, an ad, titled "Confessions of a Mac to PC convert," was posted to Microsoft's Web site. The article purported to be an unsolicited, objective, first-person account of a writer who decided to switch from an Apple Macintosh computer to a PC running Windows XP.

When this unusual claim was investigated, it turns out that she was an **employee** at a public relations company **hired by Microsoft,** and had been **PAID** to say what she said – *and* Microsoft used a phony stock photo, instead of her real picture in the ad. Due to the immediate bad publicity, Microsoft promptly pulled the "ad" and called it a "mistake." See these reports by CNet and Mercury News.

What I also find intriguing is how quickly – and with how much power, Microsoft did damage control. For instance, although the page was originally on Google, within **one day** not only had Google removed it, but also they deleted the cache copy that they keep for almost everything.

But here it is, that very hard to find, infamous page, with extra editorial comment added by GeekTimes.

Conclusion: *It's up to you whether you learn the hard way or the easy way. If you prefer to have your computer experience be less problematic, then SWITCH TO A MAC.*

This section's Haiku
(see the bottom of page 1 for more explanation):

You step in the stream,
But the water has moved on.
This page is not here.

— Section #12 —

What They Aren't Saying...

Maybe the best way to start this section is to quote Mick O'Neil, who defines a new term in The Scholastic Macintosh.

"Winertia is the tendency of school system or university to adopt Windows-centric (the industry ' status quo') procurement policies despite an overwhelming argument that Macintosh networks are **easier to install, cheaper to maintain, and easier to use** in an educational environment. Logic alone is not enough ' force' to affect a change in a winertia-based system as educational decision making often has more to do with **politics** than **productivity**."

Despite that warning, most PC/Windows proponents will insist that their decision **is** based on logical considerations. If that is so, then here are a few Mac facts that you can present (that they are unlikely to mention when they are arguing to standardize on PCs). Their receptiveness to this information will give you a good indication of just how much ' logic' went into their PC/Windows decision…

1 - Numerous studies have shown that **students are more creative and more productive with Macs than with PCs** (e.g. look at the very worthwhile IDC report [a PDF file] as well as the Evans report [PDF], both of which we have already referred to. Here is what a student says: Think Different. And here is more research data.)
  [*Of course, this assumes that the Macs have been properly kept up-to-date.*]

  A detailed report from Gistics (PDF) states "Macintosh users typically master twice as many tools as their Windows counterparts." (*Wouldn't this be a rather* **big** *advantage in an academic environment?*)

  Still another report, this one from Arthur D. Little Corp, concludes that: **Mac users (e.g. teachers and students) are 50% more accurate and 44% more productive than Wintel users**. (*Seems that these would be* extremely *important objectives for schools: accuracy and productivity.)*

  On a related note, the UK government agency BECTA launched a digital-video pilot in October 2001, issuing 50 UK schools with an iMovie-equipped iMac and a Canon digital-video camera. Feedback from participating schools – including a young offenders institute – showed that the project resulted in an **improvement in pupils' behavior, motivation and attendance.** The aim of the project was to identify ways of inspiring pupils' creativity, and to gather evidence on the impact of information and communications technology on team-building. And similar.
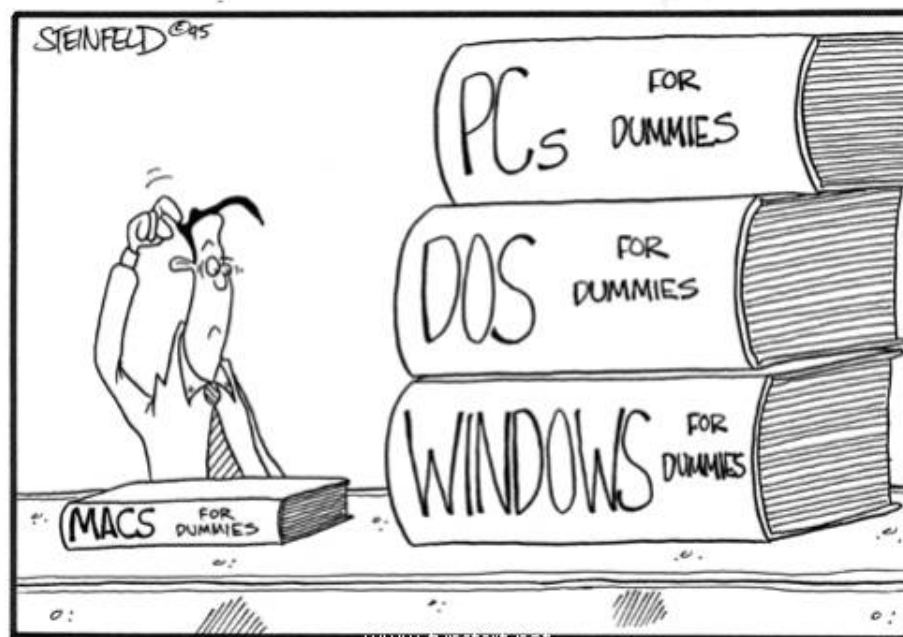
  Confirming these is the experience gained from the state of Maine purchasing 17,000 Macs for it's seventh grade students in late 2002. The *Christian Science Monitor* reports that "A mid-year evaluation, conducted by researchers from the University of Southern Maine, found that students using the iBooks were **more engaged in school**, **doing more homework**, and **misbehaving less than in previous years**." *Should I repeat those findings?*

Another perspective was provided by an engineer with over 15 years of PC experience: "The main goal of a graphical human interface is to ease the use of a computer through a visually consistent presentation of data, related information, objects to perform actions and relations between entities of all kinds. Consistency is what makes possible learning what a computer can do through a natural everyday use of all kind of software.

"The Macintosh graphical human interface is, by nature, by programmer's habits and by traditional users vigilance, **calibrated to ensure consistency**. It helps acquiring visual shortcuts naturally. This makes the perception of a situation more "a snap", so that the system makes you comfortable making a decision at any time.

"The Windows graphical human interface is different. Some objects have been made intentionally globally redundant. The close box of a window being the same as the "Cancel" button most of the time, and the same as the "OK" button in other cases are examples. This is an example of what makes consistency in Windows more of a bonus functionality than a guideline users can rely on. Moreover, some programmers don't use this redundancy twice the same way and a close box sometimes does "OK" in a window where "Cancel" should be the behavior user thinks is right (Too bad ! Try again...). The most puzzling for the user is that they have to remember when the thing happens (and probably to learn it is changed in the next revision of the software). These Wintel interface issues hinder learning and discourage creative thinking."

Lastly, since it is a well-known fact in the business world that the majority of creative professionals use Macs (e.g. see), how much deductive capacity does it take to figure out that students would also be more creative on Macs?

2 - Essentially <u>every</u> independent survey ever done has shown that **teachers prefer working with Macs over PCs**. (As just a few examples, please refer to the IDC report, (PDF) or this high school Distinguished Educator's paper, or this college professor's VERY detailed analysis. Another educator elaborates on several reasons Why I Prefer Macs in the Classroom, as does another, and still another.)
  [*These <u>again</u> assume that the Macs have been **properly maintained.**]

This conclusion should be no surprise, as in the Computer Intelligence InfoCorp's Consumer Technology Index study, (identified as "the largest, most comprehensive study of personal computer usage in the United States"), they evaluated the degree of **user satisfaction** of more than **50,000 computer users** at home, in self-run businesses, and in businesses where the employer provides the computer.

In **every** market, the **Macintosh was rated FIRST in user satisfaction**. By a long shot.

Another reason why is **exceptional** software support provided for teachers. For instance Apple Remote Desktop features "powerful assistance tools that help teachers make learning more effective. You can monitor your students' progress, help the kids who need individual attention – and make sure everyone's working on the lessons you've assigned them."

Read the **profound** conclusions of this independent, comprehensive teacher assessment (the Teaching, Learning and Computing Study by the University of California). Here is only a small part of what it says:

> "We found that teachers with Macintosh expertise are more constructivist in both philosophy and general teaching practice than are other teachers [i.e. those with Windows/PC expertise]. That is, their teaching was more likely to involve designing activities around teacher and student interests (rather than in response to an externally mandated curriculum), having students engage in collaborative group projects where skills are taught and practiced in authentic contexts (rather than in a sequence of textbook exercises), focusing instruction on students' understanding of complex ideas (rather than on definitions and facts), teaching students to self-consciously assess their own understanding, (in contrast to multiple-choice testing modeling learning)… "

> *Just exactly what ELSE do you need to hear?*

3 - Countrywide experience in all levels of educational institutions and businesses has conclusively demonstrated that **Macs are easier to maintain than PCs**. This means less downtime. Lower maintenance also means **LESS COST**.

In the U.C. Berkeley White Paper On Platform Choice, their Director of Computing says that it is "our belief is that it is less expensive to support Macs; they have less downtime, and problems are easier to troubleshoot…Various other studies corroborate our experience." [*We have provided numerous other citations to support this, on prior pages, e.g.* here].

> (*Wouldn't easier maintenance, less downtime, and lower cost be important in an academic setting? Duh…*)

4 - Apple is the technology leader in the computer business. Period. For example, Macs provide features (like the Sherlock Internet search engine, DiscBurner software, iTunes, iPhoto, iMovie, iDVD, Airport, Rendezvous, iLife) not typically available on any PC, or are an extra cost. (Note that Apple has over 100 times the number of Patents than the typical PC box assembler has. Apple Computer also holds more than twice as many computing patents than does Microsoft.) Two interesting lists of Macintosh innovations (Encyclopedia4U and Sharky list) will put the situation in perspective.

> In the same vein, Apple has won more awards for innovative software and pioneering hardware than Microsoft and all the PC assemblers **combined**. In August of 2002 the Academy of Television Arts Sciences announced the recipients of the Primetime Emmys for engineering and animation. Final Cut Pro and Apple were one of the Emmy winners for "their innovative developments in film engineering." Last year Apple's FireWire technology was honored by the Academy of Television Arts & Sciences for its substantial impact on the television industry.

> In 2003 Apple won two Industrial Design Excellence Awards (IDEA): one for the powerful G4 powerbook, and the other for the extraordinary XServe server. In 2003 Apple's PowerSchool won a prestigious Codie award. In November of 2003 the new G5 Mac was *PC Magazine*'s grand prize winner. Etc.

> Apple also won (for PowerMac G4, Pro Mouse, and Cinema Display) the 2002 Consumer Product Design Of The Year, sponsored by DuPont Engineering Polymers. Elsewhere, England's D&AD (Design & Art Direction) Society noted Apple's consistent record of having its design achievements recognized. In 2002 Apple's iPod took a much-coveted Gold Award, marking a major achievement in the eyes of the 230-strong judging panel. Apple's iBook and PowerBook G4 Titanium took Silver awards. No other company has received such consistent recognition from the society. D&AD Jury foreman Dick Powell explained: "Well-designed products continuously remind you of their excellence. Apple has long understood this – investing heavily in Emotional Ergonomy that rewards consistently."

In February 2002, Apple won a Technical Grammy Award. In presenting the company with the award, the association said this about Apple (and similar remarks would apply to **several other fields**, like video, printing, etc.):

"Apple Computer is considered the **leading architect in bringing computer technology into the studio and revolutionizing the way music is written, produced, mixed, recorded and creatively imagined**. The introduction of the Macintosh in the mid-1980s helped launch a number of important software breakthroughs, linking technology to the creative process, and literally changing the face of the recording studio.

"Almost immediately, developers began creating revolutionary tools for playing, recording and editing music, all solidly grounded in the Mac's user-friendly interface. **This made the Macintosh virtually synonymous with the computer-driven production techniques of the last decade.** Over time, with a Mac and the right tools, a single person could compose, perform, record, edit and mix the instrumental portion of a song or entire album. Thus, the Macintosh became the touchstone of a new model for producing recorded music.
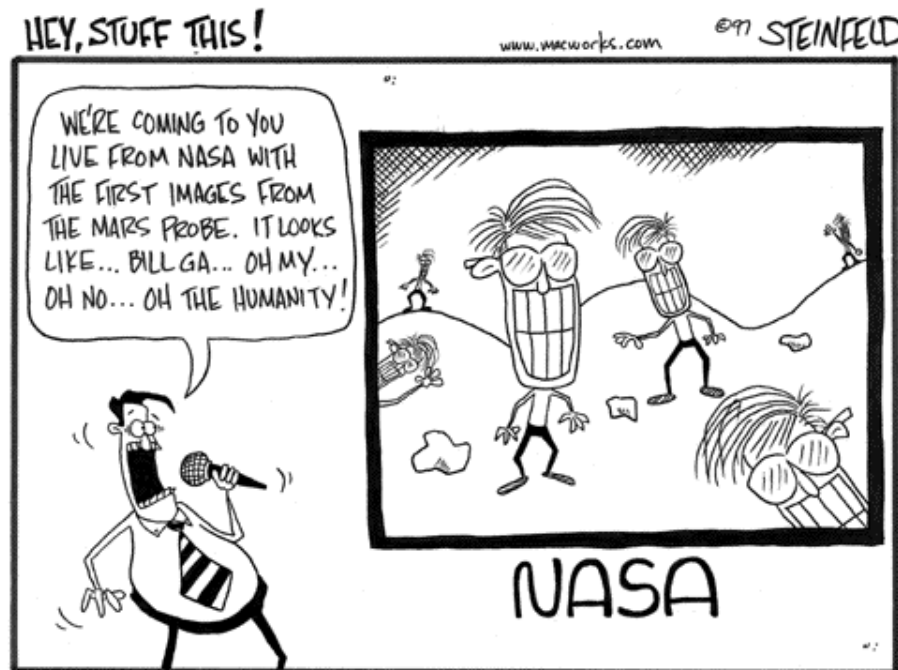
"The creation of the Macintosh sparked a flurry of creativity that continues today. With the Mac's powerful new processors and new, Apple-driven applications – such as DVD Studio Pro – **Apple continues to build on its historic role in moving studio technology forward**."

(*Isn't having creative and challenging software*
– along with the most technologically advanced computers –
important *for our students and teachers?*)

5 - Macs are significantly **less susceptible to virus attacks.** (Currently there have been some 300 identified Mac viruses, but over **70,000** PC viruses. This is **not** a typo:
SEVENTY THOUSAND Windows/PC viruses .)

Here is what one virus info site says "The good news for Mac users is that the majority of the adware & spyware industry is focused on developing their "malware" to target PC users through ActiveX controls and DILLs that only work on Windows based computers." This September 2003 report by the *Wall Street Journal* says "If You Are Getting Tired of Viruses Get A Mac."

An August 2003 letter by the US Computer and Communications Industry Association (CCIA) has urged the US Department of Homeland Security to avoid using Microsoft software… It accuses Microsoft of being more interested in economic marketing and competition than security and said the lack of diversity within a network system 'amplifies the risk emanating from any vulnerabilities that do exist'."

CCIA cites these recent examples: "Design flaws in Microsoft's products have recently been responsible for temporary closure of Maryland's Department of Motor Vehicles offices, failure of the passenger check-in system at Air Canada, an intrusion on the Navy-Marine intranet, and cancellations and suspensions of service on the CSX railroad. Additionally, a Microsoft exploit managed to disable a safety monitoring system at an off-line nuclear power plant."

A recent superb report says "Some of the nation's leading computer science and network security experts today issued a report warning that the computers and critical technological infrastructure worldwide are increasingly vulnerable to attack because of the security practices and dominance of Microsoft software in desktop computing. As a result of Microsoft's concerted effort to fortify and expand its monopolies by tightly integrating applications with its operating system, and its success in achieving near ubiquity in personal computing, our computer networks are now susceptible to massive, cascading failures."

Read what FBI employees (i.e. people who are not only sensitive about security, but people who know a thing or two about security) say about Macs (1/04).

Base on similar experiences, it shouldn't be surprising that **Apple servers are much more secure than Windows servers**. (Nationwide experience shows that there are significantly fewer hacks onto Mac servers by students than on PC servers.)

People using Windows servers are trusting that their IT professionals will provide them a safe barrier. This January 2004 story says that this is an illusion: "Many IT pros feel helpless in the battle against the constant barrage of worms and viruses. When using antivirus software, the general rule is to update automatically or download the latest virus definitions at regular intervals. But the problem with antivirus software is that it only offers protection for known viruses; therefore, the software is only effective when it can detect specific patterns in viruses and worms. But someday this may not be possible."

6 - **Macs can read PC diskettes/Zips/CDs/Pen Drives** without any additional software. (This means that students with PCs at home can bring in almost any documents and these documents can be used and edited on a Mac. Again, the reverse cannot be readily done with PCs.)

Need to know more? The superb MacWindows site provides tutorials for just about every cross-platform aspect imaginable.

7 - All OS 9.x (and later) **Macs can be set to automatically update their OS software** from an Apple website. (PC's have adopted this idea as well, but do not do as thorough a job of it. This December 2003 article from Stanford University mentions just some of the issues.)

8 - The sensational Mac OSX G5 XServe server, compared to Wintel models, is less expensive, has higher performance, and offers features they simply do not have.

For example, the system administrator can update their one Mac server which **immediately updates the system software of all Macs on their network** NetBoot (PDF). This can't be done as well on the Windows/PC servers. (One PC tech wrote me "The vulnerabilities of enabling NetBIOS on a PC are quite horrific." This article says "NetBIOS is enough to make admirers of Microsoft grimace. It is a twisted version of the Net.."

Another relevent example is regarding Internet Content Filtering: an issue very dear to educators. Most PC schools I have seen try to solve this by:

1) installing filtering software on each computer [e.g. Filtergate]. This is moderately expensive, very time consuming to administer, is not cross platform, and could likely be bypassed by a motivated student.

2) utilizing a Firewall Appliance with filtering software (e.g. SonicWall Pro 3060). This is a better solution than #1, but can be very expensive (e.g. five year cost = $7,000±).

3) utilizing a server with filtering software (e.g. InterGate). This is a good solution, which is moderately expensive (e.g. $1000+ for 100 computers).

Compare these to using a Mac XServe. One of the BIG benefits of using a UNIX business-class machine is the availability of a **lot** of inexpensive software solutions. Here, for example, there is Squid with DansGuardian (& maybe SquidMan or SquidManager for more GUI).
—> This provides FREE content filtering! <—

9 - This January 2004 article says that **you are already using a Mac** – so why not move up to the real thing? Read some of the Switcher stories we mentioned, and you'll see that upgrading will be a productive experience, a good thing, and a fun time. Read what happened when a clinical psychologist hired by another computer company tried to talk Mac users into changing.

10-**Apple is very motivated to expand on its school business, and as such is willing to negotiate any issue**.

> For example, I have been involved in several cases where schools got prices for computers from Dell, etc. They then went to Apple Ed and got prices for Macs with equal performance, same specs (RAM, etc.), same three year warranty, and extra features (e.g. Bluetooth). In EVERY case the purchase price for the Macs was **less** than the Wintel boxes – and in some situations, *significantly* less.

Consider these FACTS about Windows:
-> Microsoft admitted on their own website that **Windows NT 4.0 has more than 10,000 bugs.** (Cybermedia's First Aid 98 said it "Fixes more than ten thousand Windows problems.")

-> Think that is an exaggeration? Well an internal Microsoft memo actually says that the final version of Windows 2000 has something like **63,000 KNOWN defects**.... And Microsoft shrugs this off (note: *Microsoft did NOT deny it*) by saying that such bugs are a normal part of the computer software business... **63,000 defects**...

Microsoft today published the full bug list for its Windows 2000 operating system. For the first time ever, all known and reported bugs are to be made available to the public. Mr Hyan-Lee of Japan (photographed above) made the mistake of printing the whole list ....
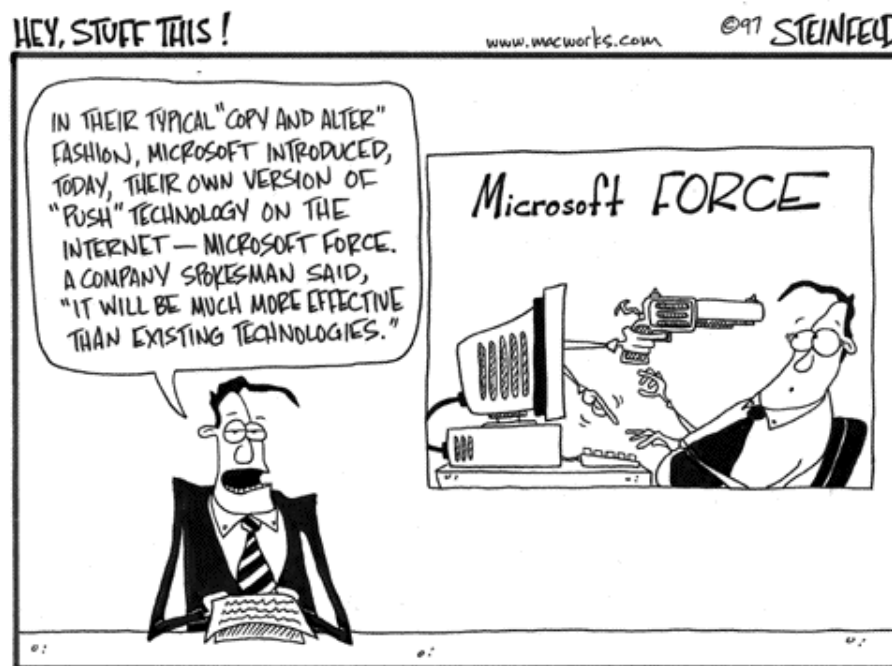
-> At another publication, a Windows PC industry expert calls Windows 2000 "a failure". And Microsoft secretly agrees.

-> You won't likely hear Windows/PC proponents telling you about the numerous problems that you are likely to encounter with a Mac to Wintel regression. This University of Oregon report outlines some of them.

-> And how about general security issues? Just check out the huge list just of Word 2000 security updates. Stanford University says that Microsoft security fixes have been coming at the rate of about once a week – over the last two years! Apple doesn't even remotely have this level of security problems.

-> Because of its increased security costs, some insurance companies charge Microsoft Windows NT users higher premiums! (Information Security Magazine: 5/01)

-> On a related matter, the late 2001 Morgan Stanley study reports that, when it comes to Microsoft's products, there is a long way to go before they will find their way into the data center of large organizations. Morgan Stanley asked the questions as part of its regular CIO series of surveys, questioning more than 200 CIOs about core issues, and it found "**a lack of belief in the Microsoft product set.**"

-> One astute insight by Mr. Dan Knight is to look more closely at **why** more Windows computers are bought: "**Part of the reason is the planned obsolescence of the Wintel platform.** Every year Microsoft and Intel get together to set a minimum level of hardware for the next year's computers. After about three years, Wintel computers cannot be economically brought to this level, so users are forced to buy new computers. (This was one reason the Department of Justice investigated Microsoft and Intel for monopolistic practices.)"

This secondary school's website lists five major reasons why they prefer Macs to Windows/PCs, and provides **dozens of references**.

Read this superb collection of articles gathered (into 2004) at Why Choose A Mac.

Look at Why Buy Macs? for an excellent (**and current**) discussion.
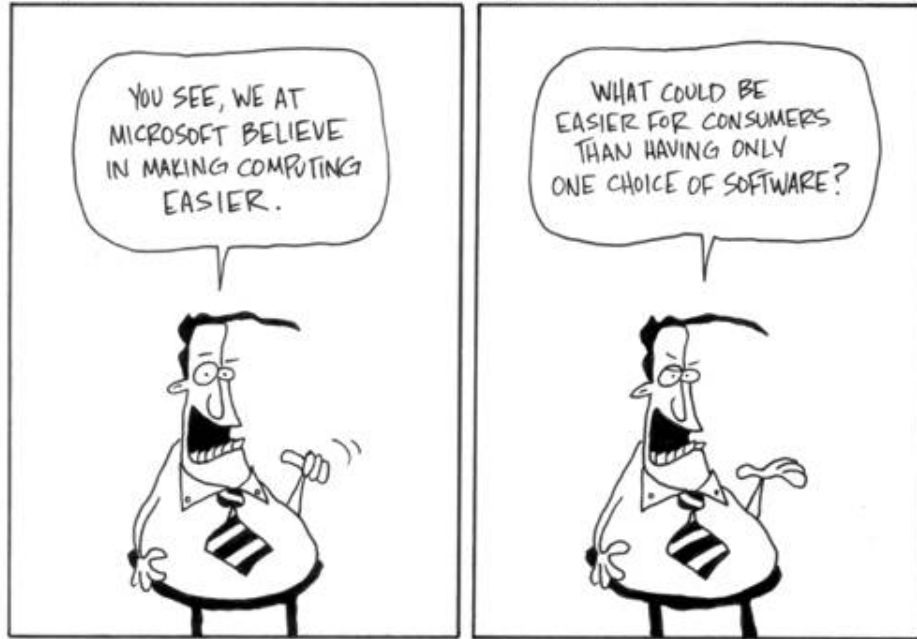
Read Bill Palmer's Education Resources.

This 2001 Technofile article writes about Why I Recommend an iMac.

Jeff Adkins writes an excellent 2003 report, explaining to his school board why Macs are the way to go.

HEY, STUFF THIS! www.macworks.com ©98 STEINFELD

Panel 1: YOU SEE, WE AT MICROSOFT BELIEVE IN MAKING COMPUTING EASIER.

Panel 2: WHAT COULD BE EASIER FOR CONSUMERS THAN HAVING ONLY ONE CHOICE OF SOFTWARE?

This November 2001 Knight-Ridder article says For a dependable, easy-to-use computer, why not a Mac?.

Robert Palmer's website lists eight categories, explaining in each Why The Mac Is Better.

This TechTV feature article elaborates on The Benefits Of Mac Ownership.

Read Apple's PDF document for some of its reasons Why Macs Are Better.

Visit here for a good list of pdf articles relating to Macs vs Windows.

A good collections of sites that compare Macs vs Windows/PCs is at About.com: Mac vs PC.

I hate to overwhelm people, but here is a HUGE collection of quotes, facts, etc. of why Macs are the best choice. (*Ed: because of its size it takes awhile to load.*)

Check out Mr. Hubbard's site for a good collection of references, several oriented to education users.

See this for an excellent series of discussions about debunking Mac Myths.

Read Dave Marrathon's Why Mac list of dozens of Pro-Mac links.

Three good sites with a large list of references pertaining to Mac advantages are: Macfacts, Josh Meister's Apple Rules and Arnspub (some broken links).

The media research group Nielsen/NetRatings released an August 2002 report about Internet usage patterns over six months for nearly **100,000 home and business computer users** around the country. T.S. Kelly, director and principal analyst for Nielsen/NetRatings said: "No other report we've done has had this kind of interest…"

"Among other findings, it revealed that 70.2 percent of Mac Internet surfers possess a college or post-graduate degree, compared with 54.2 percent of all Internet users. Coupling this information with other facts points to the conclusion that Mac users have higher intelligence." In the CNet story about the same report, they wrote that "**Those who surf the Web using a Mac tend to be better educated and make more money than their PC-using counterparts, according to a report from Nielsen/NetRatings.** The study also said Mac users tend to be more Web savvy…"

Read some conclusions of a large school MIS person, which include the following:

"The argument that a visit to Best Buy reveals the popularity of PCs and the scarcity of Macs is a perfect example of what is called "increasing returns" in economics, and "strange attractors" in a branch of mathematics called "chaos theory".

"An economic viewpoint has been developed by Stanford Professor W. Brian Arthur, who developed the theory of increasing returns to explain a phenomenon that takes hold in industries characterized by congealed knowledge with little physical content."

Professor Arthur mentions several examples of increasing returns, but most applicable to our situation is computer operating systems. In the early to mid 1980's three operating systems were in use: CP/M, DOS, and Apple's Macintosh.

"One of these (DOS) was clearly inferior, yet it became the standard. Why? Because it was adopted by IBM (and the clone manufacturers). Once a slight lead was established, software developers had an incentive to support the front-runner. This caused more people to gravitate toward that platform, thus further incentivizing software developers. The resulting positive feedback loop caused DOS (and now Windows) to assume a lead position, EVEN THOUGH THEY ARE CLEARLY INFERIOR TO OTHER CHOICES."

As author of this site I get a **lot** of email. Occasionally (less than 5%) it is not charitable. Recently it was suggested that to get really informed that I should read some anti-Mac info at a site (revealingly) called Apple Sucks. Being open-minded, I did.

On that page the author (unidentified and with no email link… hmmm) references several other sites. [*Note as of 6/1/02 this enlightening page suddenly disappeared. I am showing you the original text version.*] The first one is his/her favorite where he/she exclaims: "I Hate Apple - A GREAT site full of technical comparisons. They do REAL benchmark tests with Macs *vs* PC's. I highly recommend this site to anyone who wants to know the real technical nitty-gritty." (Emphasis is his/hers.)

So I went on to ' I Hate Apple' to see what THAT person had to say. I found a long technical comparison of a Dell Dimension to an older model iMac. What is interesting is in the last paragraph, where this **anti-Apple person** concludes that the Dell PC's: "total failure in the video card area makes it unsuitable for the home user. So my pick for the home user in this comparison is the iMac. **It boasts far superior gaming abilities and with Firewire and iMovie it makes a fun weekend tool to use making family videos to send to your relatives.**" (My emphasis.) *Sounds like these anti-Apple people are on to something!*

This April 2002 Boston Globe story says: "**The best home computer has a sharp, attractive flat-panel display, an elegant off-white semispherical case, and a silver Apple logo.** But what puts this iMac over the top is its CD burner, and the software that goes with it. It's called SuperDrive, and there's not a lot it won't do. Of course it plays and burns standard music CDs. It also plays and burns DVDs – the high-capacity disks that are becoming our favorite way to watch movies…"

"You don't have to buy a Mac to make your own DVDs, as there are burners for PCs as well. But these tend to be aftermarket afterthoughts. There's a nice burner, and a jumble of photo- and video-editing software. None of it is well-integrated with the underlying Windows operating system, or with Microsoft's pitiful Windows Movie Maker software. You can make it work, but it takes considerable effort."

In October of 2002, Apple's Senior VP of Worldwide Product Marketing Phil Schiller, Senior VP of Software Engineering Avie Tevanian, and Director of Mac OS Product Marketing Ken Bereskin met with *InfoWorld* editors for a remarkably candid and informative interview about Apple's future plans. A good read!

Here are some miscellaneous tidbits to chew on:

-> Apple's market share is greater than that of Sony televisions, and the COMBINED shares of ALL European passenger cars sold in the U.S., including Mercedes, BMW, Volvo, Jaguar, and Porsche. (Appliance Mfgr & Market DataBook of Automotive News)

-> In 2002 ZDNet conducted an online poll, which was replied to by over 11,000 readers. Some **90%** voted that **Macs were better than Windows/PCs for schools.**

-> Contrary to the impression given by PC geeks, you CAN actually build your own G4 computer! Here is one site that gives details, and another.

-> The Apple **iMac is the best-selling computer in CompUSA's history**.

-> A **new Mac is sold every 9 seconds**.

-> A September 2001 Wired story says: "With Hewlett-Packard gobbling up Compaq, Gateway slashing staff and Dell driving prices to rock bottom, the PC market has turned into a bloody battlefield. **But the big winner could turn out to the only player in desktop computers that doesn't make a PC: Apple**.

-> "PC makers are stuck trying to make money selling identical boxes full of computing power that no one really needs. With **no brand loyalty and nearly identical products to sell,** the only way to attract customers is to cut prices down to the quick. Dell is leading the industry down that rocky path. The PC price war has been on for months, and everyone is losing. Or are they?… While the PC sector is consolidating and cutting back, Apple is boldly expanding."

-> A Harris Interactive study found that 53% of those who owned Macs and bought new computers in the first 9 months of 2000 purchased Macs. That is the highest retention rate for **any brand of personal computer**, including all the leading Windows brands.

-> The **Mac OS is available in over 35 different languages.**

-> In 2003 SmartMoney published an analysis of portable computers. They said that Apple portables "**are better than Windows laptops at handling music, photographs and movies, and for burning DVDs**. Plus, they are **quite competitive on price**, versus comparably equipped competitors."

-> Despite Intel trumpeting how fast USB 2.0 is, the facts are that Firewire/IEEE1394 (which has been included with Macs for years) is a much as "70% faster."

January 24th, 2004, was the 20th anniversary of the release of the Macintosh. (Here is the famous Apple Superbowl ad [a 3 MB Quicktime movie].) Note how the message is extremely pertinent still today. The timelessness of the ad is one of the reasons it has probably won more awards than any other ad, of ANY kind, in history.

There were MANY stories written about this momentus event. Twenty Years Outside The Box gives a good overview. *St Louis Today* says "You could argue that every PC is a Macintosh…" Yes we could. "Apple's Place In Home Computing" also gives some good insights.

One of the main reasons for their continued success, is the ingenius products that continue to eminate from Apple. In early 2004, for example, GarageBand is getting major buzz. To begin with its **free** with any Mac.

SiliconValley says that it "breaks new ground in how simple it makes the music creation process." *USA Today* states "Because GarageBand is seamlessly tied together with the other iLife components, your newly created masterpieces can easily serve as the soundtrack for a slide show or family movie, or be transferred to a demo CD, DVD or portable iPod digital music player." And this simply says "GarageBand Rocks."

See what else CBSNews liked in the Fall of 2003.

-> Contrary to what uninformed people have told you [Macs and PC's Get Along Fine](#).

-> Many people associate IBM with Microsoft, but in actuality IBM is on better terms with Apple. For example, the latest microprocessors in Macs (G5s) are **made by IBM**. [Read [more](#) about IBM making high speed Power PC chips for Apple.]

-> Being a Mac user is like being a Navy SEAL: a small, elite group of people with access to the most sophisticated technology in the world, who everyone calls on to get the really tough jobs done quickly and efficiently.

<u>**Conclusion**</u>: ***If you want the best performing, lowest cost, most fun, least problematic computer —get a Macintosh.***

This section's Haiku
(see the bottom of page 1 for more explanation):

Three things are certain:
Death, taxes, and lost data.
Guess which has occurred.

---

rev: October 21, 2004

— Section #13 —

Mac vs PC

The study of why Macs are better than PCs

Why Use Macs in Your Local School

— A Very Brief Summary —

1 - Numerous studies have shown that **students** are **more creative and more productive** with Macs than with PCs.
   [*Assumes that the OS on the Macs has been properly kept up-to-date!*]

2 - Essentially <u>every</u> independent survey ever done has shown that **teachers prefer working with Macs over PCs**.
   [*This also assumes that the Macs have been properly maintained.*]

3 - <u>Countrywide</u> experience in all levels of educational institutions and businesses has **conclusively** demonstrated that **Macs are easier to maintain than PCs**.

4 - **The lifetime of Macs has always been longer than PCs**. The typical reported averages have been 6+ years for Macs and 4± years for PCs. (For instance, in our local North Carolina schools there are still eight year old Macs in daily use. No eight year old PC is in daily use throughout the entire NC school system – if not the country.)

5 - When factoring in **ALL** aspects of ownership (including purchase price, technical support, setup time, maintenance, training time, network management, years of useful service, cost of electricity to operate, etc.) **Macs have consistently been shown to be LESS EXPENSIVE** than <u>any</u> Windows/PC alternative – typically by over **<u>$400</u>** per <u>year</u> per <u>computer</u>.

6 - **Apple is the technology leader** in the computer business and provides features (like the Spotlight Internet search engine, Bluetooth technology, etc., etc.) not normally included on PCs. (Note that Apple has over <u>100</u> <u>times</u> the number of Patents than a typical PC box assembler has. They also have over twice as many computer related patents as Microsoft has.)

7 - Apple is unlike virtually all of its competition in that it develops and builds BOTH the basic hardware and the Operating System. This is a compelling reason why Apple is better positioned to retain its lead in **reliability, quality, innovation, better integration of hardware and software, etc.**

8 - Macs are significantly **less susceptible to virus attacks.** (Currently there have been **zero** identified Mac OS X viruses, but over <u>80,000</u> PC viruses.)

9 - All current Macs **can run Windows** (all versions, including XP) and its software, **for FREE**. Files can also be moved cross-platform! PC computers cannot similarly run Mac software.

10-**Macs can read Pen Drives/Zips/CDs/PC diskettes** without any additional software. (This means that students with a PC at home can bring to school almost any document, and these documents can be used and edited on the Mac. Similarly, they can convert their AppleWorks document into a PC version to be brought back to their home computer. PCs do not offer this degree of flexibility and ease of translation.)

11-All OS 9.x and 10.x **Macs can easily be set to automatically update their OS software**. (PC's have tried this idea as well, but do not do as thorough a job of it – e.g. in the area of drivers.)

12-With OS X **Macs have the power and flexibility of UNIX software** with an easy to use graphic interface. At the same time, users can switch to the Classic mode and run any OS 9.x software.

13-With Mac OS X servers, the system administrator can update their <u>one</u> Mac server, which **immediately updates the system software of <u>all</u> Macs on their network** (NetBoot). Again, this cannot be done on Windows NT servers often used by school districts.

14-**Apple Servers are more secure than Windows servers**. (Nationwide experience shows that there are <u>significantly</u> fewer hacks onto Mac servers by students than onto PC servers.)

15-If your school district already has an **investment in Mac hardware, software and training**, this money and effort will be seriously undermined by standardizing on PCs.

16-Considerably more important than having a "Windows experience" is that students learn keyboarding, master word processing, can create spreadsheets and charts, can put together multimedia projects, have expertise with working on the Internet, develop an ability to use the computer as a powerful tool, etc.,etc. **Learning <u>all</u> of these important <u>skills</u> is easier on a Mac**.

17-There is an **unusually** strong community among Mac users. Why does this make a difference to educators? Well, take our NC area as an example. A Mac users group was *specifically* started here with the intention of providing a resource for **free extra training for teachers** and students. They have had monthly meeting for some eight years now. No such PC group exists.

18-**Apple is <u>very</u> motivated to expand on its business with schools, and as such is willing to negotiate <u>any</u> issue**.

This section's Haiku
(see the bottom of page 1 for more explanation):

The web site you seek
Can not be located — but
Countless more exist.

rev: May 23, 2005

— Section #14 —