From: Bryan Campbell
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A Cornerstone Technology for the Twenty-First Century

"Home users who buy new PCs don't have much choice in operating systems. Once Windows XP ships, nearly all computers will be sold with it installed." "When your six-month-old version of MusicMatch Jukebox doesn't work, you may decide just to live with WMP [Windows Media Player]." The New Windows, PC Magazine 30 October 2001
http://www.pcmag.com/article/0,2997,s%253D1590%2526a%253D15591,00.asp

This phase of the antitrust trial concerning Microsoft products is occurring at one of the most trying times in the history of the United States. The due deliberation given it (going on as does all business) says much about the resolve of the nation and its allies. Personal Computers are vital to the world economy which means even in this dire time the United States needs to ensure the vitality of the whole Personal Computer industry which is a mainstay for the engine of the world economy in this new century. Security is best served by having a strong economy that has the means to lift up the world into a new prosperity as was done after World War II.

At question in this case is the unfettered access to the next generation of the common infrastructure. Microsoft Operating Systems have become the cornerstone for running a myriad of Personal Computers world-wide! These Operating Systems take a place beside raods and highways, electricity, and the telephone system, as infrastructure services that are fundamental to everyday life in modern society. Care must thus be observed with the newest Microsoft system, Windows, to see that it remains a platform any company or individual may build on and garner the full benefits of any innovation.

1. The Revised Proposed Final Judgement gives Microsoft too much influence over how other developers can implement their programs. Section III.H allows OEM installs of non-Microsoft products. That clause is made too narrow by Section III.H.3.2, which states Windows may invoke a Microsoft product (Section III.H paragraph 2) if another product does not meet a "reasonable technical requirement" (ActiveX) consistent with Windows. Once it is in writing, ActiveX support will be a minimum for all programs to meet. That will be anti-competitive by requiring programs to be a proprietary Microsoft ActiveX control as a "reasonable technical requirement" to allow OEM installs when some software firms would prefer to use only Java. Studying constitutions and court decisions is part of my background and I have seen innocuous clauses gain unexpected importance. Section III.H.3.2 could be such a clause causing OEMs to leave Microsoft programs in place. That Microsoft has broad latitude to override OEM software choices makes this Judgement contrary to the public interest. Section III.C of the Judgment, indeed, seeks to leave open such options.

Generally, as Microsoft does not give tech support to OEM built systems, there is not a strong business reason for Microsoft to so closely govern the initial boot. Buyer recourse is to an OEM, which bears the costs of more technical support phone calls if it deploys a confusing initial boot or a confusing configuration. Microsoft costs do not raise due to some inept OEM ideas so OEMs can certainly be left to their own ideas on finalizing systems. OEMs carry the financial burden of manufacturing and selling what they build so OEMs need the freedom to install programs that

make those systems most attractive to buyers. If an OEM markets PCs that misbehave, a Web or other review will quickly make that news and the market will react leading that OEM to fix its error without reflecting on Windows itself. Microsoft paternalism is unnecessary. Not to say that it can not protect the reputation of its product, only that in ensuring Windows works as expected Microsoft does not also stifle non-Microsoft programs because those developers choose to use their own vision on the Windows Operating System.

1a. The revised settlement gives Microsoft far too much competitive advantage because Section III.H.3.1 and its preamble let the Windows Operating System select Microsoft programs to connect to a Microsoft server. That leaves the door wide open to Microsoft specifying, for example, only Internet Explorer may be used to update Windows so people wishing to use other browsers still need be familiar with Internet Explorer. People using the Lynx browser perhaps because of reduced vision or Opera's browser due to physical disability would have no way to visit Microsoft Web sites or to update Windows. This settlement may allow discrimination and or infringe upon the Americans with Disabilities Act (ADA) and perhaps other codes if a secondary route is only left to people with disabilities. (Plus their Personal Computers are painstaking configured to allow independent operation which a central authority is unlikely to be able to clone no matter how strong its motivation!) From a wider perspective, this clause gives Microsoft too much latitude to disregard individual choice.

Other vendors will be reluctant to write similar programs knowing reasonable earnings from the work is unlikely as possible customers will not use a program since Windows may by-pass it at critical times when customers need be most familiar with their programs to ensure successful outcomes. Moreover, the Court of Appeals Ruling on page 30 (using the Adobe PDF rendering) notes having two browsers on systems is unpalatable to OEMs as some customers will phone the support line asking which browser to run. OEMs seek to limit such costly calls so OEMs will not configure systems with two similar programs to avoid customer confusion. Because OEMs carry the burden of product support they need to be able to configure systems to best suit the individual buying a system. Windows is a most adaptable Operating System allowing buyers to run Personal Computers in a personalized fashion, giving OEMs an option to begin the personalization process would be one way to make using a new Personal Computer easier.

Conversely, if via Section III.H.3.1 Windows ignores buyer chosen software to increase ease of use by using only one browser buyers will of necessity run Internet Explorer to be able to update Windows. Some violations the Court of Appeals upheld deal with promoting exclusive use of Internet Explorer, no part of any settlement should allow for any similar eventuality. Microsoft must be encouraged to quickly implement open standards so any browser can interact the same way with any server. The guiding goal should be the example of the telephone system which at one time only allowed equipment built by the phone company to be connected to the system. By the early 1980s, equipment built by any manufacturer was allowed to connect to the telephone system something that helped the greatly expanded types of telephone services available now. Plus at that time telephone companies stopped requiring that handsets be wired into the system by their employees as telephone sockets were fitted with jacks that allow easy connection of handsets. Having seen other technologies become much easier for customers to handle alone it would be most unfortunate to go backwards against that trend by letting Personal Computers appear to be devices that only a central authority can setup.

Car dealers offer customers many options, although the supply chain for assembly is long with an involved manufacturing process. Since car dealers let customers pick items such as seat color likewise OEMs can have options for Web players, browsers, and other preferred software components. (Dell Computer buyers custom configure hardware for new systems http://www.zdnet.com/anchordesk/stories/story/0,10738,2834200,00.html fifth paragraph, doing the same with some Web "plug-in" software merely extends

an existing concept.) Yes the finishing stages of Personal Computer assemble will change to yield widespread benefit as new systems have the newest versions of programs installed.

Customers satisfaction should go up given less need to update new systems with the most recent versions of programs helping lower or hold steady OEMs costs by reducing phone calls to support on what to do when an update causes a malfunction. Microsoft benefits by having some updates done before customers receive systems. A 3 Dec 2001 article at http://www.wired.com/news/print/0,1294,48756,00.html shows a patch which closes many security holes in Microsoft Outlook is very seldom downloaded as a percentage of estimated Outlook users. And that a tiny test group had little success installing the patch. (Having run desktop systems for 23 years, I'm fully familiar with instructions for software I found those for the patch process involved. Not complex, just a process needing diligence to complete.) All software firms try to make updates easy, yet customers, especially the majority not interested in the technology itself, are fatigued by frequent updates. By having the Operating System supply fewer components (where they become outdated with unfortunate speed) OEMs will be able to relieve buyers of some extra setup chores, making them more immediately productive! For retail sales OEMs could provide CDs (which stores could also update) with new versions of programs.

Returning to the comparison with the phone system where interoperability (meaning seamless operation between components from diverse manufactures) reigns supreme the idea that only Microsoft programs (besides when self-updating) be allowed to access Microsoft servers is as inefficient as calling the phone company for customer service merely to be told to call back on handset it built. Possible problems with other browsers using Microsoft servers probably stem from Microsoft placing proprietary functions in its own Internet Explorer browser (please see http://www.pcmag.com/article/0,2997,s%253D1470%2526a%253D4804,00.asp) and then using those function on Microsoft servers. The public interest is only served by universal Web access as exemplified in continental telephone systems where those responsible for the system do not limit customer choice.

1b. My 23 years of experience with desktop class computers (then called "micros") stems from my being a person who is physically disabled (having Cerebral Palsy entails lack of fine motor control, unsteady and shaky movements, and difficulty in moving). That familiarity with keyboards began in about 1961 with I began using a headwand to type on a typewriter. My first "micro" computer in 1978 enabled me to complete a Bachelor of Arts in History by 1982. Even a computer did not speed up my typing though (a photo at http://www.opera.com/press/guides/operapower suggests how I work) so the whole Degree took seven years to finish, letting me to all the reading (and much more) related to the History, Political Economy, and Economics courses for the Degree. A background enabling me to place this case in a broader perspective than is often done, with the skill to look at all factors and sides before writing an analysis.

Vital to note also is the wide power of software to do amazing things! It is software which transforms the diverse components within desktop computers into cohesive wholes able to a universe of tasks. If you do not want to, or cannot hold down two keys at once solutions abound! A two key command can be programmed on to one key or software 'holds' modifier keys like Shift on till another key is typed. Personal Computers adapt to the person. For browsing the first thing I did on purchasing Web access in 1995 was Search for a suitable browser and found NCSA Mosaic 2.1 highly usable. Please see http://archive.ncsa.uiuc.edu/SDG/Software/mosaic-w/releaseinfo/2.1/WBook_60.html for its one key commands which were enough for keyboard Web navigation, at that time. By mid-1996 the Web was more complex and Opera Software http://www.opera.com had a browser that has since filled the bill.

Being able to find and run commercial software is huge a cost saving, too. On the Web site for the White House, "Fulfilling America's Promise to Americans with Disabilities"

http://www.whitehouse.gov/news/freedominitiative/freedominitiative.html says adaptive technology to make Personal Computers usable by people with a disability costs $2000 to $20,000 a system. In comparison Opera and this macro program (to program commands or often used phrases to run by typing one or two keys) http://www.macros.com together cost $65, showing that great software can reduce some expense of making computers usable by people with a disability. Such a large saving is rare, yet it illuminates the power of software.

The malleable nature of software is the vital point as that versatility lower costs. Every program does not have to use the exact same approach to accomplish any task. Most programs even have a few ways to do any one task. Some macro programs carefully guide you through macro building, the one I run also does direct building which is less work for me. Neither approach is more correct, the best solution is the one most suited to the interest and skill level of the person performing the task. With Microsoft moving to place more full programs in the Operating System the best feature of software, its malleable nature, will be lost.

We risk reaching a point where people only know how run a few programs by rote as they service the computer instead of computers serving the individual. In an enlightened age of reduced regulation it is very strange to see Microsoft regulating the Personal Computer industry. Because many clauses in the Proposed Judgement give Microsoft ways around prohibitions, especially Section III.H.3 using the word 'notwithstanding' (meaning despite stated limits Microsoft may have its way), it is no over statement to say Microsoft may now regulate its industry. With it being able to still influence many aspects of OEM systems customers will largely see Windows in the form Microsoft wants, placing it at the center of the Personal Computer letting Microsoft regulate industry affairs. When a monopoly impedes the free flow of products that is at odds with the nominal workings of a capitalist economy and its open markets.

1c. Technology plays its best role in economic growth when it is deployed in a manner that does not favor or give special status to any party (which is separate from financial returns due product creators). Applying that concept to Operating Systems for Personal Computers is illuminating. DOS began in 1981 as a system with the bare essentials to run a computer, some might say so bare that it was like selling an engine with no spark plugs. Other vendors began selling software to perform such essential tasks. In 1991 Microsoft released DOS 5 which later with DOS 6 were the first more complete versions, (http://www.nukesoft.co.uk/msdos/dosversions.htm) less requiring third party software to enable computer features of that day.

Notable these implementations left room for improvement and customer choice. Although by 1993 the engine definitely included spark plugs demanding customers seeking their view of complete computing were free to buy software offering a full of range options in areas like memory-management from a number of vendors. What Microsoft added to DOS are functions virtually fundamental to the workings of an Operating System, yet there was no wide attempt to exclude other vendors from those markets. Windows 95 had improved memory-management so third party software for it all but vanished, which is natural because the Operating System should be able to handle a basic computer resource like memory itself.

To understand the impact of combinations a careful review of whether another product brings a finishing touch to an Operating System does help. Optional utility software to check Operating System integrity and better memory-management refine the Operating System, increasing its ability to perform without incident. Those items represent more intensive development of what the Operating System is meant to do, make Personal Computers ready and able to run programs the owner needs. A built-in browser, media player or the like expands the Operating System without increasing the integrity of that software. Expansion adds to the Operating System without polishing it. When such tying occurs the Operating System can become more difficult to maintain, unlike the customer benefits derived from intensive development.

Problems with an expanding Operating System are illustrated by the security holes Internet Explorer lends Windows. Two articles on http://www.extremetech.com/article/0,,s%3D25124&a%3D21033,00.asp explain matters. "Microsoft Releases IE 'Mega-Patch'" notes that a combined patch now closes various Internet Explorer holes (one even lets someone take over your computer, details on http://www.infoworld.com/articles/hn/xml/01/12/13/011213hnbackdoor.xml). Yet it is not always clear the browser must be updated to version 5.5 before the patch will install, thus after download some people gave up. Brett Glass writes further in the article that stopping is bad, the patch is essential since Microsoft nearly always has Internet Explorer run, (to view email sent in the style Web pages) "unbidden," even if computer "owners" act "to make another browser the default". That means owners using another browser must still maintain Internet Explorer because Microsoft expanded the Operating System to include its own product. That means just not using Internet Explorer does not avoid security problems in Windows. Extra software in the Operating System brings extra problems. This is a particular bad time for compromised security so it is unwise to make people work hard for security.

Despite such hard work the second article, "Internet Explorer Violates Basic Security Principles," on the above link says that how Javascript runs in Internet Explorer makes it vulnerable. Malevolent Web sites can "hijack browsing sessions," steal items like credit card numbers from browser cookies or read sensitive information from files on computers. No patch existed when the article went to the Web on 10 Jan 2002. Disabling Javascript is the only way to seal the gap for now. And that makes the Web very difficult to use since many sites employ Javascript to exchange information with browsers and to have Web page pieces properly placed. An expanded Operating System makes it difficult for people to decide what browser best serves their interests because Internet Explorer asserts itself in Windows.

And it seems silly, at first glance, to seek other programs when the Operating System maker provides software in a persistent manner to do things. That persistent hampers competitors from fulfilling the browser or other functions. Brett Glass notes that Internet Explorer at time runs despite efforts of computer owners to have Windows launch a non-Microsoft browser when a third program requests browser functions. Such behavior is anticompetitive because it will cause some users to surrender and use Microsoft products to get their jobs done instead of toiling to have Windows always use the browser they want. Usually Microsoft says bundling will not inhibit customer choice of software that does not seem to reflect real world experience. Worse than being anticompetitive is that people are led to using software which is not secure. Bringing the discipline of the market is the best way to let customers choose great and secure software uninfluenced by the first blush of tying.

2. How Microsoft dominance and now monopoly in desktop class computer Operating Systems functions demonstrates surprising durability. A product primarily sold on new computers each edition of the Operating System has a fresh plateau to maintain its dominance. Not depending on static plants or structures to provide goods or services in a certain locality means this monopoly is unlikely to weaken due to age, obsolescence, or outside encroachment. Not having to finance and maintain fixed assets to manufacture tangible products means Microsoft is able to quickly apply resources to new challenges without the lag and expense of having to retool manufacturing plants to build new kinds of products. Which is not to say software development is instantaneous or that Microsoft has no costs only that the expenses are not structural, not binding it to one course for any time span. With little to hinder it Microsoft can quickly respond to meet emerging market trends making the monopoly durable.

What sustains the Operating Systems monopoly is fascinating. Increasing yearly sales of systems licensed to run Microsoft Operating Systems created a huge installed base of systems with the hardware specification derived from the first IBM Personal Computer in 1981. About 100 million Windows

client licenses (including corporate updates) now ship yearly, with declining computer prices making it more "enticing" to buy new systems than to try upgrading old ones http://www5.zdnet.com/zdnn/stories/news/0,4586,5100875,00.html. With Windows put on many new systems the monopoly is self-renewing as the equipment it runs on is continually updated. For entities running Windows there is not one large unit or factory to age and be replace by equipment from competitors at one moment in time. Interesting too, is that buyers of the Operating System pay for the equipment its runs on, relieving Microsoft of paying for equipment to maintain the monopoly. Low costs to Microsoft, with no decisive point in the product cycle to switch vendors due to continual buying means the Operating System monopoly is durable and long lasting.

Development of this point stems from the Court of Appeals note that Joseph Schumpeter saw only temporary monopolies in technology. The ruling (page 12) cites Schumpeter's idea of product improvement causing many firms to dominant a market in sequence. A dynamic technology market would appear difficult to dominant for long, as another firm will improve the given item such that buyers flock to for a few years till a third firm replaces it and so on. That works when a given item has no dependances on it. If changing the one item, however, demands that other things must be changed too product improvement has difficulty unseating the first monopoly. Schumpeter's theory does not apply to Personal Computers Operating Systems because Schumpeter could not be expected to foresee the huge network effect in this arena. Producing a better Operating System in isolation will not enable buyers to adopt it. When Microsoft began with MS-DOS and early Windows it did not face a dominant rival "with a massive an installed base and as vast an existing array of applications" (Court of Appeals ruling page 23). Instead of being temporary deep support makes the Windows monopoly most resilient.

2a. Remedies to antitrust activities need to reflect the strength of the Microsoft monopoly. It is very durable so the company is much, much more likely to be able to damage other firms than anything in a judgment disrupting it. Windows is as much a cornerstone of personal computing as are plumbing and electricity to a building. Buyers require Windows to be able to run the programs that form their daily activities and will purchase the Operating System in a basic or its present expanded form. Any discomfort experienced by Microsoft is a necessary of result of allowing the free market to again operate. Bumps in the new open market road are just the expected opposite reaction to benefits from antitrust activities.

In specifying what Microsoft must not do its ability to employ its own interpretations of matters needs to be considered to achieve the desired result. The firm managed to sidestep the 1994 Consent Decree http://www.usdoj.gov/atr/cases/f0000/0047.htm (page nine, paragraph three) item that Microsoft not require notification of any New System line sold with no Microsoft Operating System. In a most innovative fashion, Microsoft had a contest in early 2001 to have system builders inform Microsoft of systems shipped without Windows. Builder employees gained more valuable prizes for telling Microsoft of higher numbers of non-Windows system sales. Microsoft wanted to see that Enterprise licenses are not misunderstood as covering new systems, a necessary thing noted in, "Microsoft offers PC builders prizes to be finks" http://www.infoworld.com/articles/hn/xml/01/05/02/010502hnsitelicense.xml

Letters to Enterprise license holders could of accomplished the same result without garnering builder sales information which is private between seller and buyer! Instead, what Microsoft did went against the idea of the 1994 Decree with a method to gain details on builder sales by using a voluntary entry to contest which seems to get around the point Microsoft not require such information, except perhaps to dissuade clients running non-Microsoft server Operating Systems ("Be a Microsoft Stoolie, Win a Chair" http://news.cnet.com/news/0-1278-210-5816847-1.html). Though it is unknown if Microsoft used information from the contest to influence software usage it is seen that Microsoft cuts close to prohibited actions in pursuing its

goals, for this case all requirements must be exacting to prevent sidesteps.

Nor can the anticompetitive ingredient of the contest be ignored as it clearly made known Microsoft's concern over systems selling without Windows. Because builders must be able to put Windows on desktop computers to retain buyers, system builders (particularly less known firms) could take pause and decide not to risk relations with Microsoft by selling relatively few (if more expensive) server systems without Windows. All system software and hardware suppliers can be replaced except for Microsoft because only it licenses Windows which brings together all the products from other suppliers into a cohesive unit that can be sold.

Such complete dependence on a single supplier for the only product with no substitute would make builders wary of offending Microsoft since it is the only firm in the Personal Computer industry that can put other firms out of business by halting access to merely one product. The Court of Appeals ruling on page 16 says customers will not change Operating Systems due to the cost of new programs and training for them which is a burden while other Operating Systems offer fewer programs.

Also, each hardware component requires a piece of software referred to as a "driver" to mediate communications between a component and the Operating System the "driver" is written for. Component makers write Windows "drivers" almost exclusively so system builders lack options for any simple substitution. Thus relations with Microsoft are a prime concern leading builders to stay attuned to what Microsoft wishes. Yes, another Operating System can be used, yet it demands a seldom seen deep commitment. Lack of "drivers" deters buyers from trying another Operating System on new computers, adding to why buyers stick to Windows despite frequently new purchases. Linux distributors do provide "drivers" with their Operating System, but these seldom drive all features on components making these "drivers" unattractive substitutes. Components makers over time have sold many items in their product category making it difficult for distributors of other Operating Systems to timely develop "drivers" to suit specific components. A tiny part of the remedy should prohibit Microsoft from in any way deterring or interfering with components makers possible writing "drivers" for other Operating Systems.

3. Pricing is the one area where, at a glance, the Operating System monopoly is not readily discerned. The price is usually not high compared to other Personal Computer components so previously cost was not an issue. Point 2 of this submission notes Windows sales are now about 100 million unit a year. Over an approximate three year mainstream life of an Operating System total sales do perhaps yield a monopoly like profit. Especially as Microsoft has low fixed costs. A humble suggestion to the Court is to investigate the cost of producing software in a very high volume to discover how price per unit relates to production cost. Another item to account for is Microsoft having no direct enduser support costs when builders put Windows on systems. Not facing that cost could let a lower price yield unexpected returns.

Annoyance, too, is a reason Microsoft has unremarkable prices. In software development "the-state-of-the-art" produces good programs which seldom run as well as common, everyday devices. The science, or art, of software is young so somewhat less reliability is reasonable. That means to sell many units a year prices cannot be maximized to the same extent, for example, as can prices for ad space in the sole newspaper for given area. Annoyances is even the name of a popular Web site http://www.annoyances.org for dealing with Windows so what have been moderate prices were a trade-off to keep buyers. Of Windows 98 a prominent writer said one reason to spend the $90 is that 98 crashed less than Windows 95
http://content.techweb.com/winmag/library/1998/0701/ana0001.htm

4. Bundling is a pivotal matter here making understanding it important. Bundling is common to enhance the value of new kinds of products, movie rentals included with VCR purchases when that product was new to spur customer interest, a process now happening with DVD players, are fine

examples of the more frequent kind of bundling. When Personal Computers first became fast enough to display usable graphics on monitors writers of programs to do charts and graphs arranged to have makers of the new, fast graphic boards for systems bundle those programs with new boards to increase sales of both products! All temporary arrangements to boast new product recognition.

Similar to this Operating System and browser packaging, "AWeb-II 3.4 Packaged with Amiga OS3.9" http://browserwatch.internet.com/news/story/news-20001229-1.html Amiga is a neat, niche computer and Operating System with some loyal supporters. Bundled with Amiga OS3.9 is the AWeb browser for buyers to try out as v3.4SE Special Edition has some features disabled so if folks wish to keep using it they need to buy a full version. Limited versions let prospective buyers try a product without damaging potential sales. Notable these test versions can be removed from systems if customers so wish. Probably the instances of Operating System and browser bundling presented at the original District Court hearing allowed the browser to be removed from the Operating System, as well. What Microsoft did in binding Internet Explorer to Windows was atypical since other programs can always be removed. Apple Computer could not create and tie the two products together, for instance, being under contract to Microsoft for its MacOS Internet Explorer to be the default browser on Apple systems.

That the Internet Explorer experience can be duplicated on Apple's MacOS without placing that Microsoft browser in the Apple Operating System shows the browser is a product category, not Operating System plumbing like memory-management that wholly depends CPU and Operating System interaction. That the product category exists is illustrated by its functions. Unlike most computer programs a browser is meant to show on a local system information that is formatted into Web pages on remote computers. A browser would quickly become boring without a connection to the Web to provide fresh and new information. A browser is part newspaper, radio, and TV for computers that only really shines because of its outside connection while other programs deal what they create. Separating the browser from other software is that it does not create what it displays. Even most computer games create files to allow games to be resumed at a later time.

Demonstrating a possible market for browser is difficult because once a firm with market power uses its builder distribution network to distribute its browser with no regard to cost by not charging for it buying a second browser seems odd. NetMechanic http://www.netmechanic.com though, is a firm in business to make Web sites work in a variety of browsers, and different types of computers, demonstrating not everyone prefers the Web as presented by Windows through Internet Explorer. Tastes do change. One noted computer commentator recently wrote (20 Dec 2001) he now uses Opera's style of having a number of Web pages open within the browser's one window (called MDI), instead of one program for each Web pages as Internet Explorer does producing a "blizzard" of separate programs http://www.scotfinnie.com/newsletter/18.htm.

If the playing field was more level, with no firm having market power using its very special access to computer distribution, there is reason to think buyers would seek browsers that suited their individual preference instead of just happening to use what ships with the computer. Equally important is that other types of computers do access the Web so a proprietary specification of how to interact with browsers is anticompetitive since it favors one type of computer. Microsoft's main focus is the Personal Computer, making it less interested in the advancement of other computers to protect its principal area of business. That is natural for Microsoft to do, yet it is bad for customers as possible choice for computers will not have the options as the kind Microsoft caters to. An example is on http://www5.zdnet.com/zdnn/stories/comment/0,5859,5101802,00.html noting that Microsoft's PDA named the Pocket PC does not support Apple's Mac computers. Not a big item, yet it is another way to make Windows look better. Microsoft is so fiercely competitive it should not be left to handle a cross-platform standard better formulated by an industrial

association.

(I must now apologize to the Court as time is now very short to finish the filing and I still type slowly so I need to work in point form, I hope you will excuse me.)

These 4 columns note that open standards greatly reduce costs for buyer and much improve the number and quality of available choices. "Standards can put you in control" http://techupdate.zdnet.com/techupdate/stories/main/0,14179,2837626,00.html, Open Standards Vital, PC's Founding Fathers Say" http://www.extremetech.com/article/0,3396,s%253D201%2526a%253D11568,00.asp, "Why we should hail IBM's ode to open source--the Purple Book" http://zdnet.com.com/2100-1107-503981.html and "Group builds onto wall of Web standards" http://news.com.com/2100-1023-802022.html. The W3C stands for Web open standards with interoperability between all software, Microsoft should be urged its lead.

5. The most effective remedy to administer with most ease is that Microsoft only sell Windows with the basic plumbing to run computers for the 1st 30 months of a judgment. That will be called disruptive, yet it is the best way to remind everyone Windows is the means to let many companies run programs on Personal Computers, not just Microsoft, and not as 2nd class players. If that is not done Microsoft will have decreasing reason to accommodate other firms on Windows as those firms will not much add to Windows' popularity. Plus that will encourage Microsoft to have enough Windows' APIs so any browser runs all browser functions in Windows instead of the APIs being limited to Internet Explorer.

During that 30 months programs now in Windows will sell at prices as determined from sources like the Web. After 30 months such programs and basic Windows most stay available for 10 years. And Microsoft may then sell 2 other Windows versions with prices reflecting having some extra programs in 1 version, and all extra programs in the 2nd version; as well as direct Microsoft support being of 1 contact for setup (only good if used in 1st 35 days after buying) that may go on for a time after the contact began, and a 2nd 6 months starting from a later contact within 15 months of system purchase. Simple reason for Microsoft support is that it be responsible for any full programs put in with Windows, that is only creating a consequence for Microsoft's action which is fundamental to a well running market economy.

5a. Judgment needs to last a long time so market can develop products and just get use to being fully open (so participants in markets related to Personal Computers have no reason to act in anticipation of its end). Allowing time for those notions to be entrenched so OEMs will react strongly to unusual demands instead of merely accepting them so Microsoft regains its position.

That is a big concern given Microsoft's habit is to disparage what other firms make, "Novell sues Microsoft over ad campaign" http://news.com.com/2100-1001-273775.html while a later review found the Novell progressing quite well, 17 Dec 2001 "Not Just Another NOS - NetWare 6 includes impressive Web tools, file and print services" http://www.eweek.com/article/0,3658,s%253D708%2526a%253D20078,00.asp. Unfortunately such ads and the blocking of 3rd party browsers from some Microsoft Web sites occurred while Microsoft negotiated this Proposed judgment suggesting Microsoft may not be serious about this process. It was soon seen that the browsers dealt well with the Microsoft sites, "MSN.com shuts out non-Microsoft browsers" http://news.com.com/2100-1023-274944.html, "Parts of MSN Still Off-Limits to Amaya, Opera Users" http://browserwatch.internet.com/news/stories2001/news-20011101-1.html, "Microsoft backpedals on MSN browser block" http://news.com.com/2100-1023-274980.html. Perhaps 1 remedy could have Microsoft mostly deal in the benefits of its own products in ads and not supposed flaws in what other firms produce, generally leaving buyers to decide what suits them best.

5b. To give independent developers the opportunity to write a browser based on its code, Netscape Communications made its source code available through http://www.Mozilla.org. As a result the specification for Netscape style "plug-ins," which add functions as helpers to browsers, is now commonly known. This specification allows any company developing a browser to run "plug-ins" in its browser application.

Because Microsoft now has such a wide lead in browser usage, its support of "plug-ins" in all its browsers is critical to such helpers being created both in ActiveX and "plug-in" style. To give market forces the chance to establish a market for browsers, Microsoft shall include "plug-in" support in all its browser for 12 years. That period will begin on the first day of the first month after Microsoft demonstrates restored internal "plug-in" support in all current (or future) browsers from by Microsoft, its subsidiaries or successors. Menu and other means that exist to modify program options in Windows could turn off "plug-in" support. If it becomes apparent "plug-ins" fall out of common usage Microsoft may be allowed to end its support early.

A 12-year time period is necessary since many Web sites are built to mainly support Internet Explorer and many Web designers will require time to become accustomed to using an open standard (likely from http://www.w3.org). Customers will also need to adapt and choose a Web browser that best meets their usage requirements, the usual way of choosing products. And the 12-year period approximately doubles the time Microsoft hindered usual market forces through special distribution requirements. Thus, 12 years is reasonable recompense to that market.

Restored Microsoft "plug-in" support (dropped in August 2001 http://news.cnet.com/news/0-1005-200-6881773.html) is a fine part of a remedy as it reinvigorates the browser market without steering it in any direction. Requiring Microsoft to publish its source code for Internet Explorer would merely develop copies with strengths and weaknesses similar to the original. Leaving them dependent on Microsoft for core code development, not creating an open market. Browsers do not relate to the booting of computers so showing source code is currently unneeded. So long as a browser is not commingled in the Operating System it is just another program making for easy substitution. Both ActiveX and "plug-ins" have strengths and drawbacks with no clear winner. ActiveX deeply ties into Windows, which is troubling if security breaks down. Meanwhile, Microsoft has doubts about "plug-ins." Such issues are exactly the type best left to customer choice.

More importantly, ensured "plug-in" support only produces a level playing field since all browsers have good access to helper programs leaving it to market forces to determine what browsers succeed. This point is forward looking as it leaves the market open with minimal or no market distortion making it very much in the public interest.

6. Varied point2: Using ActiveX on the Windows Update site does not exclude people from general access to the Web as the Court of Appeals ruled. The anticompetitive element is that only Microsoft knows how to have browsers run ActiveX meaning that users must maintain Internet Explorer to be- able to reach the Update site which is a crucial, must reach site for anyone running a Windows Operating System! Above this filing shows it is a long and somewhat difficult process to keep Internet Explorer current and secure. Also the Court of Appeals ruling (page 30-1) says Microsoft twice acknowledged two browser icons can be confusing. Running two browsers would be confusing as well, the easiest course for most people is to only run Internet Explorer. It thus has a very distinct advantage over other browsers. Yet Microsoft must ensure the integrity of its products so of course it may have Windows invoke a single purpose client that would check and service only Microsoft software. Such a client would have limited, specialized usage likely only for connecting to Microsoft servers, it will not be anti-competitive because it will not effect perceptions of programs from other vendors. That differs from the present wording of Section

III.H.3.1 and its preamble which gives Microsoft programs special rights users could see as making it better than similar products from other vendors.

6a. Relating to Microsoft Passport: If Microsoft wants customers to create a basic account (using an existing e-mail address) before providing product assistance that account should only be for dealing with Microsoft, and not for dealing with other firms over the Web. Privacy and security concerns of individuals deem that each person be able to make their own decision on whether to create an account to deal with Microsoft alone or a process for giving out information to third parties. Having 2 kinds of accounts means Microsoft will not be able to unduly leverage the Operating System monopoly into the de facto identification and information dispersal process for the Web. That will also much decrease the possibility that newcomers to PCs would erroneously think only Microsoft provides software for this class of computers. A central repository for all personal information will be probably a target for thieves trying to steal credit card number to commit fraud and perhaps where malevolent forces will go for personal information in efforts to build false identities. Signing in to a creation like Microsoft Passport is not something to be done while people are trying to setup another product. It must be considered on its own drawbacks or merits, and then perhaps entered into.

Thank you for this opportunity.

Sincerely,
Bryan Campbell