



LINUX!



REFLECTIONS ON COMMERCE, “ANTI-COMMERCE” AND THE OWNING OF IDEAS



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FREEDOM DOESN'T MEAN THE OBLIGATION TO BE PROFITABLE — COOPERATION DOESN'T MEAN COMPELLING OTHERS TO BE COOPERATIVE

We who praise the free market are often accused of believing that maniacal profit seeking is some sort of moral obligation. But the freeness of the free market should mean that you can offer for sale whatever is yours at whatever price you want, which definitely includes the right to offer it for nothing. Economic liberty means economic liberty. It includes the *right* to be a money-grubber who knows the price of everything and the value of nothing, but it is absolutely not the *obligation* to behave like this.

Perhaps you want to compromise and sell your stuff at a loss. This also should be your right. It's your stuff. Maybe you want to do this out of generosity to your impoverished customers. Maybe you just want to clear out your warehouse. That's your business. If rivals want to charge more for similar stuff and complain about your "predatory pricing" and cry out for a "level playing field", tough. Any law or any "pro-capitalist" propagandist who says otherwise is an ass.

Here's another important distinction, to set beside the one between the right and the obligation to be profitable. It is one thing to cooperate with others voluntarily, without money passing back and forth all the time, and to believe that people who have never done this or who can't see the point of it don't really get the full meaning of the word "human". But it is quite another thing for you to *force* all those emotionally stunted and drably one-dimensional tradesmen into "cooperating", by legally preventing them from doing business the way they want to or by robbing them of their justly gained profits to pay for your preferred "cooperative" projects. Do that, and the world you'll get will be a lot drabber than the one in which both you and the go-getters may do as each chooses. Yet sadly, millions assume that because they personally prefer being nicer to get-

ting richer, this somehow means them supporting the let's-be-nasty-to-the-go-getters team. Libertarianism is the attempt to break this ignoble alliance. I and all libertarians of my sort favour a world in which both the go-getters and the cooperators flourish, constantly making use of each others' achievements, and regularly stirring each other into yet more creative achievement — to the point where telling these two teams apart becomes impossible.

The relationship between commerce in the narrow sense and non-commercial voluntary life has a fascinating history. A favourite story for me is how the British Quakers decided to become completely trustworthy people, not because of commercial ambition but simply because they were fed up with their previous and well-deserved reputation for being untrustworthy. Having, as we would now say, reinvented themselves as trustworthy folks they then proceeded to make fortunes, as Britain's first travelling salesmen, and then as bankers. More recent impulses towards communal and convivial social arrangements, and away from mere "commercial" or "corporate" greed, have had equally benign economic effects. Marks and Spencers, the great retailing chain, began as more like an open air charity shop than as an attempt to make money. Charging less for your products because you are generous can also be very profitable.

TWO THREATS TO MICROSOFT — THE US GOVERNMENT AND ... LINUX!

I will illustrate these noble notions with a fascinating story that is even now unfolding in the world of computer software. For the spirit of "anti-commercial" cooperativeness does not manifest itself now only in such endeavours as the worship of God or the growing of organic vegetables. (In the first sentence of this paragraph, I nearly put "business" of computer software, but my whole point here, as we shall see, is that there's more to software than "business".)

The world's leading personal computer software enterprise, the much admired and much hated Microsoft, is now suffering from two huge headaches, both of which involve software being "given away", the inverted commas being present because actually the story is a lot more complicated and interesting than that.

First, as is now quite well known, Microsoft is being set upon by the United States government for the ghastly crime of itself "giving away" its programme for accessing the Internet. Actually, Microsoft is merely including — or trying to include — this programme in the latest version of its Windows programme, which is being sold in an impeccably commercialised and profit maximising, not to say greedy, fashion. Microsoft stands to make a stack of money from its Internet software ef-



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FOR LIFE, LIBERTY AND PROPERTY

forts, which is hardly what happens to you when all you are doing is giving things away.

Second — now a lot less famously but in a way that may yet prove far more significant — the MS-DOS and Windows operating systems which are at the heart of Microsoft's current commercial grandeur could be facing a far more fundamental challenge, from another operating system — “Linux” — whose creator really is giving it away. What Linux could now be doing to Microsoft may in future decades be compared to what Microsoft itself did to IBM. Microsoft, the “predatory pricer” of Internet software, is itself being nibbled away at by a new and even more predatorily priced (or “even cheaper” as we libertarians like to call it) operating system.

If computer matters irritate you, and you don't care to read further, at least read that all good and true libertarians as I understand them support Microsoft in its battles with the US government, but have no problem whatsoever with the fact that the dominance of Microsoft may now be threatened by a less “commercial” commercial rival. The US government is trying, as is its wont, to violate liberty. Linux, like Microsoft or IBM before it, *is* liberty.

OPEN SOURCE SOFTWARE DEVELOPMENT — ANYONE CAN HAVE THE SOURCE CODE

I'm no computer expert, so I will flesh out the story by quoting from an article in *Computer Shopper* (Issue Number 129, November 1998, pp. 763-767) by Charles Stross:

Linux is the word on everyone's lips right now. It's exceptional among personal computer operating systems because, mostly, it doesn't crash. Linux is remarkably stable, and system often run for months and years at a time between shut-downs. It's cropping up everywhere: unlike most operating systems, which are limited to one machine or family of machines, it runs on everything from a PalmPilot to a supercomputer (by way of PCs and Macintoshes). It's immensely flexible — its mainframe ancestry means that it is a true multi-user, multi-tasking, multi-processor system, and it provides features you don't normally expect on a personal computer.

Linux has its roots in a student project. In 1992, an undergraduate called Linus Torvalds was studying computer science in Helsinki, Finland. Like most computer science courses, a big component of it was taught on (and about) Unix. Unix was the wonder operating system of the 1970s and 1980s: both a textbook example of the principles of operating system design, and sufficiently robust to be the standard OS in engineering and scientific computing. But Unix was a commercial product (licensed by AT&T to a number of resellers), and cost more than a student could pay.

Annoyed by the shortcomings of Minix (a compact Unix clone written as a teaching aid by Professor Andy Tannenbaum) Linus set out to write his own ‘kernel’ — the core of an operating system that handles memory allocation, talks to hardware devices and makes sure everything keeps running. He used the GNU programming tools developed by Richard Stallman's Free Software Foundation, an organization of volunteers dedicated to fulfilling Stallman's ideal of making good software that anyone could use without paying. When he'd written a basic kernel, he released the source code to the Linux kernel on the Internet.

Source code is important. It's the original from which compiled programs are generated. If you don't have the source code to a program, you can't modify it to fix bugs or add new features. Most software companies won't sell you their source code, or will only do so for an eye-water-

ing price, because they believe that if they make it available it will destroy their revenue stream.

What happened next was astounding, from the conventional, commercial software industry point of view — and utterly predictable to anyone who knew about the Free Software Foundation. Programmers (mostly academics and students) began using Linux. They found that it didn't do things they wanted it to do — so they fixed it. And where they improved it, they sent the improvements to Linus, who rolled them into the kernel. And Linux began to grow.

There's a term for this model of software development; it's called Open Source (see www.opensource.org/ for more information). Anyone can have the source code — it's free (in the sense of free speech, not free beer). Anyone can contribute to it. If you use it heavily you may want to extend or develop or fix bugs in it — and it is so easy to give your fixes back to the community that most people do so. The Open Source ethos is not a market economy; it is a giant potlatch, a present giving society where the more you put into the communal pot, the greater your prestige. Detractors have, rather unfairly, called this communism; a swap-meet is more like it.

The first distributions ... were put together on floppy disk by enthusiasts; subsequent companies like SuSE, RedHat, and Caldera emerged who existed solely to package and sell support for their own distributions. However, enthusiast groups such as Debian and Stampede still remain active in the field, effectively keeping the companies from ‘taking possession’ of Linux. ...

“IT IS POSSIBLE TO MAKE MONEY OUT OF SOFTWARE YOU GIVE AWAY”

The idea that all we are talking about here is a bunch of unkempt anarcho-techies sitting around in a shared student attic outwitting the besuited capitalists is, however, seriously misleading. Stross continues:

This is possible because of the deeply hidden secret of the Open Source movement: it is possible to make money out of software you give away for free. People will willingly pay for support, manuals and development work — and if you're an Open Source developer, every extra copy of your code they pass on works to your benefit as an advertisement, rather than being a lost licensing opportunity. Consequently, RedHat Inc grew from a two-man garage start-up to a forty-person two-million dollar company in its first two years, and is still growing at an astronomical rate; others like Caldera ... are growing at a similar speed.

What RedHat and Caldera sell isn't really the software, which is completely free. It's the helpful voice on the end of a telephone or e-mail connection plus manuals and CD-Roms and the usual paraphernalia that most customers expect of a software vendor. Thus, even though Linux is free, corporate support is readily available from a number of sources.

As more and more people got to know about Linux, some of them began to port the Linux kernel to run on non-standard computers. Because it's free, Linux is now the most widely-ported operating system there is. It runs on PCs, Macintoshes (both PowerPC Macs and the older ones), SPARC, MIPS and DEC Alpha workstations, Acorn, Archimedes, and a whole slew of more obscure systems; see www.linux.org.uk for pointers to these. There's even an effort under way to get Linux running on the Psion Series 5 ...

Watching Linux today is like watching the Internet back in 1994. It's growing at an incredible rate, but it's only a few

months past the stage of being the world's best-kept secret ...

One thing is certain: Linux is going to be around for a few years ...

... the best guesses of the current user base put it at somewhere between five and ten millions users, and that same study puts the growth at 12 per cent *per month*.

This puts Linux firmly in the running as a competitor for Windows NT 4.0. ... Linux scales well — a cluster of DEC Alpha workstations running Linux has made it into the top 500 supercomputers, and it's Linux that rendered the CGI animation sequences in *Titanic* and runs heavy horsepower Web sites like DejaNews. It's also ridiculously cheap for the facilities it provides — while commercial Unices like Solaris and SCO Open Server are cost-competitive with NT Server, Linux cuts them all off at the ankles by being essentially free. ...

The real growth in Linux use is just beginning ...

Recent signs of how serious the Linux bandwagon has become come in the form of corporate recognition; suddenly companies who only sell their products on commercially viable systems are rushing to port their applications to Linux.

The threat to independent software developers posed by Microsoft, and the opportunity offered by the growth of Linux, have triggered a near-stampede to port applications to Linux among the big software houses. For example, in May 1998, Oracle Corporation was maintaining that it had no intention of porting the *Oracle* database server to Linux because there was insufficient demand and it would, in any case, be a nuisance to support. In June 1998, it announced the release date of *Oracle 8* for Linux would be March 1999. Also in May, Netscape announced that they were making Linux one of their principle development platforms, along with Windows, MacOS and Sun's Solaris.

Netscape, in case you didn't know, is now Microsoft's principal rival in the Internet Access software market.

Stross also describes the problems associated with using Linux, at its current stage of development. But once something catches on big in computing, it creates a huge community of people who want these problems solved and who are willing to help solve them, and Stross elaborates further about this process. Many major Windows-based programmes won't run on Linux, but Linux-based clones are being developed which will handle your original files from — and look much the same as — the classic Windows-based program you now use.

Tempted as I am simply to reproduce the entire Stross article, I will content myself with just one more quote from it, near the end, which is about a problem that Linux doesn't have, which Microsoft programmes do.

Did I mention viruses? No. There's a good reason for this: Linux doesn't get them. ... Linux has all the usual Unix security features. Unix is a really, really hostile environment for viruses: while there are security threats to a Linux system, your chances of catching a virus off a floppy or CD-Rom are almost infinitely lower than when running Windows or MacOS.

FANNING THE FLAMES

I first heard about Linux in a Channel 4 TV report by Robert Cringely. And the other day, in Tottenham Court Road, I encountered a row of huge and serious looking Linux manuals that I swear hadn't been on that shelf when I last looked. Since doing most of this piece, I have spotted another Linux report in the December 1998 issue of *Personal Computer World* (page 28: "LINUX GETS A TRIPLE BOOST"). And *PC Direct* ma-

gazine is actually giving away a copy of the Red Hat version of Linux, in the form of a free CD taped to its front cover. (Given that *PC Direct* and Red Hat are giving away the software on it, I hope they won't mind me "stealing" the graphics of this disc for illustrative purposes.)

My guess is: listen for three kinds of public statement from Microsoft supreme Bill Gates. (1) "Linux is insignificant. Ignore it. The Microsoft way is better." ("So, Bill, how come you're talking about it?" This will only fan the flames.) (2) "Linux is mad, bad and dangerous to use. Ignore it. The Microsoft way is better." (This will fan the flames into a roar.) (3) "We're going to make available all the classic Microsoft applications so that they can also run on Linux, our own version of which will be on sale shortly at \$49.95 (whisper whisper) make that \$19.95." (This, after all, was pretty much what Microsoft and Bill Gates *did* say about the Internet.)

Having only the dimmest idea of what an operating system *is*, I am not qualified to judge whether the optimism of people like Charles Stross about Linux is justified. Maybe in a few years Linux will shrink away to nothing, or just go on buzzing about in the background like Unix itself. Maybe Microsoft will sail on serenely, coining money long into the next century, its share price levitating upwards. I certainly have no immediately plans to switch to Linux myself.

But whatever happens to Linux in the longer run, the *possibility* that Linux *might* be about to gouge great lumps out of Microsoft's market share, and *the opportunity we all now have* to choose Linux-based rather than Microsoft programs, makes nonsense of any claim that Microsoft is now a monopoly. To the exact extent that other computer folks feel threatened by Microsoft — and many definitely do — they can use and are now using Linux to gang up on Microsoft, much as an earlier generation of computer folk used the non-IBM controlled IBM PC standard to gang up on and break the dominance of IBM. IBM's problems weren't helped by the fact that the Feds tried to destroy it also, but it was economic freedom that eventually toppled IBM, just as economic freedom will as surely topple Microsoft, either because of Linux, or through some other circumstance in the unknowable future.

AN ECONOMY NOT BASED ON INTELLECTUAL PROPERTY RIGHTS

The Linux story could be an early example of a new and different principle of economic organisation which may now be moving towards prominence. Since the early days of the industrial revolution, the idea that you can *own* ideas, if only for a few decades, has been regarded as a precondition for technological development. If the people making progress couldn't own their inventions, it has been said, why would they bother to think of them? But many, including many libertarians, are uneasy about the concept of "intellectual property". If I am using your new chair of a remarkable and novel design, that means you can't use it. So if we both want to, we had better agree which of us is the owner of it. But if I use your *idea* for a new chair and use that *idea* to make my *own* chair, or if Jimmy Chang in Hong Kong uses it to mass produce such chairs, you can still carry on using your idea, by continuing to use your chair. A central reason for property is scarcity. But *ideas* aren't scarce. An *idea* can be used by millions simultaneously. True, you may not be able to dominate the world market in your chairs, given that Jimmy Chang is a more energetic business man than you are. But if he *is* more energetic, wouldn't the world prefer him to be mass producing your chairs, rather than depending on you, or waiting for you to give Jimmy Chang your permission?

Well, here we have these software developers deliberately choosing *not* to own *their* new inventions. Instead of being paid in license fees or royalties or the right to exclusive use, they are paid in prestige, and in the form of prestige-generated

fees for telling confused amateurs more about the idea than those amateurs can easily work out for themselves from a computer screen filled with mumbo-jumbo.

In the days of the original Industrial Revolution, then as now, the knowledge spread amongst great tribes of technicians about how the latest inventions worked was hugely important. Just having steam engines dumped down in your midst wasn't nearly good enough, if no one knew what they did or how you mended them. But the process of getting hold of the knowledge of how to build steam engines was far more cumbersome in former decades than now. Plans or hand-drawn sketches were then laborious to make and copy, and not at all impossible to intercept on their travels. Early cameras couldn't be carried about in their breast pockets by industrial spies. In the absence of instant and virtually costless communication from any place on the globe to all other places, secrets were sufficiently keepable for it to be worth making the effort to keep them, and the laws we have inherited from that period reflect that.

But even without intellectual property laws, invention would surely still have proceeded. If A hadn't invented the wuffulator, B or C would have arrived at the same notion before long, and made it work. The general state of technological knowledge was such that the wuffulator was "out there", waiting not so much to be *invented* as *discovered*. (Hence the well-known fact that the same gadgets are often "invented" in several places at once by different people, who then spend the rest of their lives quarrelling about which of them got there first, and who "stole" what from whom.) Greedy capitalists would have been denied large fortunes made from working the whole thing out in deadly secret, but other less greedy folks would still have made their various smaller fortunes by telling everyone how the thing worked and how to use it and maintain it. The non-greedy co-operators would each have chipped in with all the various conceptual advances — the new materials that have recently become available, the other inventions recently made that would help — and the job would still have been done. What is more, it might well have been done better.

It is interesting to speculate how personal computer software might have developed if the copying of software had from the start been as permissible legally as it always was easy technically. The Linux story suggests that rapid progress would still have been made, and perhaps even more rapidly than with the likes of Bill Gates in charge of things. Perhaps we have patent law to thank for those maddening Windows crashes that we still have to put up with.

Whether the original Industrial Revolution could have revolved so fast or so smoothly without patents is questionable. What is not is that the non-greedy cooperator model is now much easier to make work, as the Linux story illustrates, thanks to our modern means of information storage and communication. All software can now — technically if not legally speaking — be copied and broadcast to the world without cost. The means of communicating and combining smaller insights is now in place and working.

Meanwhile, thanks also to modern information technology, knowledge itself is not so scarce. It is *knowledgeable people* — people like those at Red Hat who can keep track of all the knowledge swilling around out there — who are now the scarce resource. If you produce some more knowledge, your problem now is not other people "stealing" it; it is much more likely to be other people unanimously ignoring it. In a world of abundant inventions, you file your patent to get it noticed, and yourself noticed for having filed it, not to "protect" it.

THE DECLINING COST OF MAKING THINGS

The Free Software Foundation way of doing things — give away the ideas and sell your knowledge of and about those

ideas — could be the wave of the future, not just for computer software creation, but for many other kinds of work. For just as the knowledge of an invention is now a global rather than merely a local fact, so too are reputations and the means of economically exploiting those reputations.

All inventions are, if you think about it, software. They are bundles of instructions about what to make and how to make it. A steam engine is a collection of metal bits, yes, but more fundamentally it is an idea embodied in a set of instructions.

Big business by definition still loves its patents, to pay for its huge factories. But the means of making things may soon be democratised, in the sense that in the next few decades it will surely become possible for us to put together three dimensional objects in much the same way as we now print documents. Manufacturing will become, you might say, three dimensional desktop publishing, with gadgets like super-intelligent microwave ovens being added to all those printers, scanners, cameras and loudspeakers that we computerised folk already have. In such a world, a global society of thing-designers will emerge similar to the Linux community, and the cost of software for thing-making will perpetually nose-dive to zero just as the cost of our software does now.

What the Linux story also suggests is that if intellectual property rights are indeed becoming unnecessary for technological progress, they may fade away of their own accord. More and more people will simply refrain from asserting them. They will — Linux style — just give it away. This would be depressing for those wedded to "commerce", but it would be a glorious vindication of the voluntary principle!

INVENTION VERSUS ART IN THE INTELLECTUAL PROPERTY DEBATE

Much as I would love to end this piece with an optimistic exclamation mark, I must add that the intellectual property argument is not about to vanish away into the history books. For intellectual property arguments are not only about inventions like steam engines or computer programs; they also rage around artistic creations.

Linux may be free, and it may have covered itself in glory by helping to make the movie *Titanic*, but I can see no automatic process at work which will ever result in such things as *Titanic* itself being given away for free. In a world without owned movies, some other team of not-for-profit collaborators *might* have made another movie *like* the *Titanic* movie they actually did make, but would it have been as impressive, and would movies in general be so good if the only movies around were free, "shareware" movies?

Whereas inventions are merely adequate realisations of the same basic idea, the idea being what matters, with art, the realisation is all. The idea ("big ship hits iceberg and sinks") you can usually scribble on the back on an envelope. And what sort of living could you make merely *explaining* a movie, the way you can make money explaining the details of a single computer program to its users? "Hey! What's going on? Get the Yellow Pages! Find a *Titanic* specialist!" Hardly. Besides which, there is a difference in terms of plain *justice* between (a) copying an entire movie and paying nothing for it, and (b) "copying" a mere idea. The inverted commas that I find I want to include in (b) but not in (a) make my point for me.

So the intellectual property question is not answered once and for all by the Linux story. The debate goes on, and as the Libertarian Alliance's editorial supremo I am eager that this fact should be reflected in future Libertarian Alliance publications. But be aware that Libertarian Alliance writers are, for the time being, paid only in prestige.