

Participatory Freedom

How the Free versus Proprietary Software conflict frames our culture and ultimately government.

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Introduction

Very few people think about the impact of software on the choices they make. Most are just happy when software doesn't get in their way and lets them achieve what the person wanted. When something doesn't work they usually assume it is a bug. Who would ever guess that it was intentional? Software dictates what formats digital artists write to and even how votes are counted in presidential elections. For the power software holds over society, it really isn't understood very well by decision makers. This paper looks at two ideological camps in software and how they frame the culture we make and the decisions governments make. To do this I first take a look at the two camps in software, look at the similar camps in culture, and finally how they relate to self governance.

Beginnings

The concept of free software is an old one. When computers first reached universities, they were research tools. Software source code was freely passed around, and programmers were paid for the act of programming, not for the programs themselves.

-United Nations Educational, Scientific and Cultural Organization, 2001

Software started out free. It was passed around similar to scientific knowledge as most of those who had it were scientists. They shared it just like they would share

scientific discoveries. Commercialization of software started with restrictions of access to the source code and the sharing started to go away.

Proprietary Software

Bill Gates "fired the shot heard around the world" for proprietary software and clearly has accomplished his goal of making lots of money off of his control of the source code. The shot took the form of his "Open Letter To Hobbyists" in which he spells out his case for not sharing software(Gates, 1976). He said the Hobbyists were stealing his program BASIC and that no software would ever end up being created if everyone always stole it (Gates, 1976). Gates asks the following two questions in the open letter:

Who can afford to do professional work for nothing? What hobbyist can put 3-man years into programming, finding all bugs, documenting his product and distribute for free?

Free Software Again

Enter Richard Stallman, the hacker who does it all for "nothing" and who "...magically get['s] paid.." for doing so (Stallman, Biography). In 1985, he founded The Free Software Foundation (FSF), a donor supported charity, facilitates Free Software growth throughout the world (Stallman, Biography). The FSF founded the GNU Project whose goal was to make a Unix-like free software system. Eventually

with the addition of the Linux Kernel to GNU, a fully operational free operating system came to be.

Copyrights, Copyleft

Copyright law is very important for both the start of proprietary software and the resurgence of free software. Any piece of software's source code can be copyrighted, which allows for proprietary software to restrict anyone else's ability to copy it.

Richard Stallman defined what he considered to be Free Software in these 4 freedoms:

The freedom to run the program, for any purpose (freedom 0).

The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.

The freedom to redistribute copies so you can help your neighbor (freedom 2).

The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

(FSF, Free Software Definition)

The concepts of Free Software was legalized and one form of it was the GNU General Public License, or GPL. The GNU GPL is a copyright distributor license agreement that took Free Software a step further and created a guarantee of sorts. If you distribute the software you must give those you distribute it to the same

rights under the GPL. This is the concept of Copyleft and ensures that software under its license will always give the end user the same freedoms that the original author wanted them to have.

Patents

Patents are government granted temporary monopolies on an invention, or at least that is what they are supposed to be. In today's world much more than physical inventions are patentable, including software. Software provides an especially legally confusing space as it is already covered by copyright law. For instance, The GIF Image format uses a patented compression technology (Stallman, Software Patents). What's worse is that the compression scheme actually has two patents covering it because software isn't that easy to understand. One program can have many patents. For example, a program may have certain patents for the user interface, others for how it communicates on a network, and others for other functions of the software package.

This creates a “patent minefield” where a new software project can practically not avoid infringing some patents or pending patents. Free software projects have it worse than a proprietary software project because normally you pay a certain patent fee for every copy of the software you sell. Since you don't sell free software and it can easily reach millions of people, that really isn't an option. Many companies such as IBM, Novell, Philips, Red Hat, Sony, Google, Oracle, and Barracuda networks are part of a patent collective called the Open Innovation Network which allows companies to share patents with each other as long as they promise not to sue users of Linux.

Forking is Free

The ability to fork a project, take an existing one using the same design, code, and images and make it your own is the ultimate participatory freedom of the consumer. This freedom occurs in both software and culture. For the purposes of this paper, any organization I refer to as Free means it gives the ability to fork it, or in most cases its products. Similarly, any organization I refer to as Restricted expressly attempts to deny some of the requirements for forking.

Culture Overview

In today's digital world, software is used to create many cultural works such as information, music, movies, or even full games. The software tools you use can frame precisely how you end up sharing them with the rest of the world. Even if you use an open tool to build the product, your company can choose to restrict their audiences' rights to make a bigger profit. Free Culture applies similar ideals as Free Software except to cultural works. Creative Commons and Wikipedia are two of the best known promoters of Free Culture. Creative Commons is primarily a collection of licenses that give content producers the ability to find a balance between public domain and all rights reserved. One of their licenses is very similar to the GPL, but they offer many more than just that option (CC, About)

Wikipedia encourages sharing, editing, and free use of their content and they usually use a Creative Commons or FSF license to do so. The proprietary software side is usually allied with mainstream, more traditional media sources and has ties to DRM. Digital Restrictions Management (DRM) is a technology that allows media and technology companies to dictate exactly how you can access your purchased media or information.

Digital Restrictions Management relies on an encryption scheme. The product is encrypted and then the encryption key is given to the consumer, usually in a software form, that prevents them from finding it out. Once this is in place, the consumer can only use the product how the software dictates. DRM has a problem though. If you can play something, you can record it with another device. This

subverts practically all DRM systems and makes them quite easy to get around if there is enough motivation.

Informational

In his essay "The Right to Read," Richard Stallman paints a grim future where you cannot legally share or even sell any books you buy (1996). In this grim future, you only pay for a license to read the book for a limited time and only for yourself. This is powered by the "success" of DRM which allows the copyright holder to take away all of your fair-use rights by not actually really selling you a book (Stallman, 1996). Also, in this future Free Software has been outlawed as it would allow people to get around the restrictions on their books. Many attempts at eBooks have included their own vision of this grim future by their use of DRM.

Anyone has the right to read and to even change Wikipedia, although Wikipedia is just one of many Wikimedia entities. Wikimedia is an organization with the stated enabling goal of a world where every single human being can freely share in the sum of all knowledge (Wikimedia, 2008). They allow you to use their books and encyclopedia for any purpose and to share them with anyone you want (Wikimedia, 2008). Furthermore they even encourage you to edit the encyclopedia or book with information you yourself have (Wikimedia, 2008). Wikipedia itself has emerged according to many sources in the top 10 of websites viewed in the world. Wikibooks, one of the Wikimedia sponsored projects, "is a collection of open-content textbooks that anyone, including you can edit" (Wikibooks, 2008). You can find and help create Wikibooks on almost anything. Some of the Wikibooks include Calculus,

Formal Logic, Spanish, UK Constitution and Government, Learning Theories, European History, Do-It-Yourself/Wooden Boat, Electric Vehicle conversion and many more. All can be downloaded free of charge and many are available in many open formats for the use on any eBook Reader or other device.

Music

RIAA Lawsuits

At first glance it appears as though like the RIAA has given up on a technological fix for music sharing shown by their massive lawsuits targeting college campuses. The lawsuits seem to result in colleges forcing students to buy into DRM schemes set forth by the recording industry. Drexel has their own that is encumbered by DRM. The RIAA lawsuits are being fought hard by organizations like the EFF and a select few colleges are not falling in line with RIAA extortion.

iTunes, PlaysForSure

iTunes is the most popular “legal” online music store in the United States and for the majority of their history they have all songs encumbered by Digital Restrictions technology. You can't put iTunes music on any device, you have to go to an iPod. Apple call's their DRM scheme FairPlay. Similar problems exist with other DRM encumbered music subscription systems, such as Microsoft's PlaysForSure. PlaysForSure naturally doesn't play at all on

an iPod and only plays on other PlaysForSure devices.

Even iTunes with its popular iPod is being forced by consumers to slowly give up on DRM; some of their songs are now available without it. The songs available without DRM are those that are from the major music recording company EMI. Steve Jobs, the CEO of Apple, has even publically denounced DRM (Jobs, 2006)

Microsoft has several incompatible DRM schemes and ironically are going to be shutting down the servers that allow PlaysForSure to work. Also ironically their “iPod Killer” attempt the infamous Zune didn't implement their PlaysForSure technology. They tried to incorporate sharing into the Zune which was supposed to be its killer feature. They let you share songs wirelessly with other Zunes, except that they are DRM encumbered. The songs will simply disappear after 3 days from the share time (Enderle, 2006). The DRM is put on to shared songs regardless if the songs were originally in formats that don't even support DRM.

Sony RootKit/ Audio CD Fiasco

In a 2005 Blog Post Mart Russinovich, a Windows security expert, tested a version of his Rootkit Reveler tool on his personal computer. To his surprise he found a rootkit. A rootkit is like a cloaking device for software, it allows malicious programs to hid themselves from the computer owner and most security software. After a great deal of analysis he determined that the rootkit had come with the Sony CD, *Get Right With The Man*. As far as we know this was the last attempt at DRM on regular CDs. Sony was sued and many people ended up boycotting Sony products for a time thereafter. What's worse is that previous to this blog post,

anti-virus companies had *known* about the rootkit, but done nothing. The rootkit hid the DRM technology that was supposed to prevent you from copying the CD and may have also degraded all burnt audio quality from your PC.

Due to the badly written nature of the rootkit, it can be used for other purposes such as viruses.

Magnatune, Jamendo

There is at least one recording company that won't sue you for listening to their song free and sharing it with others. Magnatune is one such example and allows you to listen to their entire collection streamed over the internet for free. You can then buy songs you like and are encouraged to share it with three friends. How do they enforce the three friends system? They just ask you nicely, which builds a sense of trust with them.

Jamendo is basically a music distribution service that allows anyone to submit and share music. All music is creative commons licensed for non commercial use and allows you free streaming access to it. They also allow you to buy a download or a CD.

Movies

DVDs, DMCA

Although you do not hear much about the Movie Picture Association of

America going around suing college students, they are influencing the laws we have to live by more and more. DVDs are DRM encumbered but has mostly gone unnoticed by the average person. If you have ever played a DVD chances are you have been annoyed by DRM. It started with just not being able to skip the FBI Warning at the beginning of a movie. But now you can't skip all the advertisements at the beginning before you can watch the movie (EFF, 2006). You are being forced to watch advertisements on a product that you paid good money for. Although on-top of that is the story of DVD Jon and his hacking the DVD DRM scheme. Any DRM scheme can be relatively easily defeated because you need to give the consumer both the product and the key to open it. DVD Jon was able to create a system for viewing commercially encrypted DVDs. In the United States, merely using his hack and using it to play DVDs you own is illegally and punishable by jail-time under the Digital Millenium Copyright Act(EFF). For instance, users of free operating systems like Linux are required to use this hack to play the DVD as the license of free sharing code and DRM are quite incompatible. It doesn't matter if you own the movie, watch it with Jon's hack and you could end up in jail.

Elephants Dream

There have been and continue to be free movies in both price and your freedom to remix them. Star Wreck is a spoof of Star Wars/Trek that was freely released. Steal This Film is a documentary on The Pirate Bay, the Raid, and Piracy in general that was freely released as well.

Elephants Dream, although a very weird movie, looked like the kick-start of a freedom to remix movie. It was funded by the same group that develops Blender, which is an free software 3d modeling and design system. When they

released the movie they also released all of the source for the models, scenes. Everything that could let you generate your own identical copy of the movie was released completely free for you to make your own remixes. Furthermore, while creating the movie they helped develop the Blender package to make it easier for them to develop the movie. Currently they are working on another free movie and a free game. The idea is to make a great movie and game but to also fund the development to make Blender better at making games and movies.

Computer Games

Modern computer or video games are a mixture of many different media forms. In modern games you have music, scripted dialog, video like sequences, a story line, and are at the same time software. With all of that, the player is still given the freedom to make choices and in some cases can change the fate of his character or world. It's no wonder that the Free vs Proprietary conflict reaches here as well. Furthermore, DRM has an advantage in that every play of a game is unique, you can't just record the screen to copy the enjoyment of the game.

In this section I will be reviewing the Free vs Proprietary affects on two popular games Bioshock and Quake.

Bioshock

Bioshock lets you “turn everything into a weapon, biologically mod your body with plasmids, hack devices and systems, upgrade your weapons and craft new ammo variants, and experiment with different battle techniques in an

incredible and unique underwater city.” (2kGames). It is a highly rated game that has challenged many game play aspects of modern gaming. Adding the ability to hack things in the game to make them do cool new things. This is incredibly ironic compared to what freedoms to hack they give you back in the real world. They included a root kit like software package to protect their content. Originally they only allowed you to install it on two of your PCs. They still do require you to have an internet connection to activate the game. If you install it twice and that computer dies, you need to call their American telephone support and explain your case to them. Furthermore, the demo even came with this rootkit and it does not uninstall when you remove the game. That is a great security risk that most people don't assume comes with playing games.

Quake

Quake was one of the first internet playable first person shooters available which resulted in great popularity. It was released in 1996 and in 1999 they released the source code for the engine. In 2006 they released the full source code to the all of the game content. Even before the release of any code, they had made it amazingly easy to develop a “mod” or modification of their game. This allowed users to create their own games without the cost of developing an engine themselves. Many did, including many that are commercially successful today, such as Team Fortress and Half Life.

Governance

In a democracy, governance should be affected by every citizen's view of the world. Many of those world views are shaped in similar ways by the shared culture and shared tools that the citizens use. It is only natural that ideologies that are familiar to someone are applied to new ways and one way would be to governance. This section looks at governance in Free Software organizations, the effects of those organization on governments, the Pirate Bay Raid, and finishes with where we can go from here.

Free Software Internal Governance

Any organization that reaches a certain size needs to become organized and have established governance procedures or it will most likely fall apart and fragment. How do Free Software project's organize themselves?

Debian Study

Last April a study covering the Debian project was released (Ferraro, 2007). Debian is a Free Software Distribution that makes it easier for an end user to use Free Software. They package up components like GNU and Linux into a usable and completely Free Operating System. Debian runs “18733+ officially maintained packages on 15 hardware platforms, from cell phones and network devices to mainframes and supercomputers, developed by more than two thousand volunteers

from all over the world who collaborate via the internet on the Debian Project” (Ferraro, 2007). The study goes through the history of Debian from its forming stages with no formal organization to drafting a constitution and stabilizing it (Ferraro, 2007). Many of the people involved in Debian hardly ever, if ever, actually meet face to face (Ferraro, 2007). The study goes on to describe how they choose to balance the leadership positions with democratic control. They examine several cases in which volunteers from around the world followed the constitution they themselves drafted to resolve some of their conflicts. Debian is committed to Free Software and has also formed from that a completely Free Organization.

Linux Kernel

The Kernel of an operating system is the core “manager” or CEO of the system and tells everyone else what they can do and when. The Linux Kernel was meant to be “just a hobby, won't be big and professional like gnu” when it was created in 1991(The Case). It quickly captured a community around it and grew. The success of the Linux kernel was due in large part to the fact that, “features did not need to be in perfect coordination with the rest of the kernel for them to be incorporated into a working kernel for others to test” (The Case). Why is this important? This is the forking ability, albeit a bit hidden from view. This allows a developer to fork a part of the kernel, work on it separately, and still merge it back if and when the developer wants to.

Free Organizations and Governance

Some Free Organizations came to light with the specific intent of changing the world for the better and have using Free Software as an essential part of that plan. Some Governments have taken it upon themselves to select Free Software for ethical or security reasons without a clear organization promoting them to do it.

Wikileaks

Wikileaks is like Wikipedia in that anyone can add content, but unlike it in the fact that this content is specifically not released to the public (). Wikileaks is a site designed to encourage the leaking of documents that governments, corporations, or other organizations don't want to get out (). They hold the public's right to know in the highest regard, and are trying to make an uncensorable website for untraceable document leaking and analysis (). The Wikileaks project endeavors to make all of the world's organizations more transparent in what they do by utilizing leaked documents to do it. They prioritize on governments that restrict information flow the most, such as China, and develop ways to get around those oppressive information regimes.

OLPC

The goal of the One Laptop Per Child project is “to provide children around the world with new opportunities to explore, experiment and express themselves.” They hope to achieve this by getting a laptop into the hands of every child in the world. The end goal is to have the laptops be a tool to encourage collaborative

education. They have made an internal commitment to the child's software freedom so the child has control of their own machine. Each program in the OLPC laptop is called an Activity and can be wirelessly shared with many other children with OLPC laptops. This encourages sharing of anything you can do on the laptop and for those you share it to change it to suit their needs.

Governments Switching Software

Many governments are making the switch to Free Software for Cost and the ability to control their IT future. The organizations making the switch include the French Parliament, The City of Munich, The City of Mannheim, among many others. Gerd Armbruster, the IT infrastructure manager of Mannheim says it best: "we want to decide our IT strategy in Mannheim, and not have Microsoft make the decision for Mannheim."

The Pirate Bay Raid, Party

The May 31, 2006 press release from the MPAA headlined "SWEDISH AUTHORITIES SINK PIRATE BAY" details how, "Over fifty Swedish law enforcement officials executed search warrants and raids at ten different locations which resulted in three arrests and the preclusion of millions of users trading up to two million illegal files simultaneously. " The Pirate Bay is considered the world biggest torrent tracker, allowing users to share anything the users want to share. Unfortunately for

the MPAA, what The Pirate Bay does is not illegal in Sweden. Furthermore, the Pirate Bay struck back when they discovered on Facebook that the head of the prosecution against them is now working for Warner Brothers, a member of the MPAA. They also struck back with the formation of a political party, called the Pirate Party. It seems to have at least made major politicians in Sweden take the freedom of users seriously.

Open Source Governance

Open source governance is a political philosophy which advocates the application of the philosophies of the open source and open content movements to democratic principles in order to enable any interested citizen to add to the creation of policy, as with a wiki document.

-The Wikipedia article Open Source Governance

Although it is called Open Source Governance, the ability to fork it is expressly mentioned. The fundamental idea is to significantly increase the freedom of all citizens to participate in their government. By giving them direct access to the bills before they become laws and to allow them to suggest changes. Although the idea exists, it has not been put into use only a handful of times. It seems like the easiest and best step towards a greater Direct Democracy.

Conclusion

In a society more bound and limited by technology, it is essential that no one can

limit where others' boundaries and limitations are. At its simplest, a user interface without a copy button removes the ease at which someone could copy an item, whether it be a song, movie, or document. This frames what they will eventually do with said item. This multiplies exponentially when billions of decisions are being influenced every day by software's control over our modern digital society. The advent of forced Digital Restrictions Management paint a gloomy picture where we can only do what the media and software companies want us to do with our own computers and devices. They have also gotten the help of governments to enforce the rights they created through DRM. This means that a company can create its own rights on our computers and have legal protection to use against us if we go against the rights they made up.

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