Open Source for Better Future

Have you ever watched video on internet from website called YouTube? Did you have problem when accessing it? If you have problem, was it solved in less than, say, five minutes? The technology that used in the site called YouTube is Flash, a proprietary format from Adobe (formerly Macromedia, before merged with Adobe) that is displayed using program with same name. Most people can access websites with Flash contents because the operating system they use – Windows, OS X, and Linux – is supported by Adobe thus enabling them viewing the content easily. Then, how about people using non-commonly-used operating system, like OpenBSD or BeOS? If Flash is open source – the source code for the program is widely and freely available – not proprietary, they can port – a process of modifying source code of a program so it works on the operating system one choose – the program, in this case Adobe Flash, to the operating system they use. However the reality is not like that, Adobe Flash is a proprietary program where the source code is not widely and freely available so people are under mercy of Adobe: once they decided to stop supporting one of the operating system they're supporting, people using that operating system can't view the content that is made with updated version of it since they'll stuck with older version. That's why people need to start an initiative against proprietary formats and programs. One of the results is Theora and Vorbis, both made by Xiph.Org foundation, open source video and audio compression technology respectively. There are a lot of advantages using open source programs and formats: free implementation, easy to study and implement, can be ported to many operating systems, independent, etc, which the writer will explain some of them in this essay.

One of the advantages is free implementation. Proprietary formats usually come with cost to implement the format on another system or program, usually called royalty. Anyone that wants to use the proprietary format for his own program will have to contact the creator to get permission and perhaps paying him in order to get proper implementation of the format. Some of proprietary formats are available freely for decoding – or in simple word, viewing – purpose, usually in library form which can be used in other application; but don't let it fool you: if one wants to use the library for your own program, he still has to check the license for that library. Most of the libraries are only available for one or two specific operating systems hence forcing one that want to create a program using them to use that particular operating system. Even worse, in order to create file with a proprietary format the programmer will have to pay the creator for encoding – creating file with the format specified – capability for his program – and the program most likely will have to be made as proprietary program since the encoding capability usually integrated in the source code of overall

program. Contrary to proprietary formats, open source formats are free to implement. As the source code and documentation for open source format is freely and widely available, anyone that want to create a program that uses open source format can use it easily: the can use the source code directly and with its full capability – both encoding and decoding – freely without need to pay anyone in the process. The resulting program can be proprietary or open source program; the programmer can freely decide it.

Second advantage of using open source format is easy to study and implement. As the source code for open source format is freely available, anyone can read and learn it, and use it. Wide availability of the source code also means that anyone can freely ask others for help or explanation if he doesn't understand parts of the code; a contrast to proprietary format where all the help come from the creator and people using that format too which is usually fewer than open source format because of the cost involved when using it. One can even write another documentation, be it easier to read for beginner or more details how to use the format optimally, helping other people without being restricted by strict license from the creator. Overall, knowledges about open source formats are much easier to be obtained compared to proprietary format; people can share their knowledge about the format without being restricted by anyone thus helping anyone that want to implement the format in his own program.

Another advantage is being able to port the format to another operating system. Being an open source format in nature, the commonly used program for working with the format is usually open source, too. This enables anyone – assuming he's capable – to port the program to the operating system he's using in case there's no port for it yet. It's impossible to be done with a proprietary program: no source code available so even if the program is available freely, it can't be run in any operating systems it doesn't support, forcing people to use the operating system where it's support available thus limiting choice and hindering people adaptation on other operating system – assuming the program is widely used thus preventing people if that program or support for that format is unavailable on that operating system. Prime example on this is Adobe Flash: it's freely available, used on many websites, and even used as primary format on some websites like YouTube, Stage6, etc where the websites are useless without capability of displaying it. Some efforts are already made to reverse engineer – a term used for a process getting information, algorithm, etc of a format or program without having source code or documentation of it – the format (in this case Flash) to be made as "open source version of Flash implementation" but so far these attemps haven't succeed yet; either the reverse engineering process stucked on older version of format or the implementation not stable which results in bad decoding. Even if one day the reverse engineers

are able to completely create an open source version of it, there's still risk of patent: most formats used algorithms that're patented by the creator thus disabling people to use it freely even if it's as simple as just decoding the format. In this case, using open source format is much better because of no patent usually involved and the source code is freely available, enabling anyone to use it even if he's using his own "MyOS".

Open source formats also have another advantage: it is independent, in a sense no one have full control of it. The creator of open source format usually: either the creator has public development server, where anyone can submit fix for errors, improvement to algorithm, or anything; or there's a council where although most of decision or changes are dependent on it people can still contribute in improving and fixing it by sending to one of the council member as they usually much more open to contributions and suggestions compared to companies creating proprietary formats where the improvements and fixes are done by themselves since no one other than themselves can view the source code. Being independent, it also have another advantages: if anyone disagree with the council decision or with some other people that're also contributing to it, they can just create their own version –usually called fork – so he can improve it to his liking and anyone else with same mindset with him can also help improving and fixing it. In that regard, both (or all) the projects (main and forked) might eventually merged back as one version and combine most (if not all) of the improvement that was made from each versions as one much better version. The most recent where merging happens is between two open sources 3D window render engine: Compiz, the main program, and Beryl, the forked program (which has different goal from the main program), that are just recently merged back as one program named Compiz Fusion where it is much more stable than earlier programs and still improved at faster pace because programmers from both programs focused on one program. That's different from proprietary format: the creator that made the program is the only one capable of improving and fixing the format – and once the creator retired, the format will not be further improved and die, except if the creator decided to make his format open source so it can be improved by anyone else especially if the format is already widely used.

However, despite the many advantages of using open source formats, some people still prefer to use proprietary format. They argue that some proprietary formats have much higher quality than open source format ones. Most recent examples is H.264, a video compression algorithm which is basically the most efficient algorithm available today. H.264 is a heavily patented program and already supported by some companies for their own devices. Quality-wise, there's no open source format for video compression that can compete equally with it in term of quality. Although there's already an open source implementation of H.264 format, it's considered illegal as it violates some

patents that's used to implement it. Another reason is most people won't care if it's proprietary or open source as long as they can work with it easily even though the program used to create it is not free because it's already widely used so they think they'll be able to share their works to most people.

Sadly enough, the quality of some open source formats are still lower than proprietary version since they can't use the algorithms used by proprietary format because of the patent. However that's not the only way: there are more algorithms can be used by open source formats, can it be invented or still being researched. Nowaday more and more algorithms are being made patent-free hence that enables it to be used in open source formats. With many people able to contribute to the open source formats so it can be continuously improved and fixed, and with good coordination, open source version of the format will eventually catch up the proprietary format so quality should not be a problem in the future. As for mentality "if it works, don't change it" most people have (usually in term of formats and programs), it should not be a problem if other people that support open source formats start creating programs that's just as easy to use as proprietary format that's already available and encouraging people to use it instead. It should not be too difficult, if the work made with open source format is interesting and used regularly, people will use it and even better, anyone using "MyOS" can also enjoy the work as he can port the program to his operating system since the source code for the program is freely available.

With all these advantages, usage of open source formats should be pushed as soon as possible since if there's no one (or just a small portion of people) using it, nobody will use it. The creator and contributors to open source format should also keep improving and fixing their format so the quality is better than proprietary ones so people will have even more reason to choose open source over proprietary format. Even better, open source format for multimedia files is already being considered for multimedia standard in next generation web standard which is a good progress sign of more open source usage.

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