

# THE WAY OPEN SOURCE MAKES MONEY

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## Abstract

This paper studies how the open-source software and hardware technologies are making money by giving free software with source code. And also, to know who is providing money for the workers, and how open source are earning and running companies. When the work has been started using the Open source product as compared to Linux; it has been found that open source is awesome and free and they will give the source code and the user can modify or contribute to those companies. The paper first discusses about Linux and the way in which source code is provided for the kernel. Next, various open sources and free software foundations (FSF) are discussed. Open Sources are the software which is given to everyone for free. FSF are the software not needed to be free but you can contribute and share your changes and at the end of this paper, a deep understanding is obtained on how the free and open source products are making money.

**Keywords:** Open Source Software, Open-source Hardware, Free Software Foundation, Making Money With Open Source.

## I. INTRODUCTION

The word "open source" gives rights to people to modify and share because its design is publicly accessible and modifiable [1]. When the Linux was developed in 1991 to give freedom to the computer world with the name of Free Software Foundation created by Richard Stallman & team, the team developed the operating system which was a new version of UNIX or they created the new OS like UNIX but it

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is free and the person called Linus Torvalds, created a program that connects all hardware for his new computer with the processor of 80386, but when he released the program on the internet the team of Richard Stallman took and used in their operating systems [2]. The program written by Linux gave success and then it was used by the Richard Stallman's OS and later it was named as LINUX when the LINUX was released [3]. The Richard Stallman was saying that Linux is an FSF project but the Linus and other companies are not interested with FSF rules and regulations so they all discussed and created a license called open source (GNU General Public License).

### A. OPEN-SOURCE SOFTWARE:

Open-source software is software where users can download software with source code (Sources codes are programs used to create software) that anyone can view, alter, change, and reuse.

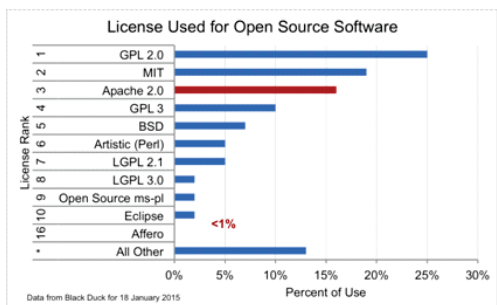
### B. OPEN SOURCE HARDWARE:

Open-source hardware is very similar to open-source software instead of releasing with source code they will release with the designs of the hardware so that common peoples can view, alter, change, and reuse.

Example: mycroft.ai.

### C. MOSTLY USED OPEN SOURCE LICENSE:

1. Apache License 2.0
2. GNU General Public License
3. MIT license
4. Mozilla Public License 2.0
5. Common Development and Distribution License version 1.0



**Figure 1: License used for Open Source Software. Each license has a different set of rules regulations or we can say it as a protocol that varies for each license.**

### II. API'S ARE OPEN SOURCE

This Part is very much needed for the current generation and upcoming generation Because in olden days there is very few API that supports open-source and allows Programmers to use it for their client. But nowadays approximately 79% of Software Companies and other companies are offering free API to Interact with their Product.

**Ex:** Facebook’s Graph API, Google API’s {tensor-flow (to use their AI in your Machine), map (Implement GMap in your Website), etc}, DuckDuckGo’s Search API and many. And Many Programming languages is also an open-source to the world where you can contribute you itself Ex:Python,C++,JavaScript{In These Language we can modify and contribute to you itself like Python has Cython, Jython; C++ has Qt Javascript has react, vue, etc..}

### III. OPEN\_SOURCE MAKES MONEY

The main objective of the paper is to know How Open Source is Making Money

**The results are:**

Most Open Source works are done unpaid like PHP. Some people write software for their own purpose and then release like Linux kernel. Some of them will do for Academic and when it gets success, they release it on the internet.

When some Software is really good and popular in public some companies will pay for the developer like Whatsapp (paid by Facebook), Android, GitHub, etc.

### A. SOURCE FROM STACK EXCHANGE (STACKEXCHANGE.COM):

Companies like Red Hat is worth more than a billion-dollar it's an Open-Source OS, and they are making money with training, supporting, consulting, and other kinds of stuff. But it's not the truth that all the Open-source companies are making money by providing training and other things, but lot of companies are doing. They are Github, Mozilla, Ubuntu, Debian, Kali Linux, etc.

Especially companies like KALI Linux[4] Parrot is the platform for Hacking and penetration testing. They make money by providing training, consulting, exams, and certificates.

And lot open-source software like Blender, Natron are making money by providing solutions, training, offering cloud for cheap rates, etc...

When talking about money it is necessary to talk about partners because most of the companies make partner with the other companies. A single company will not invest a lot of money to create software, OS, Hardware, Technology so that open-sourced companies will join and make the things that will be useful for all the companies in that association and they will give some open source license like Apache or MIT. They may not release the software or hardware to the public like us but the partner companies can view, change, reuse according to their wish.

Technologies like Docker, and Kubernetes are created by the efforts of more than one companies and they made it for private and also, they have open-sourced the project for personal uses.



Figure 2: Open source technologies

People cannot make money with open source unless it gets famous or popular. But we can make money with open source by providing Add-Ons and Support by making those are pricing. People should know that Many Open Source Companies are having their open-source version and Business Version of the Software so that they can choose the free version for Normal use and Paid version for some particular purpose. It doesn't mean that the scope of activities done by open source is unlimited. Similar to any commercial version software, there is always a limitation on the activities which can be done by open source softwares. There are many free add-ons[5] support for open source (Not All companies are having both open and commercial version of the product, few companies have their product as a commercial version for some advanced use).

The Company, Red Hat said that there are lots of open-source Foundation companies who don't make money till now. Whenever you visit some website there is something called "Donate Us" for more good work. Understand one thing open source license[6] doesn't contain about Putting an advertisement in their product. It can be done when the creator has interest on it.

#### IV. CONCLUSION

After understanding the concepts of Open-source, it is found that there are various means of earning income which is both reliable and beneficial. It can be concluded that there

are various ways to make money with good Project or innovative Project. Moreover, it is important that the project should be novel, socially relevant and reliable.

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