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Office of Innovation

OPEN SOURCE:
BUSINESS MODEL

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Can my product be open source and make money?

Yes. Open source business models have the ability achieve widespread impact and create revenue opportunities for businesses, often, better than proprietary technology.

"Technology thrives in the open, where people are free to share their ideas and build on the work of others." *- Red Hat*

Technology firms which have made strides through disruptive innovation dominate today's list of Fortune 500 companies. These firms have defined and redefined industries, culture and society through innovation. With this new wave of enterprise is a new wave of how to create value for the business and its customers. Tech giants including Microsoft, Google and Amazon employ a **SaaS model** (Software as a Service)[1] which has proven effective for both proprietary and open source technology.

This paper outlines some of the strategies that can be used to create value and generate revenue for open source hardware, software, and content. It explores opportunities for open source businesses and how they play a significant role in today's rapidly changing innovation landscape. The UNICEF Innovation Fund invests exclusively in open source technology. To support our portfolio and other open source companies, we interviewed 12 companies and leaders in the industry to identify successful business models that are profitable.

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[1] A software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted. It is sometimes referred to as "on-demand software" SaaS is typically accessed by users using a thin client via a web browser. (wiki)

Table of Contents

What is open source technology?

 "Open-source software development is a production model that exploits the distributed intelligence of participants in Internet communities. This model is efficient because of two related reason: it avoids the inefficiencies of a strong intellectual property regime and it implements, concurrently, design and testing of software modules. Because open source works in a distributed environment, it presents an opportunity for developing countries to participate in frontier innovation. - B. Kogut and A. Metiu, Oxford Review of Economic Policy

Defining Open Source

Open source refers to the principles and methodology of open source software (OSS) and open source hardware (OSH) that are continuously improved, modified and redistributed:

Open source software
enables the original source code to be made freely available to the public and may be modified and redistributed. For software, it means the original source code is publically accessible for people to view the code, copy it, learn from it, modify it, or share it.[2]

Open-source hardware
refers to *tangible objects* such as machinery and other devices whose designs are available and can be modified, changed or distributed, however, the copyright for the intellectual property (IP) in this business model is controlled by the original developer.
By providing the source code freely available to the public, some firms build broad communities of developers who innovate and develop a product together with users. Using this strategy, many companies have been successful at introducing their products globally because they have an existing user base, generate revenues and increase their economic outcomes.

There are several licenses that distributors can use. Companies or distributors benefit mainly from either, consultancy, services or the sale of hardware that runs open-source products such as providing software on CD or upgrading.

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[2] Source: https://opensource.com/resources/what-open-source

What business model works for open source technology?

Software as a Service

Since the pioneering of the software industry, technology companies have used an enterprise sales model to sell and distribute their technology. The traditional approach entails a company selling a license for a single download or use. Upgrades are prompted by the company when they happen to release one and are sold as an additional product. The product is created to fit a particular use case accompanied with heavy restrictions on how it can be used and shared.

There are several different models businesses can explore in order to create social and economic value with open source technology. To find and recommend a model that has proven to show long term success for open source startups with software, hardware and content and that spans across different geographies, we surveyed a range of organizations that spans geographies and industries to see how they make money with open source technology. T Software-as-a-Service (SaaS) was identified most frequently as the model adopted by these companies. We will explore this model in depth in this report.

A SaaS model allows the company to sell services performed by the product instead of selling the product itself. In a SaaS model, the software is cloud-based and the company hosts software on its infrastructure and delivers it via the Internet. They support all the underlying computing software and provide key services such as application hosting, frequent version upgrades and other features that offer additional infrastructure. Commonly used products that use a SaaS model includes Gmail, Google doc, Box, Dropbox, SAP and Microsoft office 365.

Established open source platforms that use a SaaS model include GitHub, Sentry and Moodle. GitHub allows developers and communities of contributors to work together on public and open source projects free of charge. However, GitHub extends the same service for private projects for a monthly subscription fee.

Sentry provides open source error tracking that shows you every crash in your stack as it happens, with the details needed to prioritize, identify, reproduce, and fix each issue. The platform is offered free of charge for hobbyist. However, for teams and organizations to use their service, they offer a comprehensive package for a monthly subscription where the price charged is dependent on the number of users and the range services required.

Since its release in 2002, Moodle has been modified for different uses in blended learning, distance education and other class management functionalities. Moodle offers additional services including consulting, hosting, courseware creation and course hosting and others. Ten percent of the revenue generated from these services goes to support the free and open source software.

Benefits of a SaaS Model:

Scalable: it gives the customer the option to access more or fewer services or features on-demand.

Automatic updates: the customer will not have to
hire additional staff to update their software.

Accessibility: users can access a product
from multiple devices.

How do open source businesses make money?

Revenue streams for open source solutions

An open source business can not charge a licensing fee. There are many different dynamic ways in which a company can earn revenue and ensure a feasible, profitable and sustainable business model.

To provide some real business examples, we interviewed a diverse number of startups to determine how they make money with their open source technology. Here are three of the most frequent revenue streams they explored and adopted.

1. **Consulting services:**
   a business can offer consulting services to enhance the existing source code, use it for a different use case, or modify it to solve a specific problem. For hardware companies, businesses can consult to create customized products that align with a client's requests. For open source businesses whose core product is content, sharing content allows the creator to showcase their work. In most sectors that involve content sharing, your portfolio creates opportunities/demand for commissioned work. Revenue can be earned from commissioned work that results from a showcase of your work.

2. **Charge for additional or fringe services:**
   Companies can charge for additional services such as hosting the platform, for maintenance of the open source code or for additional features. The company could charge for additional features such as adding the client's company logo to the dashboard or for additional login accounts similar to a freemium model to ensure it is unique to the client.

3. **Sale of additional proprietary products:**
   Companies can **sell additional closed source products** that build on the core open source product. A common revenue stream for open source hardware companies is to charge a fee on the manufacturing cost of their open source designs. Here, anyone can download and modify the design and the company earns revenue once the product is made. For hardware companies some companies may sell the inputs required to manufacture their design.

What are the advantages of being open source?

Knowledge Sharing:
Open source allows a community of contributors to build on and improve existing source code. This enables knowledge sharing and brings diverse skills and expertise to your team. In turn, it significantly reduces development costs and enables your product to be continuously improved and upgraded.

Adaptability:
Software, hardware and content are developed to solve a specific set of problems. When the developer, engineer or architect design a product, it is made to function in a specific way, for a specific customer, in a specific area. Open source allows the product to be modified and adapted for different geographical areas, for different contexts and users and to solve a different set of problems. Larger companies such as Microsoft and Oracle have to ensure that any software designed works in every geographic region, is understood in many different languages and is compatible for a wide range of devices. As an early stage venture, this would require a large amount of financial and non-financial resources. Some sources argue that by choosing to have a proprietary technology, it limits the lifespan of your product and increases market risk. A community of contributors, may ensure a wider adoption of your product as it allows for adoption in a local context with very little restrictions.

Security:
Because the source code is publicly available, open source exposes bugs or weaknesses in the system thus, increasing security. The only way to prove the security of a code base is that it is public, open, and testable by others. There have been far too many examples of companies saying "trust us" with the security of their code base only for their insecure code to be eventually infiltrated by hackers. Open-sourced code allows the public to test and comment. Users and the community of contributors can also help identify errors in design or bugs, reinforcing security by user collaboration.

What opportunities exist for open source businesses?

Investors are providing capital for open source businesses:
A number of investors are drawn to investing in networks and technologies with rapid adoption. Union Square Ventures, a thesis-based venture capital fund, places value on investing in businesses with a larger network effect. One of their investments is MongoDB, now valued at $1.6 billion. Founded in 2009, its database has since been adopted as backend software by websites and services including Craigslist, eBay and Foursquare.

Open source business are successfully exiting:
Open source business have a clear exit strategy. Large companies including Dropbox have acquired open source technologies and hired the team of developers who created the original source code to improve and grow the technology, creating opportunities for the open source founders.

For example, Dropbox released the Zulip chat app under an open source Apache Foundation license. Zulip is a group chat application optimized for software development teams. Dropbox acquired it in 2014, and worked with the original Zulip developers to improve the product, and then launched it as an open source product. Zulip being open source has allowed it to be integrated with many platforms and products. For Dropbox, there is value in offering additional features and improving the user experience for their customers.

 "At Dropbox, we love and depend on numerous excellent open source projects, and we consider contributing back to the open source community to be vitally important."[1]
- Tim Abbott, Dropbox CEO

Large software clients are increasingly looking to purchase open source software and acquire the teams behind it:
Some of the world's tech giants are now embracing open source technologies. According to Fortune Magazine, Apple is increasingly looking past large software enterprise technology companies like VMware, EMC and Oracle for smaller, unknown open source companies. These technologies are popular among web companies because they're built to be fast, efficient and often address a particular set of problems. Web companies prefer open source technology because of their ability to contribute, modify and ensure it keeps up with the demand for performance, scale, security and other factors that are a priority for web companies – this is not feasible with proprietary technology.

Open source licenses open a significant client base from government and international organizations:

Companies that open source their products have the opportunity to work with public institutions including some of the United Nations agencies and government agencies who prefer to use open source technology for the procurement of products and services, for operational use and when selecting external partners and beneficiaries to receive funding. Having an open source technology creates opportunities for funding through venture capital, challenges and grants that will only invest in open source solutions. Open source is one of the Principles for Innovation and Technology in Development created by UNICEF. It has been endorsed by over 300 organizations. Recently, the French government, through SGMAP[3], launched a pilot to explore various open source-based alternatives for building its own cloud computing infrastructure.[4] On August 8 2016, the US President's Executive Office issued an executive order requiring that US federal agencies publish at least 20 percent of their newly-made custom software as open source over the next three years. This requirement is part of a pilot established by the Federal Source Code Policy.

Today, innovation plays an integral role on creating social impact and when open source companies work with these agencies, they too became an important part of driving social change.

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[3] Secrétariat Général pour la Modernisation de l'Action publique
[4] Source: https://joinup.ec.europa.eu/community/osor/news/france-pilots-open-source-based-cloud-services