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Information Security Project 2

Open-Source Software in Intuit

Report By

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1.0 INTRODUCTION:

Open-source software (OSS) is a code which is designed to be publicly accessible. It allows anyone to view it, modify, and distribute the code according one's, their suitability. Open-source software is developed in synergetic way, relying on peer review and community production.

Open-source software is often cheaper, flexible, and has greater longevity than its peers because it is developed by communities rather than a single author or company. Open-sourcing helps to speed development and empowers all developers to contribute to a code base. Open-source software has become the central point for its practical benefits, such as its speed, flexibility, transparency and community support, has attracted many businesses. In the tech market there is an open-source software for every commercial software application, Apache open office offers windows, MacOS and Linux for free of cost.

1.1 BENEFITS OF OSS:

OSS is usually developed by talented software developers to create programs with standard quality. According to reports OSS saves many businesses billion of dollar.

They are usually available for free and no cost for downloading any other copy of it. It is usually flexible as you modify the existing software and hire people who can execute the changes. Likewise, TURBOCASH software package created the software for free which offers the accounting services. Cloud computing also offers open-source services for example Own cloud and Next cloud are open source. Firefox, Chrome and Android are other popular examples of open-source software.

1.2 DISADVANTAGES OF OSS:

Many business and commercial industries are aware of the uses of OSS, but there are not cognizant of the dangers it poses. There are some difficulties and issues with OSS as it does not have an official platform to address problem. It does not have help-desk or any customer service to access for help. One needs to be all by themselves and independent in thought, in addition usually there is a lot of community help available which can guide you.

Furthermore, OSS is usually free but the programmers might charge for the service that they offer. It loosely translates that though software is free it becomes lucrative as they charge by helping others download it. If a company does not have proper licensing and policies to protect its IP rights, its risks stealing of massive data for malicious use.

2.0 OPEN-SOURCE SOFTWARE AT INTUIT:

The company believes in open source and it has led various projects such as Argo, Karate, Ben Ten by employee's contribution and has been committed to the principles and practice of open source. Furthermore, it fosters a culture of contribution and collaboration. As Intuit involves in personal finance, accounting, tax software they need to provide quality, accessibility, flexibility, scalability and many other features. Speed is an important feature as the delivery of service to small business and consumers around the world is integral. The work at Intuit is team specific, for instance, developers in a team, who study and develop might not be aware of the changes and executions made across the company. The major limitation of this style of working is that it increases the threats of replication of work.

Intuit inculcates open contribution that involves contributing to the development of open-source software. It makes sure that all services are available to developers across the organization. By making the tools available and accessible to developers across the teams. Intuit nourishes community support where employees comment, contribute and share their view.

According to one of the Open-source tech leaders in Intuit, "Open Contribution helps organizations innovate as a whole by utilizing commonly available technology, tools, and data. It also helps engineers build and hone their craft and makes the source code easily available to other stakeholders and industry experts to provide feedback. This allows engineers across the organization to understand the design and architecture of a project, contribute to the code and documentation instantly and test to identify potential issues and bugs, resulting in a higher quality product. Open contribution also encourages multiple engineers to review code and share feedback, thus raising the quality of software."

Open source resonates with the mission of Intuit as it makes it easy for developers to solve problems and inculcates best code for execution. As engineers start to increase their consideration for open source, they have increased their value to share, adopt, and use code. The company honors and appreciates the contribution to open source as a way to bring better digital experience to life.

Intuit looks forward to recruit new people who are involved in open source and they want to encourage people who are willing to contribute code to other people's projects. It believes that aptitude for OSS is challenging as it advances the nature of software across the industry.

3.0 RISKS OF OSS AT INTUIT:

Even though benefits of OSS are embraced it does pose risks for the company. OSS can limit licensing and increase vulnerabilities and inject malicious code in the open-source platform. To manage an OSS can lead to work flow challenge. OSS risks mostly arise from weakly written codes and damage the data present on the system.

Intuit values speed, and focuses on delivering its services to customers promptly. To obtain rapid development and cut back on costs Intuit has embraced OSS.

Assessing the risk assessment report created on the vulnerabilities present in the Intuit network, OSS can expose the system to the following risks.

- Cross site scripting - Hackers insert malicious scripts into safe and secure working networks and can carry an attack to the end user's session.
- SQL injection - The hacker is able to disrupt the queries in the database and view the data that is generally not permissible.
- Weakly trained employees could download malicious code unknowingly.
- Intellectual Property Risks.

Intellectual risks have raised as the organization uses licenses with limited security policies which places an organization's intellectual property at risk. The nature of OSS has made it tough for the organization, as it does not have authority or a front desk, and the code can be freely copied and accessed.

Following are the open-source projects created by the company,

- [Argo](#) - Argo makes that possible by maximizing the efficiency of Kubernetes, allowing people to get things done more quickly.
- [Ben Ten](#) - Engineers use Ben Ten to create and track Jira stories, while customer care agents use Ben Ten to search across databases and get answers fast.
- [Card Parts](#)- Teams can effectively and efficiently reuse elements, while designers get a template, they know their designs will fit.
- [Karate](#) - Web services testing made simple. Unstable or inconsistent tests can delay the production release of web services.

Most of the codes created by the engineers are publicly available which allows security analyst to mitigate vulnerabilities but on the other hand everyday humongous amounts of security lapses are found in the code due to its accessibility. Since OSS is freely available from repositories and project homepages, it is hard to prevent security breaches and demands same security that any commercial software demands. Constant modifications in the code leads to regular and constant security check for vulnerabilities.

4.0 ANALYSIS OF OSS AT INTUIT:

Intuit generally makes its codes available on many repositories and many public homepage platforms for free of cost and, moreover, it is actively inculcating teams to involve its developers, to become more OSS oriented. After analyzing the risk and security assessment report, the results showcased the Intuit is still working on its security measures that mostly involve mitigating security breaches and applying standard cybersecurity measures.

Though the company actively embraces OSS, at this stage I don't think it's the right timeframe to adopt open source and open contribution due to the security lapses and the dangers of OSS.

OSS has posed many risks to bigger organization. For instance, The Heartbleed security bug in the OPENSSL cryptography library impacted nearly 20% of secure web servers on the internet and allowed numerous data breaches including theft of 4.5 million medical records from a large hospital chain.

Other than coding and technical risk that OSS poses, risks of inappropriate licensing is something that many are not aware. Licensing for OSS can be issued under no license or can be issued under one of hundreds of different licenses. Some licenses require developers to link to the code and others require that proper attribution be provided. The main feature of these licenses is that it allows users to copy, modify, license and sublicense code freely. Restrictive license can lead to intellectual property at risk.

Though Intuit works under valid OSS license, it does not have efficient and robust policies in the security agreement and there is a dearth of many security policies that can intellectual property rights. In the intellectual property right clause, it does not assign exclusive ownership of code by the developer as it makes freely available on the public which means it can be modified by anyone without the need of login information or details. When details of users acquired it makes it easy to track the user when a security breach takes place. In addition, the company does not have proper patent clauses for the security codes creates which makes the ownership and security more vulnerable.

Another risk due to the reputation of the company, many users download the code, but if the code has been infected and undetected by the security analysts; it is going to damage the user's data and system. Moreover, the company is liable to many damages incurred by the users.

The tech companies are usually burdened with responsibility of investing in cybersecurity, their investment includes by hiring security analysts, acquiring the technological equipment and licenses required. Most of them hand over their responsibility to third party to provide security measure. Mostly companies also acquire insurance that can cover any security breach. When the company has started OSS, the need for security measure had alarmingly doubled due to the state of the software, consequently the investment has doubled and increased the costs.

Lastly, considering the technical security vulnerabilities and OSS license issues I would not recommend OSS for Intuit. The risk assessment report provides more insight and bolsters the decision of omitting OSS for the company. Though the team at the company has created reputable projects implementing open-source software, the company needs to work on its cybersecurity measures. To defend against these cyber-attacks such as cross site scripting and SQL injection, web application firewalls must be used that alert any impending attack and block the site before the script has been executed. In addition, queries should be parameterized, where parameters are given values only in the time of execution.

To avoid intellectual property risk, communication is crucial in the institution, where discussions take place between senior officer to members from the HR, marketing, sales, legal services, production and R&D regularly and the company must keep a track of individuals and organizations that have access to IP so that tracking is easy. Corporate leadership must work with everyone's consent to mitigate intellectual property rights.

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