

# Open Source: Stuff you should know

For Hunter College' awesome open source class

Presented by Gil Yehuda, Sr. Director of Open Source

April 6, 2020

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## **If you have to leave now, here are some takeaways:**

1. Open Source means different things to different people. Don't get trapped in one framing, inquire what people really mean when they use the term. It might surprise you.
2. Open Source has evolved over the past 20+ years. Open Source was seen as anti-corporate. Today it is driven by corporations.
3. Companies think about Fear, Love, and Money. Open source hits all three.
4. Open source will help get you a job, if you are clever about it. I'll elaborate.
5. I'll give you advice about what to do and avoid.

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# Agenda

- 1. About me**
- 2. About open source**
- 3. About you and your career**

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# Me



About when the  
Free Software  
Foundation was  
established



About when the  
Open Source  
Initiative was  
established



When I started to  
understand what  
FOSS was really all  
about



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# A brief history of license philosophy

## Proprietary code is bad

Unix Licensing, BSD  
Unix, Richard M.  
Stallman, Printer  
drivers

**Code must be set  
free**

## Free or Open

Open Source  
Movement,  
Cathedral vs. Bazaar,  
Eric S. Raymond

**Code can be set  
free**

## Open but Commercial

Vendors use  
unfavorable open  
licenses to drive  
users to commercial  
options

**Free, but we want  
to make money**

## Maybe Open for Most

New fauxpen source  
licenses that target  
cloud companies or  
“bad” actors

**Free for those on  
my side**

# What I do today



Search or jump to... Pull requests Issues Marketplace Explore

**Yahoo**  
 Yahoo is a Verizon Media brand. This organization is the home to many of the active open source projects published by engineers at Yahoo and Verizon Media.  
 Sunnyvale, California http://opensource.yahoo.co

Repositories 175 Packages People 185

**Pinned repositories**

- SongbirdCharts**  
Allows for other apps to render accessible audio charts
- athenz**  
Athenz is a role for provisioning authorization (decentralized)
- Oak**  
A Scalable Concurrent Key-Value Map for Big Data Analytics
- maha**  
A framework for with out of the dimension tool

**Gil Yehuda**  
 I often answer questions to stimulate thought, not to provide solutions.

**Credentials & Highlights**

- Sr. Director of Open Source at Verizon Media (Company)
- Studied at Case Western Reserve University
- Lives in Washington, DC 2017–present
- \$4m content views 271k hits month
- Top Writer 2016, 2017, 2014 and 2013

**Profile** 1,404 Answers 178 Questions 6 Shares 28 Posts 9,393 Followers

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# Open Source

Code you can use, projects you can join

Explore how we do Open Source  
 Learn more

**Use**  
 Our projects are licensed so you can use them. We use them too.

**Contribute**  
 We invite you to help us make our code better.

**Join**  
 If you love what you see maybe you'll want to work here too.

**Featured Projects**

- Athenz**  
 Federated authentication system for provisioning and configuration.  
 Project Overview Source Code
- DataSketches**  
 Getting the best approximations from Big Data sets.  
 Project Overview Source Code
- Vespa**  
 Store, search, rank and organize big data at user serving time.  
 Project Overview Source Code

**TODO**

## TALK OPENLY DEVELOP OPENLY

**For companies committed to open source.**

Does your company release open source projects? Do you interact with the open source community to better:

- **•** other ways to run successful and effective open source about the group, or **•** contact us to get involved.

504 views · View Upvoters · Answer requested by Felix Zaslavsky

8/397

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**Open Source Developer Guide**

- Using Open Source Code
- Publishing a New Open Source Project
- Contributing to Open Source Projects
- Launching Mobile Apps
- Promoting Your Projects
- Accepting Contributions
- Resources to Address Common Questions

THE LINUX FOUNDATION

# Open Source Guides For The Enterprise

Leverage best practices for running an open source project by The Linux Foundation in partnership with

Search Open Source Guide

## Verizon Media Open Source Developer Guide

The Verizon Media Open Source Developer Guide covers all relevant information to publishing, using, contributing to, promoting, and growing open source at Verizon Media.

The Verizon Media Open Source Program Office (OSPO) provides services to help developers with their open source needs. These services are highlighted in this guide. Employees can check out the OSPO Welcome Page on our intranet page (on The Street) and can contact the OSPO team via email osspo@ or Slack #opensource with questions. We've made a redacted

- <https://github.com/yahoo>
- [opensource.yahoo.com](https://opensource.yahoo.com)
- <https://www.quora.com/profile/Gil-Yehuda>
- <https://www.linuxfoundation.org/resources/open-source-guides/>
- <https://verizonmedia.github.io/oss-guide/>
- <https://todogroup.org/>

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# Wait, what's Verizon Media?

Verizon Communications is a conglomerate of many companies that operates many businesses. It's listed as #19 on the 2019 Fortune 500 list of the world's largest companies with \$131.9B revenue.

- Verizon Consumer Group (wireless, wireline, FIOS, etc.)
- Verizon Business Group (5G edge computing, enterprise computing, telematics)
- Verizon Media Group
  - Yahoo: News, Finance, Sports, Mail, Search, intheknow.com, cachay.com
  - AOL, HuffPost, TechCrunch, Engadget, Autoblog, and other media brands
  - Advertising, video, and analytics platforms
  - Content delivery network technology
  - Ryot studios AR



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# Okay. Let's talk about open source:

## 1. Why companies are very interested in open source

- a. Back up to the basics
- b. Thinks the way companies think
- c. What are OPSOs

## 2. How open source can help you get a job

- a. My code vs. our code
- b. Different types of “open source jobs” you should consider
- c. Things to avoid

## 3. Your questions



# Open Source and Tech Companies

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# What does **open source** mean to you?

## **Legal Workaround**

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Copyright defaults to restrictions in code sharing, Open Source is a workaround of Copyright law behaviors.

## **Development Methodology**

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A way for developers at different companies to improve code by managing upstream contributions in a community

## **Ethical Movement**

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Code *ought* to be shared. Proprietary code exploits users and enriches companies. Open Source restores user's rights.

## **Marketing Bullet**

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Vendors open their code base, but then charge for support services. It's just a different way to charge for the same thing.

## **Public Collection of Code**

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Someone probably solved the problem I'm working on. I'll use that solution since it's better than the one I didn't write yet.

## **All of the above**

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Exactly. And more.

*Everyone sees open source through their own lens. These are all correct some of the time.*

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# Licenses are created for a reason: Free Software vs. Open Source vs. Code Available

- **Free software** is an ethical movement that sees proprietary software as a social evil.
- **Open source** is a crowdsourcing movement that sees value in networked value production.
- **Code available** is a method to share code but restrict some usage unless the user pays.

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# License types

## Restrictive

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Licenses like GPL, LGPL, EPL, and MPL impose some restrictions that will sometimes cause issues. But it depends on what we are trying to do with the code.

## Problematic Licenses

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Licenses that are not OSI approved, and the AGPL license (which is), are designed with restrictions that make using the code very complicated. By default we don't use these unless we determine we can.

## Permissive

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Licenses like MIT, BSD, and Apache have very few terms we have to worry about, and they are easy to address. So we consider these permissive.

## Mock-licenses

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Some code publishers use the Unlicense, WTFPL, Beerware, or other fake licenses that don't really help, but they don't really restrict us. We tend to avoid these, but we will use them if need be.

We don't evaluate a license in a vacuum. We look at what you seek to do with the code and help determine how/if we could comply with the license based on your use of the code.

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# So, what **is** Open Source?

Open-source software is a type of computer software in which source code is released under a license such that the copyright holder grants users the rights to study, change, and distribute the software to anyone and for any purpose.

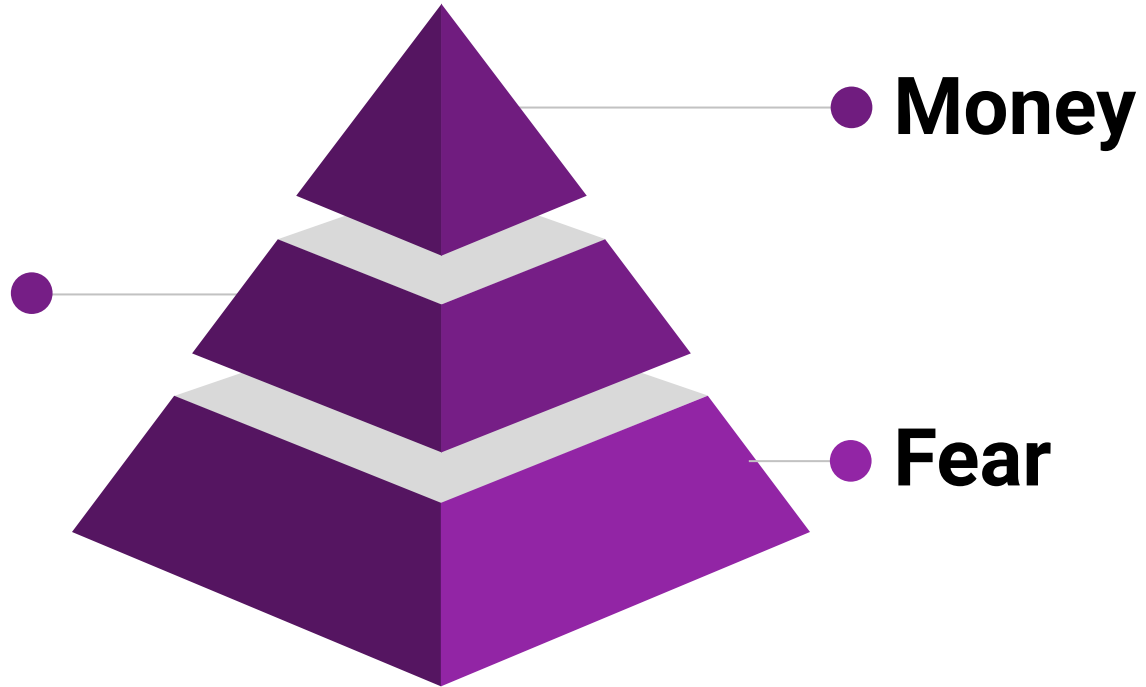
## So what?

- Open source code has **legal implications**.
- Open source also has **social rules**.
- Open source has **business implications**.

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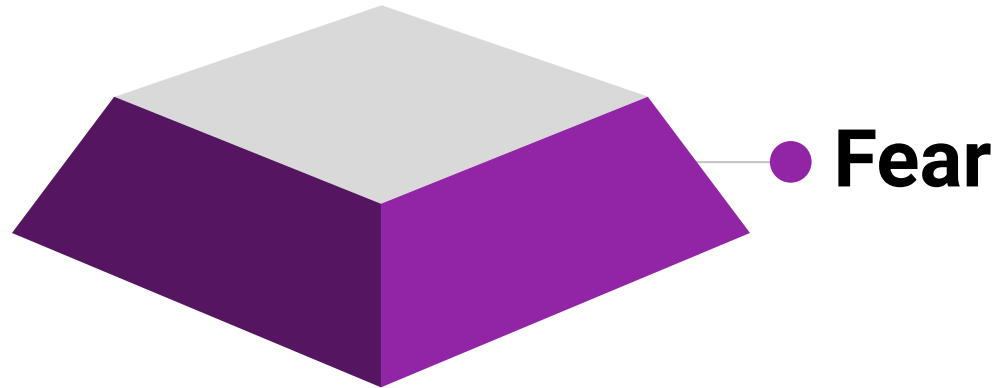
## Business think:

**Love**



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# What can go wrong?





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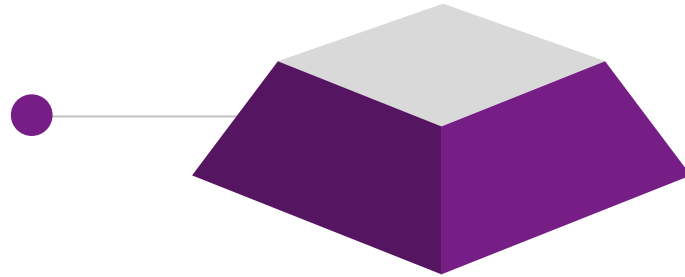
# Fear is a Liar

- Once, companies feared the Free Software Movement since it was designed to destroy proprietary software. Companies made money licensing proprietary software.
- But open source is everywhere, proprietary software is not destroyed, and we have smarter ways of making money.
- So the concerns shift:
  - Can I use a project I find on GitHub in an application I use at work?
  - Should I let a stranger write code that I'm responsible for at work? What if the code breaks or has a security flaw? who fixes it?
  - What's the difference between all these licenses? Do I even need a license?
  - How do I know if a project is any good?

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# What can go right?

**Love**



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# What's love got to do (got to do) with it?

- Someone I'm not paying a salary is writing code that I get to use!
- I can hire someone who already knows how to code in the platform we use here; saves on training budget!
- Open source developers are better at coding since they code in public and turn criticism into better code!
- We can find someone to hire by seeing who contributes to a project important to us and make them an offer.
- Developers love working at companies that are open source-friendly, they'll stick around.
- If a developer leaves the company, she'll still work on the project while someone else pays her salary!
- All we have to do is *threaten* to open source a project, and the team will make the project better.

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# How does this help the business?



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# Show me the Money!

## Save Money

Costs less to use something already developed.

Done properly, you get more resources to help you develop new features, test, document, and promote.

Others will help reduce **tech debt**

You effectively outsource non-core work and commoditize your operating platform.

Strategic open source can neutralize a competitive threat.

## Make Money

Standardization reduces resistance, increases life of technology, and attracts sales.

Focus value sales on value-added core-work to open source platforms.

You can use open source to attract developers into your technology ecosystem, and then sell them products.

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# Tech companies must be great at open source

Because you can't develop software these days without dealing with open source.

- Need to manage “inbound” of 3rd party code in to their code base.
- Need to manage the contribution of code back to external projects.
- Might want to publish open source projects.

Since this is production code, you need to figure out security, supportability, and licensing processes. Assume no one *will* read the code.

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# Non-tech companies care about open source too

Companies that use software will want to free themselves of vendor lock-in.

- Open source is seen as a proxy for interoperable and standard -- but this often fails.
- Open source is seen as free -- but this is a misunderstanding of cost.
- Open source is seen as better -- and sometimes it is.

Since this is production code, you need to figure out security, supportability, and licensing processes. Assume no one *can* read the code.

# **Open Source Program Office (OSPO):**

The center of competency at a company  
for all things Open Source



# Many companies have OSPOs:



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# Verizon Media OSPO Services



## Program Management

Supporting internal engineering groups with open source issues



## Community Management

Promoting projects via blogs, podcasts, videos, webinars, & speaking events



## Strategic Partnerships

Establish and renew membership with foundations, partner companies



## Security Monitoring

Bug Bounty alerting us of unauthorized code published



## Mobile Compliance

Responsible for mobile and TV app compliance engineering and automation

# For example: managing participation in Apache Software Foundation projects

**53+**

Active Participants

**28**

Apache PMC Members



# Promoting our projects



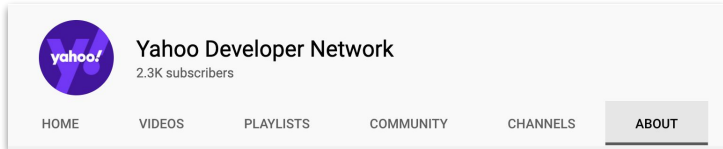
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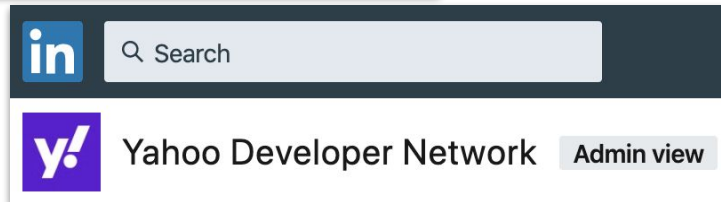
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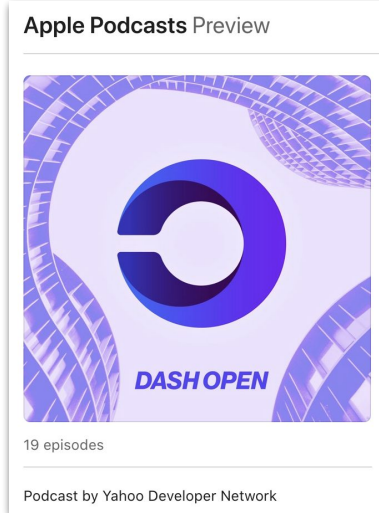
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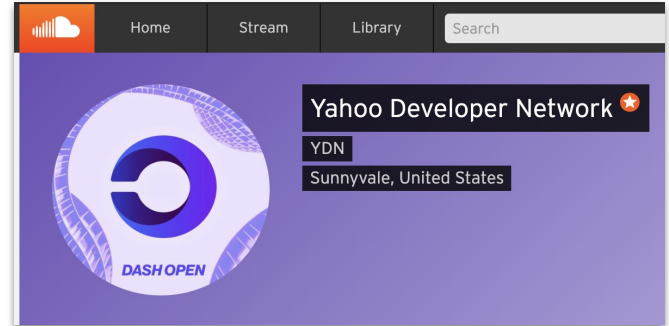
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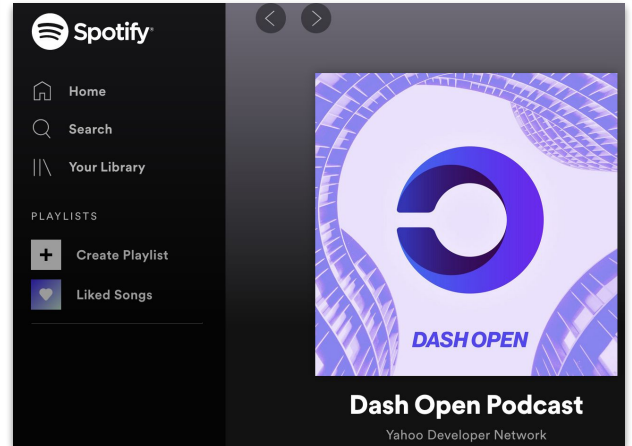


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# Section Summary:

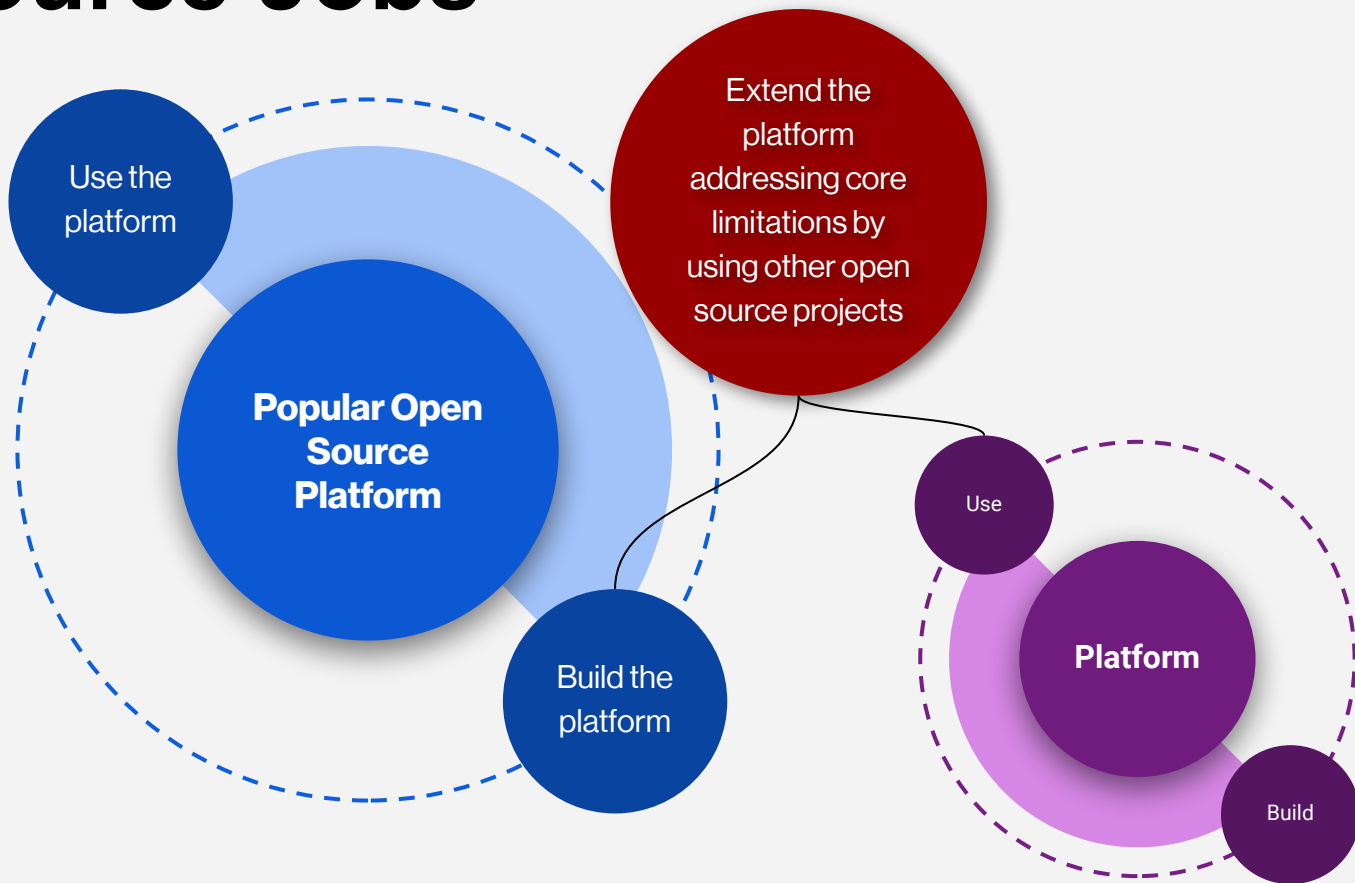
- **Open source is no longer exclusively weekend volunteerism to the gift economy. It's a business model.**
- **Taking code for free is not free. Code has to be managed. It's like free puppies.**
- **Companies drive most of the important open source projects and foundations.**
- **The better you understand motivations, licenses, and strategic publications, the better your business outcomes.**
- **Companies with OSPOs have a plan on how to abate risk and achieve better outcomes.**



# Open Source and Jobs

# “Open Source Jobs”

e.g. Apache Storm  
Kubernetes  
PyTorch  
React Native  
Etc.

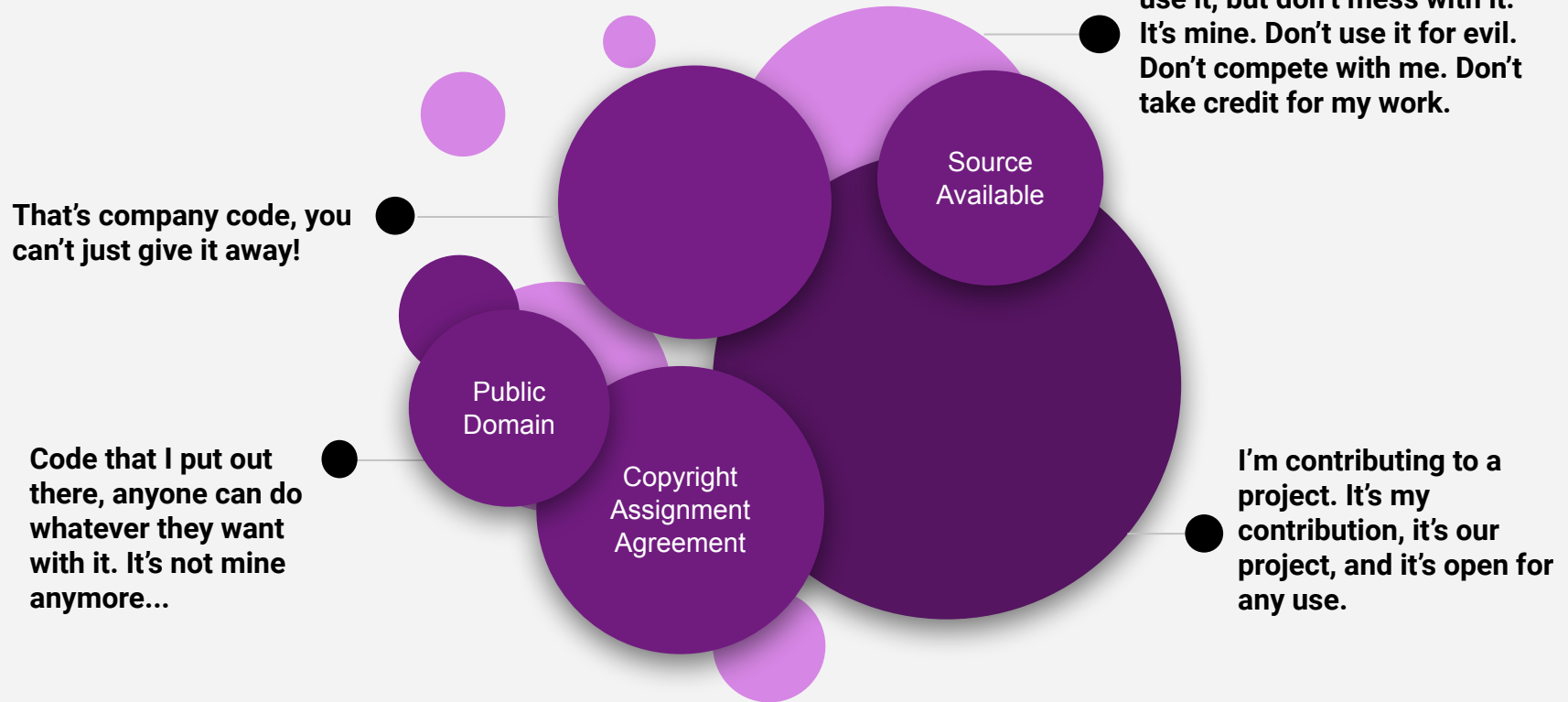


# Rookie mistakes to avoid

- Don't publish someone else's code (or company code from an internship) in a way that make it seem it was your code. Give credit and/or ask permission.
  - Don't publish cleartext passwords or other secrets.
  - Show you care about the visitors to your repo by adding a useful README, contributing file, and license.
- 
- <https://www.quora.com/Can-your-work-on-GitHub-actually-make-your-resume-worse/answer/Gil-Yehuda>
  - <https://verizonmedia.github.io/oss-guide/docs/publishing/publishing-template/README.html>



# My code / Our code / Company code?



# Get on top of the resume stack:

1. Before you apply to Company A, go to their github org and check out their open source projects.
2. Pick out one that is popular, applies to your expertise, seems active.
3. Learn it, use it, suggest fixes to it.

Why would this work?



## Section Summary:

- **It's one thing if you can use a well-documented open source project. It's better if you can help build a project others want to use. It's extremely attractive if you master the art of improving projects leveraging other projects.**
- **Open source projects differ in terms of their sense of authorship-rights (tethering).**
- **Find out when your code is actually your code or the company's code.**
- **Open source shows off your skills, also your flaws. If you're interviewing, I'm looking at your GitHub account.**



# Your Questions

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# Your Questions

1. How did you get started writing open source software? What was the first project that you worked on?
2. What company would you cite as having undergone the most dramatic "change of heart" on open source software?
3. Do you have to know many different programming languages to be paid with a full time salary and work on open source projects all day?
4. What's your favorite thing about open source development?
5. Do you know why businesses previously hesitant to open source development are now more open to it?
6. What's one of the most complicated aspects of managing an Open Source Project?
7. What advice would you give to those who want to contribute to open source projects but at times lack the confidence to do so?
8. Can you participate in open source without being a coder?
9. How do you get started if you don't yet have the confidence to contribute?

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# Your Questions (1)

1. Why do companies contribute to open source projects?
  - Not contributing fixes creates a supportability nightmare
  - Working code wins technical arguments.
  - Code is more valuable, leverageable when public.
  - Improved hiring / branding as a tech company.
  - To neutralize, commoditize, establish leadership, or invite into product ecosystem.
2. What does your average day look like?
  - Slack, email, Jira, hangouts, presentations, strange issues. Lots of communication and coordination.
3. What first drew you towards working on open source projects?
  - I realized there's more you can accomplish working with others than working on my own.

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## Your Questions (2)

1. Why are specific ways Verizon Media uses open source?
  - We use open source in all products. Why reinvent the wheel. We'd rather improve it.
  - We take good projects and make them into great projects.
  - Neutralize, commoditize, establish leadership, and invite people into our product ecosystem.
2. What open-source does Yahoo contribute to / favorite open source project?
  - The entire Big Data ecosystem. Many Apache Projects. OpenStack, Tons of Javascript/Node projects.
  - I can't pick a favorite, but I'm very impressed with Screwdriver, Athenz, Bullet, Vespa, Moloch, and Elide. I'm proud of many "for-good" projects we created too.
3. What advice do you have for open source newbies?
  - There's much more to everything. Find your comfort spot and make a T.
  - If you think you are the smartest person in the room, you are in the wrong room.
  - Smart people know many things. Successful people know many smart people.



# Section Summary:

- **You asked really good questions!**



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# What's next?

1. Looking for a job?

<https://www.verizonmedia.com/careers/>

<https://www.linkedin.com/jobs/search/?keywords=verizon%20media>

<https://oath.wd5.myworkdayjobs.com/en-US/careers>

2. Do you know anyone doing medical research to help with COVID-19?

Send them this link. <https://cord19.vespa.ai/> it's an open source search engine we just published that will help medical researchers.

3. Looking for open source projects to contribute to?

<https://github.com/yahoo>

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