

BE VIII Semester CSE-2

Free and Open Source Software

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Course Objectives and Outcomes

- **Objectives**

- Familiarize the students with Open Source Technologies
- Expose students with OSS Projects
- Make the students understand the principles, methodologies, policies, licensing procedures and ethics of OSS.

- **Outcomes**

- Identify various FOSS tools, platforms, licensing procedures, development models and FOSS ethics
- Describe various FOSS projects, development models and project management
- Adapt to the usage of FOSS tools and technologies.
- Distinguish between Proprietary and Open Source tools, development methods
- Evaluate various Open Source projects like Linux, Apache, GIT
- Practice Open Source principles, ethics and models.

Syllabus

- **Unit-I**

- **Introduction to OSS-** Open Source, need and benefits, Standards, Requirements for Software, OSS success, Free Software, Examples, Licensing, Public Domain software, History, uses of FOSS

- **Unit-II**

- **Fault Tolerance Desig-** Principles and Open Source Methodology- History, Open Source Initiatives, Open Standards Principles, Methodologies, Philosophy, Software freedom, OSS Development, Licenses, Copyright vs. Copy left, Patents, zero marginal cost, income-generation Opportunities, Internationalization

- **Unit-III**

- **Case Studies:** Apache, BSD, Linux, Mozilla Firefox, Wikipedia, Git, GNU CC, LibreOffice.

Syllabus (cont.)

- **Unit-IV**

- **Open Source Project:** Starting and Maintaining an Open Source Project, Open Source Hardware, Open Source Design, Open Source Teaching (OST), Open Source Media- License, How to create your own Licenses, Important FOSS Licenses (Apache, BSD, PL, LGPL), copyrights and copy lefts, Patent

- **Unit-V**

- **Open Source Ethics-** Open Source Vs. Closed Source, Open Source Government, Ethics of Open Source, Social and Financial Impact of Open Source Technology, Shared Software, Shared Source, Open Source as a Business Strategy.
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- Text BOOK: Open Source Technoogy by Kailash Vadera and Bhavyesh Gandhi, University Sscience Press, 2013

Classes and Assessment

- Class work
 - Mon (11.00-12.00AN), Thu(9.30-10-30 AM), Fri(1.00-2.00PM)
- Assessment:
 - 30 CIE, 70 SEE
 - Three sliptests/assignmments/case studies

Questions

- What is Free and Open Source Software?
- Why should we study?

Survey: Open Source Programs Are a Best Practice Among Large Companies

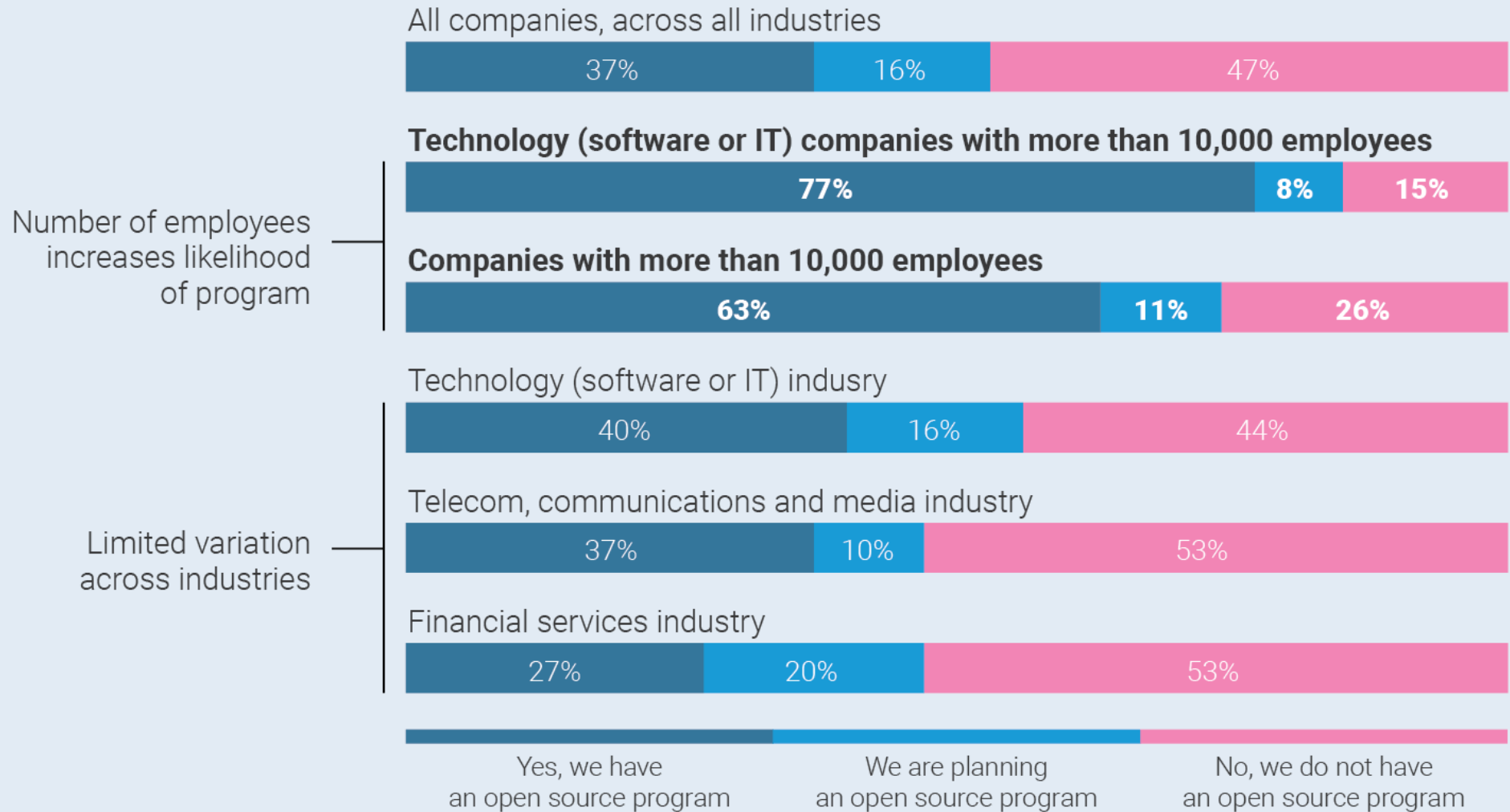
30 Aug 2018, by Lawrence E Hecht and Libby Clark

<https://thenewstack.io/survey-open-source-programs-are-a-best-practice-among-large-companies/>

**Open-Source Software Has Changed The Way Software Is
Developed. Here's Where The \$33B Industry Is Headed**

<https://www.cbinsights.com/research/report/future-open-source/>

Large Companies, Especially Those at Internet-Scale, Most Likely to Have an Open Source Program

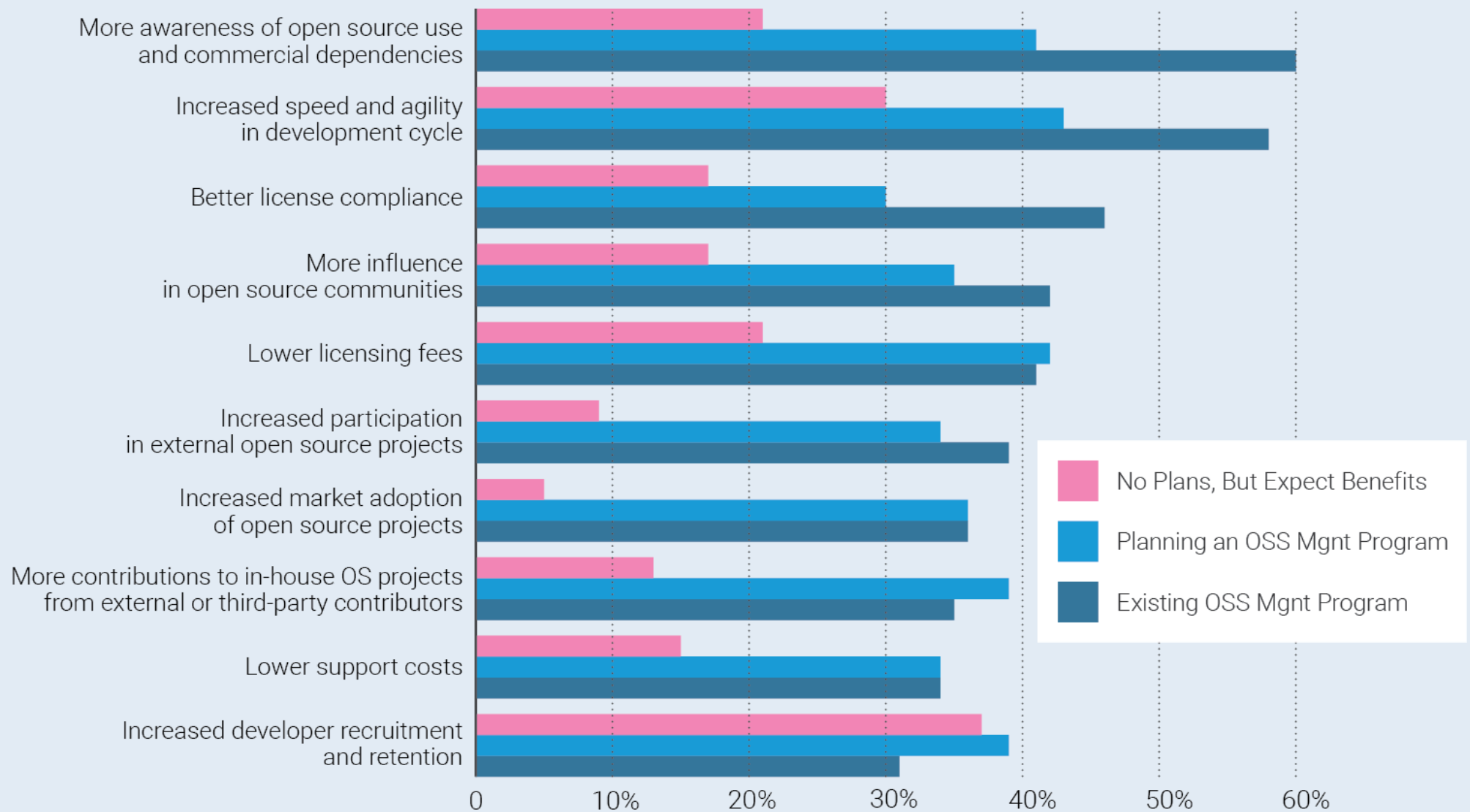


Source: Open Source Program Survey. Q. Does your company have an open source program (either formal or informal) or management initiative? Full Sample, n=748. Technology (software or IT) with > 10,000 employees, n=39; > 10,000 employees, n=160; Technology (software or IT), n=206; Telecom, communications, or media, n=60; Financial Services, n=45.

Consensus About the Role of Open Source Programs

- 77% Foster open source culture within organization
- 74% Maintain open source license compliance reviews & oversight
- 73% Own & oversee execution of open source strategy
- 73% Communicate open source strategy within & outside company
- 72% Facilitate effective use of OS in commercial products & services
- 60% Select/set up infrastructure & tooling for OS use, contribution & creation
- 57% Develop & deliver open source training, resources & documentation
- 53% Launch new open source projects
- 50% Engage with developer communities so company contributes back to other projects effectively
- 49% Ensure high-quality & frequent releases of code to open source communities

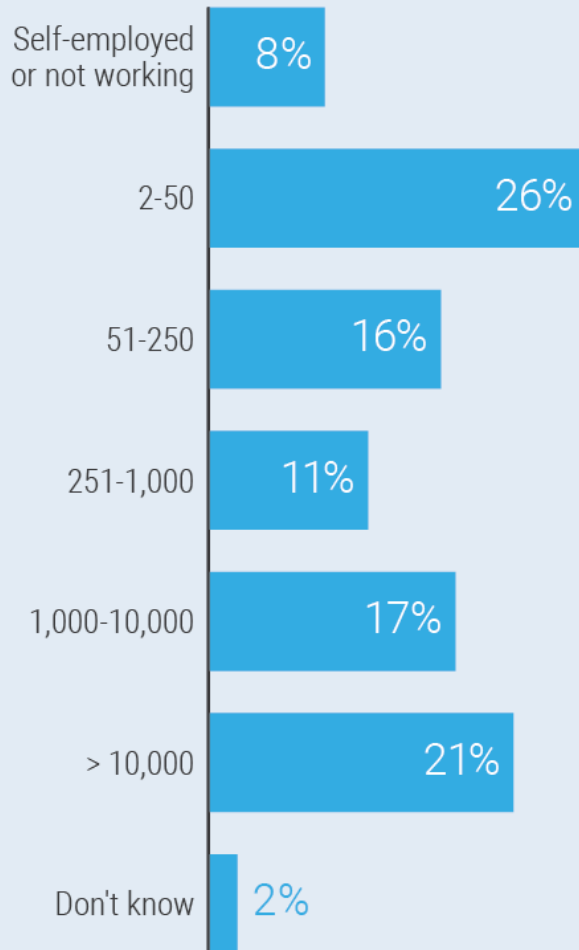
Benefits of Open Source Programs



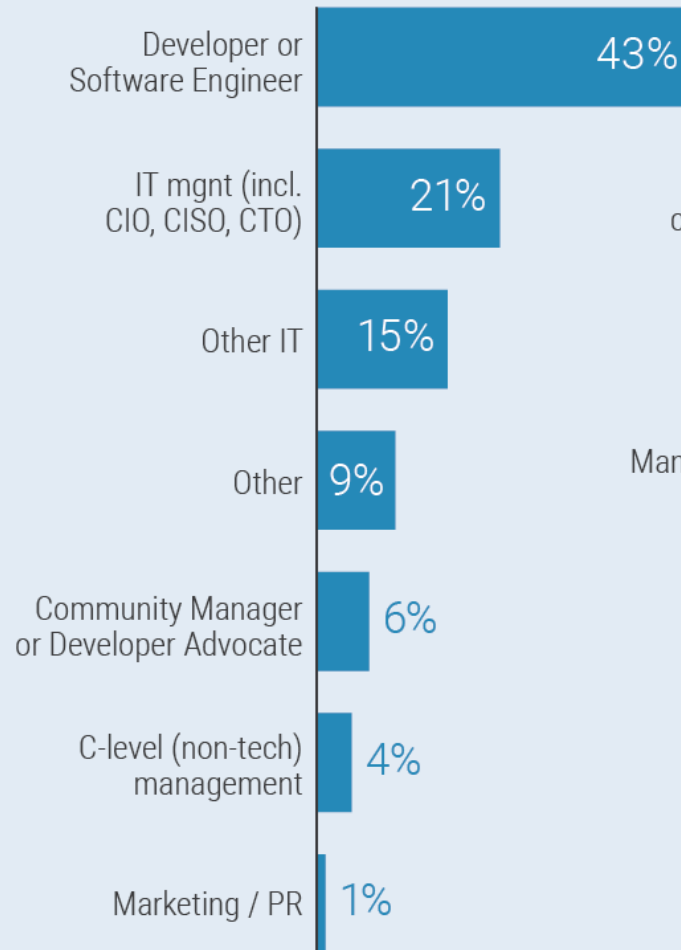
Source: Open Source Program Survey. Q. What are the areas where your company has most benefited from the open source program? (Check all that apply) n=156. Q. What does your company aim to accomplish by starting an open source program? (Check all that apply) n=74. Q. What are the top three ways your company would benefit from an open source program? (Choose three) n=201.

Demographics

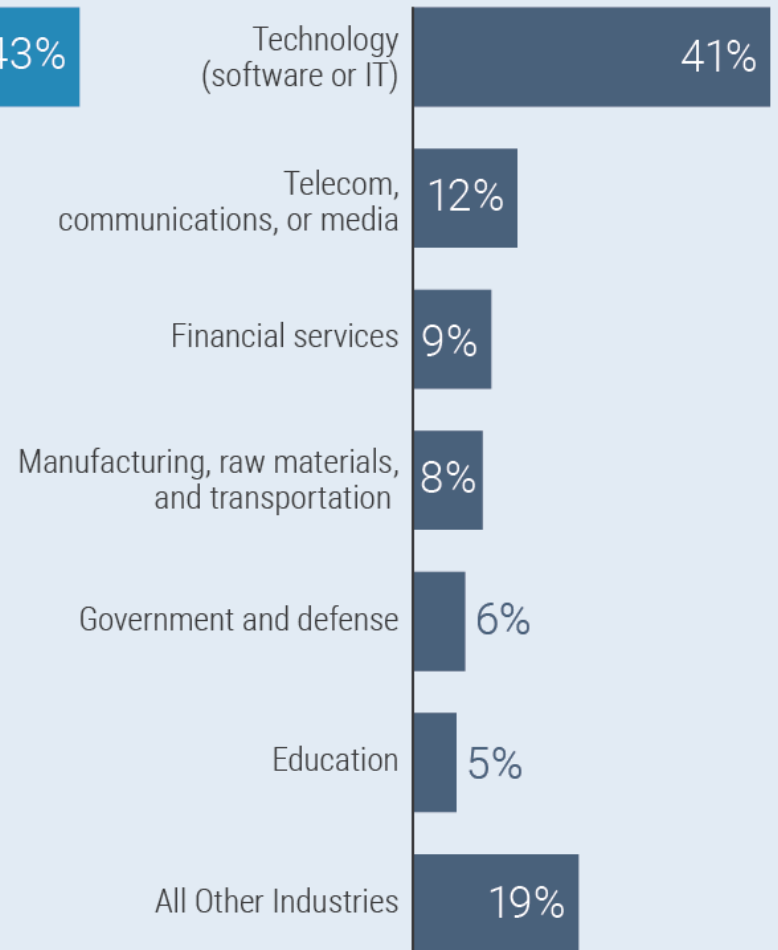
Company Size



Job Role



Industry Vertical



Source: Open Source Program Survey. Q. How many people work for your company or organization? n=748.
Q. Which category most closely defines your role? n=500. Q. What industry vertical is your company in? n=497.