

Improving the Impact of Enterprise Open Source Development and Participation

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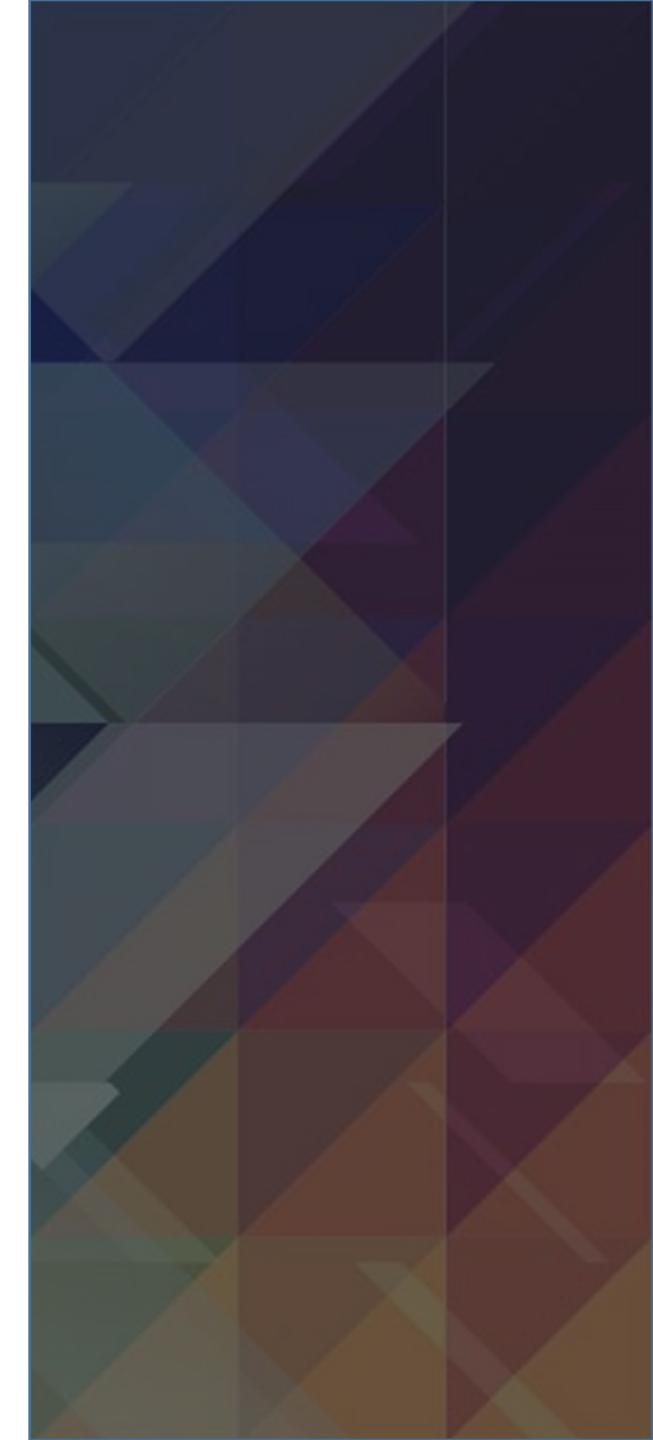
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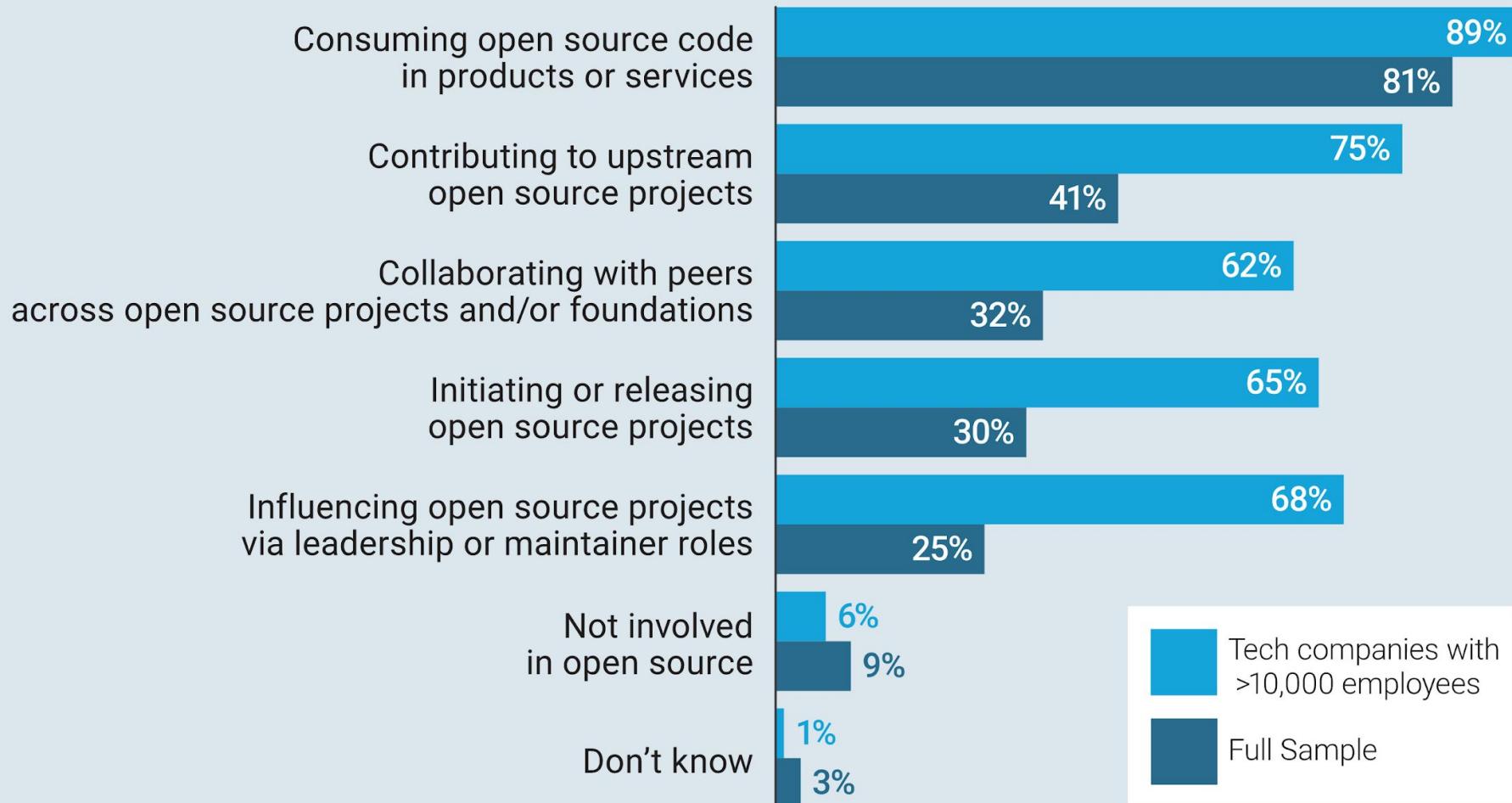
Abstract

Enterprise open source development and involvement has its own set of challenges, but it becomes easier if you have a clear plan to follow. If you're one of the growing list of companies that relies on open source software for their products and services, investing time and money into improving your open source practices can pay off immensely in the long run.

There are many success stories of companies getting involved and becoming leaders in various open source domains that they charted a path you can follow to improve your own contributions and aim for a leadership role.

This talk offers a practical guide to a number of practices that enterprises can adopt to help them grow their footprint in open source projects.

Large Tech Companies Excel in Open Source Citizenship Metrics

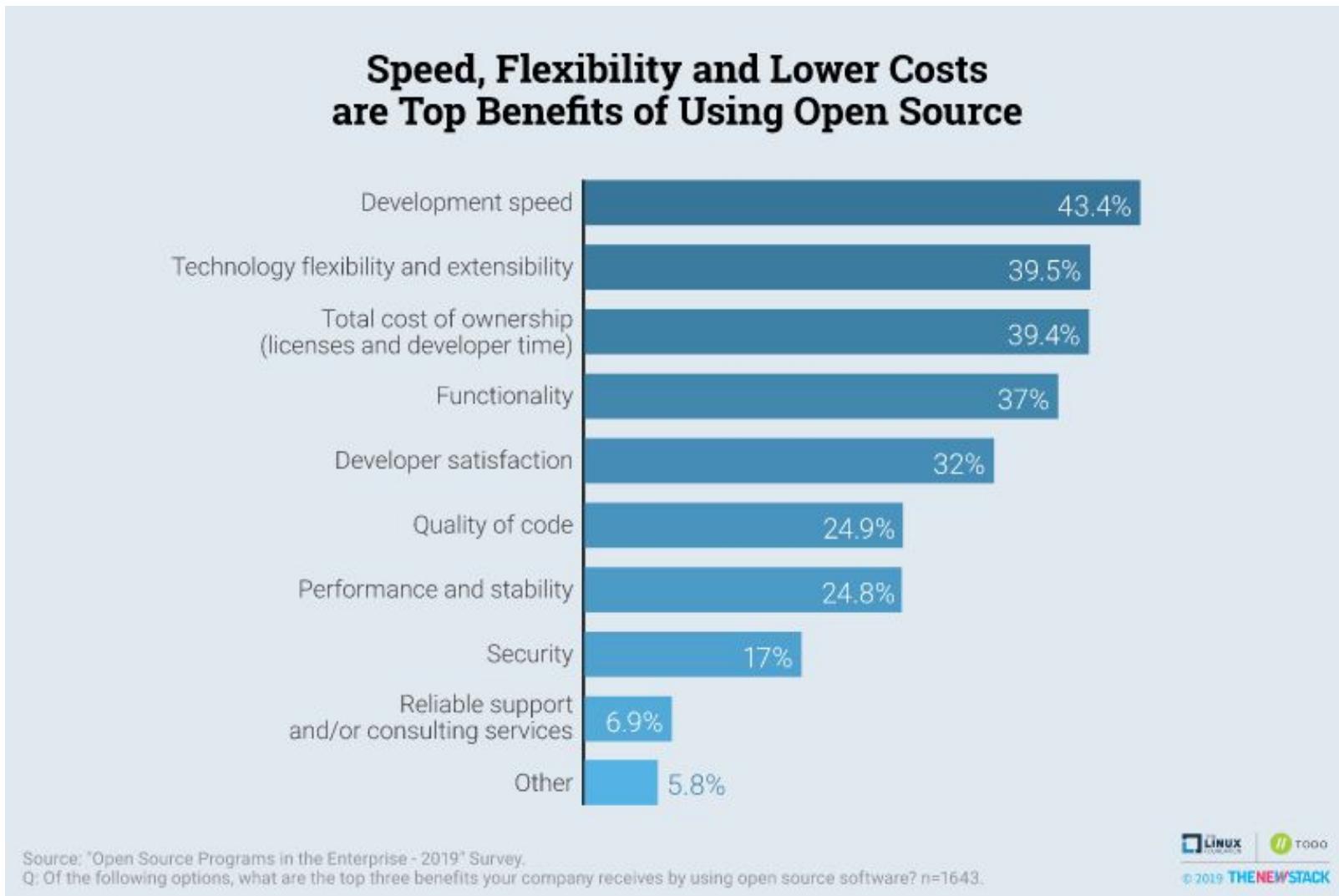


Source: "Open Source Programs in the Enterprise - 2019" Survey. Q. Where is your company or organization on its open source journey? (Check all that apply) Full Sample, n=2,681, Technology companies with > 10,000 employees, n=142.

Why open source?



Benefits of Open Source



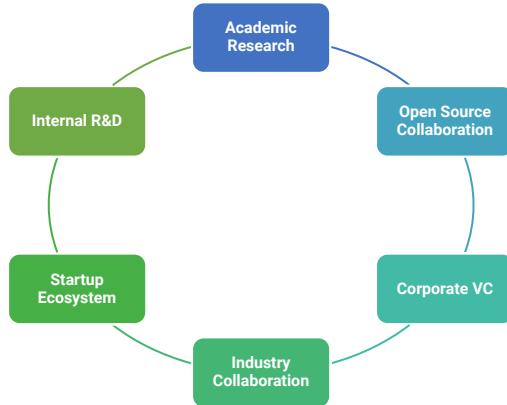
Reference:

Linux Foundation / The New Stack Survey <https://github.com/todogroup/survey>

Strategic Value of Open Source

Another tool in your tool box:

Open source is essential to any company's development strategy.



Product dependency: Open source is ubiquitous.



Product enablement: Open source delivers value.

Direct enablement

- Fulfill open source development requests from R&D and product teams.
- Upstream internal code into open source projects.
- Implement and upstream related drivers.
- Support open source compliance efforts.

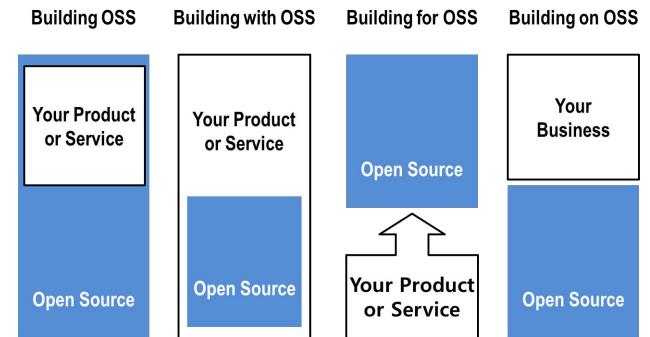
Indirect enablement

- Stabilize upstream projects used in products.
- Participate in internal policy discussions.
- Effectively influence the upstream projects via thought leadership and code contributions.
- Participate in upstream technical discussions.

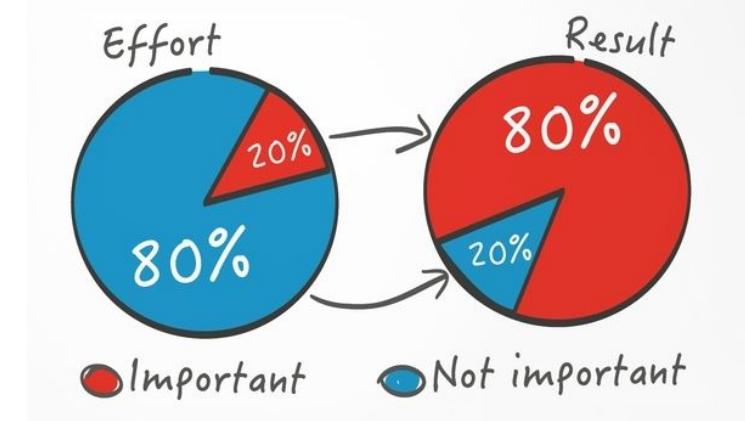
Upstream enables better products

- Less work for product teams.
- Minimized cost to maintain source code.
- Better quality code.
- Faster development cycles.
- More stable code bases.
- Improved reputation in upstream projects.

Flexible licensing: Adaptability to various business models

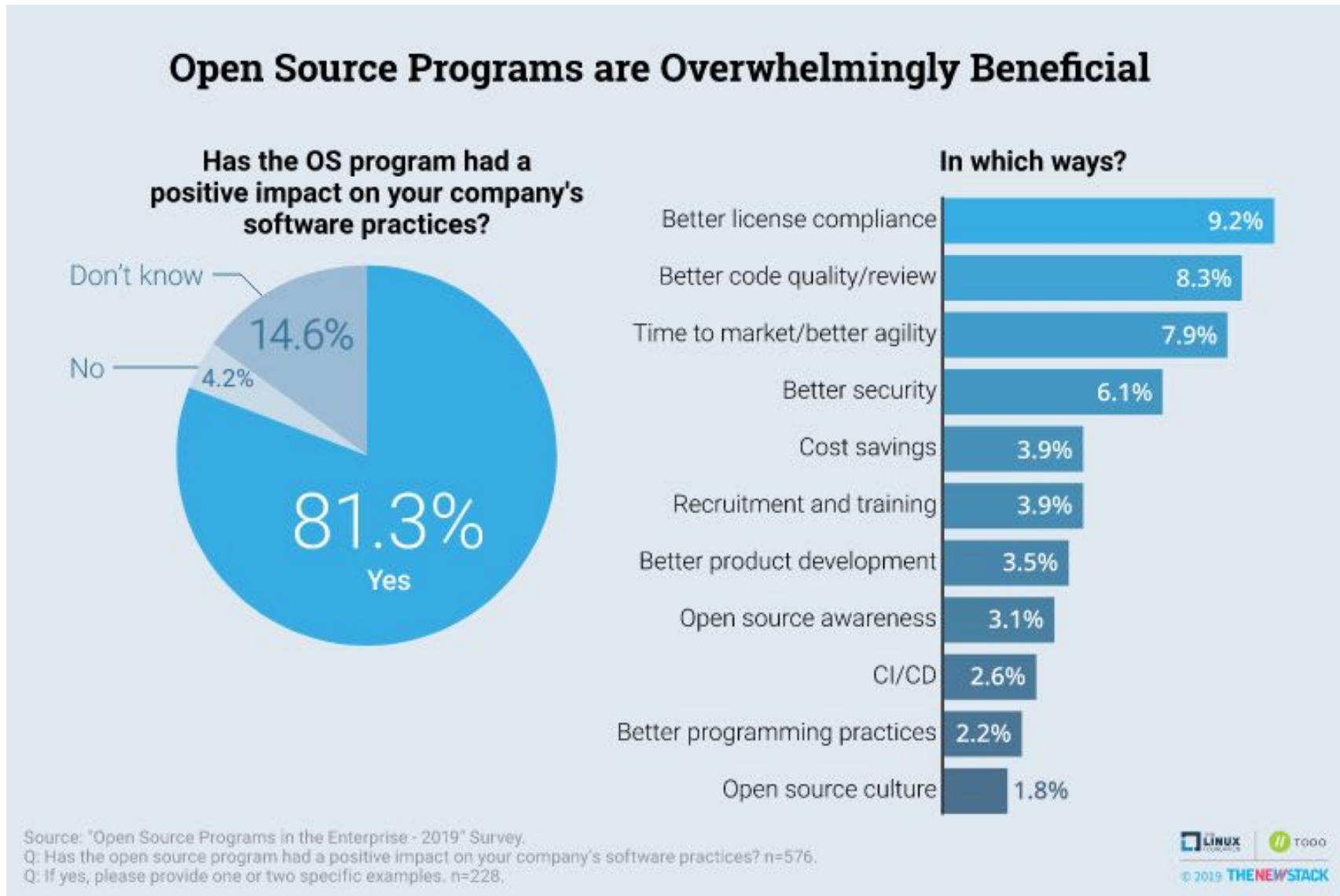


Innovation enabler: Pareto Principle



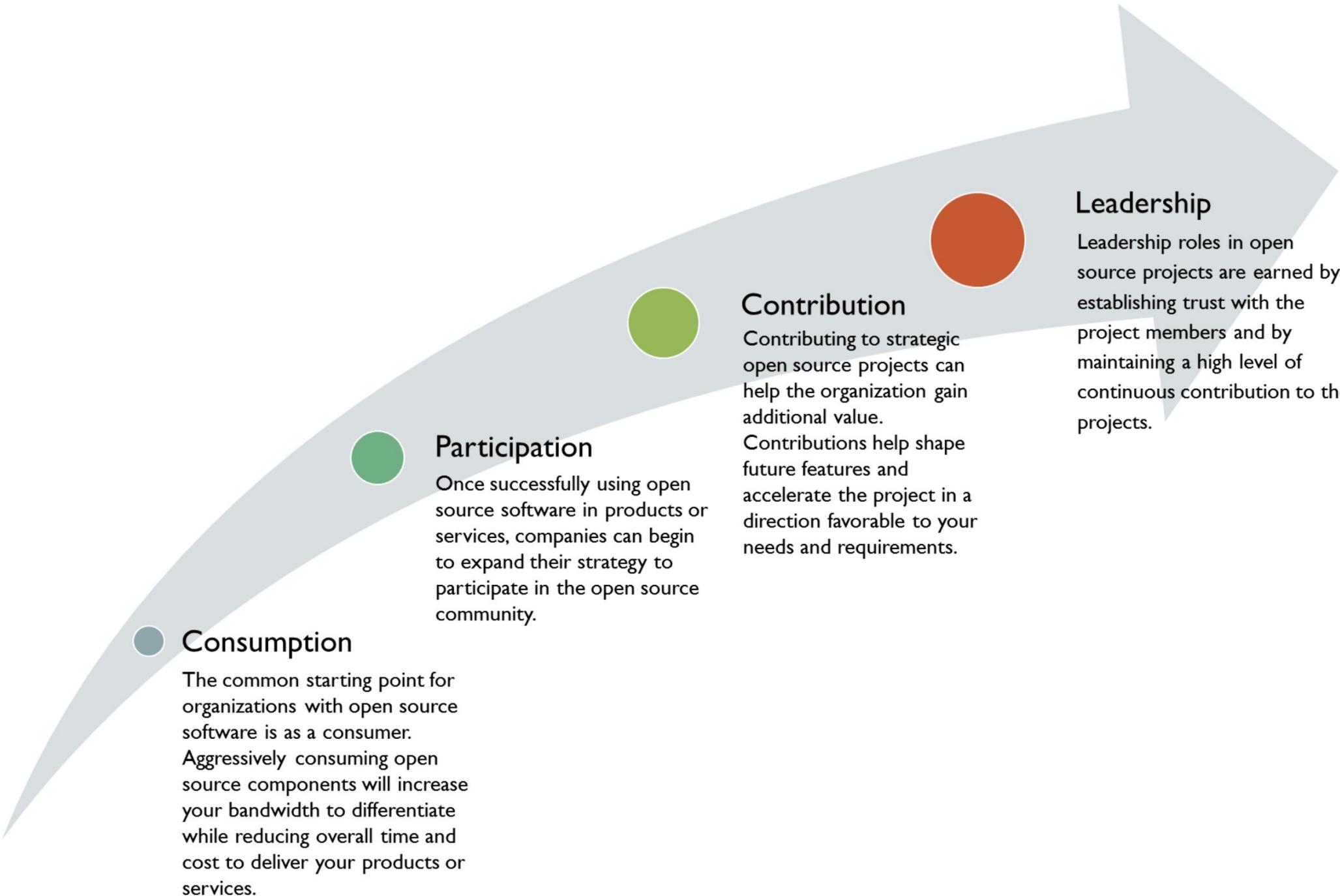
Smart companies have an open source strategy

The Rise of OSPOs



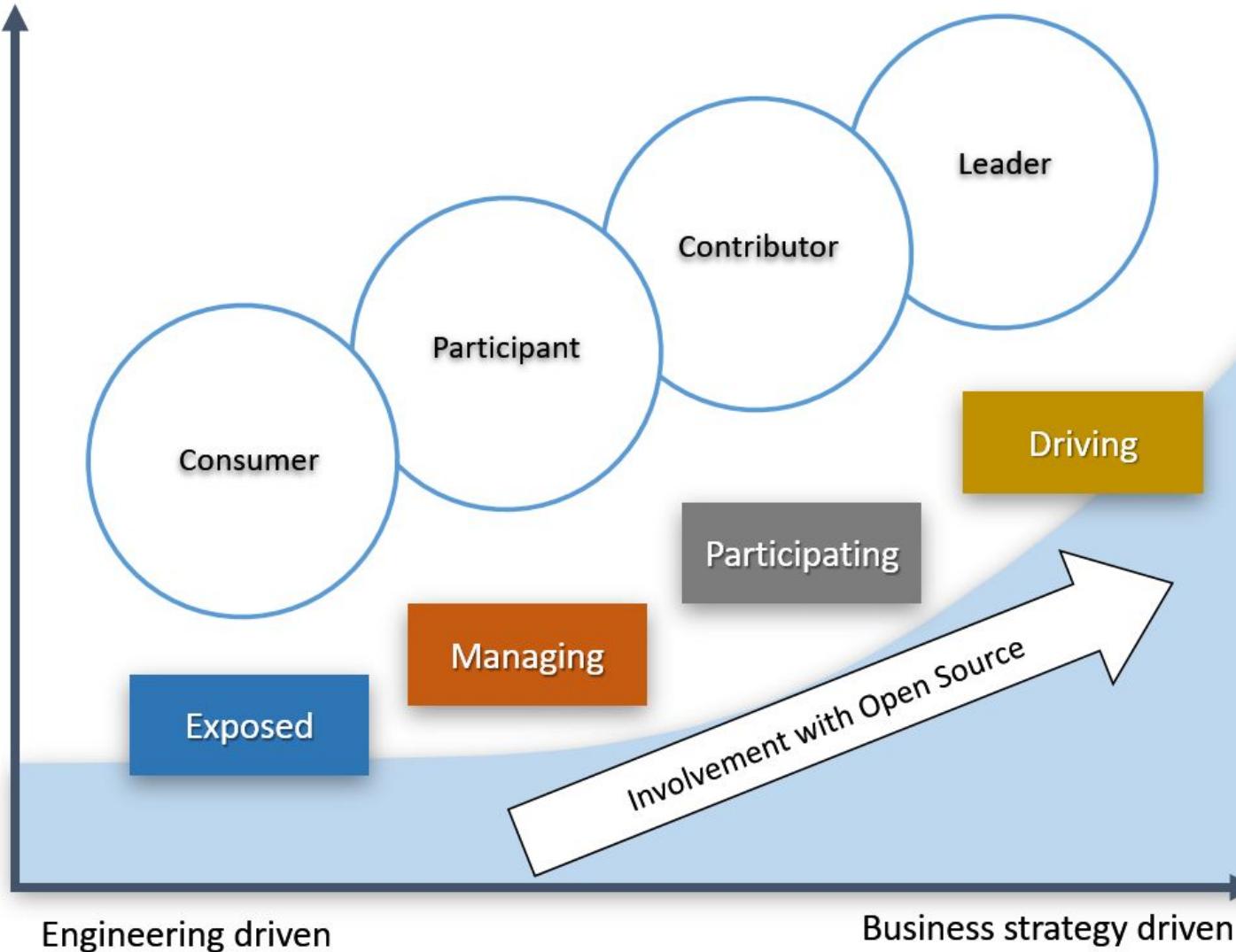
The phases of your open source journey







Identify your current position



Phase 1: Open Source Consumption

- The most common starting point for organizations is as an open source software user in their products/services.
- Aggressively consuming open source components will increase your ability to differentiate and reduce overall time and cost to deliver commercial products.
- Necessary enabling elements for a healthy open source consumption strategy:
 - Use a strategic classification scheme to guide decisions on what open source software to consume
 - Ensure the company meets all obligations of its use of open source software
 - Deploy automated workflow software for evaluating/approving open source usage
 - Establish an Open Source Review Board (OSRB) to serve as a clearinghouse for all Open Source activities
 - Create incremental investment in headcount and infrastructure in engineering, product management, and legal to manage the mix of closed source / open source software

Consumption and Compliance Supporting Elements

Strategy	Portals	Policy & Process	Development	Team	Education	Tools	Initiatives
Compliance	Internal site (Educational)	Usage and compliance policy	Integrate compliance in the development QA process	Compliance team (core and support)	Training on company policy	Source code scanning	OpenChain
Managing inquiries	External site (Obligation fulfillment, source code distribution)	Distribution	Integrate compliance tools with build systems	Scoreboard and success metrics	Guidelines and best practices	Linkage analysis	SPDX
Legal (Risk tolerance)		Auditing			Training on open source licenses	Project management	Open Compliance Program
M&A, Corporate Development		Notices			New employee orientation	Project management	TODO Group
Software Procurement	Internal messaging	Usage			Checklist for product team	Software Bill of Material	
	External messaging	Policy on open source licenses			Checklist for developers	Automation of online forms and workflow	
		Policy on mixing code under different licenses			Checklist for SW procurement	IP evaluation tool	
		Obligation fulfillment			Compliance mentorship	SW Inventory management	
					Professional formal training		
					Invited speakers		

Phase 2: Open Source Participation

- Engage more closely with the community to increase your visibility and to begin attracting the talent you need.
- Necessary enabling elements for a healthy open source participation strategy:
 - Monitor and participate in community communication platforms like chat servers, mailing lists, forums, and websites to stay informed about project developments
 - Attend relevant conferences and meetups to establish a relationship with the community
 - Sponsor project events and foundations to improve visibility within the community
 - Educate developers on how to participate in and contribute to open source projects
 - Contribute at a small scale as a way to learn each project community norms and ways of working together

Phase 3: Open Source Contribution

- Once you are ready to build on your company's participation and begin contributing code to an open source project, you need to selectively engage with targeted projects and communities to drive your company's needs.
- Contribute to strategic open source projects that can help shape future features in the project that meet a company's needs.
- Necessary enabling elements for an open source contribution strategy:
 - Hire a staff director to lead open source strategy and manage the OSRB
 - Hire contributors and committers to key open source communities that are critical to your products
 - Deploy open source collaboration tools to support open source usage and contributions
 - Add open source developer resources
 - Incrementally invest in engineering, product management, and legal to scale with your contribution efforts

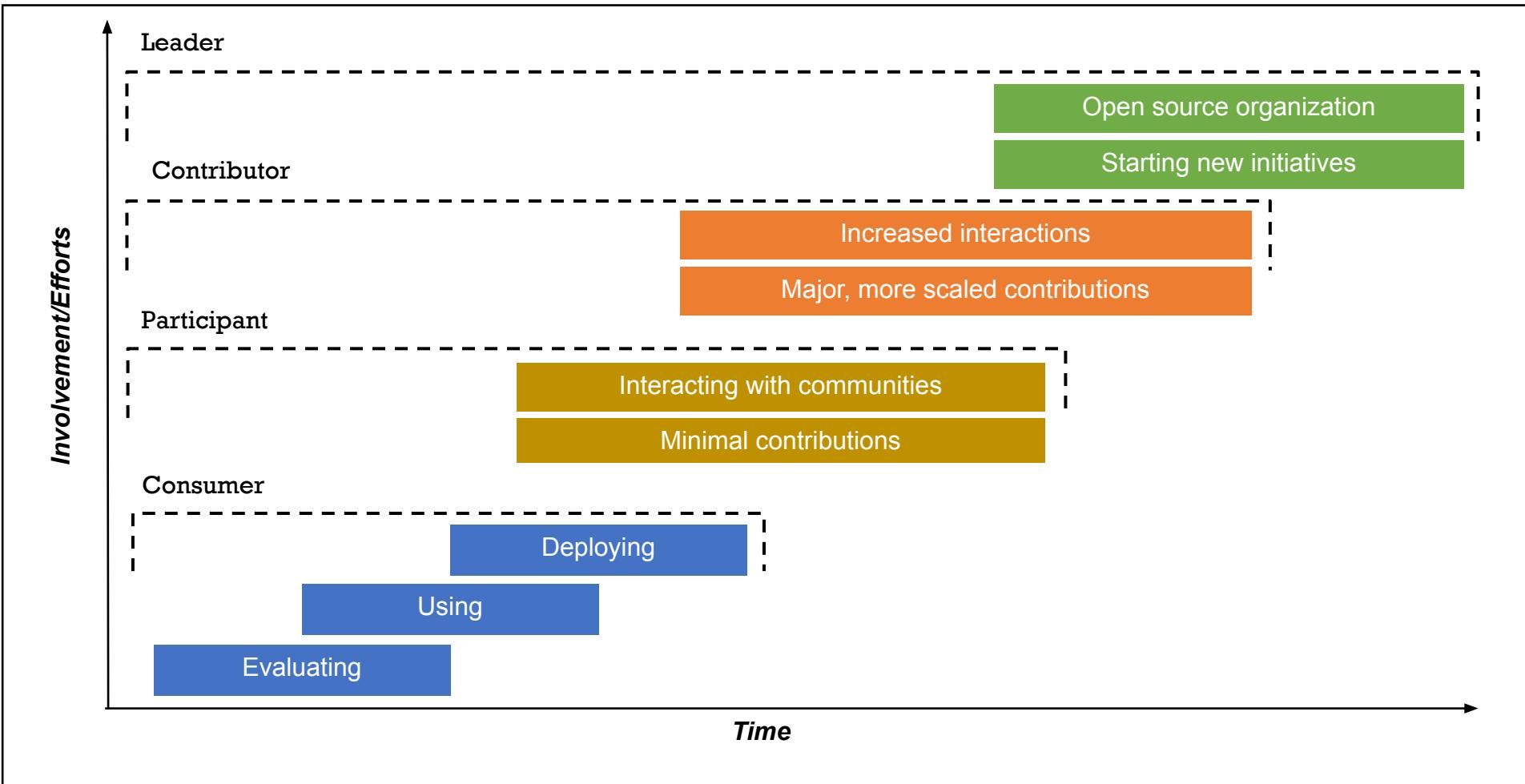
Contribution Supporting Elements

Contribution	Dedicated Group	Open Standards
Policy and process on project contributions	Establish open source group	Participate in relevant open standards
Guidelines and contribution training	Hire from open source projects	Consider open sourcing internal technology as reference implementation
Contribution Approval Team	Support & participate in open source foundations	
Increase participation in key open source projects	Host open source events	
	IT infra to support open source development	
	Establish/recognize open source career path	
	Support communities of projects you depend on	

Phase 4: Open Source Leadership

- This scenario builds on all of the prior scenarios to capitalize on emerging trends in technology to establish a leadership position.
- This scenario requires significant investment in targeted open source communities and consortia to establish leadership agenda. It will also require incremental investment primarily in engineering, product management, and legal to establish leadership in external communities and industry consortia.
- Necessary enabling elements for a open source leadership strategy:
 - Increase engagement with targeted open source communities
 - Engage with open standards to drive the company's needs
 - Engage with open source foundations
 - Drive the creation of new open source projects
 - Continue to invest in engineering, product management, and legal

Transitioning

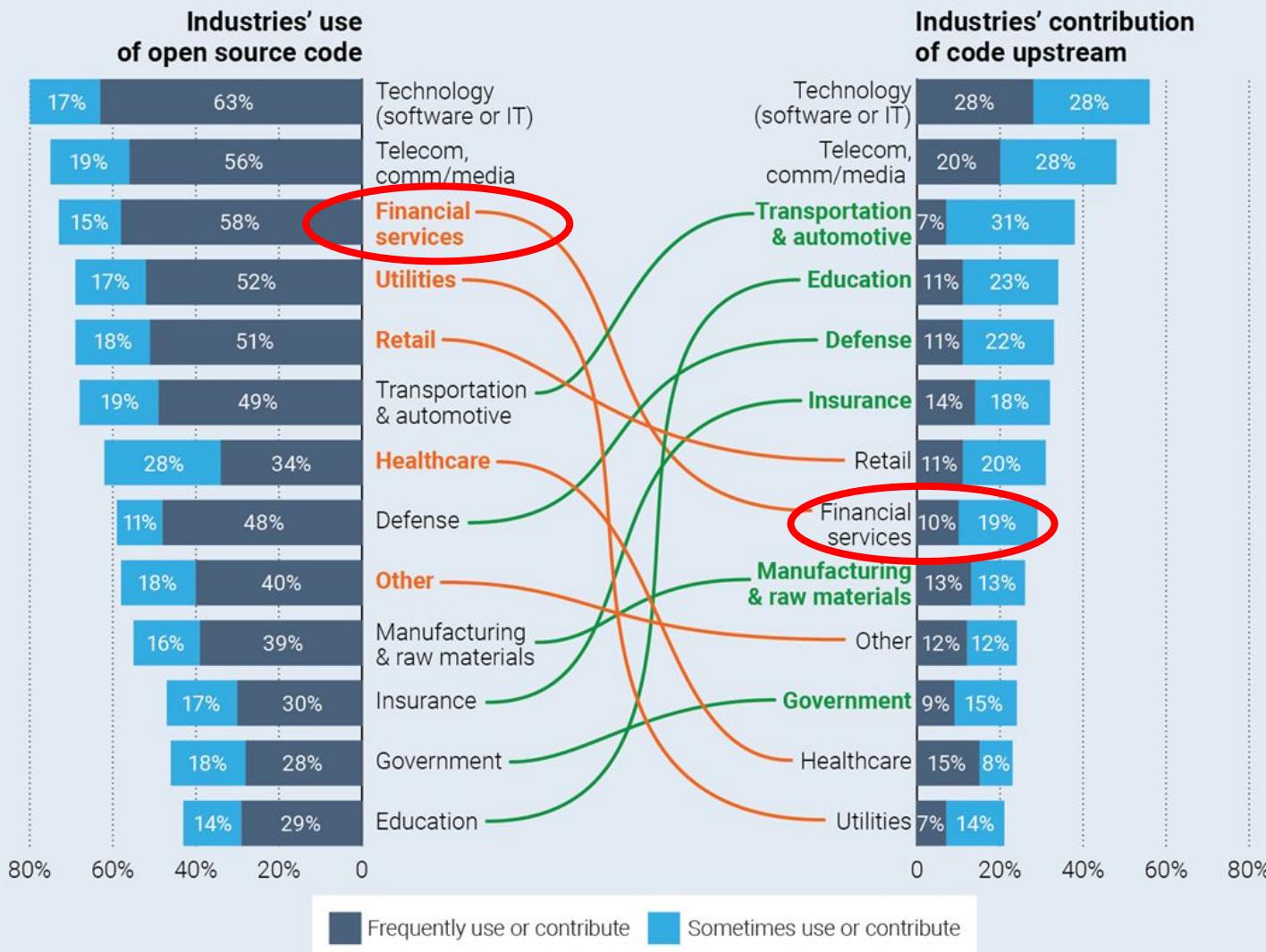


Financial, Utilities, Retail, Healthcare Use Open Source Code in Commercial Products, But Less Likely to Contribute Upstream

Financial Industry - Heavy User, Minor Contributor

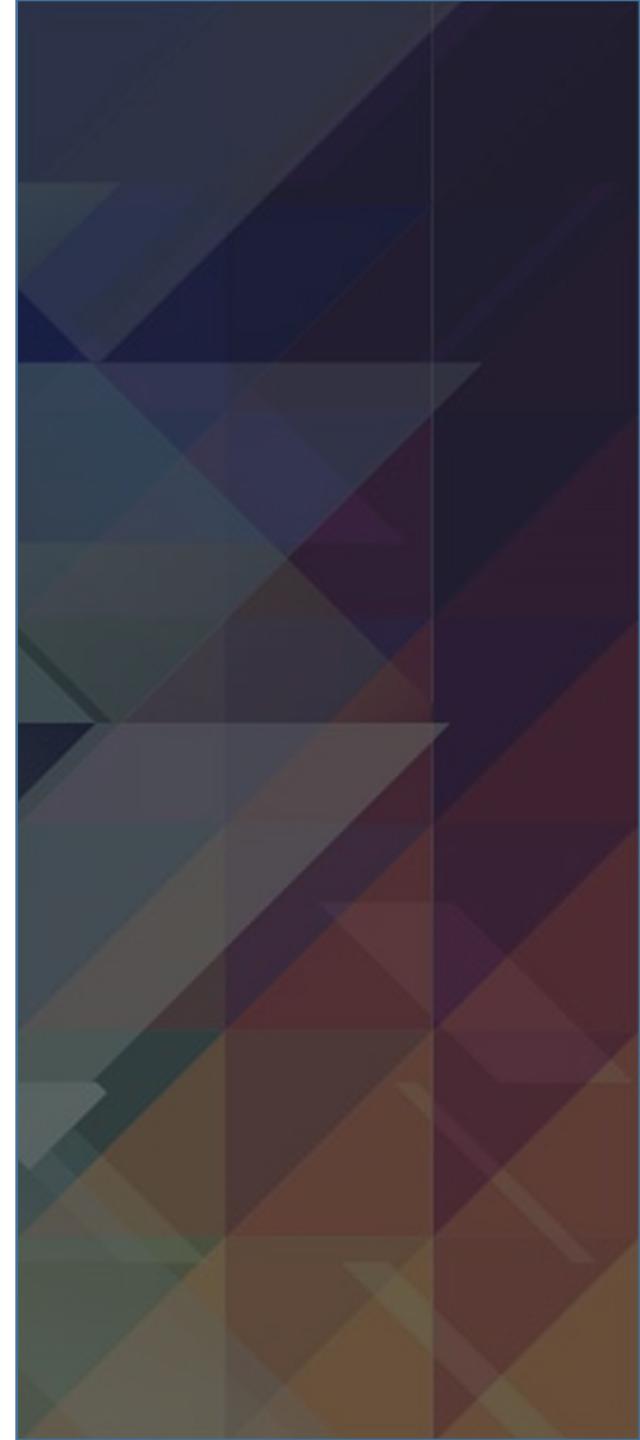
Research Shows Open Source Program Offices Improve Software Practices

<https://thenewstack.io/research-shows-open-source-program-offices-improve-software-practices/>



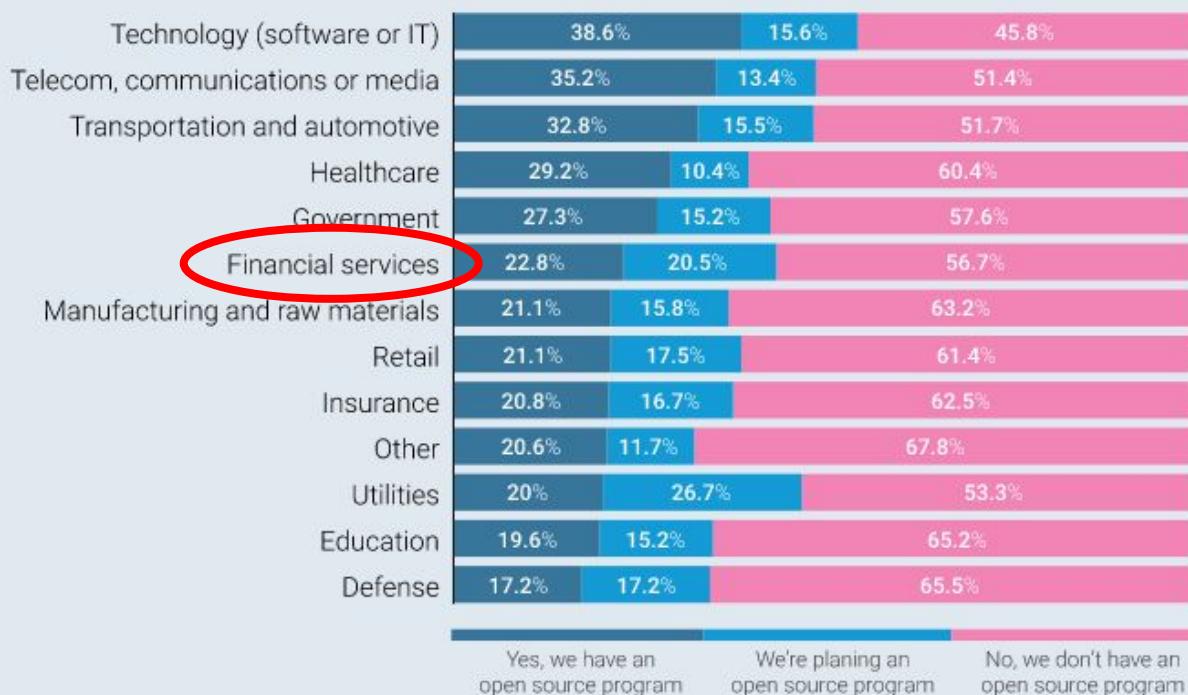
Source: "Open Source Programs in the Enterprise - 2019" Survey. LEFT CHART Q. How often does your company use open source code in commercial products? The question allowed for "Rarely" responses. Technology (software or IT), n=709; Other, n=179; Telecom, communications or media, n=142; Financial services, n=125; Education, n=111; Government, n=66; Transportation and automotive, n=58; Retail, n=57; Transportation and automotive, n=58; Healthcare, n=48; Manufacturing and raw materials, n=38; Sample sizes for the following industries were less than 30: Utilities, n=30; Defense, n=29; Insurance, n=24. RIGHT CHART Q. How often does your company contribute code upstream? The question allowed for "Rarely" responses. Q. What industry vertical is your company in? Technology (software or IT), n=709; Other, n=179; Telecom, communications or media, n=142; Financial services, n=125; Education, n=111; Government, n=66; Transportation and automotive, n=58; Retail, n=57; Transportation and automotive, n=58; Healthcare, n=48; Manufacturing and raw materials, n=38; Sample sizes for the following industries were less than 30: Utilities, n=30; Defense, n=29; Insurance, n=24.

Recommended Practices

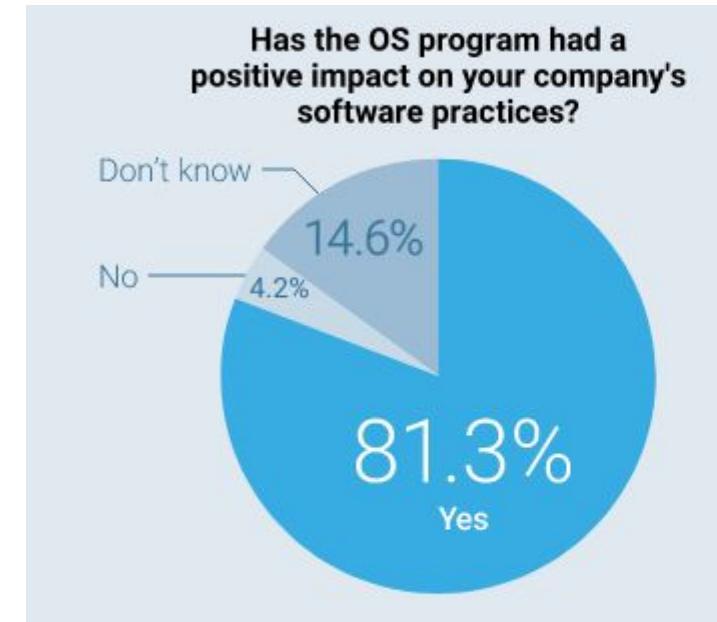


Create your open source program office

Tech and Telecom Firms Most Likely to Have an OSS Program



Source: "Open Source Programs in the Enterprise - 2019" Survey. Q. Does your company have an open source program (either formal or informal) or management initiative? Defense, n=29; Education, n=112; Financial services, n=127; Government, n=66; Healthcare, n=48; Insurance, n=24; Manufacturing and raw materials, n=38; Other, n=180; Retail, n=57; Technology (software or IT), n=712; Telecom, communications or media, n=142; Transportation and automotive, n=58; Utilities, n=30.



Hire or promote a leader for the open source office

Identify your reliance on open source software

What components are you using? Where?

How important are they to your software stack/product/service?

One option is to focus on software used by many business units or incorporated in several products. Such an approach will allow you to show a return on investment across multiple business units or across high risk areas.

Identify current and target open source position

Consumer, Participant, Contributor, Leader.

Each position requires a specific set of investment and action plan.

Develop and execute an open source strategy

Technical, legal, product, ecosystem and business considerations.

Open source strategy is a core component of any software strategy.

How can open source strategy accelerate your organization?

How can an open source strategy help you achieve overall corporate objectives?

How can an open source strategy help you achieve your IP strategy?

How can an open source strategy help you grab opportunities that are otherwise unattainable?

Implement an open source enabling environment

Policies, processes, tools, development environment, dedicated team, educational resources, open standards, open source foundations, compliance initiatives, communication, human resources, etc.

Provide a flexible open source friendly IT infrastructure

*Build expertise in key open source technical areas,
ecosystem, community and strategy*

Create meaningful metrics to track your progress

*If you can't measure it, you can't improve it.
Some exceptions apply!*

Create and outsource open source training

*Create training on company strategy, policies, guidelines, etc.
Outsource technical and development training.*

Establish relationships with open source foundations

Get involved.

Become a member.

Influence discussions, policy making, be in the know, etc.

Establish a framework for open sourcing internal code

Policy, process, due diligence (technical, business, legal), checklists, tooling, etc.

Encourage internal collaborations and enable them via inner sourcing practices

Participate and host open source events

Be visible.

Show your work.

Seek collaborators.

Establish open source R&D projects with universities

Update your outsourcing agreements, your M&A practices

Ensure compliance within your software supply chain.

Join the TODO Group



Formalize an open source career path

Closing Thoughts



Challenge Areas

Culture	Processes	Tools	Continuity	Education
Development model Collaboration Transparency Meritocracy Team formation Hiring practices Right success metrics	Governance Usage Compliance Contribution Approvals Operational model	IT infrastructure Development tools Metric/KPI tracking Knowledge sharing Code reuse	Strategy Projects Priorities Funding Executive support	Executive education Knowledge transfer Technical training Compliance training Mentorship program

4 Key Pillars

Consumption and Compliance

- Establish internal infrastructure that enables proper open source practices and incorporates open source policies, processes, checklists, and training.

Contribution

- Hire or train developers that focus specifically on open source contributions and deploy the necessary tools to support internal open source engineering.

Participation

- Begin engaging with the open source community on communication platforms and at events.
- Sponsor projects and organizations that are important to open source software you rely on for your products.

Leadership

- Increase engagement with open source communities, open standards bodies, and foundations.
- Launch new open source initiatives and increase your visibility in open source communities.

Open source is eating the software world; you can either watch the show or be a part of it.

References



TODO

<https://todogroup.org/guides/>

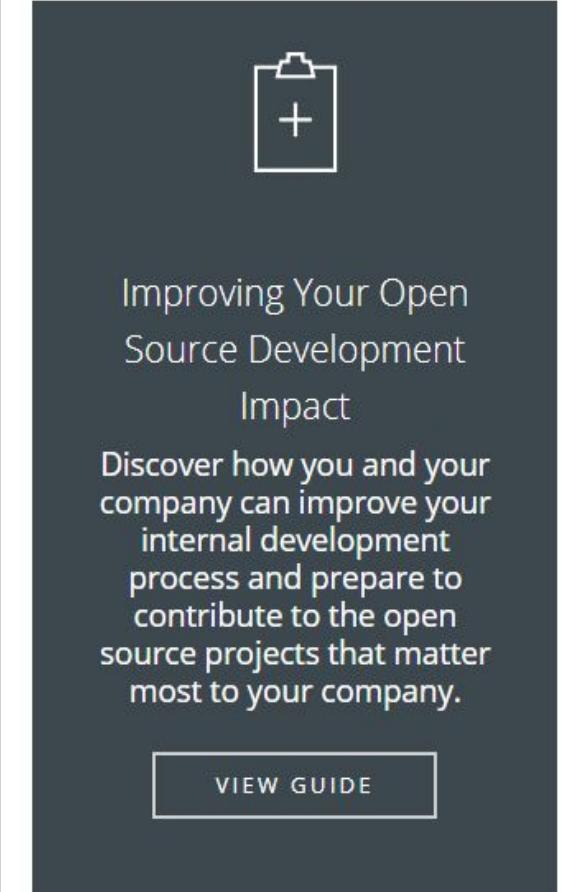


<https://www.linuxfoundation.org/category/publications/>



Using Open Source Code
Ensure that your organization
meets its legal obligations
when integrating open
source code in your
commercial products.

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Improving Your Open
Source Development
Impact
Discover how you and your
company can improve your
internal development
process and prepare to
contribute to the open
source projects that matter
most to your company.

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Enterprise Open
Source: A Practical
Introduction
By The Linux Foundation

www.linuxfoundation.org

Interested in more?

We can organize an open source bootcamp

LF Energy Open Source

Bootcamp

<https://events.linuxfoundation.org/lf-energy-open-source-bootcamp/>

08:00 | Registration

09:00 | Introduction, Open Source Basics

09:30 | How to Work in Open Source –

Ibrahim Haddad dives deeper into the nuts & bolts of open source development: upstreaming, understanding collaborative development, working in existing projects and starting new ones, all in the context of existing successful open source projects.

11:30 | Lunch

12:30 | Open Source Development Process

Building on the morning session, Ibrahim Haddad will discuss details on the open source development model – how and why it works, applying open source processes within an organization (innersourcing), best practices in each development phase, managing contributions and technical, business, and legal options for open-sourcing proprietary technology.

13:30 | Open Source & Business Strategy

Ibrahim Haddad will discuss how to develop an open source strategy for your business – designing policies, implementing tactics, developing ecosystem, and approaches to project management.

14:15 | LF Energy and You

Shuli Goodman explains why LF Energy exists and why these open source processes are critical to reinventing the energy industry.

14:30 | Break

15:00 | License Compliance

As an expert in the field, Jon Aldama presents the aspects of open source intellectual property – how do licenses actually work, how to choose one and comply with it, licenses vs patents, compliance tools and best practices.

16:00 | Managing an Open Source Program Office

Why and how to create an OSPO – strategic considerations, working with foundations, logistics and roles, leadership, and case studies, along with an introduction to the TODO Group.

17:00 | Wrap-up

19:00 | Evening Event (venue TBD)

We are seeking a location for a fun and relaxing dinner together to continue networking and discussions from the day. There is a flat fee to attend; pre-registration is required.

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