

# **Why open source is important and what are we doing about it?**

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Samsung Research America – Silicon Valley

**Open Source is Collaborative, External R&D**

# Well known companies with dedicated open source organization



Google

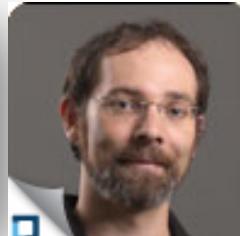


IBM

CITRIX

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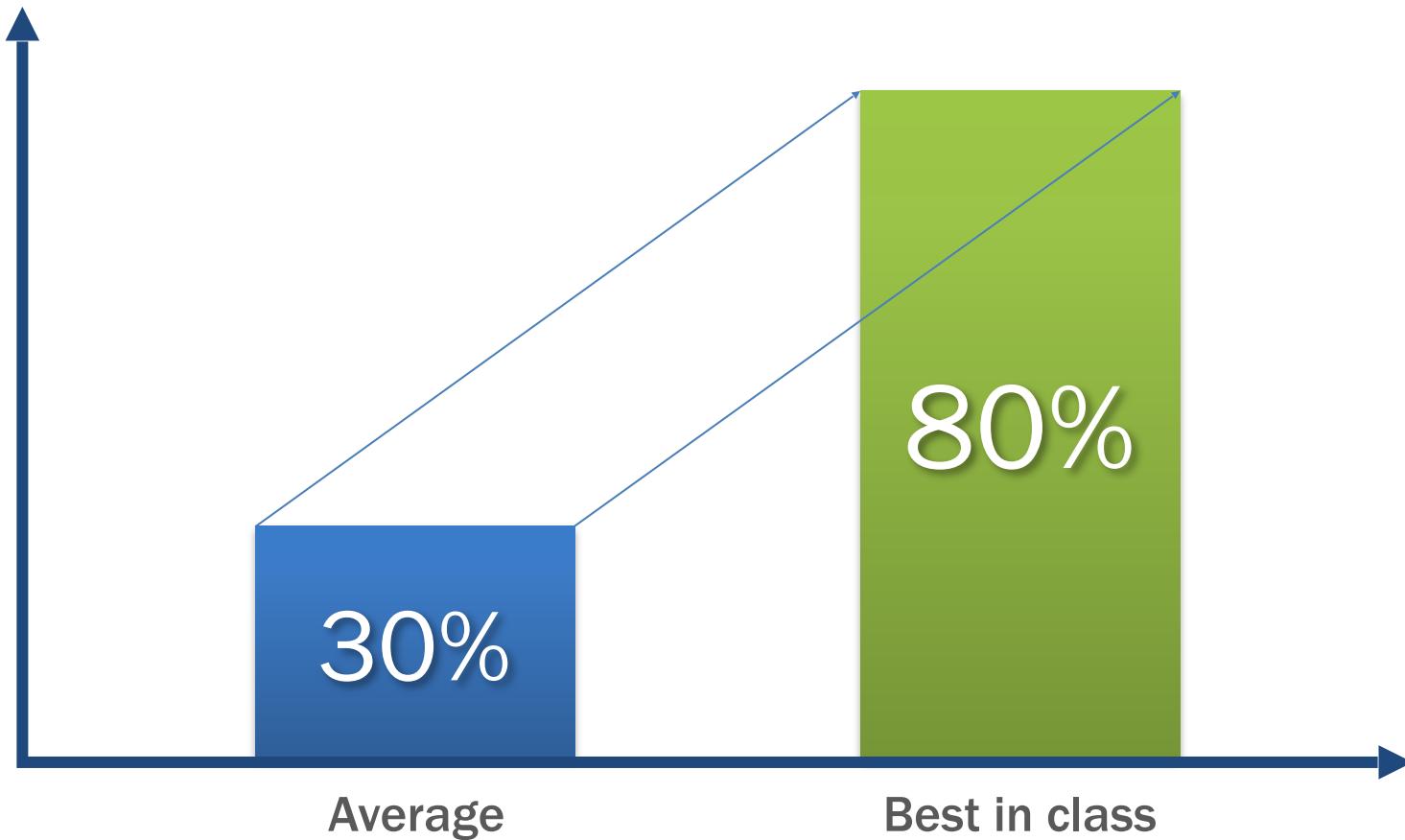
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# Why are companies increasing open source R&D?

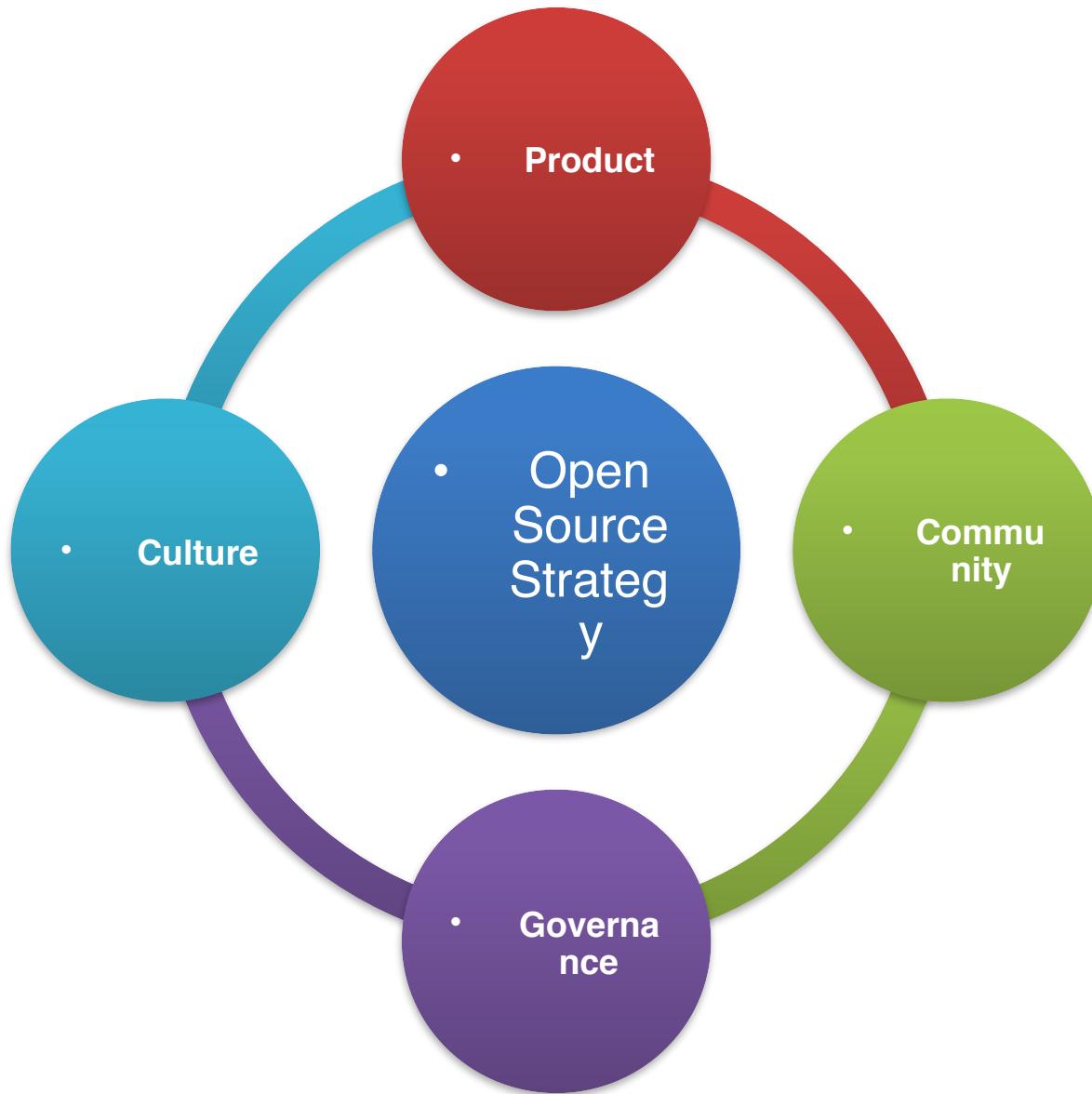
- Support Product Development
- Support Product Innovation
- Faster Time To Market
- Better Hiring

# Open source is a strategic asset

Shift from smaller part to majority of code being open source across industries: Embedded, Supercomputing, Telecom, Banking, Healthcare, Automotive, etc.



# Key dimensions to enterprise open source strategy



# Executing the strategy: Enterprise open source infrastructure

Portals	Compliance	Education	Inventory	Communication	Contribution	Open Standards	OSS Group
Internal	Usage Process + Policy	Training	Inventory Management	Internal	Process + Policy	High engagement in open standards	Establish organization
External	Distribution Process + Policy	Guidelines	Audit 3 <sup>rd</sup> Party Code	External	Open source proprietary code	Oss reference implementation	Hire from OSS projects
	Auditing Process + Policy	Licenses			Increased scope of engagement		Support OSS foundations
	Checklists	New Employee Orientation			Increased work with # of projects		Host OSS events
	Attribution Policy	Contributor Training					Independent IT Infra
	Documentation Policy	Establish Internal OSS certification and career path					
	Compliance part of development						
	Compliance Team	Mentorship Program					
	Scoreboard						
	Involvement w/ OSS licensing						

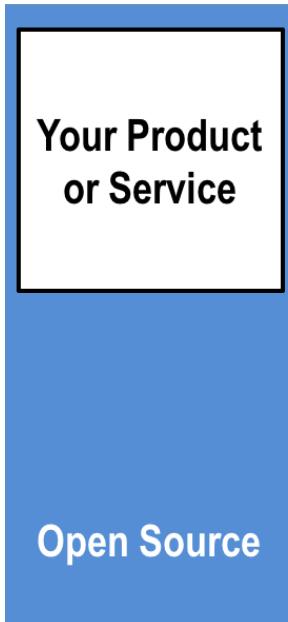
# Why aim for open source leadership?

# 1/ Product dependency on open source software

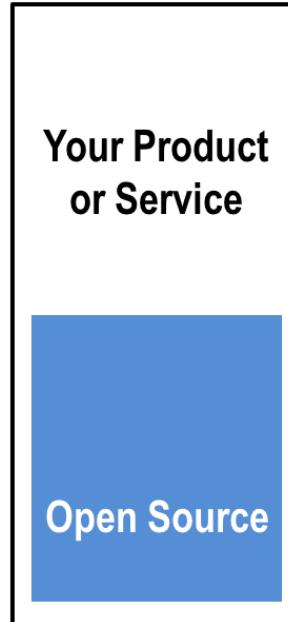
Let's ask ourselves this one question:

**Can we build a product without using open source software?**

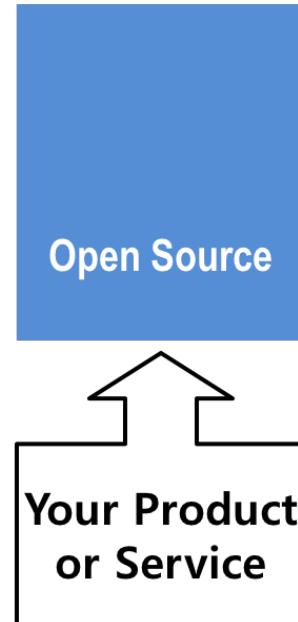
Building OSS



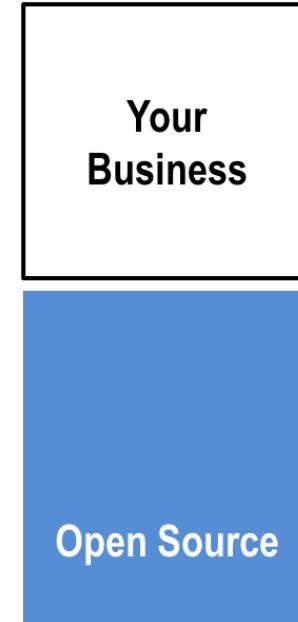
Building with OSS



Building for OSS



Building on OSS



## 2/ Faster Path to Innovation

- **Commoditizing and freely sharing lower-level components of the platform proved to be a better way of building products.**
  - **When you do this, you are focused differentiating at higher levels of the stack, focusing your resources to innovate on your unique value add.**
- ⇒ **This is a fundamental business advantage that Linux and open source enable.**

### 3/ Open Source is Eating the Software World

2011  
THE WALL STREET JOURNAL.  
**WSJ**



ESSAY

#### Why Software Is Eating The World

By MARC ANDREESSEN

August 20, 2011

May 5, 2014, 5:51 PM ET

### Open Source ‘Eating’ Software World: Samsung

Article

Comments

By RACHAEL KING

Reporter



THE WALL STREET JOURNAL.  
**WSJ**

Samsung Electronics is ramping up its contributions to various open source projects as the company depends more on open source software in its products. The company sees open source software as a faster path to innovation.

2014

Open Source is Eating the Software World.

**SAMSUNG**

## Needed skills to accelerate software innovation

- More open collaboration
- Better programming and development skills
- Better architectural skills
- Better software and system design skills
- Better integration skills
- Modular and scalable designs
- Software re-use
- Continuous integration cycles
- e

Open Source Dev Skills

# Samsung's Open Source Journey

**Getting a taste of Open Source**  
(Embedded Linux)



**Increased Adoption**



2002

2005

2008

2013

2014

2015

**Proliferation**

**Established the Open Source Group**



**TIZEN™**



**IoTivity**



# Why is open source important to Samsung?



# Samsung Open Source Group (OSG) – Est. 02/2013



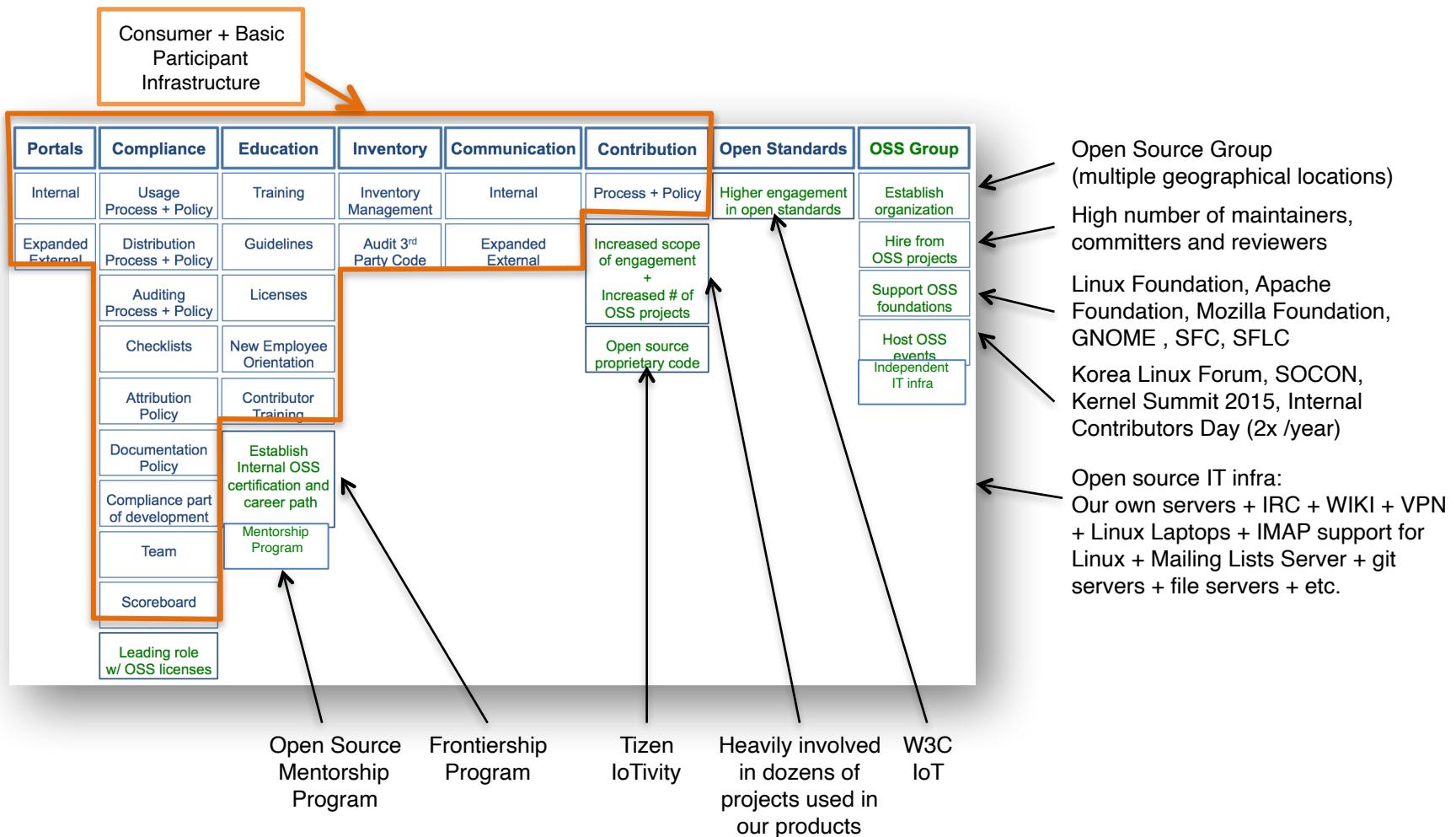
**Open source leadership can't be given.**

- You earn it by consistent participation and contribution.

**Open source leadership can be taken away.**

- You lose it by lack of participation and contribution.

# We continue to build our open source infrastructure



# OSG current focus areas

## Non-Technical

Open  
Source  
Foundations

OSS  
Compliance

Evangelism  
Strategy  
Community

## Technical

Media

Standards

Virtualization

Web

Graphics

System

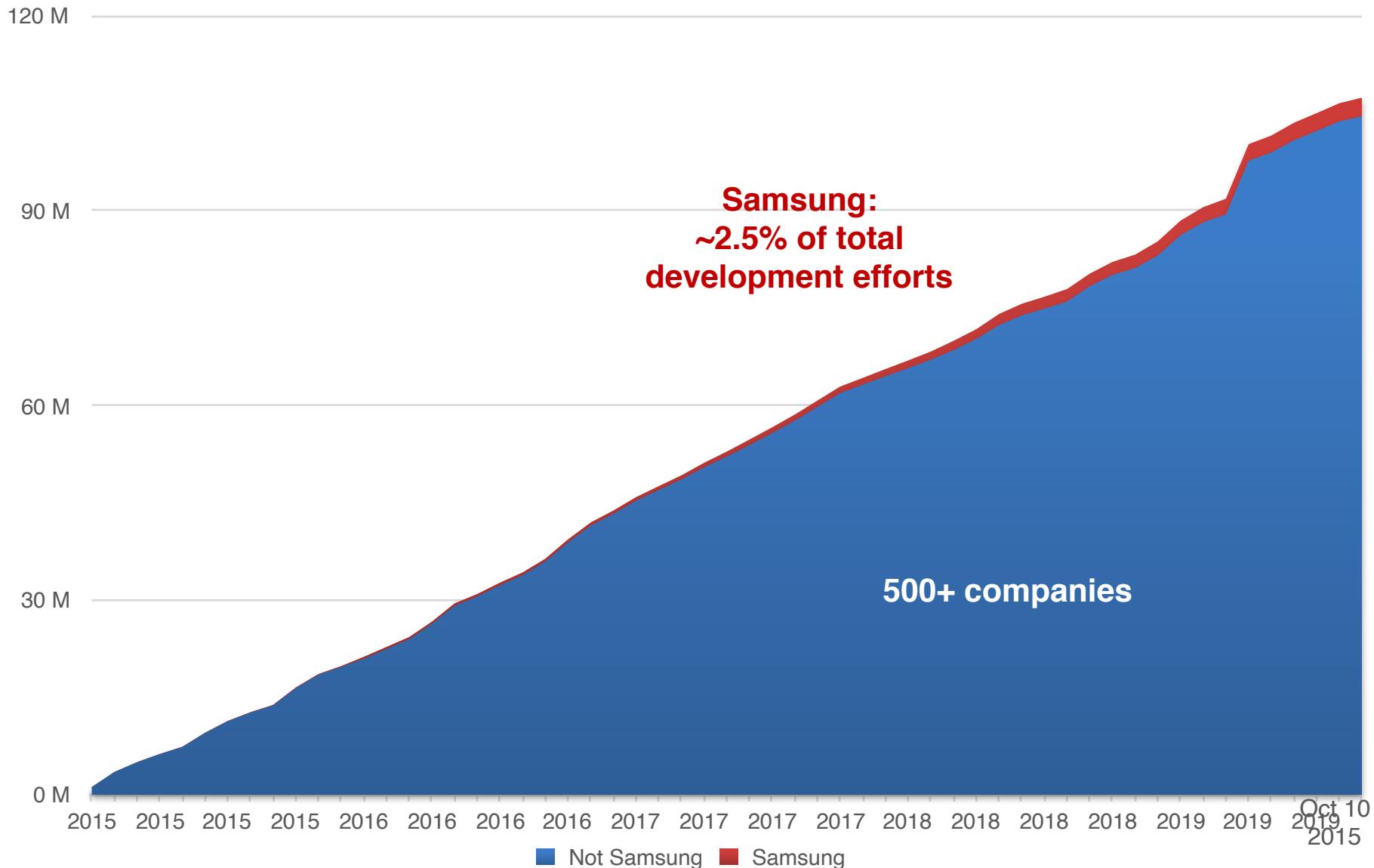
# What do our open source developers do?

- Upstream development.
- Helping R&D and product teams on open source software.
- Open source knowledge transfer internally.
- Special projects and new ideas.
- Internal and external thought leadership.

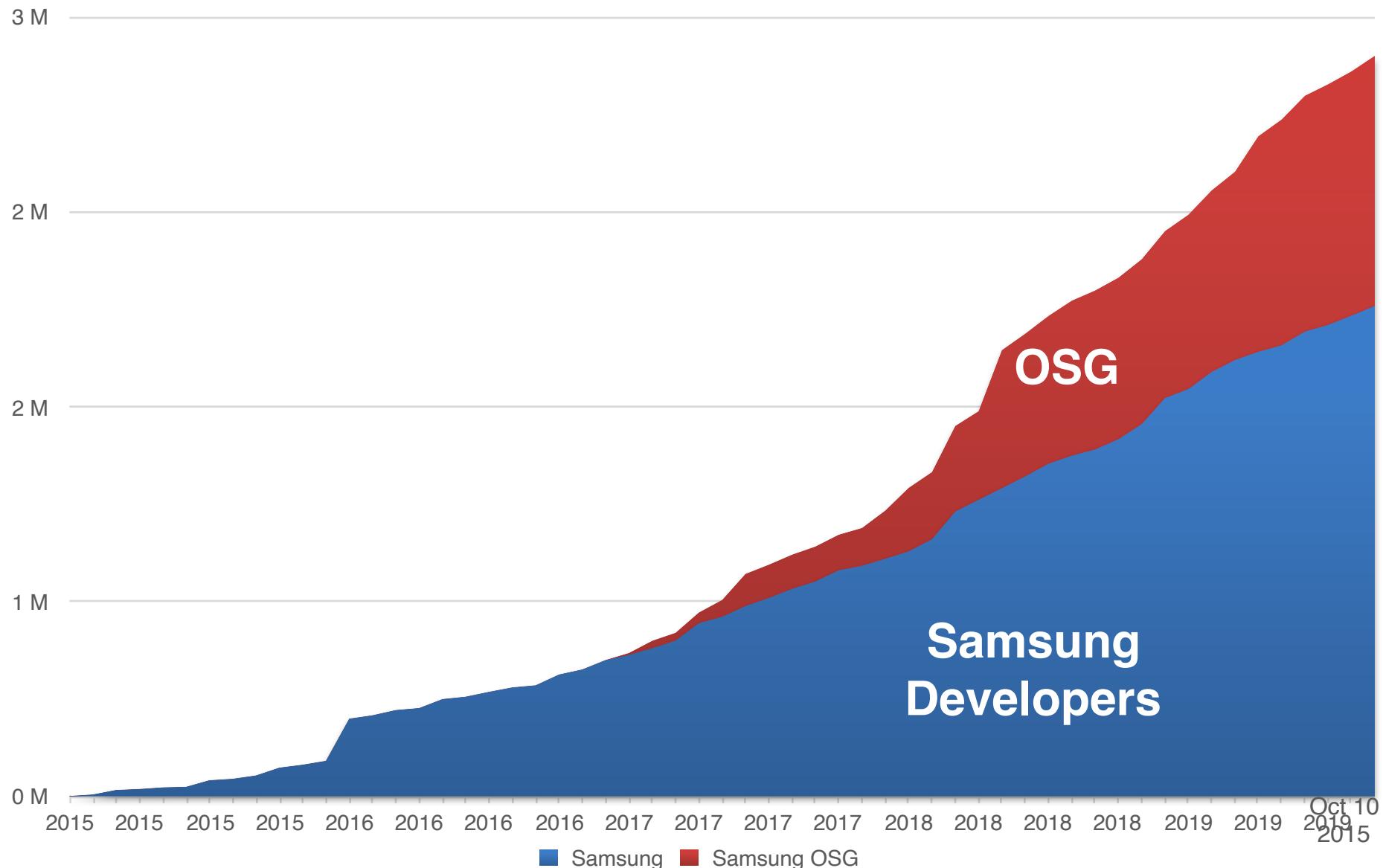
# What's our impact? (source code)

- Goal: Quantify our contributions to key upstream projects.
- gitdm – git data mining.
- Survey 15 upstream projects:  
BlueZ, Wayland and Weston, GStreamer, Cairo, EFL and Enlightenment, Linux, FFmpeg, Clang, Blink, Servo, Caskbench, Skia, Webkit, Xen, U-Boot.
- Date:
  - Survey covers code committed from Jan 1, 2011 to Oct 10, 2015.

# Development Community vs. Samsung (15 projects)



# A closer look at Samsung's contributions



# OSG = Over 40% of Samsung's upstream dev since its inception (Feb'13)

3 M

*This is a great example to showcase the need for a dedicated open source team that gets engaged on open source projects critical to your company.*

2 M

2 M

1 M

0 M

2017 2017 2017 2017 2017 2017 2017 2018 2018 2018 2018 2018 2018 2018 2018 2019 2019 2019 2019 Oct 10, 2019

OSG

Samsung  
Developers

■ Samsung ■ Samsung OSG

# What's our impact? (Thought Leadership)

**2013**

**10 publications**

**30 conference talks**

**Numerous conferences sponsorships**

**Established social media presence**

**2014**

**7 technical publications**

**58 conference talks**

**22 media mentions (incl. 2x in WSJ)**

**Numerous conferences sponsorships**

**Sponsored Outreachy Program**

**2015**

**Established: <http://blogs.s-osg.org/>**

**76 blogs at 81K views**

**46 conference talks**

**44 media mentions**

**56 talks on Slideshare at 32K views**

**Creating own demos at events**

Samsung Talks About Its Aggressive Linux Talent Recruitment Strategy

Wednesday, 22 May 2013 06:41 | Jennifer Cloer |  Exclusive

APRIL 16, 2013

**Samsung flexes its open source muscles where you might not expect**

**Open source goes corporate at Samsung**

Posted 01 Oct 2014 by [Ben Lloyd Pearson](#) 

Rating: ★★★★★ (7 votes)

How Samsung is Bringing Open Source Culture Inside the Firewall

Thursday, 27 March 2014 14:27 | Libby Clark |  Exclusive

May 5, 2014, 5:51 PM ET  
**Open Source 'Eating' Software World: Samsung**

 LINUX.COM

HOW  
SAMSUNG  
IS EVOLVING  
INTO AN  
OPEN SOURCE  
COMPANY

# Guiding principles

## 1. We can't hire all the smart people in the world.

We need to find a way to tap into their knowledge and influence favorable outcomes in external collaborative and R&D projects.

## 2. Open source R&D creates significant value.

Internal R&D uses the results of open source R&D and claims portion of that value.

## 3. We don't need to originate the research to use it or benefit from it.

## 4. We practice what we preach internally: openness and collaboration.

# Closing Thoughts

# Why Focus on Open Source R&D?

Open Source R&D is a very important and a strategic innovation tool.

- Share development on non differentiating software
- Lower R&D cost
- Accelerate product development
- Influence on technologies used in products
- Access to talent pool

# **Companies need to adapt to collaborative development (internally and externally)**

## **Culture**

- Development model
- Collaboration
- Transparency
- Meritocracy
- Team formation
- Hiring practices

## **Processes**

- Contribution
- Governance
- Organizational
- Approvals
- Operational model

## **Tools**

- IT infrastructure
- Development tools
- Metrics
- Knowledge sharing
- Code reuse

***We're on the right path; it will take time and perseverance.***

**#TheNextBigThing will be created with Open Source.**

**Open Source is eating the software world.  
We can watch the show or be part of it.  
We chose to be part of it!**

**@SamsungOSG**