

# Introduction to Open Source

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Public

## Agenda

- General Overview
  - What is it?
  - Theory of Why it Works
  - Open Source Licensing Basics
- Open Source at Sony Mobile
  - History
  - Strategy
  - Intellectual Property
  - Open Source Processes

## Why are we here??

- SOMC's History/Transition – Share lessons learned
- Engineers/Developers - have tremendous opportunities, but with that comes responsibility
- Lawyers and Engineers need to work together – legal and technical issues overlap

## What is Open Source Software?

- Computer Software that provides its **source code** under a **license** with the rights to **study, change, and distribute** the software to **anyone** and for **any purpose**
- OSI Definition: 10 Freedoms – <http://opensource.org/osd-annotated>
- Is it widely used?

## Wildly Successful



- More Stable
- Faster Development Time
- More Secure
- It is everywhere:
  - 2 billion people own a smartphone, full of Open Source
  - Internet, web services, medical equipment, cars and likely your fridge too.
  - Even the US DoD is a major user of Open Source ... think ARPAnet ...

## The Cathedral vs The Bazaar – Why it Works

- Linus' Law: *with enough eyeballs, all bugs are shallow*
- Release early, release often (bleeding edge vs. stable releases)
- Users = Co-Developers: users become testers, and testers become contributors
- Skilled developers wandering through your architecture
- Self-selection of developers
- Public - your work is on display (and the criticism can be brutal)
- Meritocracy + Democracy/little management
- Crowd Power – crowd decision-making works in the context of code development
- Why developers volunteer: reputation, experience, scratch an itch/solve a problem
- Why developers are paid: shared support and maintenance makes it cost efficient and more reliable

See Eric S Raymond, The Cathedral and the Bazaar: <http://www.catb.org/esr/writings/cathedral-bazaar/cathedral-bazaar/>

## Licensing Basics - Copyright

- Copyright attaches to every novel expression of an idea (e.g., software)
- Exclusive Right to:
  - Copy
  - Modify
  - Distribute
- Time Limited – 50+ years
- License – grants defined rights



## Copyleft



[C] Simon Whiteley 2011

**Richard M Stallman**

**Reciprocity**

**Distribution = trigger**

**Changing the code/combining with other code = need to provide changes/combination to the downstream recipient**



## Open Source Licensing Overview

**CopyLeft**  
**Permissive**

| License                                | Force Feedback/limits usage | Uptake | Easy   |
|--|-----------------------------|--------|--------|
| GPLv2 (+v3), (+Affero), Derivative     | High                        | Low    | Low    |
| Mozilla Public, Modifications to files | Medium                      | Medium | Low    |
| Apache 2.0, Patent protection          | Low                         | Medium | Medium |
| MIT, BSD, Notice work only             | Low                         | Low    | High   |

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## License Interpretation (Re Copyleft)

- GPL uses very technical language (+ is a manifesto as much as a license)
- Glosses on licenses created by old message board discussions/FAQs
  - E.g, Linus Torvald's interpretation of the GPL as it applies to Linux
  - Stallman/FSF's FAQ pages about the GPL
- What is a derivative work often becomes very technical
- Widely recognized exceptions/interpretations by the community – shims, sockets, etc.

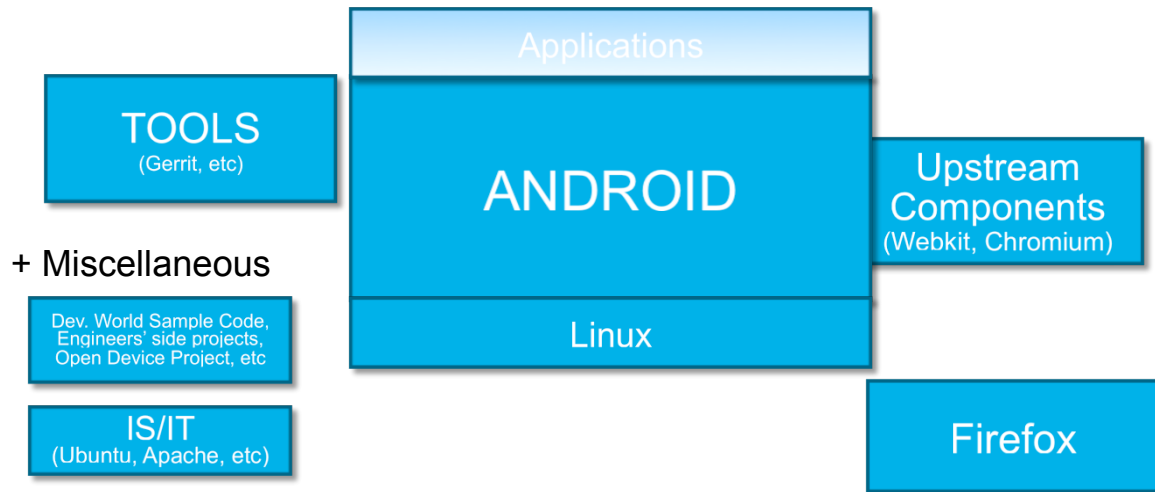
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## Open Source Community

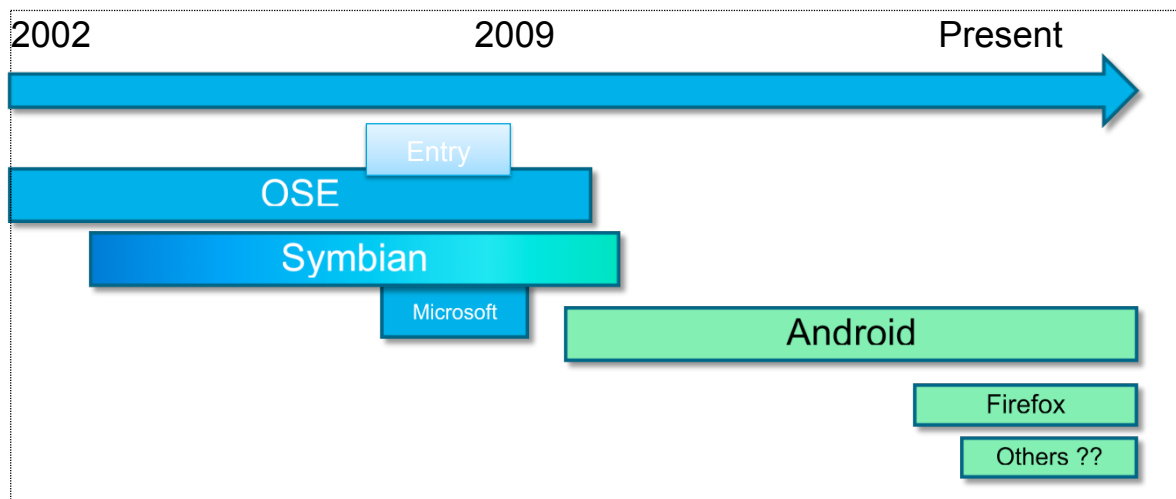
- Free Software Foundation – Stallman founded
- Software Freedom Law Center – Eben Moglen
- Apache Foundation
- Linux Foundation
- [gpl-violations.org](http://gpl-violations.org)

## Open Source at Sony Mobile

## Overview of Different Open Source Activities



## OS History



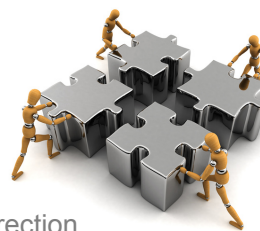
## Official Strategy

**Sony Mobile's Strategy in Open Source is to reduce our OPEX and TTM through active but selective contributions of Non-Differentiating SW to the Open Source Community.**

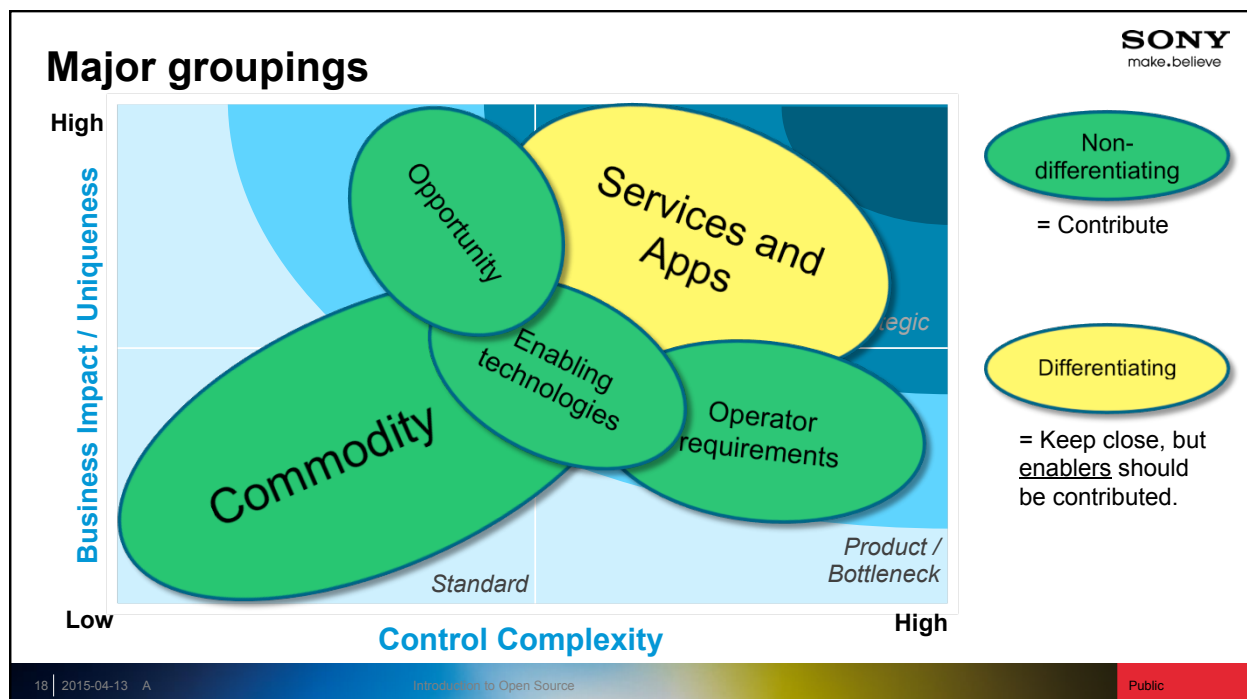
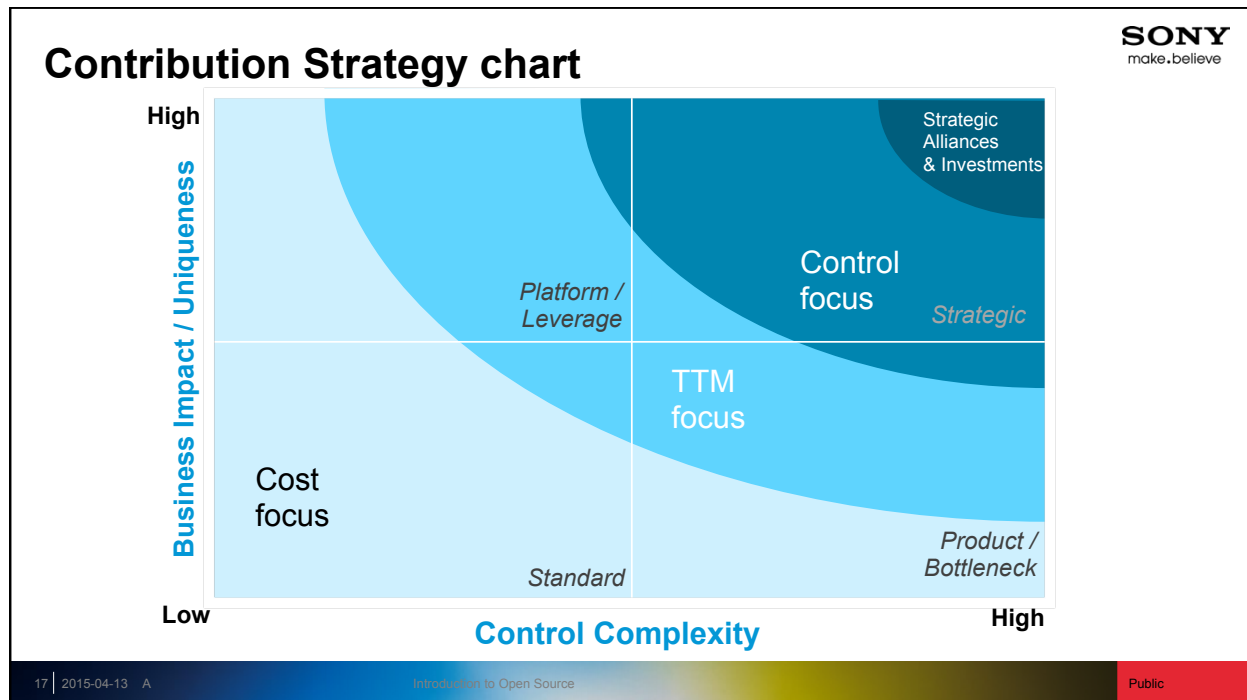


## Fundamental objectives for [AOSP] contributions

- **Reduce Cost of Maintenance**  
Contributions reduce the patch mountain.
- **Improve Time-To-Market**  
Fewer patches means faster bring ups.  
Feedback from Google shows insights to roadmaps/strategic direction.
- **Disrupt Competitors**  
By contributing, we force competitors to re-adjust their set of patches.
- **Get Closer to Google**  
Create engineer-to-engineer relationships that can be leveraged to drive the business.  
Influence Android strategy.







## Intellectual Property Rights and Contributions

- **Patent Strategy**

To reduce royalty payments and to ensure that products are the most appealing.

- **IPR Dept**

Checks contributions for conflict with IPR goals and objectives.

- **Modify**

If there are patent issues, IPR Dept can often suggest alteration of a proposal to allow for contributions. *It is extremely rare a contribution proposal is fully rejected!*

- **Document**

Track all submitted contribution proposals and their status.

I ♥  
PATENT  
PORTFOLIOS

***Do not Self-Censor!***

Try it, and if (when!) getting an approval from Open Source Board = IPR is cleared to contribute.

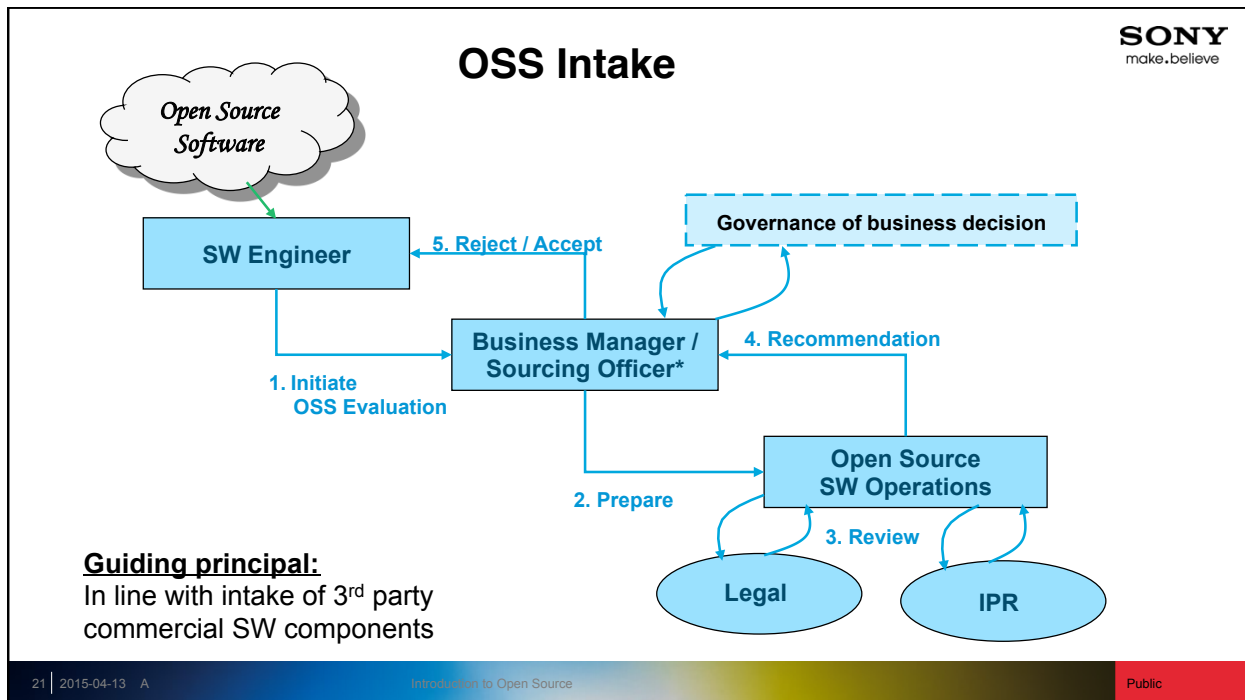
## Open Source Processes

- **2 Corporate Directives**

- Intake – Open Source Software Directive
- Output – Open Source Software Contribution Directive

- **Open Source Board – Decision making body for contributions of Open Source. Maintains the Open Source Directives. Members:**

- Legal
- IPR
- Open Source Operations
- Technology/CTO
- Development (GSM)
- UX (App Software)



## Classification of Contributions

**Trivial contribution**  
A Trivial contribution is a rather small and simple change to already existing open source software. No new functionality added. No significant improvement in performance.  
• E.g., bug fixes

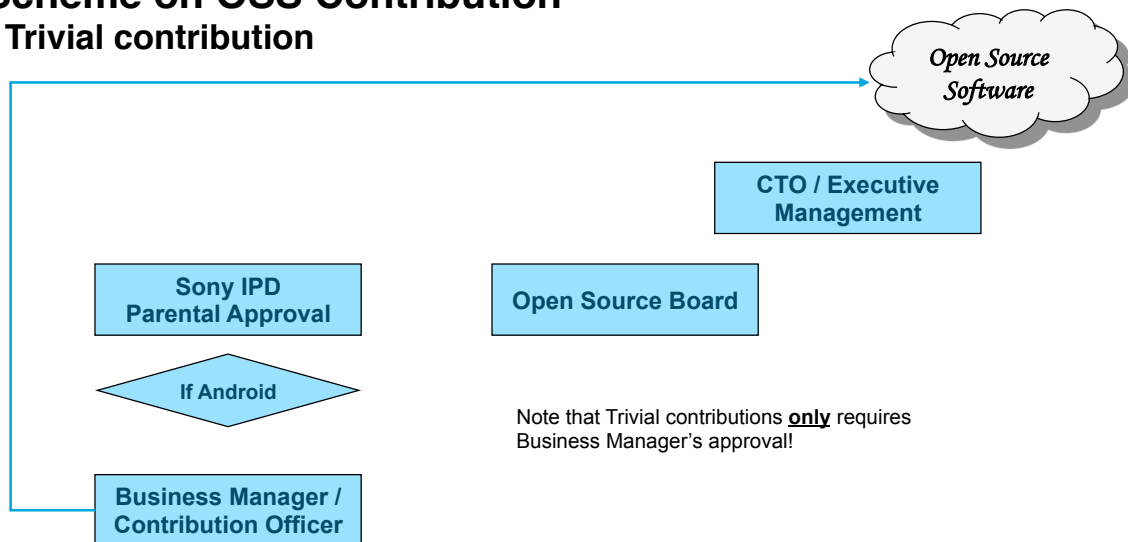
**Medium contribution**  
A Medium Contribution is larger than a Trivial Contribution. It can contain both substantially changed functionality and completely new functionality.  
• E.g., new Linux device drivers (support for new hardware)

**Major contribution**  
A Major Contribution involves substantial amounts of code, with significant Intellectual Property value, and is the result of considerable internal development efforts.  
• E.g., DRM Framework

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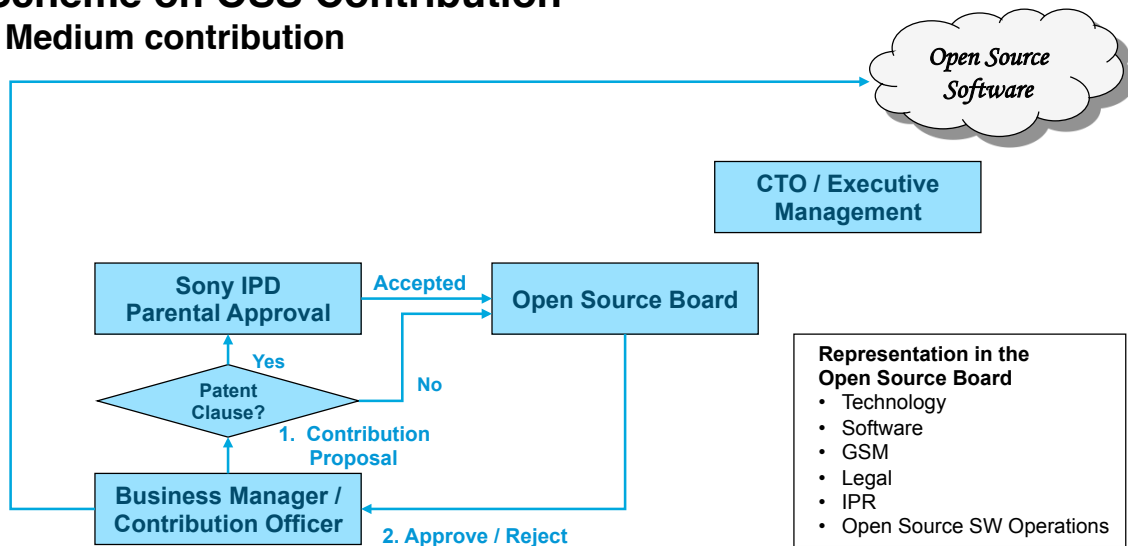
## Scheme on OSS Contribution

### - Trivial contribution

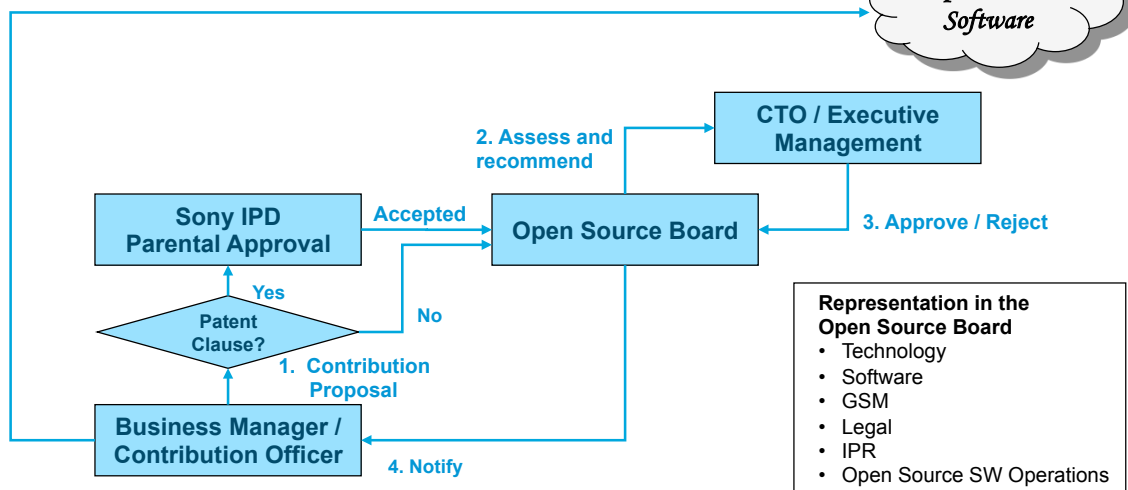


## Scheme on OSS Contribution

### - Medium contribution



## Scheme on OSS Contribution - Major contribution



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INTERNAL  
USE ONLY

## Conclusions

- Engineers empowered, but need to take responsibility
- Legal and Development/Engineers need to work together
- Open Source is simple –understand the consequences and handle it accordingly
- Process/Administration

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