Open Source and Standards Collaboration

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From the smartphone to 5G, it all starts with Qualcomm

$50+ billion cumulative investment in R&D

Source: Qualcomm data, as of Q1 FY18
Qualcomm Standards Bodies and Industry Organizations

410

Standards and industry memberships

2K

Employees participating in standards and industry memberships

• Cellular
• Automotive
• Wireless Connectivity
• IOT
• Multimedia
• Device Connectivity
• Security
Qualcomm Open Source Participation

2.5K
Projects vetted for use, modification or contribution

2K
Employees trained to interact closely with Open Source *

• Enablement Projects
• Business assistance projects
• Personal Projects
How are Open Source and Standards similar and different?
“Open source software is commodity software. It's a level playing field in which anyone can participate.”
“It [a standard] is used to define an interface between two (or more) entities such that they can interact in some predictable fashion and to ensure certain minimum requirements are met. Standards exist to encourage and enable multiple implementations.”
Why do SDOs want to collaborate with Open Source?
Language Savant. If your repository's language is being reported incorrectly, send us a pull request!

<table>
<thead>
<tr>
<th>syntax-highlighting</th>
<th>language-grammars</th>
<th>language-statistics</th>
<th>linguistic</th>
</tr>
</thead>
</table>

5,718 commits
14 branches
127 releases
685 contributors
MIT

Branch: master
New pull request

<table>
<thead>
<tr>
<th>Branch</th>
<th>Description</th>
<th>Last Updated</th>
</tr>
</thead>
<tbody>
<tr>
<td>ghUn</td>
<td>Add issue and pull request templates (#3972)</td>
<td>3 months ago</td>
</tr>
<tr>
<td>bin</td>
<td>Handle repo cleanup race more elegantly (#3939)</td>
<td>4 months ago</td>
</tr>
<tr>
<td>ext/linguist</td>
<td>drop max token len to 32 (#3925)</td>
<td>4 months ago</td>
</tr>
<tr>
<td>lib</td>
<td>Replace Kotlin language grammar (#4065)</td>
<td>3 days ago</td>
</tr>
<tr>
<td>samples</td>
<td>Support for PICO-8 as Lua variant (#4072)</td>
<td>3 days ago</td>
</tr>
<tr>
<td>script</td>
<td>Add script to alphabetise submodule list (#4054)</td>
<td>a month ago</td>
</tr>
<tr>
<td>test</td>
<td>Add script to alphabetise submodule list (#4054)</td>
<td>a month ago</td>
</tr>
<tr>
<td>tools/grammars</td>
<td>Whitelist 4 new TextMate grammar fields (#4039)</td>
<td>a month ago</td>
</tr>
<tr>
<td>vendor</td>
<td>Replace Kotlin language grammar (#4065)</td>
<td>3 days ago</td>
</tr>
<tr>
<td>.gitattributes</td>
<td>Merge branch ‘master’ into 1233-local</td>
<td>4 years ago</td>
</tr>
<tr>
<td>.gitignore</td>
<td>Replace the tokenizer with a flex-based scanner (#3846)</td>
<td>5 months ago</td>
</tr>
</tbody>
</table>

Latest commit 49593a6 3 days ago

From https://github.com/github/linguist
How should SDOs collaborate using Open Source?
Open Source participation enables feedback loops across the board
Open Connectivity Foundation and IoTivity

Coordination
IETF Hackathons

IETF Hackathons encourage developers to collaborate and develop utilities, ideas, sample code and solutions that show practical implementations of IETF standards.

The IETF Hackathons aim to:

- Advance the pace and relevance of IETF standards activities by bringing the speed and collaborative spirit of open source development into the IETF
- Bring developers and young people into IETF and get them exposed to and interested in IETF

Past IETF Hackathons have covered a range of topics including: DNS, HTTP 2.0, NETVC, OpenDaylight, ONOS, VPP/FD.io, RiOT, SFC, TLS 1.3, WebRTC, YANG/NETCONF/RESTCONF. New technologies are always encouraged.

The next IETF Hackathon will be held in London, March 17-18, 2018.
Can Open Source improve collaboration with lessons from Standards development processes?
“Foster an open ecosystem by establishing interoperable APIs, ensuring interoperable implementations with vendor commitments and open source tools.”
“The fast pace of updates to these projects has created some unexpected problems for the people who deploy and use them.”

Kevin Fleming, Bloomberg

https://opensource.com/article/18/2/important-conversation
IP Policy

- Many SDOs have FRAND or disclosure-only IP policies
  - Have worked very well

- Using only RF Open Source licenses will not work in all situations, it may:
  - Make unclear what is “standards essential”
  - Only apply RF terms to the specific implementation
  - Reduce motivation to contribute and participate in technology areas that require a large R&D investment

- Better to keep SDO IP policy intact
  - Make OSS license copyright-only (suggest BSD or MIT)
  - Add an explicit pointer to the SDO IP policy
Call to Action

What can we do?
Educate!

- OSPO - Open Source Program Office
- ISPO - Industry Standards Program Office

Robert Burns: Oh would some power the gift give us, To see ourselves as others see us.
What your ISPO & SDO needs to learn about Open Source

• Open Source Compliance and effect of non-compliance
  ◦ Review of the software products and contributions
  ◦ Inbound & Outbound processes and policy

• Open Source Development practices
  ◦ CI/Testing
  ◦ Community parity
  ◦ Security

• Open Source Community best practices
  ◦ Issues/Bug tracking, Documentation, Chat
  ◦ Fair and efficient review and responses
  ◦ Monitoring and metrics for project health
What OSPO & Open Source can learn from ISPOs & SDOs

• Expectation of complete releases and high quality standards

• Governance and Antitrust compliance

• Interoperability and backwards compatibility
  ◦ “There are numerous examples I can cite where open source projects are updated so frequently that new versions will, usually unintentionally, break backwards compatibility.” - Kevin Fleming

• Long term strategy, roadmaps, and planning

• Clear rules for contributors, participation and IP declaration
Our internal collaboration between OSPO & ISPO

• Collaborate on:
  ◦ Training
  ◦ Awareness
  ◦ Compliance
  ◦ Outreach

• Align review processes and agree on hand off points:
  ◦ “SDO’s ask you to join, open source projects ask you to contribute.”

• Regular strategy meetings
Standards and Open Source will blend further over time
Thank you!

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