Toward an Understanding of the Motivation of Open Source Software Developers

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Overview

1. Introduction
2. OSS Communities
3. An Example – The GIMP Project
4. Legitimate Peripheral Participation
5. Learning as the Motivation
6. Discussions
7. Summary
OSS Communities

- Anyone can be a contributor
  - No strict separation between users & developers
- Community of practice
  - Common goal/interest
- Regeneration
  - Original developers leave, new developers join
Roles

- Project Leader
- Core Member
- Active Developer
- Peripheral Developer
- Bug Fixer
- Bug Reporter
- Reader
- Passive User
GIMP

• Image editor
• Developed by two students until they graduated
• 20 month pause
• Leadership assumed by a different developer
• Enough core developers to take over the task after he left.
## Mailing list activity

<table>
<thead>
<tr>
<th>No. of emails</th>
<th>No. of members</th>
<th>Total no. of emails</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 200</td>
<td>5</td>
<td>2237</td>
</tr>
<tr>
<td>101 - 200</td>
<td>8</td>
<td>1197</td>
</tr>
<tr>
<td>51 - 100</td>
<td>10</td>
<td>695</td>
</tr>
<tr>
<td>26 - 50</td>
<td>29</td>
<td>1061</td>
</tr>
<tr>
<td>11 - 25</td>
<td>47</td>
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<td>73</td>
<td>471</td>
</tr>
<tr>
<td>3 - 4</td>
<td>107</td>
<td>352</td>
</tr>
<tr>
<td>2</td>
<td>134</td>
<td>267</td>
</tr>
<tr>
<td>1</td>
<td>502</td>
<td>502</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>915</strong></td>
<td><strong>7525</strong></td>
</tr>
</tbody>
</table>
## Code contributions

<table>
<thead>
<tr>
<th>No. of contributions</th>
<th>No. of contributors</th>
<th>Breakdown of the contributors according to their defined roles in the GIMP community</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Core Members</td>
</tr>
<tr>
<td>&gt;250</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>101-250</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>51-100</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>21-50</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>3-20</td>
<td>47</td>
<td>0</td>
</tr>
<tr>
<td>1-2</td>
<td>82</td>
<td>0</td>
</tr>
<tr>
<td>Not credited in change log</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>197</td>
<td>4</td>
</tr>
</tbody>
</table>
Legitimate Peripheral Participation

- Knowing-in-action
- Learning by participation
- Peripherally participate by doing small and easy tasks
  - Legitimate participation, access to knowledge from masters
Learning as the Motivation

- «Scratching a personal itch»
  - Need new functionality
- Often not the case
- Is the motivation to learn something new?
- Creating a software system = knowledge cronstuction
OSS Initiators

• Explorative learning
  – Find new ways of things
  – Overcoming existing problems
  – Doing things better

• Learning by doing
  – Learn more about a topic by doing practical tasks
Later Participants

- OSS projects often initiated by skilled developers
- Good help in learning and understanding programming.
- Learn from fixing bugs, maintenance, ++
- Level of participation can increase as skill level increases
Social Aspects

• Technical supremacy highly appreciated

• Reputation
  – Attention
  – Trust
  – Influence
Control structure

- Open development / Open release
- Process
  - Closed
  - Transparent
  - Open
- Different degree of participation possible
Building a community

- Focus on community building
- Encourage newcomers
- Be responsive to questions
- Make the project attractive
  - Language
  - Modularity