A quantitative study on GRASS, gvSIG and QGIS Communities

V jornadas SIG Libre. 23-25 March, Girona
Authors: Andrés Maneiro, Francisco Puga, Adrián Eirís, Alberto Varela
The ecosystem of a software product

An application's ecosystem

Users

Power users

Leaders
- build the product

Power users
- adapt it
- extreme use

Users
- casual use
A quantitative study on GRASS, gvSIG and QGIS Communities

5 indicators for communities and core product (default installation)

- **User trends**: based on mailinglists
- **Developers trends**: based on mailinglists
- **Activity and manpower**: based on code contributions
- **Community workhours**: based on code contributions
- **Generational analysis**: based on code contributions
A quick overview: size and history of projects

Size of projects

- **gvSIG**
  - ~1.200.000 lines of code
  - 80 months of development

- **GRASS**
  - ~515.000 lines of code
  - 132 months of development [1]

- **QGIS**
  - ~500.000 lines of code
  - 102 months of development

[1] The project declares that was initiated at 1982, but there is no data before 1999, probably due to using different version control systems for the code which provoked information loss.
Users trends (based on mailing lists activity 2008-2010)

<table>
<thead>
<tr>
<th>Project</th>
<th># Subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>gvSIG (sp+en)</td>
<td>1945 + 770</td>
</tr>
<tr>
<td>QGIS</td>
<td>1243</td>
</tr>
<tr>
<td>GRASS</td>
<td>1046</td>
</tr>
</tbody>
</table>
Developer trends (based on mailinglists activity 2008-2010)

<table>
<thead>
<tr>
<th>Project</th>
<th># subscribers</th>
</tr>
</thead>
<tbody>
<tr>
<td>gvSIG</td>
<td>729</td>
</tr>
<tr>
<td>QGIS</td>
<td>440</td>
</tr>
<tr>
<td>GRASS</td>
<td>316</td>
</tr>
</tbody>
</table>
Activity and manpower (based on code contributions 1999-2010)
Community workhours (based on code contributions 1999-2010)

GRASS - # of commits grouped by hour of day

GVSIG - # of commits grouped by hour of day

QGIS - # of commits grouped by hour of day

GRASS - # commits grouped by day

GVSIG - # commits grouped by day

QGIS - # commits grouped by day
Generational analysis (based on code contributions 1999-2010)

GRASS - Top3 developers: % commits along project history

GRASS - developers in 2010: % commits along project history

GVSIG - Top3 developers: % commits along project history

GVSIG - developers in 2010: % commits along project history

QGIS - Top3 developers: % commits along project history

QGIS - developers in 2010: % commits along project history
Could we guess some patterns?

**Lead users**
- GRASS current leaders have grown internally in the project and have broad expertise in it.
- gvSIG development seems to be led by contract. No signs of external contributions and volunteer development are shown in the core.
- QGIS development seems to be led by a large volunteer and highly distributed base. It has aggregated around it 3 different generations of people. Signs of a hacker-friendly culture.

**Power users (not enough data)**
- GRASS contributors seems to be slowly decreasing.
- gvSIG seems to have a stabilized contributors base.
- QGIS seems to have momentum as more and more people is participating the community.

**Casual users**
- GRASS displays a slowly decreasing in general public.
- gvSIG has some advantage and leads the way.
- QGIS shows a slow and steady growing.
This study was a first step. For 1\textsuperscript{st} time we can learn how our communities work based on facts, but, needless to say, it needs further work.

Some ideas we have:

- Same analysis for other branches of the product (future versions, ...).
- Include more sources of information: issue tracking analysis.
- How active and big is the “power users” community? # of plugins, ...
- Which and how many companies support the product?
- Trends for users and developers disaggregated by regions.

Let us know more analysis you see interesting and help us to build them!
A quantitative study on GRASS, gvSIG and QGIS Communities

V jornadas SIG Libre. 23-25 March, Girona
Authors: Andrés Maneiro, Francisco Puga, Adrián Eirís, Alberto Varela