

Faculté Polytechnique



OSS 2013

Identifying Success Factors for the Mozilla Project

Dr Ir Robert Viseur

Summary

Motivations.

Methodology.

Success factors for open source projects.

Main findings.

Perspectives.

Motivations

The history of Netscape / Mozilla...

- Approximately followed the history of the Internet...
- And was not a “smooth sailing” (victories and failures):
 - Historical context:
 - 1994: Successful launch of Netscape browser after the beginning of WWW (based Mosaic graphical Web browser).
 - 1996-1998: Decline with the pressure of Microsoft (from 1996).
 - 1998-2000: Unsuccessful release as open source software.
 - 2003: Death of the Netscape company and creation of Mozilla Foundation.
 - 2004: New beginning with Firefox and strong rise of market shares.
 - 2008: Competition from Google Chrome / Chromium (partner) and domination of Webkit in growing mobile Web.
 - 2011: Launch of Boot to Gecko (Firefox OS).

Interest in better comprehension of success factors of Mozilla project.

History of the research

Three steps:

- 2011: First version based on author's experience and on literature presented at AIM 2011 conference.
- 2012: Second version for book “Histoires et cultures du Libre” (edited by Framabook).
- 2013: Third version with state of the art about success factors and full (?) literature review about Netscape / Mozilla / Firefox.

History of the research

Three steps:

- 2011: First version based on author's experience and on literature presented at AIM 2011 conference.
- 2012: Second version for book “Histoires et cultures du Libre” (edited by Framabook).
- 2013: Third version with state of the art about success factors and full (?) literature review about Netscape / Mozilla / Firefox.

Methodology

Brief state of the art about the identification of success factors in open source projects.

- Build on (Manenti & Parisi, 2007), (Fershtman & Gandal, 2007), (Stewart et al., 2005) and (Midha & Palvia, 2012).

Case study about the Mozilla project...

- Based on a review of the scientific (mainly) and professional literature about Netscape developments and about the Mozilla projects (specially Firefox).
- Structured by the success factors identified in literature.

Results: findings by factor.

- Main findings presented here (see paper for full details).

Success factors for open source projects

Factors of success (mainly based on « *Cue Utilisation Theory* »):

- Intrinsic factors :
 - Complexity of source code.
 - Modularity of source code.
- Extrinsic factors :
 - Type of license.
 - Number of available translations.
 - Size of the user base.
 - Size of the developer base.
 - Responsibility assignment.
 - Organizational sponsorship.

What do we mean by “success”?

- Current market success (i.e. popularity).
- Technical success (i.e. activity).

Build on (Manenti & Parisi, 2007), (Fershtman & Gandal, 2007), (Stewart, Ammeter & Maruping, 2005) and (Midha & Palvia, 2012).

Main findings (1/4) : importance of complexity

The source code released in 1998 was too complicated and difficult to change.

- Consequence :
 - Rewriting → new Gecko rendering engine.
 - Delay in the the release of a production quality successor for Netscape Communicator 4.*.
 - Amplified by the share of resources between commercial and open source releases.
- Causes :
 - Erosion of design due to the iterative development practices adopted by Netscape.
 - Objective to propose a rendering engine complying with the Web standards.
- Death of Netscape company linked to other commercial and managerial factors (ex.: unfair commercial practices from Microsoft).

Main findings (2/4) : importance of modularity

Firefox benefits on a big repository of extensions (addons).

- Important for the users and for the developers:
 - 85% of Firefox users used at least 1 extension and $3 \cdot 10^9$ downloads worldwide (in 2012).
 - Simplification of the distribution of development efforts.
 - Huge success among developers (25.000 extensions)
- Opportunity for addressing specific needs.
- Principle not specific to open source software.

Mozilla released with valuable development tools (i.e. XUL, Gecko, Bugzilla,...).

- Sometimes: difficulties to spread those technologies in others projects.

Main findings (3/4) : importance of the license

Big debates at the beginning of Mozilla project.

- Observations :
 - BSD doesn't protect developer's contributions.
 - GPL is considered as untenable for commercial developers (due to “virality”).
 - Netscape is released with 75 third-party modules.
- Solution :
 - Creation of new software license : Mozilla Public License (OSI compatible, weak copyleft).
 - Project in the project.
- First release : Netscape Public License (heavily criticized).

Importance in the eyes of the community but impact difficult to evaluate on the Mozilla project.

Main findings (4/4) : importance of the organisational sponsorship

Impact of the transition from Netscape to Mozilla Foundation sponsorships on:

- the activity of developers,
- the composition of the group of most active developers.

Impact on the marketing after the creation of the Mozilla Foundation.

- New design of the website (more user-centered).
- Several well professional and innovative marketing efforts (ads in newspapers, crowdsourcing applied to ads creation, viral marketing, brand strategy,...).
- Partnerships with search engines company (mainly Google) in order to finance the project.

Perspectives (1/2)

Mozilla brought one of the main license in open source field: Mozilla Public License.

- The license MPL is well-known.
- But the history of the updates (i.e. NPL → NPL / MPL → MPL / LGPL / GPL) is less studied.
- → **What are the managerial lessons of the practices of the Mozilla project with the use of licenses ?**
 - Motivations of the updates ?
 - Impacts of the updates (on the Mozilla project or on the projects used by Mozilla) ?

Perspectives (2/2)

Provision of valuable development tools and modular structure of Mozilla but...

- Difficulties to spread those technologies beyond the projects of the Foundation.
 - Examples : XULRunner or Gecko (replaced by Webkit in several third-party projects).
- → **How can we explain the lack of adoption of the Mozilla technologies (ex.: Gecko rendering engine compared to Webkit)?**
 - Explained by technical factor ?
 - Google justify the creation of Chrome/Chromium and the use of Webkit by the poor performances of browsers with rich Internet applications.
 - Explained by (too) centralized organization of the community ?
 - Frequent disputes due to the hierarchical organization but...
 - Warranty of coherence in the developments and...
 - Large number of contributions made by members.
 - Other reasons (lack of documentation, license policy,...)?

Q&A

Thank you for your attention.
Any question ?

This slideshow is published under CC-BY-ND license.

Contact

Dr Ir Robert Viseur

Teaching Assistant @UMONS

- UMONS, Faculté Polytechnique
- Rue de Houdain, 9
- B-7000 Mons
- Mail : *robert.viseur@umons.ac.be*
- WWW : *www.umons.ac.be*

Senior Technology Advisor @CETIC

- CETIC
- Rue des Frères Wright, 29/3
- B-6041 Charleroi
- Mail : *robert.viseur@cetic.be*
- WWW : *www.cetic.be*

More information : www.robertviseur.be