Table of Contents

Part I: Full Papers

Collaboration and Forks in OSS Projects

A Comprehensive Study of Software Forks: Dates, Reasons and Outcomes ................................................................. 1
   Gregorio Robles and Jesús M. González-Barahona

A Model of Open Source Developer Foundations ....................... 15
   Dirk Riehle and Sebastian Berschneider

Long-Term Sustainability of Open Source Software Communities beyond a Fork: A Case Study of LibreOffice .................... 29
   Jonas Gamalielsson and Björn Lundell

Community Issues

Step-by-Step Strategies and Case Studies for Embedded Software Companies to Adapt to the FOSS Ecosystem ....................... 48
   Suhyun Kim, Jaehyun Yoo, and Myunghwa Lee

Citizen Engineering: Evolving OSS Practices to Engineering Design and Analysis .......................................................... 61
   Zhi Zhai, Tracy Kijewski-Correa, Ashan Kareem, David Hachen, and Gregory Madey

Gender Differences in Early Free and Open Source Software Joining Process .............................................................. 78
   Victor Kuechler, Claire Gilbertson, and Carlos Jensen

Open Education and Peer-Production Models

Emerging Hackerspaces – Peer-Production Generation .................. 94
   Jarkko Moilanen

Exploring the Barriers and Enablers to the Use of Open Educational Resources by University Academics in Africa ................ 112
   Tanya Percy and Jean-Paul Van Belle
Integration and Architecture

OSS Integration Issues and Community Support: An Integrator Perspective .................................................. 129
Claudia Ayala, Daniela S. Cruzes, Anh Duc Nguyen, Reidar Conradi, Xavier Pranch, Martin Höst, and Muhammad Ali Babar

Designing Secure Systems Based on Open Architectures with Open Source and Closed Source Components .......................... 144
Walt Scacchi and Thomas A. Alspaugh

Business Ecosystems

Using Multiple Case Studies to Analyse Open Source Software Business Sustainability in Sub-Saharan Africa .......................... 160
Sulayman K. Sowe and Maurice McNaughton

Exploring the Role of Commercial Stakeholders in Open Source Software Evolution ............................................... 178
Andrea Capiluppi, Klaas-Jan Stol, and Cornelia Boldyreff

Exploring the Role of Outside Organizations in Free / Open Source Software Projects ................................................ 201
Darren Forrest, Carlos Jensen, Nitin Mohan, and Jennifer Davidson

Adoption and Evolution of OSS

Two Evolution Indicators for FOSS Projects ............................................ 216
Etiel Petrinja and Giancarlo Succi

Open Source Migration in Greek Public Sector: A Feasibility Study ................................................................. 233
Androklis Mauridis, Dimitrios Fotakidis, and Ioannis Stamelos

Part II: Lightning Talks

Community Issues

Free and Open Source Software Adoption in Emerging Markets: An Empirical Study in the Education Sector ............................................ 244
G.R. Gangadharan and Martin Butler

Open-Source Technologies Realizing Social Networks: A Multiple Descriptive Case-Study .................................................. 250
Jose Teixeira
# Table of Contents

## A Qualitative Method for Mining Open Source Software Repositories

*John Noll, Dominik Seichter, and Sarah Beecham*

- Page 256

## OSS Quality

### The Impact of Formal QA Practices on FLOSS Communities – The Case of Mozilla

*Adina Barham*

- Page 262

### Do More Experienced Developers Introduce Fewer Bugs?

*Daniel Izquierdo-Cortázár, Gregorio Robles, and Jesús M. González-Barahona*

- Page 268

### Perspectives on Code Forking and Sustainability in Open Source Software

*Linus Nyman, Tommi Mikkonen, Juho Lindman, and Martin Fougère*

- Page 274

### Open Source Prediction Methods: A Systematic Literature Review

*M.M. Mahbubul Syeed, Terhi Kilamo, Imed Hammouda, and Tarja Systä*

- Page 280

## OSS in Different Domains

### From Open Source Software to Open Source Hardware

*Robert Viseur*

- Page 286

### Does OSS Affect E-Government Growth? An Econometric Analysis on the Impacting Factors

*Spyridoula Lakka, Teta Stamati, and Draculis Martakos*

- Page 292

### Open Source, Open Innovation and Intellectual Property Rights – A Lightning Talk

*Terhi Kilamo, Imed Hammouda, Ville Kairamo, Petri Räsänen, and Jukka P. Saarinen*

- Page 298

## Development Practices

### OSS Adoption in South Africa: Applying the TOE Model to a Case Study

*Jean-Paul Van Belle and Mark Reed*

- Page 304

### Forking the Commons: Developmental Tensions and Evolutionary Patterns in Open Source Software

*Mehmet Gencer and Bülent Özel*

- Page 310
A Novel Application of Open Source Technologies to Measure Agile Software Development Process ........................................ 316
  Luis Corral, Andrea Janes, Tadas Remencius, Juri Strumpflohner, and Jelena Vlasenko

A Linguistic Analysis on How Contributors Solve Software Problems in a Distributed Context ...................................... 322
  Héla Masmoudi and Imed Boughzala

Business Ecosystems

Examining Turnover in Open Source Software Projects Using Logistic Hierarchical Linear Modeling Approach ................................. 331
  Pratyush Nidhi Sharma, John Hulland, and Sherae Daniel

A Study on OSS Marketing and Communication Strategies ..................... 338
  Vieri del Bianco, Luigi Lavazza, Valentina Lenarduzzi, Sandro Morasca, Davide Taibi, and Davide Tosi

The Effect of Open Source Licensing on the Evolution of Business Strategy ........................................................................ 344
  Tetsuo Noda, Terutaka Tansho, and Shane Coughlan

Part III: Tool Demonstration Papers

Binoculars: Comprehending Open Source Projects through Graphs ........ 350
  M.M. Mahbubul Syeed

OSSLI: Architecture Level Management of Open Source Software Legality Concerns ......................................................... 356
  Alexander Lokhman, Antti Luoto, Salum Abdul-Rahman, and Imed Hammouda

Part IV: Short Industry Papers

Product Development

Hybrid Business Models in Software Product Industry: Patterns and Challenges ........................................................................ 362
  Swandan J. Deodhar, Kulbhushan C. Saxena, and Mikko Ruohonen

Two Modes of Product Development: Head-Oriented vs. Release-Oriented ........................................................................ 368
  Masayuki Hatta
Industrial Experiences

OSS in 2012: A Long-Term Sustainable Alternative for Corporate IT .......... 371
Didier Durand, Jean-Luc Vuattoux, and Pierre-Jean Ditscheid

Discussion on the Problems to be Solved toward the Migration to OSS
Productivity Software in the Business Enterprises .......................... 377
Jun Iio and Tomotaka Ogawa

How Can Open Standards Be Effectively Implemented in Open Source?
Challenges and the ORIOS Project ........................................... 383
Björn Lundell, Admir Abdurahmanovic, Stefan Andersson,
Erik Bergström, Jonas Feist, Jonas Gamalielsson,
Tomas Gustavsson, Roger Kahlbom, and Konstantin Papaxanthis

Future Smart Metering Runs on Open Source – Challenges and the
GuruxAMI Project ......................................................... 389
Mikko Kurunsaari

Part V: Posters

Open Source Software in Research and Development (Guidelines for
Postgraduate Students) .................. 395
Michael Adeyeye and Oluyomi Kabiawu

Development Style of Open Source and Economies of Connection ...... 396
Keisuke Tanihana and Tetsuo Noda

FLOSS Survey 2013? A Proposal for Comprehensive Survey on FLOSS
Developers ............................................................... 397
Masayuki Hatta

FLOSS Project Registration Strategies ............................. 398
Alexander Lokhman

Using the Eclipse C/C++ Development Tooling as a Robust, Fully
Functional, Actively Maintained, Open Source C++ Parser .......... 399
Danila Piatov, Andrea Janes, Alberto Sillitti, and Giancarlo Succi

Part VI: Workshops

FLOSS Education: Long-Term Sustainability .......................... 400
Gregorio Robles, Jesús M. González-Barahona, and Wouter Tebbens

Developing Mobile Software with FLOSS .......................... 401
Anthony I. Wasserman

Author Index .......................................................... 403