



08 e 09 de outubro de 2015

Newcomer Developers to Open Source: Problems and Perspectives

Igor Steinmacher

www.igor.pro.br

igorfs@utfpr.edu.br

About Me

- BSc. Computer Science (UEM 2002[3])
- MSc. Computer Science (UFRGS 2005)
- PhD. Computer Science (IME/USP 2015)
- Professor @ UTFPR-Campo Mourão
- Collaborator @ PCC/UEM

- Member of the
 - Research Group on Information Systems (UEM)
 - Software Engineering and Collaborative Systems Research Group (IME/USP)
 - Software Engineering and Collaborative Systems Lab (UTFPR)

About Me

- A bit of Collaborative Work and Social Computing
- A bit of Software Engineering

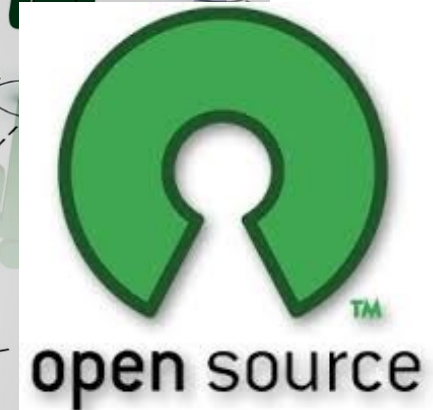
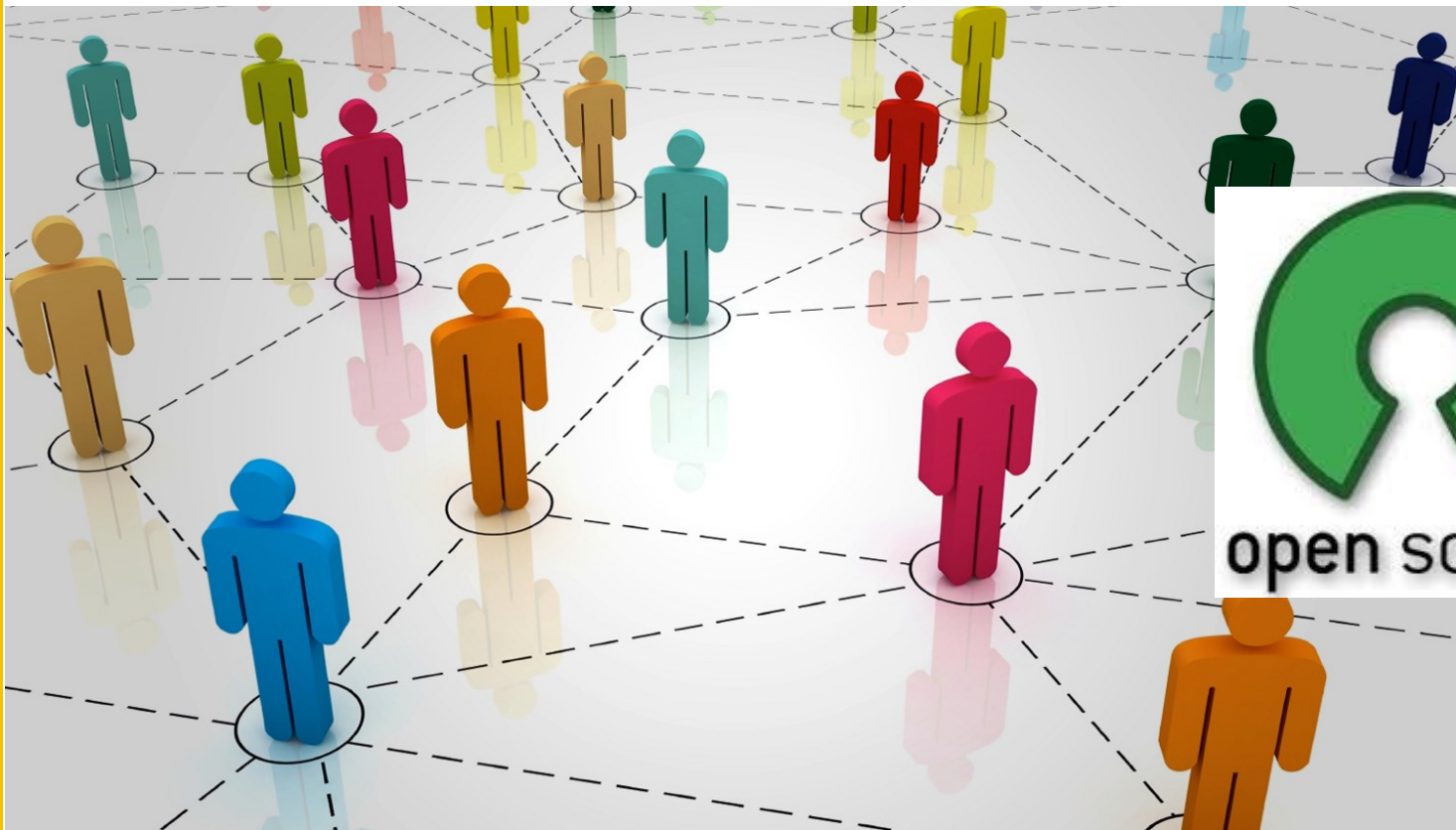
Background

- Software Engineering
 - Social intensive discipline
 - **Human interaction and collaboration**



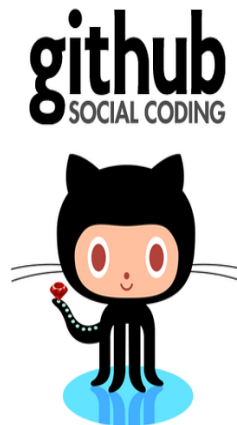
Context

- Open source → Open Collaboration Community



Context

- **Open collaboration** communities leverage and depend on new contributors
 - Innovation
 - Sustainability



- Ideally, open collaboration communities present a low barrier to entry
 - However...

Context

- Newcomers are susceptible to several barriers when they are onboarding
 - Learning curve
 - Coordination
 - Communication
 - Cooperation



Context

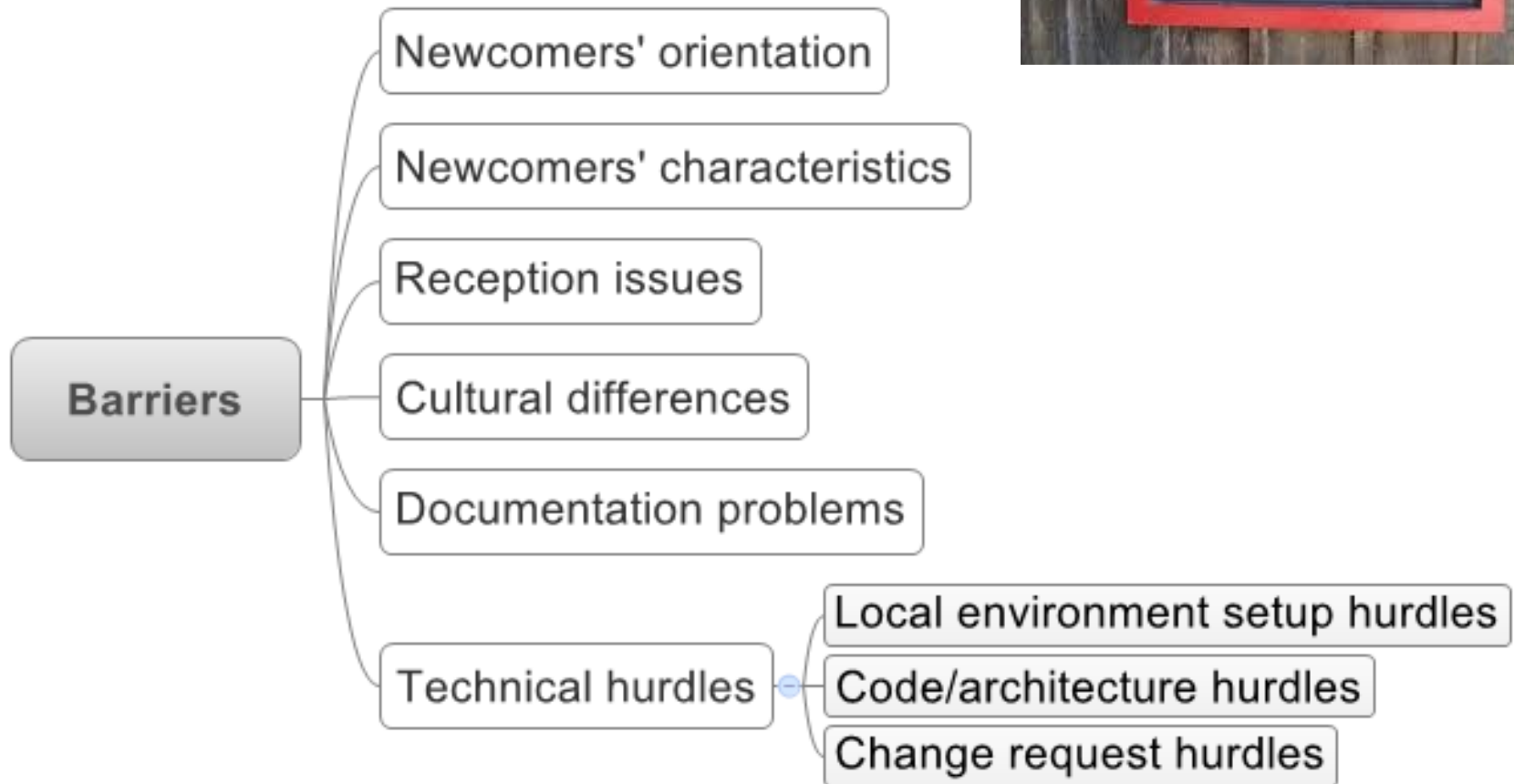
- **Open Source Software** projects
 - Newcomers are usually **developers** willing to place a contribution
 - Delivering a contribution is a complex, multi-step process
 - Multiple steps → multiple barriers → increase chance to giving up



My interests

- Development Process in Community-based OSS Projects
 - Newcomers to Open Source Software
 - Mining Software Repositories
 - Role of incentives on newcomers motivation
 - Tools to support newcomers
 - Impact of social coding environments
 - Gamification as a way to motivate and retain
 - Teaching Open Source Software

Newcomers to OSS



STEINMACHER, I.; CONTE, T.; REDMILES, D.F.; GEROSA, M.A.. Social Barriers Faced by Newcomers Placing Their First Contribution in Open Source Software Projects. In: The 18th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2015). ACM, 2015. p. 1-13. [\[PDF\]](#)

Newcomers to OSS

FLOSS COACH

HOME

COACH ME ▾

FORUM

LOGOUT

How can I help you?

JABREF

How to Start

Talk to the Community

Setup your workspace

Deal with the Code

Submit your Changes

JabRef - How to Start



CONTRIBUTION FLOW

CHOOSING A TASK TO START WITH

FIND A MENTOR

Basic Contribution Flow to Follow

Please consider the flow below if you want to be guided till you finish your contribution. It is not a strict flow, you can skip steps if you want. It was designed to give you a sense on what you should do. You can move to appropriate guidelines and resource by clicking the boxes instead of using the menu.

You can access these steps on the sidebar by clicking the question mark icon at the top-left side of the page

Learn about the
project and skills

Find a task to
start with

Submit your
contribution

Setup your local
workspace

Study and change
the code

Support from the community

STEINMACHER, Igor; WIESE, Igor; CONTE, Tayana U.; GEROSA, Marco Aurélio. Increasing the self-efficacy of newcomers to Open Source Software projects. In: Proceedings of the 29th Brazilian Symposium on Software Engineering, 2015. v. 1. [\[PDF\]](#)

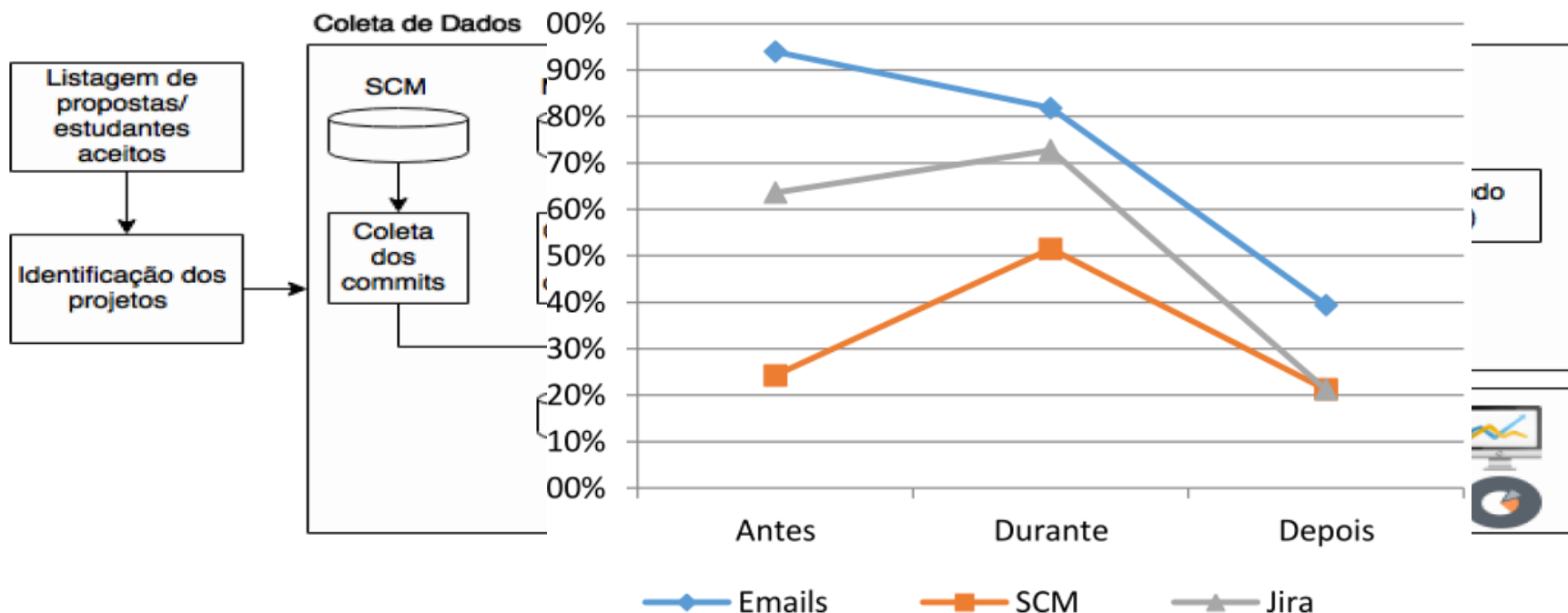
Newcomers to OSS

- Finding and documenting **Patterns** of solutions based on the barriers model
- Building a new version of FLOSScoach
 - Become a “study-bed” for strategies to support newcomers
 - Partnership with IME/USP and UnB (Portal SPB)
- Automatically feed the portal using NLP
 - Post-doc: Christoph Treude (@IME/USP)

Google Summer of Code



- How extrinsic incentives (\$\$\$) from GSoC influence the onboard and retention?



SILVA, J.; WIESE, I.; STEINMACHER, I.; GEROSA, M.A. Pagamento Atrai Colaboradores de Longo Prazo ou Prestadores de Serviço? Uma Investigação Inicial sobre o Google Summer of Code 2014. In: Simpósio Brasileiro de Sistemas Colaborativos (SBSC 2015). [[PDF](#)]

Gamificação de ambiente de software livre



- Foster the onboarding of students in OSS projects
- Integration with teaching (open source) software development
- Portfolio building (internships)
- Parceria com CCSL (possível com Portal SPB)



Women in Open Source



- Genre differences in joining process
- Role of support groups (WoMoz, RailsGirls, MNT *etc.*)



Social Coding Environments

- Migration to Social Coding Environment on Developers Behavior
 - Is there a different behavior?
 - Do projects receive contributions from more contributors?
 - What make these environments more prone to receiving contributions?

Social Coding Environments

- New behaviour detected

- Casual Contributors

- What motivates them?

O fenômeno das contribuições casuais tem se tornado cada vez mais comum, cabe às comunidades de software livre utilizá-lo a seu favor

Encontramos indícios de que este fenômeno ocorre na comunidade do LibreOffice e que o custo para a comunidade pode ser baixo

... factors?

... (System-of-System)



RAMOS, Felipe V.; CHAVES, Ana Paula; GEROSA, Marco Aurélio; STEINMACHER, Igor. Um estudo exploratório sobre contribuições casuais em projetos de software livre: caso do projeto LibreOffice. In: Anais do IX WDES, 2015. [\[PDF\]](#)

Other interest areas

- Prediction Models
 - Feature location (find an artifact based on historical data)
 - Socialization opportunities
- Qualitative Research
- Teaching Open Source Software
 - How to use it in CS Curriculum?
 - How to benefit from OSS experience in classroom/University?

Questions? Doubts?

Feel free to reach me

igorfs@utfpr.edu.br

www.igor.pro.br