Self-organisation in Commons-Based Peer Production

Drupal: "the drop is always moving"

David Rozas

GRASIA seminar (14/02/2018)

This work was partially supported by the Framework programme FP7-ICT-2013-10 of the European Commission through project P2Pvalue (grant no.: 610961).

davidrozas.cc
@drozas

Who am I?

davidrozas.cc
@drozas

- Currently **postdoc researcher** at P2P Models
- Mixed background: in **social sciences** (PhD in Sociology @UniS [UK]) and **computer science** (MsC + BsC @URJC [Spain] & @NTNU [Norway])
- Mixed experience in **academia** (FP6 EU ASTRA, FP7 EU Qlectives, FP7 EU P2Pvalue) and **industry** (self-employed [UK & Spain], Educatic [Spain], Infosys [India])
- Areas of interest: organisational theory, free software, commons-based peer production, social computing, decentralised technologies, etc.
- Interested in intersection between "**the technical and the social**"

Overview

davidrozas.cc
@drozas

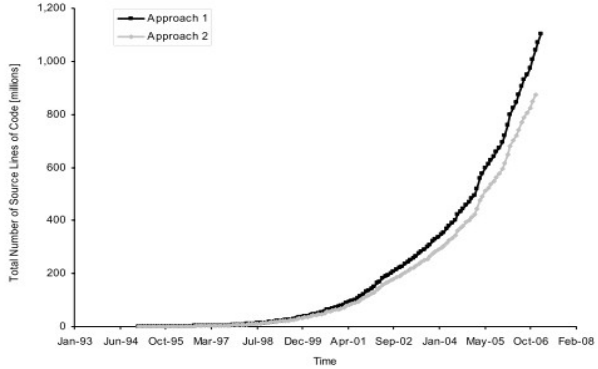
- Key concepts: Free Software, Commons-Based Peer Production
- Case study
- Methodology
- Key insights:
  - Notion of contribution in peer-production
  - Formalisation and decentralisation in peer production
  - Emergence of *polycentric* governance and organisational forms with different degrees of *organicity*
- Conclusion and implications for practitioners
- Call for collaboration

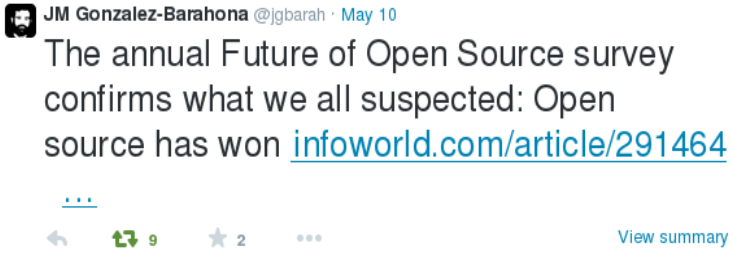
What is Free Software?

davidrozas.cc
@drozas

- Software which allows its use, copy, study and modification in any way
- Huge increment in adoption and production
- **Not only about the software**: new ways of producing it (Raymond, 2001)

Deshpande and Riehle (2008)

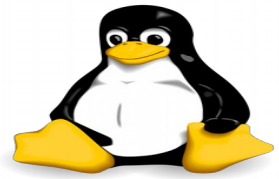




Commons-Based Peer Production

davidrozas.cc
@drozas

- New mode of production (Benkler, 2006), characterised by (Fuster-Morell, 2014):
  - **Collaborative process**
  - **Peer-based**: different levels of structure depending on the process, but not mainly based on contractual obligations neither forms of coercion
  - **Commons-process**: process driven by the general interest, results in openness of the resources
  - **Favouring reproducibility**: via Free Software or Creative Commons licenses
- In context of collaborative economy, in contrast with corporate models (e.g. Uber)



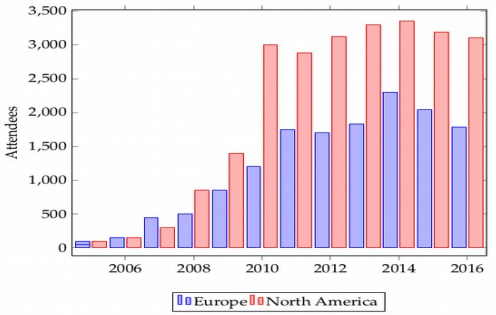
Case study: the Drupal community

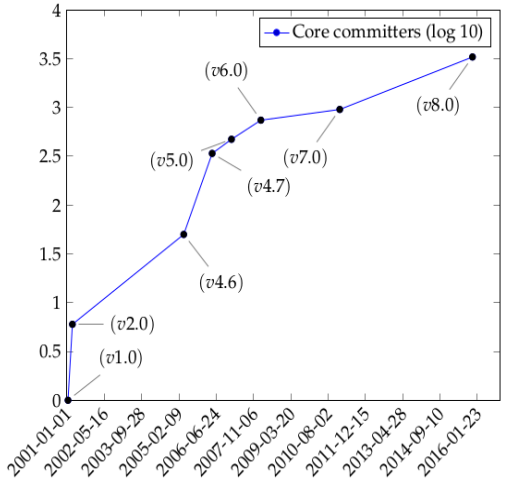
davidrozas.cc
@drozas

- Free software content management framework, started personal project of a student (2001). Powering +2% websites worldwide (W3Techs, 2014)
- A community project: “you come for the software, you stay for the community”
- Currently +1M users registered at Drupal.org, +30k code contributors (Drupal.org, 2014a).
- Hundreds of local F2F events, tens of DrupalCamps and DrupalCons in 4 continents (Drupal.org, 2014b)
- Extreme case

Timeline and growth in participation

davidrozas.cc
@drozas





2001 — Drupal 2.0

2005 — Face-to-face meeting (FOSDEM)

2007 — Drupal Association

Drupal 5.0

NASA, MTV, ...

2008 — White House

2009 — Drupal 6.0

2011 — Drupal 7.0

2013 — 1 million Drupal sites
DrupalCon Sydney

Backdrop

2015 — DrupalCon Latin America

Drupal 8.0

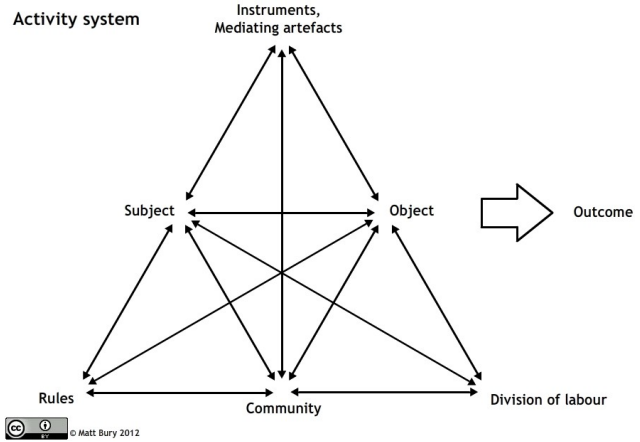
2016 — DrupalCon Latin Asia

Dries Buytaert launched Drupal 1.0 on 2001 after graduating

Timeline adapted from Chumillas & Rozas (2017)

Methodology and theoretical framework

- [Contribution] activity as main unit of analysis. Activity Theory (Vygotsky, 1978; Engeström, 1987)
- Qualitative study, (virtual) ethnographic perspective (Hine, 2000)
- Data collection methods (multi-modal)
  - Participant observation, 3 years. Online (main platforms) & offline (32 events, 53 days)
  - Documentary analysis. Drupal Planet as starting point. 8,613 documents from archive
  - 15 semi-structured qualitative interviews

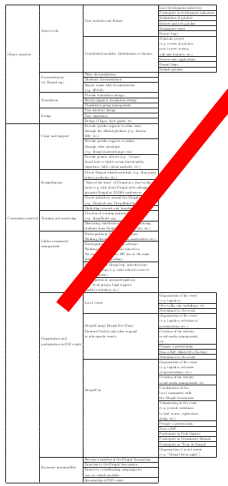


#F1: Contribution

- “Talk is silver, code is gold”
- What does it mean to contribute?: code-centrism in communities & literature
- What about other contributions? Affective labour as the “lifeblood” of the commons (Bollier, 2014): immaterial labour creates or modifies emotional experiences (Hardt, 1999)
- > *“What types of activities are understood as contributions in the Drupal community and in what ways are these recognised?”*

#F1: Contribution beyond source code

- Meanings constantly evolving as part of negotiation processes between the participants
- Two main categories:
  - “Object-oriented”,
  - “Community-oriented”



	etc.)	
Organisation and participation in F2F events ($SG_{2.5}$)	Local events ($SG_{2.5.1}$)	Organisation of the event (e.g. logistics)
		Give talks, run workshops, etc.
		Attendance to the event
	DrupalCamps / Drupal Dev Days / Frontend United and other regional or role-specific events ($SG_{2.5.2}$)	Organisation of the event (e.g. logistics, selection of presentations, etc.)
		Creation of the website, social media management, etc.
		Prepare a presentation
		Run a BoF (Birds Of a Feather)
		Attendance to the event
	DrupalCon ($SG_{2.5.3}$)	Organisation of the event (e.g. logistics, selection of presentations, etc.)
		Creation of the website, social media management, etc.
		Coordination of the local community with the Drupal Association
		Volunteering in the event (e.g. provide assistance to find rooms, registration desks, etc.)
		Prepare a presentation
		Run a BoF
		Participate in Code Sprints

#F1: Reflection in arterfacts

Spain

LinkedIn
Twitter
Drupal Answers
GitHub

Current Role(s):
PhD student
University of Surrey

IRC: drozas

Professional Info

Companies Worked For
Educatic, Infosys, Norwegian University of Science and Technology, Solusoft

http://davidrozas.cc
http://www.surrey.ac.uk/sociology/people/phd/david_rozas/index.htm

Personal Info

Gender: male

Languages spoken: English
Spanish

Bio:
I am a free software enthusiast and I have been learning and having fun with Drupal and its community since 2010.

I am currently doing some work as Drupal freelancer while doing a PhD on the "social side" of Free Software communities. My research concerns individual involvement and group dynamics of Commons-Based Peer Production communities, focussing on the Drupal community as a case study. More info: http://www.surrey.ac.uk/sociology/people/phd/david_rozas/index.htm

History

Member for	7 years 4 months
Documentation	Over 100 edits

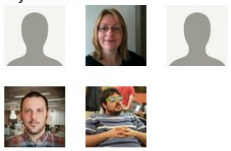
Areas of Expertise:
Site builder
Developer
project manager,
Drupal Events:
DrupalCon Copenhagen 2010
DrupalCon Amsterdam 2014
DrupalCon Barcelona 2015

Projects

Facebook Page Plugin (83 commits)
QScience (51 commits)
Patterns (47 commits)
Patterns Installation Profile (41 commits)
Patterns Client (16 commits)
Patterns Server (15 commits)
Integrity (1 commit)
Total: 254 commits

drozas helps support and grow the Drupal community with the Drupal Association.

My mentors:

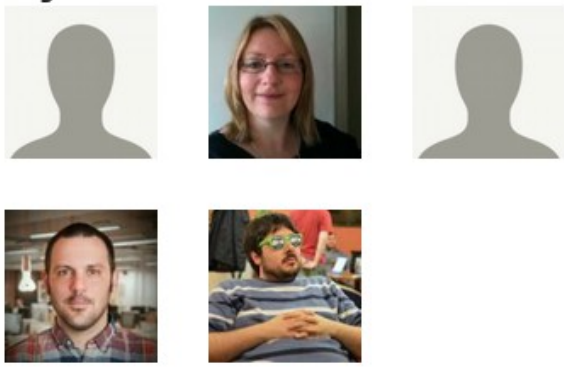


2 people list drozas as a mentor

I contributed Drupal patches
I contributed Drupal modules
profiles
I contributed to Drupal issue queues
I contributed Drupal documentation
I contributed Drupal translations
I provide Drupal-related services

Retrieved 17th July 2017 from https://www.drupal.org/u/drozas Drupal.org (CC BY-SA 2.0).

My mentors:



2 people list drozas as a mentor

Projects

Facebook Page Plugin (83 commits)
QScience (51 commits)
Patterns (47 commits)
Patterns Installation Profile (41 commits)
Patterns Client (16 commits)
Patterns Server (15 commits)
Integrity (1 commit)
Total: 254 commits

#F1: Relevance of “community-oriented” contributions

“[…] attending these meetups was really good. Because you realise there are people behind the source code, right? […] And you meet people that can tell you a kind of personal story. […] And then, it [the community] stops being something anonymous, it becomes something yours.”

I_1, Drupal developer and devop, M, 1 year

#F1: Relevance of “community-oriented” contributions

“Because the community is growing, then you have less of a sense of community. But I think the solution to that is to have smaller local communities.

So, you know, as the worldwide community grows, then you start finding, like whereas before it might have been 50 people worldwide, now you have like 50 people in your part of London, or wherever.”

Drupal themer and developer, M, 11 years

- Different types of emotional experiences which foster collaboration. Vary according to degree of experience
- Not only understood as a **type of contribution**; not only **unequally represented**; they are key for **sustainability**

Life in a do-ocracy: a model of governance?

"The Drupal community uses a do-ocracy model, meaning people work on what they want to work on, instead of being told what to work on. Decisions are usually made through consensus building and based on technical merit, trust and respect."

Buytaert (Bacon, 2012, p. 514),

"[…] Doocracy refers to the idea that there is no external body or hierarchy that decides how actions should be carried out. […] authority over an action is held directly by those developing it."

Fuster-Morell (2010, p. 282)

davidrozas.cc
@drozas

Self-organisation in Commons-Based Peer Production

> *[…] the salient characteristic of commons, as opposed to property, is that* ***no single person has exclusive control*** *over the use and disposition of any particular resource in the commons. Instead, resources governed by commons may be used or disposed of by anyone among some (more or less well-defined) number of persons,* ***under rules that may range from 'anything goes' to quite crisply articulated formal rules*** *that are effectively enforced.*
>
> Benkler (2006, p. 61),

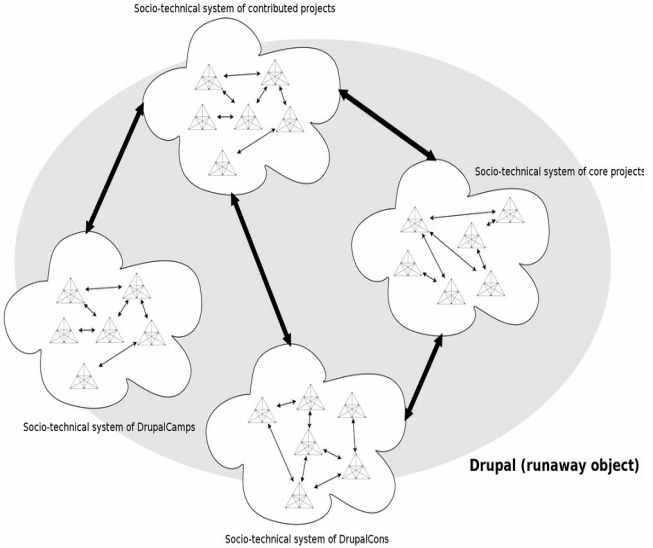
"How does a large and global Commons-Based Peer Production community self-organise?"

> *"What are the main organisational aspects and dynamics that have characterised the growth of a global CBPP community of such a scale?"*

> *"What type of governance emerged in the Drupal community?"*

#F2: Emergence of socio-technical systems of contribution

- *Case studies of different types of projects, local events, DrupalCamps and DrupalCons*
- *STSoC: set of **interacting parts,** including people, software, hardware, procedures or rules among others, which form a complex whole that revolves around **networks of human activity systems which are perceived as contribution** within the community and share a similar main focus of action*



#F2: Formalisation and decentralisation

Formalisation and decentralisation in peer production: intertwined, and despite main medium / type of activity; and counter-intuitiveness with hacker ethic and do-ocratic values

*[…] procedures **have to be more formalised** in order for it to be welcoming for new contributors. Because people need to know how we do things, who to talk to, and why. Otherwise, it looks like… like you have to be **part of the in-crowd**, or you have to know certain people, or you have to be in a backchannel, and that stuff is really bad. It will **drive away new contributors**. So the formalisation has definitely increased […] we talk about how to do them [decisions], and we come to some kind of agreement and plan. […]*

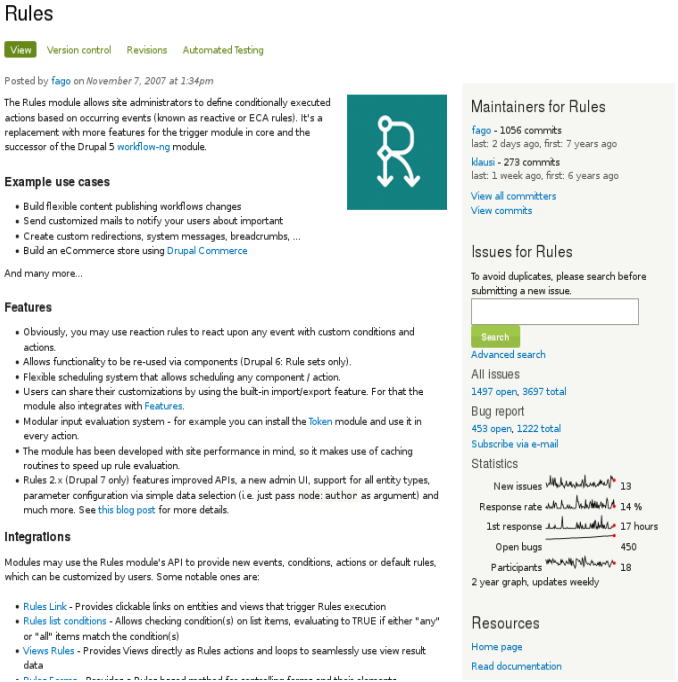
I_9, Drupal core developer and mentoring organiser, F, 8 years

Formalisation and decentralisation: development of projects

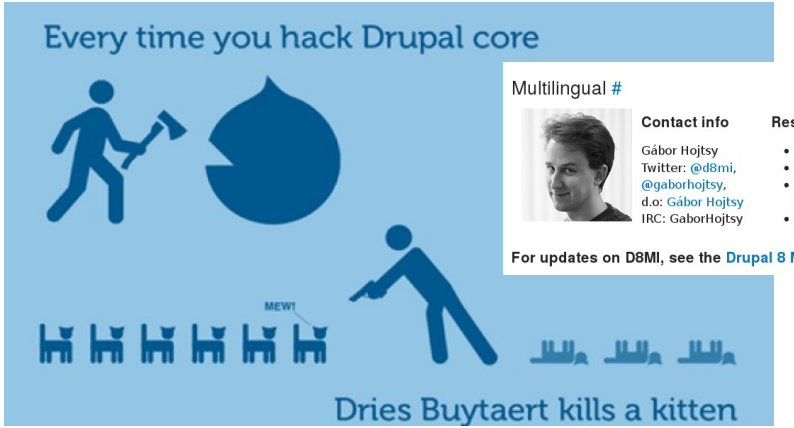
davidrozas.cc
@drozas

Custom

E.g. Quality assurance to "commit" code



Contributed



Core

Formalisation and decentralisation: organisation and participation in events

davidrozas.cc
@drozas

Drupal.cat +Beers

DRUPALCAMP 2017 MADRID MAY 5-6

ASOCIACIÓN ESPAÑOLA DE DRUPAL

DRUPALCON AMSTERDAM 2014

Drupal ASSOCIATION

E.g. Quality assurance to select presentations

How can we explain this?

- Partial explanation according to Ostrom's principles (Ostrom, 1990):
  - Clearly defined community boundaries: institutions, Project Application Process
  - Congruence between rules and local conditions
  - Conflict resolution mechanisms: Drupal Community Working Group [...]

- Also in other large and global CBPP communities:
  - Viégas et al. (2007): The *hidden* order of Wikipedia
  - Forte et al. (2009): Decentralization in Wikipedia Governance

#F3: Different degrees of *organicity*

davidrozas.cc
@drozas

- **Analysis of STSoC. Drawing on classic concepts from organisational theory of organic and mechanistic organisational structures (Burns & Stalker, 1961)**
- **Rules**: from social norms -> core gates and codes of conduct
- **Division of labour**: from blurred -> high degrees of explicit specialisation
- **Legitimacy**: from lower levels to participate/organise -> formal institutions
- **Centralisation and autonomy**: fully decentralised spaces loosely interconnected -> the most centralised and rigid structure [...]

Characteristics of organisational processes	Degree of *organicity*		
	d_1: High	d_2: *Mezzo*	d_3: Low
Rules	Some implicit rules. For example, 'writing good code' or 'avoiding promotional talks'.	Intermediate amount of rules partially affecting areas (e.g. quality assurance). For example, coding standards or selection criteria for presentations.	Large amount of explicit rules affecting most decision-making: governance, quality assurance, division of labour. For example, Core Gates or conflict of interest regulation.
Specialisation	Implicit and blurred division of labour. For example, contributor, or presenter.	Intermediate levels of division of labour. Partially explicit in some cases. For example, maintainers of contributed projects, or organisers in DrupalCamps	Explicit and large division of labour. High degree of specialisation. For example, product owners of core or track chairs.
Degree of formality	Low degree of formality. For example, social life organised around implicit social rules.	Intermediate degree of formality. Emergence of some formal organisational structures and institutions in some cases. For example, the Spanish Drupal Association.	High degree of formality. Organised around formal organisational structures, with bureaucratic processes for most of the decision-making. For example, the Drupal Association.
Centralisation and autonomy	Fully decentralised spaces and loosely interconnected: vast amount of small centres of decision-making almost completely independent of each other.	Considerable amount of medium-sized autonomous distributed spaces with low degrees of dependence on others. For example, contributed projects working groups, or the Spanish Drupal Association.	The most centralised and rigid structures, several centres of decision-making with stronger interdependence. For example, the Core Governance or committees in the Drupal Association.
Complexity and amount of required coordination	Low degree of required coordination. Low levels of complexity.	Intermediate degree of required coordination. Medium complexity.	Largest amounts of required coordination. Main focus of action highly complex.

■ ■ ■

#F3: *organic* and *mechanistic* organisation, polycentric governance

- Organisational changes experienced illustrate emergence of STSoC:
  - Core, contributed modules, organisation of DrupalCons, DrupalCamps, local events, etc.
- Counterbalancing and simultaneous co-existence of socio-technical systems of contribution varying in their degree of *organicity* (Burns & Stalker, 1961), in which Drupalistas have developed multiple governing authorities
- Emergence of **polycentric governance** (Ostrom, Tiebout & Warren, 1961): variant numbers of centres of decision-making to distribute authority “to make at least some of the rules related to the use of that particular resource” (Ostrom, 1999, p. 528)

Conclusion

davidrozas.cc
@drozas

Story of how hundreds of thousands of participants in a large and global Commons-Based Peer Production community have organised themselves, in what started as a small and amateur project in 2001

#F1: Contribution as meanings under constant negotiation between participants in peer production communities according to their internal logics of value

#F2: Organisational dynamics: formalisation and decentralisation, despite main medium / type of activity / OO vs CO / hacker values

#F3: Resulted in emergence of polycentric governance and organisational forms with different degrees of *organicity* (interacting)

Implications for practitioners

- **Offline matters**: consider the relevance of the offline medium to grow and sustain the health o fthe community, envision ways to foster these interactions at several levels
- **Value** of the **least visible labour**: reflect and find specific ways — according to their internal logics of value — to make this type of labour more visible, acknowledged and valued by all participants
- **Tensions** as a source of development: embrace tensions as part of natural development, and implement communitarian mechanisms to facilitate the resolution of conflicts

Implications for practitioners

davidrozas.cc
@drozas

- **Varying organisational forms in peer production**: even if perceived as inefficient , “loosen control without losing control”
- Commons-Based Peer Production **institutions as *umbrellas*** of initiatives: need to create conditions that enable the distribution of authority amongst several centres of governance, rather than opting for imposing certain conditions from a position of central authority

How does this connect to GRASIA? Future work

davidrozas.cc
@drozas

- Implications for provision of indicators that measure, aggregate and incorporate these forms of value -> offer mechanisms that enable communities to define these indicators dynamically
- Introduction of some structure to peer production can be beneficial -> providing participants with tools to self-organize.
- Tensions amongst different forms of organisation: organic prone to suffer with Tyranny of Structurelessness, (Freeman, 1972); mechanistic with generation and establishment of oligarchies — Shaw and Hill (2014) argue is an extension of the Iron law of oligarchy (Michels, 1915) in CBPP communities

How does this connect to GRASIA? Future work

davidrozas.cc
@drozas

- For example, in P2P Models (Hassan, 2017):
  - What are the limits of purely technical governance? How much of our social governance models can be embedded into code? How much trust can we place in the algorithms?
    - Bringing commons principles into the crypto World? “Ostrom's crypto-principles”?
  - Role of collaborative artefacts in the distribution of value: new models? Can we quantify other forms? Is it actually a good idea to do it?

Call for collaboration: looking for co-authors!

davidrozas.cc
@drozas

- Notion of contribution (Nigel Gilbert)
- Divide by case studies? By findings? From one discipline to the other?
  - Empowerment of themers, in opposition to Zilouchian-Moghaddam, R. et al. (2011)
  - Role of F2F events?
  - Use and limitations of Activity Theory as a lens?
  - From the Cathedral and the bazaar… towards “Cathedrals and bazaars in the same community”?
  - Quality assurance mechanisms?

References

- Bacon, J. (2012). *The art of community: Building the new age of participation.* O'Reilly Media, Inc.
- Bollier, D. (2014). Affective Labor as the Lifeblood of a Commons. Retrieved from http://www.bollier.org/blog/affective-labor-lifeblood-commons
- Benkler, Y. (2006). The wealth of networks: how social production transforms markets and freedom. Yale University Press.
- Burns, T. & Stalker, G. (1961). *The management of innovation*, Oxford University Press.
- Deshpande, A. & Riehle, D. (2008). The total growth of open source. In B. Russo,E. Damiani, S. Hissam, B. Lundell & G. Succi (Eds.), Open Source Development, Communities and Quality. OSS 2008. IFIP — The International Federation for Information Processing (Vol. 275, pp. 197–209). Boston, MA: Springer US. doi:10.1007/978-0-387-09684-1 16
- Drupal Association. (n.d.-b). DrupalCon Locations and Attendance. Retrieved 11th May 2016, from https://assoc.drupal.org/drupalcon/drupalcon-locations

References

- Drupal.org (2014a). https://www.drupal.org/
- Drupal.org (2014b). Drupal upcoming events. https://groups.drupal.org/events
- Engeström, Y. (1987). *Learning by expanding. An activity-theoretical approach to developmental research*. Cambridge University Press.
- Forte, A., Larco, V. & Bruckman, A. (2009). Decentralization in Wikipedia Governance. Journal of Management Information Systems, 26(1), 49–72. doi:10 .2753/MIS0742-1222260103
- Freeman, J. (1972). The tyranny of structurelessness. Berkeley Journal of Sociology,17, 151–164. Retrieved from http://www.jstor.org/stable/41035187
- Fuster-Morell, M. (2010). Governance of Online Creation Communities: Provision of infrastructure for the building of digital commons (Doctoral dissertation,European University Institute). Retrieved from http://hdl.handle.net/1814/14709

References

- Fuster-Morell, M., Berlinguer, M., Martíinez, R., Salcedo, J. L. et al. (2014). Theoretical synthesis: Final theoretical synthesis of WP1, including research reports on data collection. Deliverable 1.2. P2PValue. Retrieved from https://p2pvalue.eu/wp-content/uploads/legacy/files/u28/D12 31July TheoreticalFindingsA%20(1).pdf

- Hassan, S. (2017). Decentralized Blockchain-based Organizations for Bootstrapping the Collaborative Economy (ERC starting grant report).

- Hardt, M. (1999). Affective labor. Boundary 2, 26 (2), 89–100.

- Hine, C. (2000). *Virtual ethnography*. Sage.

- Michels, R. (1915).Political parties: A sociological study of the oligarchical tendencies of modern democracy. Hearst's International Library Company.

- Ostrom, E. (1990). *Governing the commons: the evolution of institutions for collective action*. Cambridge University Press.

References

- Ostrom, E. (1999). Coping with tragedies of the commons. Annual review of political science, 2(1), 493–535. doi:https://doi.org/10.1146/annurev.polisci.2.1.493
- Ostrom, V., Tiebout, C. M. & Warren, R. (1961). The organization of government in metropolitan areas: a theoretical inquiry. American political science review, 55(4), 831–842. doi: https://doi.org/10.1017/S0003055400125973
- Shaw, A. & Hill, B. M. (2014). Laboratories of Oligarchy? How the Iron Law Extends to Peer Production. Journal of Communication,64 (2), 215–238. doi:10.1111/jcom.12082
- Viégas, F. B., Wattenberg, M. & McKeon, M. M. (2007). The Hidden Order of Wikipedia. Online Communities and Social Computing: Second International Conference, OCSC 2007, held as part of HCI International 2007, Beijing, China, July 22-27, 2007, Springer, 445–454. doi:10.1007/978-3-540-73257-0 49.

References

- Vygotsky, L. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Harvard University Press
- W3Techs (2014). Usage of content management systems for websites. http://w3techs.com/technologies/overview/content_management/all
- Zoubi, T. (2016, March). History of Drupal (aka from Drop 1.0 to Drupal 8.0).Retrieved 10th March 2016, from http://websolutions.hr/drupal-history
- Zilouchian-Moghaddam, R., Twidale, M. & Bongen, K. (2011). Open Source Interface Politics: Identity, Acceptance, Trust, and Lobbying.CHI '11 Extended Abstracts on Human Factors in Computing Systems, Vancouver, BC, Canada: ACM, 1723–1728. doi:10.1145/1979742.1979835

Sources

- Charts:
  - Number of core committers (log 10) per release. Based on data collected by Zoubi(2016). The statistics from Drupal 3.0 to 4.5 could not be found, and they have been omitted.Retrieved 10 th March 2016, from http://websolutions.hr/drupal-history, under a CC BY-SA2.0 license.
  - Number of attendees to DrupalCon events in Europe and North America. Based on data reported by the Drupal Association (n.d.-b).
- Images:
  - https://twitter.com/jgbarah/status/597431817000636417
  - http://greatthoughtstreasury.com/sites/default/files/Benkler_Farnsworth2007_032[1].jpg
  - http://fossbuzz.org/wordpress/wp-content/uploads/2014/10/AffiliateLogosFinal_1.png
  - http://upload.wikimedia.org/wikipedia/commons/a/af/Tux.png
  - http://upload.wikimedia.org/wikipedia/commons/5/53/Wikipedia-logo-en-big.png
  - http://upload.wikimedia.org/wikipedia/commons/d/d7/Amsterdam_Fab_Lab_at_The_Waag_Society.JPG
  - http://farmhack.net/sites/default/files/The%20Garlic%20Master%20001_0.JPG
  - https://www.drupal.org/files/druplicon-small.png
  - http://genuine-corporate.s3.amazonaws.com/assets/DrupalConGroupShot.jpg
  - https://davidrozas.cc/sites/default/files/presentations/resources/drupal_metadecidim19_07_2017.pdf (timeline by Cristina Chumillas)
  - https://upload.wikimedia.org/wikipedia/commons/thumb/c/c0/Activity_system.png/220px-Activity_system.png
  - https://www.meetup.com/London-Drupal-Pub-Meet/Photos/26552590/
  - Screenshot from https://drupal.org/u/drozas , retrieved 24th March 2015
  - https://media.licdn.com/mpr/mpr/AAEAAQAAAAAAAAkIAAAAJGVmYjAzOTc4LWQ5OTAtNDFhZi1hOWE4LTgwMDkzZDUzNDdjNw.png
  - https://www.drupal.org/project/rules
  - https://www.drupal.org/community-initiatives/drupal-core/multilingual
  - https://pixabay.com/p-583537/?no_redirect

Sources

- Images:
  - http://greatthoughtstreasury.com/sites/default/files/Benkler_Farnsworth2007_032[1].jpg
  - https://i.pinimg.com/236x/c3/2c/0e/c32c0e88f09f766123c0584b3ee701fa.jpg
  - https://groups.drupal.org/node/416908
  - https://2014.drupalcamp.es/
  - https://asociaciondrupal.es/sites/default/files/isologo-aed-black-145x41_0.png
  - http://blog.lemberg.co.uk/sites/blog/files/styles/large/public/blog_header_images/DrupalCon-Amsterdam-Human-Drupal-Drop-1.png.png?itok=6LAJkWOq
  - https://www.combell.com/nl/blog/files/2014/10/DrupalCon-Amsterdam.png
  - https://www.drupal.org/files/drupal-association-logo-rgb.png
  - https://2017.drupalcamp.es/
  - http://www.onthecommons.org/sites/default/files/styles/large/public/Screen%20Shot%202013-10-22%20at%203.41.36%20PM.png?itok=JNAv0ycw

Any questions/feedback?

Thanks!

¡Gracias!

Ευχαριστώ!

Danke!

¡Obrigado!

+info || contact:
David Rozas (@drozas)
https://davidrozas.cc/

Full thesis:
http://epubs.surrey.ac.uk/845121/

Slides: http://bit.ly/2nSVjKh