Open Source and Open Data: Business Perspectives from the Frontline

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Aalto University School of Economics, Information Systems Science,
PL 21210, 00076 Aalto, Helsinki, Finland
{Yulia.Tammisto,Juho.Lindman}@aalto.fi

Abstract. Open data initiatives on governmental data seem often to be linked to small software companies, which also use and release software under OSS licenses. This paper calls for more research to understand the similarities between open data and open source software vendors. We build a theoretical linkage between the more established OSS research and emerging research on open data in the context of small software companies.

1   Introduction

Governmental Open Data projects in different countries have created new opportunities for small software companies [11], but the possibilities of Open Data (OD) [1] are not limited to governmental data. A better understanding of the changes in the ecosystems where these small software companies operate helps to better understand the transformation of the software marketplace driven by OD and Open Source Software (OSS)[2].

There is a gap in research traditions between research on OSS and OD. This is surprising at the outset, as most OD advocates have invested heavily in OSS; many of the tools used in OD publication are licensed under OSS licenses; and often the actual companies are similar or even operate in both OSS and OD. OD also enjoys a wide popularity in OSS communities. We propose that this gap should be bridged and theoretical linkages built between OSS and OD research.

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[1]   OD refers to "information that has been made technically and legally available for reuse" [22]. In addition to the technological details our definition stresses the legal and organizational aspects of open data that are similar in OSS research.

[2]   In this paper we rely on the following OSS definition: "Open Source is a development method for software that harnesses the power of distributed peer review and transparency of process" (http://www.opensource.org).

2 OSS and OD

Voluntary collective action systems often include a public or semipublic good [5]. These public goods can be for example OSS or OD. Mixing open and proprietary product strategies offers potential to many software companies [3]. Another way to benefit from more open development is to change internal software production based on the lessons from the OSS world [4]. Concepts used to describe OSS inspired practices within an organization include: Corporate Source [2] and Inner Source [9]. Open Source can also be considered as a sourcing strategy and defined as a governance model, where software development tasks are opensourced to an unknown workforce [13].

Open government data has been claimed to offer possibilities for economic growth by providing data sets which can be used in the provisioning of new services [6]. Tim Berners-Lee [1] has provided a categorization of five levels of open data for linked open data. The process of data transformation and publication can be theorized in several ways. Latif et al. [8] offered a model to describe the roles of entities in OD business: 1) raw data provider, 2) linked data developer and 3) applications developer. Elsewhere [12], we have developed a conceptualization, building on Latif [8] and Rajala's [10] classification, which focuses on the different business models of the actors. Based on our findings, it seems that value capturing (of the small software companies of open data) may follow three different paths: 1) consultancy, 2) conversion, and 3) application development.

3 Findings

We conducted a small round of interviews about OD using interpretive interview approach [7] and compared the results with the earlier collected data on OSS. Through the course of the analysis we detected a certain similarities between OSS and OD companies that are reported in Table 1. All the respondents are from Finland, their profiles are listed in Table 2.

Table 1. Similarities between OD and OSS business

	Open Data	*Open Source*	*Similarity*
Competition environment	Market is divided between small software companies and large software companies	Market is divided between small, medium- and large software companies	Most of the large competitors are the same in both OD and OSS. Some companies are the same and they use and develop the same software.
Customers	So far emphasis on public organizations (cultural institutions, municipalities), potential in the media-industry	Emphasis on public organizations (schools) and private actors	Public sector as a large customer

Revenue sources	Consultancy, conversions, application development, maintenance	Consultancy, application development, maintenance	Not based on traditional software sales, develop services on top of public goods
Communities	Often enjoy popularity and community support	Often enjoy popularity and community support	Developer-communities are the same and have "activist" components
Openness of activities	*"I think the added value [of OD] comes from having more clever people to look at it."*	*"More eyeballs make bugs shallow"*	Favor openness in the innovation activity

Table2. Informants of the interviews

OD	Company	Position
1	Small (5 persons) web technology and application development company	Project manager / Consultant
2	Small (5 persons) web technology and application development company (same as above)	CEO / Consultant / Developer
3	Small (10 persons) software development company	Project manager / Developer
4	Small (2 persons) consultancy and software development company	CEO / Consultant

OS	Company	Position
1	Small (3 persons) OSS company developing collaborative learning tools	CEO
2	Small (3 persons) OSS company developing collaborative learning tools (same as above)	Developer
3	Small (1 person) OSS company developing relational database tools	Entrepreneur
4	Small (10 persons) OSS company developing web services	Developer

4   Conclusion

The aim of this paper was to look for some similarities between OD and OSS in the context of small software companies engaged in OD and OSS. We speculate that there are interesting lessons to be learned to the OD research from OSS business model research related to service design and delivery relying on public goods. Research on OSS communities can in some cases be applicable also to the emerging OD communities. By this paper we only scratched the surface of the potential contribution for the research. We call for a further research on comparison of OD and OSS to realize all the benefits of the combination of these two phenomena.

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