Providing Generic Lifespan-based Design Principles for Open Content Production Communities

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Progress Report

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My thesis in a nutshell: Open production communities are a cost-effective and reliable way of generating content by leveraging the potential creativity, manpower, and knowledge of a vast crowd (crowdsourcing) in a systematic way. The focus of this thesis is on providing design principles in the field of open content production communities (OCPCs) that are production communities excluding open source as content. Despite various approaches and theories, constructing a successful production community is more of an art than science, because of the complexities of its interdisciplinary and constantly-changing nature. This thesis aims at defining and evaluating generic design principles for OCPCs with regard to two main general phases in a community's life cycle: before reaching the maturity stage, and after entering it. Four pertinent aspects of production communities will be meticulously studied in order to properly backup the proposed design principles: incentive mechanisms, user reputation systems, content quality assessment processes, and user-related governance practices. The principles will be evaluated by community experts.

Reviewers[1]: Felix Köbler and Ivo Blohm

Introduction

The Internet provides a vast infrastructure for every online individual to create content and share it worldwide. The case of Wikipedia shows that when proper organization and content qualification processes are provided, the accumulated content can be transformed into a valuable source of knowledge. For this reason, crowdsourcing (Howe 2008) is gradually becoming a common practice for many companies, organizations, and other types of institutions. The potential of a vast crowd can be used in many areas such as in providing news, e.g. citizen journalism (Lewis et al. 2010), bringing innovation to production processes, e.g. co-creation communities (Prahalad/Ramaswamy 2004), idea

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generation, e.g. open innovation communities (Blohm et al. 2011) or knowledge sharing (Chiu et al. 2006). In recent years, many online communities have been built around the idea of providing a virtual environment for people to generate, categorize, and share open content. Wikipedia, Slashdot, and open source communities such as Debian[2] are prominent examples in this regard.

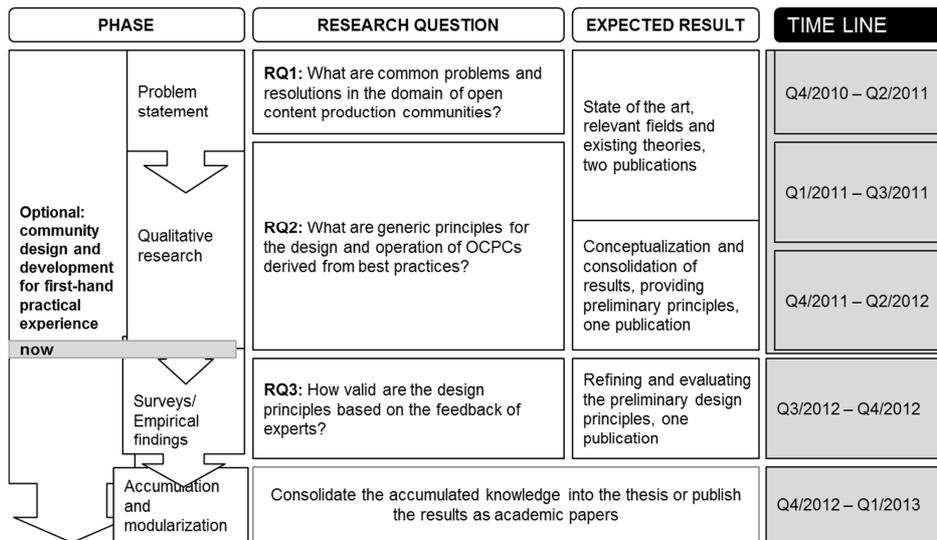| PHASE		RESEARCH QUESTION	EXPECTED RESULT	TIME LINE
Optional: community design and development for first-hand practical experience now	Problem statement	**RQ1:** What are common problems and resolutions in the domain of open content production communities?	State of the art, relevant fields and existing theories, two publications	Q4/2010 – Q2/2011
	Qualitative research	**RQ2:** What are generic principles for the design and operation of OCPCs derived from best practices?	Conceptualization and consolidation of results, providing preliminary principles, one publication	Q1/2011 – Q3/2011 Q4/2011 – Q2/2012
	Surveys/ Empirical findings	**RQ3:** How valid are the design principles based on the feedback of experts?	Refining and evaluating the preliminary design principles, one publication	Q3/2012 – Q4/2012
	Accumulation and modularization	Consolidate the accumulated knowledge into the thesis or publish the results as academic papers		Q4/2012 – Q1/2013

Figure 1 Research time line

Despite numerous studies around online communities, this field still attracts researchers and cries for deeper academic scrutiny and conceptualization. Its ubiquity and interdisciplinary character followed by rapid advancements in technology and constant changes of users' behavior makes it a dynamic and complicated area of study. Many communities fail to success because they do not provide proper features that would address users' needs in different stages of the community. The focus of this dissertation is on open content production communities (OCPCs) (Oreg/Nov 2008) which are a subset of open (or peer-to-peer) production communities. The main objective of open production communities is generating, evaluating, classifying, and sharing public content. This particular kind of community can be distinguished from non-production communities[3] and also social networks, where producing public contents is not the main objective. Based on users' motivation, two major groups can be distinguished in open production communities: open source communities that are built around the idea of generating open source software and services, and open content communities in which users generate open content, meaning that the accumulated knowledge is considered as a public good (Wasko et al. 2009). Open source communities have a distinct characteristic

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[2] Debian GNU/Linux is a popular Linux distribution that encompasses the GNU OS tools together with the Linux kernel.

[3] Non-production communities provide either certain *services* (e.g., game communities or online shops) for users or are merely based on identities and background (e.g., members of a sport club)

among other open production communities, since users are required to possess a certain set of skills (e.g. programming) to be able to contribute. The main intrinsic motivation of users is also self-development, which differs from other open production communities, where other factors such as enjoyment and socialization are the primary motivations (Nov et al. 2010). For this reason, the focus of this thesis is on open content production communities, which are open production excluding those with source code as content. Sustaining and encouraging participation and assuring a certain quality for the generated content is of great importance in OCPCs and there are no generic design principles to date to draw general guidelines for community designers.

This works is aimed at providing design principles for community designers based on the contribution context, lifespan (Iriberri/Leroy 2009) of communities, and the behavior of users. The principles will be deduced from best practices and a comprehensive study and compilation of the existing literature and will be evaluated by community experts. The evaluation will be performed in two phases. First, the preliminary principles will be discussed with three community experts. Based on their feedback, the principles will be updated and extended, if necessary. Then, the final principles will be sent to 10-15 community operators or owners to be evaluated based on a Lickert-scale. The final results will help community designers build up an infrastructure with apt and relevant incentive and assessment mechanisms. This would provide strategic advantages for communities by maximizing the effort and collective intelligence of its users (Hoegg et al. 2006) resulted from following the principles

#	Planned for	Target	Title	
1	Q3 2011	Book Chapter	E-government, online communities, and future trends	accepted
2	Q1 2012	A Journal (Digital Creativity)	**Promotion Processes** and Reputation Systems in Participative Online Production Communities	accepted
3	Q2 2012	A Conference (ICIS2012)	Multi-Dimensional **Incentive Mechanisms** in Open Content Production Communities: A Conceptual Model	submitted
4	Q2 2012	B Journal (JOEUC)	**Content Quality Assessment** in Open Content Production Communities: A Design Framework	preparing
5	Q2 2012	B Conference	User-related Governance Mechanisms and Approaches in Open Content Production Communities	
6	Q3 2012	B Journal (IJVCSN)	Introducing a **Knowledge Framework** for Open Content Production Communities	
7	Q4 2012	A Conference (ECIS2013)	Generic **Design Principles** for Open Content Production Communities: A Life-Cycle-Based Perspective	
8	Q1 2013	Dissertation	**Dissertation**: **Providing Generic Lifespan-based Design Principles for Open Content Production Communities**	If required

Figure 2 Publications

Preliminary Results

In order to be able to address the design-complications of OCPCs and extract their common design features, the results from the reviewed literature were arranged in four major domains: (1) incentive mechanisms to adjust a desired participation behavior (Vassileva 2012), (2) user reputation systems, (3) content generation and qualification (quality assessment) processes (Yaari et al. 2011), and (4) user-related governance. This classification was a result of a systematic review of more than 150 papers (Watson 2002; Torraco 2005). In addition to related fields of online production communities, the principles in (real) communities that consume and manage a common pool resource[4] (Ostrom 2000) will be reviewed so that possible similarities and adapt the preliminary design principles based on the findings in this research area. To this date, the conceptualization of the results of the literature review of the first two domains has been accomplished. The paper pertaining to the first domain (incentive mechanisms) has been submitted to ICIS2012 and the paper pertaining to the second domain (reputation systems) has been accepted in the Digital Creativity Journal.

Next steps

Publishing the findings

Currently, a paper regarding modeling existing approaches for content quality assessment is being prepared. The next two planed (and final) publications will be on a providing a holistic knowledge framework for OCPCs and, finally, the design principles (see Figure 2 for a list of accomplished and tentative publications).

Evaluating the principles

In order to refine and extend the preliminary principles extracted from the literature, experts of three production communities (Ubuntu Brainstorm, Sapiens, and Wikipedia) will be interviewed. Next, the evaluation of design principles will take place. The list of design principles along with additional information will be send to about 15 community owners or operators as a survey so that they can evaluate and comment each principle. Based on this feedback (which will be both qualitative and quantitative), the final principles will be provided. A timeline showing the accomplished and planed activities can be viewed in Figure 1.

Expected Results

Until the next WISSS, two papers are planned to be published in the fields of incentive mechanisms and content quality assurance in OCPCs. Also, generic design principles

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[4] This principles are addressed in Ostrom's work as the "Design Principles of Long-Surviving, Self-Organized Resource Regimes"

and guideline for open content production communities based on literature review and refined by experts' feedback will be provided. The final outcome and scientific (theoretical) contribution of the thesis will then be provided after evaluating these principles based on the evaluation of about 15 community owners and operators.

The evaluated design principles will provide a framework for community designers to bless their communities with more user participation and select and prioritize apt mechanisms to sustain participation, qualify content, and moderate users. The selection and prioritization will be based on community lifespan, objective, and and the behavior of its users.

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