12-13-2018

Explaining online communities' contribution to socio-economic development

Joseph Budu

Ghana Institute of Management and Public Administration, josbudu@gimpa.edu.gh

Follow this and additional works at: https://aisel.aisnet.org/globdev2018

Explaining online communities' contribution to socio-economic development

Joseph Budu
Department of Information Systems and Innovation
School of Technology
Ghana Institute of Management and Public Administration, Accra, Ghana
josbudu@gimpa.edu.gh

Paper Category: Research-in-progress

ABSTRACT

In recent times, online communities are emerging as a potential source of information technology-led socio-economic development by enabling new generative mechanisms. Existing studies provide useful insights yet do not recognize the contributions of online communities in achieving socio-economic development. To address this knowledge gap, this paper documents a netnography study conducted on an online community for teaching the youth how to earn income online legitimately. We applied the theoretical notion of IT affordances to examine the possibilities for socio-economic action via online communities in the context of a developing country. Preliminary findings show how the online community contributes to socio-economic development by fostering collaboration, information sharing, and learning leading to income generation.

Keywords: online communities, affordance, socio-economic development, ICT4D

Introduction

The phenomenon of information communication technology (ICT) diffusion and use is with us, and is impacting economic systems globally. This evidence makes it imperative that the ICT for development (ICT4D) nexus is well understood. Most ICT4D studies have been one of three forms. Those of the first form seek to understand the social contexts in ICT (e.g. Chandwani & De, 2015; Diniz, Bailey, & Scholler, 2014; Samoilenko & Osei-Bryson, 2017). Those of the second form seek to understand how developing countries could catch up with technological development from developed countries. For instance, research has sought to explain how mobile users in India can benefit from access to information (Potnis, 2015). Those of the third form seek to understand the creation of possibilities to improve life conditions through an ICT intervention (Avgerou, 2008). For instance, ICT enabled new modes of cooperation and information sharing for safety and rescue in the Indian seas (Sreekumar, 2011). The rest of the studies on ICT4D are reviews of previous research, and research that chart new courses for future ICT4D research (e.g. Avgerou, 2017; Heeks, 2008; Ramadani et al., 2018; Sahay, Sein, & Urquhart, 2017; Walsham, 2017). Despite the valuable insights from these studies and reviews, two overlooked issues persist.

First, few attempts have been made to understand ICT4D from the perspective of private entrepreneurs, their interactions with ICTs, and how they contribute to achieving socio-economic development. Yet, entrepreneurs' exercise of leadership brings about change and social improvement. For instance ITC Ltd. a public listed Indian company successfully deployed a technology to optimize the soybean supply chain in rural India for the benefit of farmers there (Singh, Andrade, & Techatassanasontorn, 2018). Therefore, comprehending entrepreneurs' activities in leading ICT4D is necessary for the design of effective development-oriented technology policies.

Second, previous ICT4D studies have limitations emanating from the type of technology studied. Most studies focus on technologies in the ICT4D 1.0 era during which the design of technology-enabled interventions are imposed on the poor for their adaptation. In the ICT4D 2.0 era, technology interventions are designed around the poor's specific resources, capacities and demands. Whilst ICT is a tool for development in ICT4D 1.0, it is a platform for development in ICT4D 2.0 (Heeks, 2008). Similarly, ICT4D 1.0 era technologies are less competitive and less generative than the Internet (Zuckerman, 2010), which is the core of ICT4D 2.0 technologies. It is more difficult to create novel functionality on a mobile phone network than to do so on the Internet e.g. creating an online community to share digital skills with unemployed youth. Extant ICT4D research overlook this foresighted conceptualization of ICT4D thereby creating the need to study the potential development contributions of more ICT4D 2.0 technologies like the Internet, instead of ICT4D 1.0 technologies like mobile phones, telecentres and infrastructure.

This article seeks to provide an explanations of the foregoing overlooked issues by presenting and analyzing evidence of how a private-led online community is contributing to socio-economic development in a developing country context. The paper uses Netnography as a research strategy to understand the contributions of an online community to the socio-economic conditions of its members. Netnography was beneficial to study this issue because it helped to understand the perceptions and values members attributed to the contribution of online communities to socio-economic development. This paper's case online community was formed by two private individuals using a feature in a mobile Internet-enabled instant messaging application called *Whatsapp*. This application is arguably one of the most downloaded and used mobile application in developing country contexts especially due to ease of use, usefulness, and its associated affordable Internet costs. Consequently, Whatsapp, which could be used to send messages to both individuals and groups, is very popular amongst the youth and Internet generation. This paper's author was part of his university's alumni Whatsapp group in which another member posted a link to join another group code named ECOGroup, which he and his friend had created to teach the youth how to earn legitimate income online. ECOGroup had over 150 members. However, the group creators required us to pay a fee to receive an invitation to join another group code named VIP ECOGroup where the income-earning tutorials would be shared. The author paid the fee to join about seventy-five (75) others in VIP ECOGroup which is the case online community studied for this paper.

This paper has six sections. The first section presents the motivation for this paper, whilst the second discusses the concept of online communities and gaps in the area. The third section

discusses the research framework for this paper to guide the identification of mechanisms in online communities. The fourth section presents the methodology used for this study, followed by the fifth section which presents preliminary findings. The paper ends with a sixth section which summarizes activities so far, and those to yet to be undertaken.

Overview of online communities

Online communities have various conceptualizations. For instance, online communities could be described as "social aggregations that emerge from the Net when enough people carry on public discussions long enough, with sufficient human feelings, to form webs of personal relationships in cyberspace" (Rheingold, 1993). Similarly, they are computer-mediated spaces with a potential for integrating content and communication with an emphasis on member-generated content and inter-personal interaction (Hagel & Armstrong, 1997; Jones & Rafaeli, 2000). Both descriptions emphasize the presence of some people or groups of people who meet within some electronically enabled space to pursue a mutual commercial or non-commercial goal (Akkinen, 2005). Whilst a retailer can create a commercial online community to establish engagement with its customers towards generating future sales (Kang, Shin, & Gong, 2016; Weiger, Wetzel, & Hammerschmidt, 2017), we can also have a non-commercial online community created to enhance teacher-learner engagement. Many such commercial online spaces exist typically to develop human skills and to share opportunities amongst the youth. Existing online communities research focus on has been on their business value (Iskoujina et al., 2017); how to leverage market-generated appeals to enhance engagement (Weiger et al., 2017); the affordances influencing members' engagement with online communities on Twitter (Bernardi, 2016); and individual-, community-, and organizational-level negative behaviors in online communities (Chipidza & Talebi, 2016). Some also study the antecedents of individuals' adoption of contributed information in online communities (Ebrahimi, 2015); the effect of participants' roles and position on their information sharing activities (Baek & Kim, 2015); and how to combat fraud (Alanezi & Brooks, 2014).

Despite the valuable insights, previous research about online communities, first, overlook their potential contributions to development. Second, there seems to be some bias towards online communities with business or commercial inclinations (Kang et al., 2016; Shek & Sla, 2008), private objectives e.g. healthcare (Hao & Zhang, 2015; Shang & Liu, 2015), gaming (Pahnila & Warsta, 2012); and professional communities of practice (Shang, Xiong, & Liu, 2016; Iskoujina & Roberts, 2015). Recent reviews of online communities attest to this claim (see Iskoujina et al., 2017; Zou, 2015). There is need to expand online communities research to cover other domains like development of employable skills. Discouragingly, online communities research with a development focus is quite scarce. From the foregoing gaps, this paper seeks to explore the contribution of online communities to socio-economic development.

Research Framework

This study seeks to explain the contribution of online communities to socio-economic development. We can best achieve this explanation by identifying online communities' mechanisms that generate observable socio-economic outcomes. A mechanism is one of the processes in a concrete system that makes it what it is' (Bunge, 2004). In this context, the

concrete system is an online community made up hardware (e.g. mobile phones and computers), software (e.g. online messaging application), and people (online community members), and processes (what the people do on/or with the online community). Unfortunately, it is unclear what particular online community processes could generate socio-economic impact. Thus we need to identify these processes, herein referred to as *generative mechanisms* so that they could be either strengthened or replicated for increased desirable outcomes. Consequently, we draw on an analytical framework for identifying generative mechanisms through affordances (Bygstad, Munkvold, & Volkoff, 2015).

Originally, affordances are 'action possibilities' that arise from the interaction between an animal and its environment (Gibson, 1986). However, we agree with the a more information system-related definition of an affordance as 'the potential for behaviors associated with achieving an immediate concrete outcome and arising from the relation between an object (e.g., an IT artefact) and a goal-oriented actor or actors' (Strong et al., 2014). In our context an affordance emerges from the relation between the technology and an actor. For instance, we would say that an online community for education affords collaboration, active engagement leading to the achievement of intended educational outcomes (Wu, Scott, Hsieh, & Yang, 2017). This outcome is an exemplary of what makes an online community what it is, but depends on whether an actor perceives and actualizes the technology's potential to contribute to achieving an outcome. While an affordance itself is an ever-present potential for action, the details of its actualization in a specific instance are contingent on aspects of the techno-organizational context, and thus the outcome is indeterminate.

The context gives rise to a variety of mechanisms that may act as conditions that initially enable or constrain the actualization of the affordance, or that later stimulate its actualization in a variety of ways, or release constraints. Figure 1 illustrates the point by showing the basic interaction of structure and action: structure enables action and action reproduces or elaborates structure. The techno-organizational context (i.e., structure) consists of networks of human, social and technical objects, which in various combinations enable (or create the potential for) action (i.e., affordances). If actualized, the result of the action is fed back to the structure as outcomes. Specifically, a developing country context contains structures that may enable the people's interaction with technologies for creating online communities. Further, the interaction births a potential for use to which a goal-oriented actor can put the technology. If this potential use materializes, the final outcome is affected by stimulating conditions (organizational arrangements that make it easier to act), and releasing conditions (which are often specific decisions) in a given context (Bygstad et al., 2015).
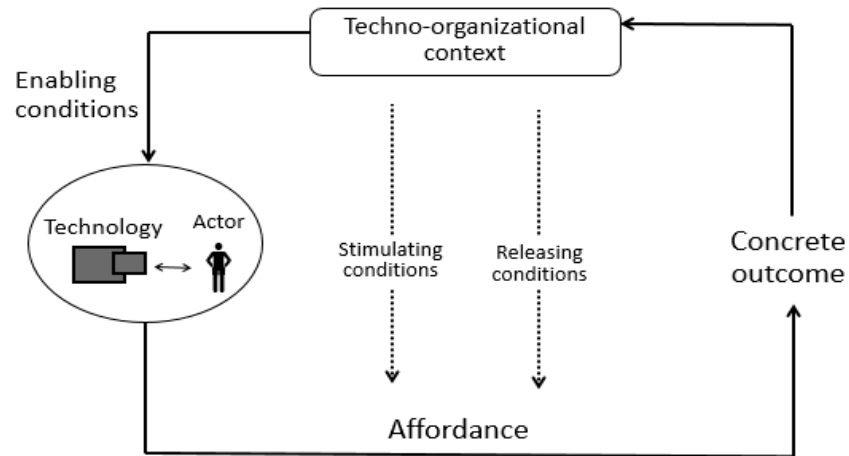
Figure 1: Framework of affordances (Bygstad et al., 2015, p. 5)

Research Methodology

This paper uses Netnography to understand the processes in an online community selected for this study. Netnography is a method to study cultures and communities online (Bowler, 2010). This strategy involves systematically analyzing messages over a period of time to provide a longitudinal understanding of the activities in an online community (Kozinets, 2002; Paccagnella, 1997). Nethnographic engagement with how online communities contribute to socio-economic development took place between November 2017 and October 2018. The field study comprised paying USD 10 to join and participate in an online community created to teach people how to earn legitimate income from online activities. Members of the community asked questions, sought clarifications, posted their earnings, shared their joys, frustrations and techniques, and also encouraged each other. The postings formed textual, and audio-visual data analyzed in this study. The author's membership of and engagement in the community gave the researcher a detailed appreciation of the members' perceptions, activities, and the socio-economic contribution of the community.

This online community was formed by two private individuals using a feature in a mobile Internet-enabled instant messaging application called *Whatsapp*. This paper's author was part of his university's alumni Whatsapp group in which another member posted a link to join another group code named ECOGroup, which he and his friend had created to teach the youth how to earn legitimate income online. ECOGroup had over 150 members. However, the group creators required us to pay a fee to receive an invitation to join another group code named VIP ECOGroup where the income-earning tutorials would be shared. The author paid the fee to join about seventy-five (75) others in VIP ECOGroup which is the case online community studied for this paper. Nevertheless, the author sought permission, first from the community's creators, and second, the entire membership. They agreed to the use of the data for academic research on principle that no identifying information would be published.

Data was collected and analyzed using a longitudinal approach to Netnography (Sadovykh & Sundaram, 2017). The approach includes three main steps – planning and entrée, data selection and collection, and data analysis and interpretation. Table 1 describes each of the steps, and how they were executed in this paper.

Steps	Description	This paper's execution
Completed steps		
1 Planning & Entrée	Plan for the research and fieldwork; Define, identify, select research questions, communities; conversations of interest; Familiarize and begin to study/observe communities, networks and its participants.	Research question: how does online communities contribute to socio-economic development? Since 31 October 2017, author has joined, familiarized and observed a paid online community created to teach members how to earn legitimate income online.
2 Data Selection & Collection	Set guidelines on: data selection and collection, observation, participation and engagement; Filter, review and revise conversations; and data collection challenges.	Author also engaged in the community's activities to have detailed understanding of income-earning opportunities taught to members. Data from the online community is in text, images, and voice.
On-going steps		
3 Data Analysis & Interpretation	Proceed with data interpretation process with the use of the discourse, content and textual analyses.	The data has been exported into a text editor and would be interpreted to how various actors interact in the online community, how they pursue the income-earning opportunities shared, and the related outcomes. The analysis would be guided by Bygstad et al's (2015, p. 7) framework and detailed guidelines for identifying mechanisms.

Table 1: Summary of Netnography steps taken and to be taken in this paper

Preliminary findings

This section presents instances of the data gathered so far from the online community. The presentation follows the suggested five W's selection tool for filtering conversations and posts to create the general idea on the themes and context of online discussions. The tool contains seven questions, which are answered in Table 2.

W's selection tool question	Answer from preliminary data collection
1. What were the actions and what happened as a result of the actions?	Two individuals created an online community which they named B Trust (a pseudonym). They shared invitation links in various online spaces including author's university alumni WhatsApp group. The author followed the link and became a member of B Trust. Subsequently, B Trust's creators informed its members of various legitimate income-earning opportunities they want to share to interested members upon

	receiving a one-time $18.00 fee to join the VIP group where the tutorials would be shared. Researcher paid the fee via mobile money, and was added to the VIP group. Other members of B Trust did same to be added to the paid group. Others pleaded for discounts, whilst others pleaded for tutorials to be postponed until they were ready to make payment. Others also asked to be added to the paid group on a trial basis, and pay the fees from the income generated from the tutorials to be shared.
2. Who performed the actions in the story (or who experienced the results)?	Creators and members of the online community.
3. Where did the actions occur?	The actions occurred online, but amongst some youth in a developing country
4. When did the actions occur?	The actions occurred from October to November 2017
5. Why did the actions occur?	The actions occurred (partly) because of high youth unemployment in the country. The online community creators wanted to share their knowledge of online income-earning opportunities to other young people who want to earn primary or secondary incomes.
6. How did the actions occur?	The online community creators publicized their intention to recruit potential members. They also shared some free tutorials to attract unpaid members e.g. how to obtain a verified Paypal account. Also, members who paid to join testified in the unpaid group to encourage more unpaid members to pay and join the paid group.
7. What is the outcome of the actions?	Some members have started earning from the income-earning opportunities shared in the paid group. They share screenshots of their earnings in the paid group to show appreciation to the online community creators. Unfortunately, others are either not earning as much as others, or not earning at all. The disparity has led to the online community creators providing continuous support and mentorship to those not earning. The creators have also created another community around individual online income-earning opportunities to address challenges of members who want to earn from those specific sources. In addition, the creators announce any new online income-earning opportunity they come across.

Table 2: Summary of preliminary data collected

Summary and Directions for Future Work

This study proposes to explain how online communities contribute to socio-economic development. This is an explanation which is largely missing in the ICT4D literature. Due to the changing nature of technologies, future ICT4D research needs to be interested in technologies that allow citizens to create solutions to their socio-economic challenges other than depend on donor and government support constantly. This paper in pursuit of explanations to fill the identified knowledge gap uses employs the theory of affordances to identify online communities' mechanisms that contribute to socio-economic development. The initial data presented point to the potential for online communities to contribute to socio-economic development through collaboration, information sharing, and learning. Going forward, the transcript of conversations in the identified online community would be analyzed further to identify and assess the mechanisms contributing to desirable outcomes. The data has been exported into a text editor and is being studied and coded to enable interpretations of members' in the online community, how they pursue the income-earning opportunities shared, and the related outcomes. The analysis

would be guided by Bygstad et al's (2015, p. 7) framework and detailed guidelines for identifying mechanisms. The aim is to further test, validate and refine the affordance-based analysis framework for identifying generative mechanisms. In the next iteration of this study, we will use the framework to analyze data gathered from the online community to explain how it contributes to socio-economic development.

References

Akkinen, M. (2005). *Conceptual Foundations of Online Communities*. *Sprouts: Working Papers on Information Systems* (Vol. 5).

Alanezi, F., & Brooks, L. (2014). Combatting Online Fraud in Saudi Arabia Using General Deterrence Theory (GDT). In *Proceedings of the Twentieth Americas Conference on Information Systems* (pp. 1–13). Savannah: Twentieth Americas Conference on Information Systems.

Avgerou, C. (2008). Information systems in developing countries. *Journal of Information Technology*, *23*(3), 133–146.

Baek, S. I., & Kim, Y. M. (2015). Longitudinal analysis of online community dynamics: A case study of Korea. *Industrial Management & Data Systems*, *115*(4), 661–677.

Bernardi, R. (2016). How Do Online Communities of Patients Aggregate on Twitter ? An Affordance Perspective. *In Thirty Seventh International Conference on Information Systems*. Dublin.

Bowler, G. M. (2010). Netnography: A method specifically designed to study cultures and communities online. *The Qualitative Report*, *15*(5), 1270–1275.

Bunge, M. (2004). How does it work? the search for explanatory mechanisms. *Philosophy Ofthe Social Sciences*, *34*(2), 182–210.

Bygstad, B., Munkvold, B. E., & Volkoff, O. (2015). Identifying generative mechanisms through affordances: a framework for critical realist data analysis. *Journal of Information Technology*, *13*, 1–14. https://doi.org/10.1057/jit.2015.13

Chandwani, R., & De, R. (2015). Analysing multimedia data: exploring the dimensions of context in ICT for development research. *The Electronic Journal of Information Systems in Developing Countries*, *69*(6), 1–15. https://doi.org/10.1002/j.1681-4835.2015.tb00500.x

Chipidza, W., & Talebi, N. (2016). Negative Behaviors in Online Communities. In *Proceedings of the Twenty-second Americas Conference on Information Systems*. San Diego.

Diniz, E. H., Bailey, D. E., & Scholler, D. (2014). Achieving ICT4D Project Success by Altering Context, Not Technology. *Information Technologies & International Development*, *10*(4), 15–29.

Ebrahimi, S. (2015). On the Drivers of Information Adoption in Online Communities. In *Proceedings of the Thirty-six International Conference on Information Systems* (pp. 1–13). Fort Worth.

Gibson, J. J. (1986). *The ecological approach to visual perception*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Hagel, J., & Armstrong, A. G. (1997). *Expanding Markets through Virtual Communities*. Harvard Business School Press.

Hao, H., & Zhang, K. (2015). Text Mining Patient-Doctor Online Forum Data from the Largest Online Health Community in China. In *Twenty-Fifth Americas Conference on Information Systems* (p. 1). Pueto Rico.

Heeks, R. (2008). ICT4D 2.0: The Next Phase of Applying ICT for International Development. *Computer*, *41*(6), 26–33.

Iskoujina, Z., Ciesielska, M., Roberts, J., & Li, F. (2017). Grasping the business value of online communities. *Journal of Organizational Change Management*, *30*(3).

Jones, Q., & Rafaeli, S. (2000). Time to Split, Virtually: "Discourse Architecture" and "Community Building" Create Vibrant Virtual Publics. *Electronic Markets*, *10*(4), 214–223.

Kang, M., Shin, D.-H., & Gong, T. (2016). The role of personalization, engagement, and trust in online communities. *Information Technology & People*, *29*(3), 580–596.

Kozinets, R. V. (2002). The Field Behind the Screen: Using Netnography for Marketing Research in Online Communities. *Journal of Marketing Research*, *39*(1), 61–72.

Paccagnella, L. (1997). Getting the Seats of Your Pants Dirty: Strategies for Ethnographic Research on Virtual Communities. *Journal of Computer Mediated Communication*, *3*(1).

Pahnila, S., & Warsta, J. (2012). Assessing the factors that have an impact on stickiness in online game communities. In *PACIS 2012 Proceedings* (p. Paper 106).

Potnis, D. D. (2015). Beyond access to information: undestanding the use of information by poor female mobile users in rural India. *The Information Society*, *31*(1), 83–93.

Ramadani, L., Kurnia, S., & Breidbach, C. F. (2018). In Search for Holistic ICT4D Research: A Systematic Literature Review. In *Proceedings of the 51st Hawaii International Conference on System Sciences* (pp. 2424–2433).

Rheingold, H. (1993). *Homesteading on the Electronic Frontier*. Mass: Addison Wesley.

Sadovykh, V., & Sundaram, D. (2017). A longitudinal convergent approach to netnography. In *Twenty-Third Americas Conference on Information Systems* (pp. 1–10). Boston.

Sahay, S., Sein, M. K., & Urquhart, C. (2017). Flipping the Context: ICT4D, the Next Grand Challenge for IS Research and Practice. *Journal of the Association for Information Systems*, *18*(12), 837–847.

Samoilenko, S., & Osei-Bryson, K. M. (2017). An analytical framework for exploring context-specific micro-economic impacts of ICT capabilities. *Information Technology for Development*, 24(4), 633-657.

Shang, Y., & Liu, J. (2015). Users' continuance participation in the online peer-to-peer healthcare community: A text mining approach. In *2015 Americas Conference on Information Systems, AMCIS 2015*.

Shang, Y., Xiong, J., & Liu, J. (2016). Exploring the Activeness of Professional Online Community Members. In *Twenty-second International Conference on Information Systems*.

Shek, S. P. W., & Sla, C.-L. (2008). Understanding the Motivations of Consumer Knowledge

Sharing in Online Community Sharing in Online Community. In *AMCIS 2008 Proceedings* (p. 145).

Singh, H., Andrade, A. D., & Techatassanasontorn, A. A. (2018). The practice of ICT-enabled development. *Information Technology for Development*, *24*(1), 37–62. https://doi.org/10.1080/02681102.2017.1283284

Sreekumar, T. T. (2011). Mobile Phones and the Cultural Ecology of Fishing in Kerala, India. *The Information Society*, *27*(3), 172–180.

Strong, D. M., Volkoff, O., Johnson, S. A., Pelletier, L. R., Tulu, B., Bar-On, I., … Garber, L. (2014). A theory of organization-EHR affordance actualization. *Journal of Association for Information Systems*, *15*(2), 53–85.

Walsham, G. (2017). Information Technology for Development ICT4D research : reflections on history and future agenda ICT4D research : reflections on history and future agenda. *Information Technology for Development*, *23*(1), 18–41. https://doi.org/10.1080/02681102.2016.1246406

Weiger, W. H., Wetzel, H. A., & Hammerschmidt, M. (2017). Leveraging marketer-generated appeals in online brand communities: An individual user-level analysis. *Journal of Service Management*, *28*(1), 133–156. https://doi.org/10.1108/JOSM-11-2015-0378

Wu, W. V., Scott, J., Hsieh, C., & Yang, J. C. (2017). Creating an Online Learning Community in a Flipped Classroom to Enhance EFL Learners ' Oral Proficiency, *Educational Technology & Society*, *20*(2), 142–157.

Zou, Y. (2015). A Relational View of Individual Participation in Online Communities of Practice : An Integrative Literature Review. In *Thirty Sixth International Conference on Information Systems, Fort Worth* (pp. 1–19).

Zuckerman, E. (2010). Decentralising the mobile phone: a second ICT4D revolution. *Information Technologies & International Development*, *6*(SE), 99–103.