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## GRASPING THE BUSINESS VALUE OF ONLINE COMMUNITIES

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### **Abstract**

Online communities are communication networks between individuals and/or businesses that identify themselves with a community formed around a common interest and interact to exchange information or knowledge through a range of the Internet-based technologies. They can create a valuable business resource and at the same time they can be successful businesses in their own right. Although, some of the commercial and marketing opportunities of online communities have already been studied – like those of brand or consumption communities – online communities can offer many more opportunities to business, including tangible revenues and intangible benefits such as improved image or the co-creation of new products. Despite the continuous rapid development of online communities and the fact that communication networks have become a permanent element of everyday life for individuals and businesses alike, no comprehensive framework exists to analyse the commercial benefits of online communities. Therefore this paper considers the opportunities that online communities offer to themselves as well as to other businesses with the purpose of identifying innovative business models. The paper investigates the definitions, dimensions and classifications of online communities together with their potential to produce value for businesses. Those value options are then discussed in the context of empirical vignettes showing examples of business models focused on one of two potential benefits coming from online communities – clear financial gains and intangible long-run returns.

**Keywords:** online communities, virtual communities, business models, business value.

## Introduction

The development of the World Wide Web and, in particular, the introduction of user-friendly web browsers in 1995, promoted a tremendous expansion of Internet usage and online networking. Since the turn of the century, web2.0 technologies have facilitated the growth of new types of online communities, in which many-to-many online interaction can occur through web-based platforms of various types. Despite the growth of online communities, however, the meaning of the concept of online communities remains somewhat elusive.

Firstly, there is no single definition of the term ‘community’, which means many different things to many different people, and it is hard to find a definition of community that is widely accepted (Komito 1998; Porter 2004). Secondly, ‘online’ is often used interchangeably with ‘virtual’, even though these are not always equivalent. Virtual communities (Porter, Devaraj, and Sun 2013; Grabher, and Ibert 2014) are often referred to as communities of belief (Carroli 1997), a new form of communication whereby community members share information, knowledge and resources (Koh and Kim 2003; Gu, Konana, Rajagopalan, and Chen 2007; Tickle, Adebajo, and Michaelides 2011). Sometimes they are described as spaces for life, work and play or even more general: a cyberspace with chat and discussion fora (Lin 2008) with users shaping webs of personal relationships (Spaulding 2010). Porter (2004) defines virtual communities as cooperation between individuals or business partners with a shared interest who interact with each other through information technologies, and that this interaction is guided by common protocols or norms. Therefore, the definition of virtual communities can be summarised by such characteristics as: social interaction, information and/or knowledge exchange, shared interest, protocols or norms, and an IT platform.

Online communities, on the other hand, are based on commitment or sometimes on voluntary involvement of their members (Ren, Kraut, and Kiesler 2007), who share common interests, purposes, needs (Comley 2008; Williams and Cothrel 2000) or ‘experience and who interact with one another primarily over the Internet’ (Forman, Ghosev, and Wiesenfeld 2008, p.293). Pfeil, Zaphiris, and Wilson (2010) and Rodgers and Chen (2005) suggest that online communities are online settings where people with a similar life situation exchange information and provide emotional support to help each other. On the other hand Warner and Witzel (2004) define online community in cross-organisational terms, arguing that the online community is an advanced form of communication networks, where a number of different businesses or companies engage. This definition covers a wide range of Internet forums including markets and auction sites, electronic bulletin boards, listservers, social networking sites, blog hosts or sites, gaming communities, and shared-interest web sites (Miller, Fabian, and Lin 2009).

In this paper, online community is used as a general term that captures the phenomenon in its entirety. Despite the rich variations in the definitions given for online communities, virtual communities or other similar terms, researchers agree on several key components: online presence, IT platform, social participation, commitment, common interests, lack of geographical boundaries. Therefore, based on previous research, the authors define online communities as communication networks between individuals and/or businesses that identify themselves with a community formed around a common interest and interact to exchange information or knowledge through a range of the Internet-based technologies.

Despite the rapid development of online communities as well as the growing number of studies on various aspects of them, there remains significant conceptual ambiguity about this phenomenon. For instance, although many categorisations have been developed (see for instance, Lee, Vogel, and Limayem 2003; Porter 2004), there is a limited number of research focused on the commercial opportunities that online communities provide and how to integrate these opportunities into a coherent business model either within businesses or within the community as a business unit itself (Porter 2004; Clemons 2009; Spaulding 2010). For instance Porter (2004), Gu, Konana, Rajagopalan, and Chen (2007), and Messinger, Stroulia, Lyons, Bone, Niu, Smirnov, and Perelgut (2009) analyse the profit model (return on interaction) and discuss tangible economic value creating in online communities. Messinger et al. (2009)

elaborated on Porter's (2004) study and found that models such as a single purchase price or registration fee (fixed fee), fee per use (variable fee), subscription based fee (and on what basis subscriptions are made), advertising-based fee pay-as-you-go extras, and sale of ancillary products can be considered profit models in online communities. As a result, Messinger et al. (2009) explore how best to take advantage of online communities by employing the most suitable business models, communicating with and advertising to customers, engaging in retailing and ecommerce, assisting with customer relationship management, and bring employees together to work in virtual environments. They concluded that online communities are instrumental to advancing the above areas. More recently, business stakeholders have become a focus of research interest (for instance, Clemons 2009; Spaulding 2010).

Therefore, by providing clarity and synthesising current knowledge on online communities and online business models, this paper will contribute to the current academic and practitioner knowledge in this increasingly important field of social and business activity. Thus, this paper has two objectives. Firstly, in order to examine the concept of online communities, a systematic review of the current academic literature is provided. Secondly, drawing on the literature reviewed a novel categorisation of the commercial opportunities offered by online communities to themselves and to businesses is constructed. This categorisation gives a basis to evaluate the methods through which the commercial value of online communities can be harnessed. The first part of the paper clarifies the dimensions and classifications of online communities. In the second part, the potential overlap between this current body of research on online communities and wider commercial opportunities is investigated through the development of a business model framework for online communities. The framework is discussed with empirical vignettes.

### **Approach to the Review**

For the purpose of this paper, the authors undertook a systematic review, where search algorithms and publications' databases were used for selecting the literature to be reviewed (Dahl Ander 2010; Higgins, and Green 2005, 2008). The identification of the literature followed four steps:

**Step 1.** As of April 2014, Web of Science database was searched for the following keywords: topic=[online community or online communities or virtual community or virtual communities] or title=[online community or online communities or virtual community or virtual communities], where time span was equal to all available years. In total 30539 publications were found, 35% of which were published in the field of Social Sciences, 77% were published in Science and Technology, and 1.4% were published in Arts and Humanities<sup>1</sup>.

**Step 2.** Next, the authors narrowed the search criteria. To focus on business and management perspective, the additional criteria were imposed of the publications being in the field of Social Sciences and Arts and Humanities (=10918 out of 30539 articles in total). Although the removal of Science and Technology publications presents limitations for the research, it also helped in managing the vast quantity of technically oriented literature and increased the probability of meaningful findings for the focus of this research. Publications in Arts and Humanities were browsed and after initial abstract analysis, 17 papers were selected for further analysis. In the category of Social Science, the authors noticed that almost 40% of academic articles were published in 100 journals, among which the authors selected 58 publishing titles. This choice was made in order to assure the high probability of finding papers containing discussions relevant for business and management. As a result, 854 abstracts were investigated and 60 articles were chosen for the further analysis.

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<sup>1</sup> The numbers do not add to 100% as most publications fit in more than one field (for instance, science, technology and social science).

**Step 3.** Each of the above mentioned 60 articles in Social Science and 17 articles in Arts and Humanities were reviewed in full in order to investigate definitions, classifications, and dimensions of online communities relevant for assessing their commercial value.

**Step 4.** Additional to the articles analysed above, the EBSCO database was searched for additional publications on [online community or online communities or virtual community or virtual communities]. Over 5266 publications were found altogether published in 1968-2014; 890 of which were academic articles published during the last 7 years (between 2014 and 2007). From these 890 articles, review articles, articles that present conceptual frameworks, propositions or hypotheses, or based on empirical investigations (67 in total) were chosen for the future analysis.

### **Mapping Online Communities**

In this section of the paper the current academic literature concerning classifications and dimensions (Table 1) is reviewed in order to provide synthetic understanding of the online community concept.

### **Classification of Online Communities**

As in the case of online communities definitions, there is an abundance of online communities typologies. The most common criterion for classification is their purpose (for instance, Porter 2004; Porter, Devaraj and Sun 2013; Grabher and Ibert 2014). Below the authors present comparison of dichotomous and multiple classifications.

**Dichotomous Classification.** One approach to classifying online communities is to divide them into two opposing types, like commercial or non-profit online communities (Porter 2004); partly virtual or totally virtual network-based online communities (Ishii and Ogasahara 2007) and closed or open online communities (Comley 2008).

**Multiple Classifications According to Purposes.** In contrast, the multiple classifications focuses mostly on various purposes for which online communities are created and sustained. For instance, Jung and Kang (2010) suggests that online communities can be created either for: 1) information exchange, 2) social relations, 3) psychological support, or 4) entertainment. Similarly Armstrong and Hagel (2000) and Spaulding (2010, adapted from Kannan et al. 2000) discuss types of online communities as a derivative of their purpose: 1) communities of transaction, 2) communities of interest, 3) communities of fantasy, or 4) communities of relationship. Communities of transaction facilitate buying and selling goods and services online and provide information about these transactions. For instance, communities where members who want to sell/buy a car may want to consult with other members before doing so. Communities of interest bring together people with common interests on a specific area, such as online knitting or cooking forums. Communities of fantasy allow participants to create new imaginative personalities, lands, activities, and so on (e.g. Second Life). Communities of relationship bring together people to share experiences and often these are anonymous, such as cancer survivors or rape victims' online communities (Armstrong and Hagel 2000 and Spaulding 2010, adopted from Kannan et al. 2000).

Another approach is taken by Brandtzaeg and Heim (2008) with classification of online communities as 1) person-oriented communities 2) professional communities, 3) media-oriented communities, and 4) virtual-world communities. Person-oriented communities are communities where the person and social interaction are the focus, such as MySpace, Facebook, Friendster, Bebo, Orkut, Windows Live Space, and Hi5. Professional communities are communities that focus on business networking. Examples are LinkedIn and itLinkz. Media-oriented communities are communities that focus on the distribution and consumption of user-generated multimedia content, such as video, music or photos, for instance, YouTube and Flickr. Virtual-world communities, such as Second Life, are communities that are essentially 3-D virtual worlds, built and owned by their residents (the users).

### **Dimensions of Online Communities**

The literature review highlighted three key dimensions of online communities: participants (who?), platforms (where/how?), and purpose for their existence (why?) (Table 1).

**Participants.** An important point that can be seen from the previous literature is the lack of in-depth analysis of the actors involved in online communities. The majority of the scholars refer to a broad category of members (for instance, Preece and Maloney-Krichmar 2005; Ren, Kraut, and Kiesler 2007; Tickle, Adebajo, and Michaelides 2011). Those members are either individuals (for example, Balasubramanian and Mahajan 2001; Wasko and Faraj 2005; Pfeil, Zaphiris, and Wilson 2010) or organisations including companies and businesses (for instance, Warner and Witzel 2004; Kavanaugh, Carroll, Rosson, Zin, and Reese 2005; Vannoy and Palvia 2010). A key challenge of defining online communities results from the wide variety of the ‘who’ dimension. Participants in online communities have such diverse aims that it is almost impossible to grasp all online communities under the general umbrella of one unified concept.

**Platforms.** Depending on the depth of immersion in online communities, scholars (Ishii and Ogasahara 2007; Brandtzaeg and Heim 2008; Jung and Kang 2010) classify online community platforms based on the extent of online vs. offline activity, such as partly virtual entities (for instance online forums created as a supportive source for offline activities) or totally virtual-world communities (for example, a 3-D virtual world Second Life). The purpose of creating a platform that supports the existence of an online community is often commercially driven.

**Purpose.** The various online communities identified above have different purposes. For instance, professional communities’ main focus is on business networking (LinkedIn or itLinkz) (Brandtzaeg and Heim 2008). Media-oriented online communities’ main purpose is distribution and consumption of user-generated multimedia content (YouTube or Flickr) (Brandtzaeg and Heim 2008). There are also communities that focus on consumption and exchange of information about brands (brand communities, communities of consumption) and these are well described in the marketing literature (Hirschman 2010; Stokburger-Sauer 2010). Despite such differentiation of the purpose dimension in online communities, there are very few attempts to analyse the overall economic potential or impact of such online communities. Extant research focuses on the general challenges of incorporating the online community into existing business models and related revenue streams; this will be discussed further in the following sections (Macaulay et al. 2007; Clemons 2009; Spaulding 2010).

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Insert Table 1 about here  
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The above analyses demonstrates that the various definition, classifications and dimensions of online communities overlap. For example, platforms in dimensions (totally virtual world based online communities versus partly virtual entity online communities) and dichotomous classifications have similarities in their origin. Also multiple classifications of online communities are similar to purpose based dimension (see above). It is clear that the challenges of different definitions of online communities result from the rich variations in the dimension of participants. It can be also concluded that the wide range of the Internet-based technologies provide rich and diverse platforms contributing to the enormous variations between online communities. Consequently, the scope of potential participants, purposes, and types translate into countless commercial and non-commercial opportunities, values, and models.

### **The Business Models of Online Communities**

To examine business value in online communities, in this research the concept of business models (Osterwalder, Pigneur, and Tucci 2005) was employed. The Internet has created new commercial opportunities and new paths for business expansion. Despite the practical evidences

from the business world, academic literature on the business side of online communities is underdeveloped compared to the total amount of the academic literature on online/virtual communities. As of April 2014, a search of the Web of Science found that out of total 30539 sources on online communities (please see the above section Approach to the Review), only 359 sources were on the topic of ‘business models in online communities’ or ‘business models in virtual communities’. 118 out of 359 sources were on the subject of Business Economics and 166 out of 359 sources were on subject of Social Sciences. Among these publications, several investigate profit models in online communities, focusing in particular on the creation of the tangible economic value (see for instance, Porter 2004; Gu, Konana, Rajagopalan, and Chen 2007; Messinger et al. 2009) and online communities’ stakeholders (for instance, Clemons 2009; Spaulding 2010; Iskoujina 2010; Ciesielska 2010). However, the literature lacks in-depth studies on how online community businesses really work. In particular there is a limited amount of the research conducted on:

1. Business models in online communities (Porter 2004; Clemons 2009; Spaulding 2010),
2. The literature on innovation based business models in online communities (for instance, Timmers 2000; Teece 2010; Osterwalder and Pigneur 2010),
3. Business models on the web (Buhse 2001; Anajana 2004; Wilson 2011).

Many of the above-mentioned publications concentrate on the general characteristics and challenges of the business value of online communities. For example Rowe, Smart, Corley, Tranfield, Levene, and Deasley (2002) explored the impact of new procurement strategies on a variety of construction related businesses and discussed the effectiveness of management of networked organisational forms as an essential factor for project success. Ahn, Kim, Cheon, and IEEE Computer (2008) discussed online business models, namely, the Internet access model, community model, online character model, game portal and publishing model. At the same time, Bhatt (2004) argued that in order to attract customers through websites, dot-coms are required to balance a trade-off between interactivity, immersion, and connectivity, according to the business objectives of the online businesses. Despite the fact that there is some academic research on (new) business models in online communities, the literature lacks in-depth studies on the actual sources of business value.

Some scholars (for example, Rappa 2010) consider a business model as a method of doing business through which a company can sustain itself through a revenue generation model. However, other scholars see the business model concept as much broader (Osterwalder, Pigneur, and Tucci 2005). It is “a conceptual tool containing a set of objects, concepts and their relationships with the objective to express the business logic of a specific firm” (Osterwalder, Pigneur, and Tucci 2005, p.5). It is also a narrative and calculative device, by which entrepreneurs can communicate their strategic intent, explore markets and construct the innovation networks (Doganova and Eyquem-Renault 2009).

There are five intertwining elements that make up each business model: value proposition with key activities, infrastructure management, customer relationship as well as financial stability and stakeholders’ credibility (Osterwalder, Pigneur, and Tucci 2005). The characteristics of a robust and successful business are increasing revenues, ability to generate profits, entering into meaningful alliances, expansion into new markets, and differentiating itself from other business models (Anajana 2004). Osterwalder, Pigneur, and Tucci (2005) divide attempts to model business models into three different categories: 1) overarching business model concept, 2) taxonomies of business models on how business models resemble each other, 3) frequency from the real world examples. This paper concentrates on the first category in modelling business models: overarching business model concept (Osterwalder, Pigneur, and Tucci 2005). In the academic literature, several online business models have been investigated: advertising-based model, subscription-based model, fee-for-service-based model, directory services’ model, referral-based model, production-based model, markup-based model,

brokerage-based model, marketing services, research and development (Rappa 2010; Buhse 2001; Wilson 2011; Lumpkin and Dess 2004; Anajana 2004).

**1. Advertising-Based Model:** in this model web content is paid for by advertisers. The model adds value by providing free or low cost content to either very broad or highly targeted audiences (Lumpkin and Dess 2004). According to Rappa (2010), the online advertising model is an extension of the traditional media broadcast model. The advertising model works best when the volume of viewer traffic is large or highly specialized. The advertising model includes: portals, search engines that can include varied content or services; classifieds, listing items for sale or wanted for purchase; user registration, content-based sites that are free to access but require users to register and provide demographic data; query-based paid placement, sells favourable link positioning or advertising; contextual advertising/behavioural marketing, freeware developers who have adware with their product; content-targeted advertising, extends the precision of search advertising to the rest of the web; intracommercials, animated full-screen ads that are placed at the entry of a site before a user reaches the intended content; and, ultracommercials, interactive online ads that require the user to respond intermittently in order to wade through the message before reaching the intended content (Rappa 2010).

Businesses and customers can benefit from direct advertisement in online shops, via e-mails, and /or buyers' online forums in order to gain intangible benefits, market growth and better brand awareness. A direct advertisement is financed by a company's marketing budget (Clemons 2009; Rothaermel and Sugiyama 2001 and Schubert and Ginsburg 2000 in Porter 2004).

Furthermore, Wilson's analysis (2011) on advertisement discusses CPM ads ('cost per thousand views'; banner ads online), CPC ads ('cost per click'; Google ads), CPT ads ('cost per transaction'), sponsorships (ads of some sort that are sold based on time, not on the number of impressions), listings (paying a time based amount to list something like a job or real estate on a website), paid inclusion (a form of CPC advertising where an advertiser pays to be included in a search result), Streaming Audio Advertising (for instance, radio advertising delivered in the audio stream after a certain amount of audio content has been delivered), Streaming Video Advertising (for example, streaming audio but in video), API ('application programming interface'), Fees (charging third parties to access your API).

**2. Subscription-Based Model:** several publications highlight and discuss this model on the web (Buhse 2001; Wilson 2011; Rappa 2010; Lumpkin and Dess 2004). In this model, fees are charged for unlimited use of a service or content, which adds value by leveraging strong brand name, providing high quality information to specialized markets or access to essential services (Lumpkin and Dess 2004). In the subscription model, users are charged a periodic fee to subscribe to a service, for example, content services, person-to-person networking services, trust services, and Internet services providers (Rappa 2010). Subscription includes lead generation (payment for qualified names of potential customers), autoresponder memberships (payment for email; watching free video), subscription revenues, affiliate revenues (for example, Amazon Associates, Products + Clickbank), rental of subscriber lists. Additionally, the utility model can be considered as a further subscription model. The utility model is based on metering usage or a 'pay as you go' approach, measured by metered usage or metered subscriptions (Rappa 2010). A similar model can be applied in the music industry (Buhse 2001). Also, Rappa (2010) considers an affiliate model, that provides purchase opportunities wherever people may be surfing by offering financial incentives to affiliated partner sites, for instance, banner exchange trades banner placement among a network of affiliated sites; pay-per-click that pays affiliates for a user click-through; revenue sharing that offers a percent-of-sale commission based on a user click-through in which the user subsequently purchases a product.

**3. Fee-For-Service-Based Model:** this model is where fees are charged for metered services, which add value by providing service efficiencies, expertise, and practical outsourcing solutions (Lumpkin and Dess 2004).

**4. Directory Services' Model:** this is 'a unique and easy categorisation of all pages and subjects', and as a result 'a completely professional looking web site in all' (Anajana 2004). Wilson (2011) also adds lead generation and auto-responder memberships to the directory services' model. Rappa (2010) discusses manufacturer (direct) model, and community model. The manufacturer model allows a manufacturer of goods or services to reach buyers directly. The manufacturer model includes: purchase, the sale of a product in which the right of ownership is transferred to the buyer; lease, in exchange for a rental fee, a buyer receives the right to use the product under a "terms of use" agreement; license, sale of a product that involves only the transfer of usage rights to the buyer, in accordance with a "terms of use" agreement; brand integrated content, is created by the manufacturer itself for the sole basis of product placement (Rappa 2010). The community models can be considered as directory services (Rappa 2010). The viability of the community model is based on user loyalty. Examples include: open source, where software is developed collaboratively by a global community of programmers who share code openly; open content, for instance Wikipedia; public broadcasting by not-for-profit radio and television broadcasting extended to the web, which is supported by voluntary donations; and, social networking services, for instance Facebook (Rappa 2010).

**5. Referral-Based Model:** this involves charging fees for referring customers, it adds value by enhancing a company's product or service offering, tracking referrals electronically, and generating demographic data (Lumpkin and Dess 2004). Expertise and customer feedback are often included with referral information. Content providers' model can benefit from affiliate revenues, sale of information, licensing of content (syndication) (Wilson 2011), licensing of brand (payment to use a media brand as implied endorsement), upgraded service/content ('freemium'), or alternate output (pdf, print/print-on-demand, customized shared book style) (Rappa 2010). Rappa (2010) adds to it an infomediary model, based on the availability of data about consumers and their consumption habits. Infomediaries (information intermediaries) help buyers and/or sellers understand a given market by analysing the data via directory services: lead generation, and, auto-responder memberships.

**6. Production-Based Model:** this model involves selling manufactured goods and services (Lumpkin and Dess 2004). Sales may be made based on list prices or through auction by wholesalers and retailers of goods and services. It adds value by increasing production efficiencies, capturing customer preferences, and improving customer service (Lumpkin and Dess 2004). Commercial profits are generally gained directly via sales or via commissions and fees on sales. For instance, Business-to-Business, Business-to-Customer, Customer-to-Customer models via IT platform can be used for: sales of tangible products (Spaulding 2010; Brown, Tilton, and Woodside 2002 in Porter 2004), selling access to customers (Clemons 2009; Brandtzaeg and Heim 2008), and selling virtual content: information or experience in online communities (Clemons 2009; Brandtzaeg and Heim 2008), or transaction fees revenue (Clemons 2009; Rothaermel and Sugiyama 2001 and Schubert and Ginsburg 2000 in Porter 2004). Content providers can benefit from affiliate revenues, sale of information, and licensing of content (syndication) (Wilson 2011), licensing of brand (payment to use a media brand as implied endorsement), upgraded service/content ('freemium'), alternate output (pdf, print/print-on-demand, customized shared book style) (Rappa 2010). Rappa (2010) adds to this an infomediary model, based on the availability of data about consumers and their consumption habits. Infomediaries (information intermediaries) help buyers and/or sellers to understand a given market by analysing the data via directory services, lead generation and auto-responder memberships.

**7. Markup-Based Model:** this involves reselling marked-up merchandise, adds value through selection, distribution efficiencies, and by leveraging brand image and reputation (Lumpkin and Dess 2004).

**8. Brokerage-Based Model:** this involves charging for brokerage or intermediary services and adds value by providing expertise and/or access to a wide network of alternatives

(Lumpkin and Dess 2004). The brokerage model provides brokers to bring buyers and sellers together and facilitate transactions whether it is business-to-business, business-to-customers, customers-to-customers (B2B, B2C, or C2C). Brokers charge a fee or commission for each transaction they enable. The formula for fees can vary. Brokerage models include marketplace exchange, buy/sell fulfilment, demand collection system, auction broker, transaction broker, distributor, search agent, and virtual marketplace (Rappa 2010).

**9. Marketing Services:** to Anajana's (2004) model of customer services with 'a user friendly web site that connects customers easily', Wilson (2011) adds licensing of brand, getting the users to create something of value for free and applying any of the above approaches to monetize it, like souvenirs and merchandise, or custom services and feeds. Many companies and online communities offer their websites as a space for 3<sup>rd</sup> parties advertising, that is, they provide marketing services. In the Internet era targeted access to potential customers is much easier. The customer base and their demographics are also offered for sale. On the other hand, the marketing fees help maintaining the online community IT platforms, for instance one of the revenue model in Facebook is through 3<sup>rd</sup> parties advertising. For instance, as a result of marketing activities, there are various intangible revenues (return in the long-run, difficult to assess) that lately can lead to tangible revenues (financial). Examples for such intangible revenue models can be as the following:

- Information or knowledge exchange that can lead to more active involvement in online communities on a commercial basis (Clemons 2009; Spaulding 2010)
- Promotion in the search engine listings/ rankings (Clemons 2009; Bughin and Hagel 2000 in Porter 2004)
- Increasing website traffic (Clemons 2009; Bughin and Hagel 2000 in Porter 2004)
- Fulfilling social and commercial needs, trust building, adding value in providing information (Macaulay et al. 2007; Spaulding 2010)
- Developing positive word-of-mouth (Bickart and Schindler 2001 in Porter 2004; Brown et al. 2007; Spaulding 2010; Stokburger-Sauer 2010; Kim et al. 2011)
- Increasing brand awareness and commitment (McWilliam 2000 in Porter 2004; Macaulay et al. 2010).

**10. Research and Development:** in this model, businesses are collaborating with online communities to develop or test new product and market niches. For example, online communities can serve as a source of open innovation for the adaption of new products and services (Ciesielska 2010; von Hippel 2005). Thus, online communities can receive finance from a consortium of companies and/or foundations. However, to ensure the success of R&D projects, this approach often involves building trust and long-term relationship (Ciesielska and Petersen 2013; Ciesielska and Iskoujina 2012). At the same time, online communities can themselves gain revenue from providing new products/services (Lakhani and von Hippel 2003; Spaulding 2010; Iskoujina 2010; Westenholz 2012).

### **Vignettes of tangible and intangible business value**

In this paper, an analysis of the business models on the web as well as an analysis of the various types of online communities demonstrated that the online medium has given rise to new business models or has adapted established and well known models to the new environment of e-commerce. Online communities can create a basis for valuable businesses and at the same time they themselves can be successful businesses. The review indicated a growing body of literature on online business models. The value of online communities for business is not only tangible and financial, but there are also a range of intangible (return in the long-run, difficult to assess) benefits. The outcome of the systematic review shows that the predominant economic research topic concerns direct profits from online communities (sales, revenues). The tangible values that online communities can offer to their business partners are primarily related to the sales of products and services (Spaulding 2010). Tangible values can also be gained via selling virtual content such as information, virtual-world experience, or by providing customers data

for marketing purposes (Clemons 2009). Typical vignettes of business models focusing on tangible values of online communities are Facebook or YouTube. However even in those cases the actual assessment of the economic value of such activity is challenging (Nussbaum 2010). That is because social networking sites offer products and services in a different form to traditional marketplace, and there is substantial lack of empirical research into this issue.

For instance, for the full year 2013, Facebook reported profits of \$1.5bn and said its daily active users grew by 22%. “2013 was the year we turned our business into a mobile business,” said Mr Zuckerberg<sup>2</sup>. The main revenue stream come from marketing and advertising, but Facebook as a user platform offers great opportunities of data mining and consumer behaviour research. Therefore while Facebook is a marketing tool<sup>3</sup> which through advertisements benefits other companies, it is also the business itself with its own user base representing their competitive advantage. Perhaps that is why Facebook is defending its top position in social media by taking over smaller competitor before they take its market<sup>4</sup>. However, as Patrick (2010) discusses, Facebook’s average revenue per user from advertisements is very small, therefore Facebook needs to explore every possible component of data mining to maximise revenue streams and create new revenue models. As well as millions of Facebook users there are hundreds of companies involved in Facebook ads and apps, which also constitute strong stakeholder groups. This seems to be often omitted in official reports, but in fact contributes to the strengths of Facebook business model.

Another example, content sharing sites such as YouTube or Flickr provide an opportunity to share content (videos, photos) with others while building online advertising platform for other businesses, which includes sponsored videos, video ads, engagement content aggregation programs, display and linear ads, and click to buy (Google Form 10-K 2008). Sponsored Videos allow advertisers of any size to use a self-service tool to reach people who are interested in their content, products or services. YouTube Video Ads enable advertisers to upload and promote their videos on the YouTube homepage. Engagement Content Aggregation Programs enable a sponsored thematic experience using partner videos, and therefore enabling partner monetisation. Display and Linear ads including traditional branded display, linear ads, and video overlay ads, let advertisers monetise video playback and split money with the content owner. Click to buy allows advertisers to create a marketplace for items driven from the video playback. Also YouTube offers analytic tools to help advertisers understand their audience and develop general business intelligence (Google Form 10-K 2008). More recently YouTube decided to broaden its income portfolio by offering paid-for subscription channels. This also expands opportunities for content creators, who now will be able to earn money directly from the users, not only via advertisements as before<sup>5</sup>. However yet again it’s difficult to assess the actual value of this fast growing online community, with most video displays on Internet<sup>6</sup>. Even Google, after paying \$1.65 billion to acquire YouTube in 2006, isn’t keen on revelling separate financial numbers generated by the website.

The tangible values, however difficult to assess, are only a small part of the possibilities that online communities offer to businesses. Online communities can also bring non-financial values for the businesses, such as a positive word-of-mouth, creation of more effective market segmentation, increasing website traffic, providing better product support and service delivery (Porter 2004; Spaulding 2010) or social and commercial needs, trust building, increasing brand awareness and commitment, adding value by providing information (Macaulay et al. 2007). In the long term intangible values also contribute to financial returns but their size and timescale is

<sup>2</sup> <http://www.bbc.co.uk/news/business-25954825>. Accessed 03 February 2014.

<sup>3</sup> <https://www.facebook.com/business>. Accessed on 25 October 2011.

<sup>4</sup> <http://www.forbes.com/sites/panosmourdukoutas/2014/02/23/whats-wrong-with-facebooks-business-model-and-innovation-strategy/>. Accessed 28 October 2014

<sup>5</sup> <http://www.bbc.co.uk/news/business-22474715>. Accessed 28 October 2014

<sup>6</sup> <http://www.forbes.com/forbes/2008/0616/050.html>. Accessed 28 October 2014

hard to predict. However, very often these intangible benefits are a basis for the coexistence of, and relationship between, online communities and businesses.

The most famous example is in the field of open source software development where the relationship between online communities and software businesses is well developed (Iskoujina 2010; Ciesielska 2010; Westenholtz 2012). Linux<sup>7</sup> to IKEA hackers<sup>8</sup> communities of this type can contribute to R&D of novel ideas and new use of existing product. Usually this type of collaboration is classified under a general term of open innovation (Chesbrough 2003), even though there are significant differences of the level of openness (Westenholtz 2012) with varied need of redefining ones business model. Companies like IBM contribute to open source software not only their human resources and working time but also finance their growth with donations. From 1999 within 10 years IBM became one of the top contributors to Linux project with 600 IBM developers involved in over 100 open source projects. Only in 2003 IBM<sup>9</sup> committed \$1 Billion to Fuel Linux and Open Source Innovation on Power Systems. Over the years Linux became an important part of IBM B2B offer. Linux is supported on most IBM Systems and 500 of their software products run natively on Linux. IBM business model is currently highly dependent on Linux community development and the success of the project, and it is in IBM's vital interest to support it. The better Linux gets, the better IBM sales are, but at the same a lot of the open source software processes are outside IBM control and the actual value of Linux community for IBM is almost impossible to quantify. This also poses serious risks for companies which don't strategically embrace open innovation and are not able to redefine their strategic advantage to meet open source licencing requirements (Ciesielska 2010).

Another example of such e-commerce sites is Amazon (1995). Although Amazon is also an online shop with clear sales revenue (tangible value), it also allows online communication between customers and commenting on the quality and value of products / services sold. Although Amazon and buying books online are synonymous terms today, it is because of its perfect customer service, successful online advertising and special discounted offers (Anajana 2004). But alongside pure financial income from sales, Amazon is using the online community of stakeholders as an additional platform for business, to simplify communication between stakeholders and to enhance the overall experience of businesses or individuals both from customers and providers perspectives. Commodification of such online communities is internal. These online communities bring value to the existing e-business of these e-commerce sites. E-commerce online communities can gain business value, for instance, intangible benefits for the network members to share their feedback about products / services. At the same time through using online communities for their marketing purposes e-commerce businesses can gain value from online communities.

## Discussion

Osterwalder and Pigneur (2010) generate business models through combining nine elements: key partners, key activities, value proposition, customer relationships, customer segments, key resources, channels, cost structure, and revenue streams (Table 2). Value proposition describes the bundle of products/services that create value for a specific customer segment. Customer relationships describe the types of relationships a company establishes with specific customer segments. Customer segments define the different groups of individuals/organisations an enterprise aim to serve/reach. Channels demonstrate how a company communicates with and reaches its customer segment to deliver a value proposition. Key partnerships describe the network of suppliers/partners that make the business model work. Key activities describe the most important things a company needs to do to make its business model work. Key resources

<sup>7</sup> <http://www.linux.com/>. Accessed 10 October 2014.

<sup>8</sup> <http://www.ikeahackers.net/>. Accessed 10 October 2014.

<sup>9</sup> <http://www-03.ibm.com/press/us/en/pressrelease/41926.wss>. Accessed 10 October 2014.

describe assets required to make a business model work. Cost structure describes all costs incurred to operate a business model. Revenue streams demonstrate the cash a company generates from each customer segment (Osterwalder and Pigneur 2010).

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Insert Table 2 about here  
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Applying Osterwalder and Pigneur's business model canvas (2010) to online communities, key partners in general term can be considered as users, owners, and businesses such as shareholders or third parties. These partners are also the online community's stakeholders who engage in the community for a variety of reasons including social participation, commitment or voluntarily involvement, shared interests and purpose, and, information and knowledge exchange; they are guided by common protocols or norms. Online communities have social key resources such as human capital; IT resources such Internet based technologies; business resources in most of the cases such as financial resources; and political resources for changing or improving legislation, for example influence of Facebook and Twitter to the Arab spring (Wolman 2013). One of the building blocks of the business model canvas is channels, which is an interesting point for large online communities such as Facebook, YouTube, Amazon, and Linux, because they can be functioning as a medium channel themselves on IT platform.

Regarding customer relationships, online communities need to consider the social interaction taking place within them, how their users identify within online communities, how unique their services are, and whether their platform and social strategy are user-friendly. Because the platform for online communities is based in online medium, maintaining IT platform can be included in cost structure. Online communities can offer tangible value propositions such as advertisement fees, donations / grants, and profits for sales of virtual/real goods/services. However they can also have intangible value propositions, such as social impact on society in general and on individuals in particular, innovation, loyalty, brand, knowledge sharing, membership, uniqueness, and connecting people. As such, intangible value proposition may not offer quick return, but may pay off in the long run.

Online communities can have revenue streams as an internal unit for businesses, as a business unit in their own right, or as an external resource for businesses. The various types of advertisements are the most popular type of the business revenue in a different range of online communities. The resistance to advertising witnessed in the case of Wikipedia is unusual among popular online communities and it reflects a particularly strong-shared sense of the community's purpose and the need for Wikipedia to maintain editorial independence from commercial interests (Lih 2009). Subscription is another popular business model among various types of online communities. Such business models as custom services, directory services, and content providers are not in regularly use in many types online communities. Product sales are popular among those online communities who sell tangible or intangible products. And finally, brokerage is the least popular business model among online communities that have been studied in our paper. Therefore online revenue streams can come from donations / grants (Wikipedia), sales of virtual/real goods/services (Amazon), advertisements of own services/products (Facebook), advertisements of 3<sup>rd</sup> parties (YouTube), open innovation/R&D (Linux).

To summarise, large online communities such as Amazon, Wikipedia, YouTube, or Facebook demonstrate a mix of several business models is used. In this context it becomes certain that online community business models are far more complicated than the selection of sources of financing. Online community business models included not only a value proposition, but also incorporate the community within the primary or supporting commercial activities.

## Conclusions

The business model concept describes the sources of value and how companies obtain commercial benefits. There have been series of investigations on e-business models, but these

have concentrated on the Internet as an enabler of new types of transactions and service provision (Rappa 2010). The main contribution of this paper is that it investigated the need to recognise both the technological enablers – the Internet and related solutions – and the socio-technological dynamics of online communities. It explored the phenomenon of online community, its parts, classifications and dimensions. The contribution of this paper is underlined in Table 3.

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Insert Table 3 about here  
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Table 3 presents four broad categories of pure business models used in online communities businesses such as R&D, marketing, advertising and sales. Sales model seemed to be most studied in this context, and a range of subtypes have been developed, like products sales, subscriptions, service and content provisions, brokerage and mark-up type. Each of those models can be characterised by key dimensions of online communities business models and their financing mechanisms. We point out that generic dimensions such as participants, platforms and purpose are intrinsically lined to the business models' building blocks such as customer relationship management, infrastructure management, and revenue/gains respectively (Timmers 2000; Teece 2010; Osterwalder, Pigneur and Tucci 2005; Osterwalder and Pigneur 2010). Table 3 demonstrates that online communities can bring value, revenue, and impact back to the society through business sustainability. In particular, business models in online communities can assist with increasing sales, promoting positive word-of-mouth, creating more effective market segmentation, increasing website traffic, strengthening brands, gaining higher advertising and transaction fee revenue, providing better product support and service delivery, fulfilling social and commercial needs, trust building, increasing brand awareness and commitment, adding value in providing information, commercial information or knowledge exchange, advertising, selling virtual content or access to customers. But what is crucial is that vignettes of the actual business involvement in online communities show much more variety of how the models are mixed, combined and hybridised, creating original configurations on which business success depends. However the existing data does not really allow for their appropriate valuation.

### Further Research

The conclusions of this study are based on existing literature. Further empirical research is necessary to enrich our current understanding of the online communities phenomena, and their impact on the business models. In particular, factors, conditions, and actual hybridised business models that impact commercial success and business activities associated with online communities should be investigated. The findings, research gaps and suggested further studies are presented in Table 4.

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Insert Table 4 about here  
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The literature review shows discrepancies in definitions of online communities, however there is relative agreement on general characteristics and dimensions that fall into this category. It feels that more in-depth understanding of the micro and mezzo processes happening between online communities and businesses would allow for clarifying the role of participants and their motivations. Further research should identify key stakeholders; the key relation types as B2B, B2C, C2C; strategies and stakes. The overall strategic stakeholder analysis needs to be done in order to analyse their role in various business models such as R&D, sales, marketing services and advertisement . Secondary data of the most successful businesses via online communities could be utilised for this study.

The literature review also shows multitude of online communities classifications, but hardly any comprehensive attempt to map the phenomena in full. Some effort was put into

recognising potential revenue streams from online businesses, but there is lack of systematic assessment of the benefits that online communities can bring, nor how different types of revenues, and other business model building block can be combined to create strong and sustainable value proposition. Therefore further, in-depth investigation of online communities types and associated business models is necessary. Because of rapid development of online communities, one can assume that their business models could have also been changing. There is great need to understand business value, especially in the beginning of an online communities' lifecycle and examine how they develop in parallel with the development of online communities. Further, as the lifecycle of online communities proceed, we need to examine how various types of online communities can create basis for valuable businesses as well as be successful businesses. Then whether and how business values in online communities can be internal and/or external should be studied. Later whether online communities can be internal to business organisations, related to them, or external should be explored. Finally, how these different types of relationships between online communities and businesses can give different types of valorisation in/via online communities should be examined. This study can be run via secondary data and empirical studies of the websites that can demonstrate successful revenue in terms of business models.

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**Table 1: Dimensions and Classifications of Online Communities (OCs)**

| Dimensions       | Classifications                                               | Examples of OCs                                                              | Publications                                                                                                                                     |
|------------------|---------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Participants     | Independent individuals                                       | Member-mediated                                                              | Porter 2004                                                                                                                                      |
|                  |                                                               | Person-oriented                                                              | Brandtzaeg and Heim 2008                                                                                                                         |
|                  |                                                               | Professional                                                                 |                                                                                                                                                  |
|                  | Organisations and / or their members                          | Organisation-sponsored                                                       | Porter 2004                                                                                                                                      |
|                  |                                                               | Closed/Research and Open/General                                             | Comley 2008                                                                                                                                      |
| Platform         | Totally virtual world                                         | Virtual network based                                                        | Ishii and Ogasahara 2007; Brandtzaeg and Heim 2008                                                                                               |
|                  | Partly virtual entity as an additional tool to the real world | Partly virtual entity                                                        | Ward 1999                                                                                                                                        |
|                  |                                                               | Social relations, Psychological support, Entertainment                       | Jung and Kang 2010                                                                                                                               |
|                  |                                                               | Real group based                                                             | Ishii and Ogasahara 2007                                                                                                                         |
|                  |                                                               | Mobile communities                                                           | Brandtzaeg and Heim 2008                                                                                                                         |
| Purpose / profit | R&D                                                           | Open Source Software                                                         | Porter 2004                                                                                                                                      |
|                  | Common interests                                              | Online community of Interest                                                 | Blanchard and Horan 1998 in Koh and Kim 2003                                                                                                     |
|                  |                                                               | Communities of interest, Communities of fantasy, Communities of relationship | Armstrong and Hagel 2000; Kannan et al. 2000 in Spaulding 2010                                                                                   |
|                  |                                                               | Media-oriented communities                                                   | Brandtzaeg and Heim 2008                                                                                                                         |
|                  | Exchange                                                      | Exchange information / knowledge                                             | Warner and Witzel 2004; Jung and Kang 2010                                                                                                       |
|                  |                                                               | Communities of transaction                                                   | Armstrong and Hagel 2000; Kannan et al. 2000 in Spaulding 2010                                                                                   |
|                  | Sales, Marketing                                              | Marketing and brand communities                                              | Bickart and Schindler 2001 in Porter 2004; de Valck et al 2009; Kim et al. 2011; Brown et al. 2007 Warner and Witzel 2004; Stokburger-Sauer 2010 |
|                  | Proximity                                                     | Physically based                                                             | Blanchard and Horan 1998 in Koh and Kim 2003                                                                                                     |
|                  |                                                               | Real group based                                                             | Ishii and Ogasahara 2007                                                                                                                         |

**Table 2: A General Business Model Canvas for Online Communities (OCs)**

|                                                                                       |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
| <b>Key partners</b><br>Stakeholders in OCs:<br>1. Users<br>2. Owners<br>3. Businesses | <b>Key activities</b><br>Component of OCs:<br>Social participation / Commitment or voluntarily involvement / Based on common interest and shared purpose / For information and knowledge exchange / Guided by some protocols or norms |                                                                                                                                                                                                                                                                                                                                             | <b>Value proposition</b><br>Tangible:<br>Advertisements / Donations / Grants / Sales of virtual/real goods/services<br><br>Intangible:<br>Social impact on the society / Innovation / Loyalty / Brand / Knowledge sharing / Membership / Uniqueness / Connecting people |  | <b>Customer relationships</b><br>Social interaction / Identification within an OC? / Uniqueness of services? / User-friendly platform and social strategy? | <b>Customer segments</b><br>Open to almost everyone, just one click away |
|                                                                                       | <b>Key resources</b><br>Social: people / Technological: IT / Business: financial resources / Political: legislation                                                                                                                   |                                                                                                                                                                                                                                                                                                                                             | <b>Channels</b><br>OCs as a medium channel themselves on IT platform                                                                                                                                                                                                    |  |                                                                                                                                                            |                                                                          |
|                                                                                       |                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
| <b>Cost structure</b><br>Maintaining IT platform<br>HR cost                           | <b>Revenue Streams</b>                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Advertising                                                                                                                                                                                                                           | Banner and direct marketing / CPM ads, CPC ads, CPT ads / Listings / Sponsorships / Paid inclusion / Streaming audio/video advertising / API Fees                                                                                                                                                                                           |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Subscription                                                                                                                                                                                                                          | Subscription revenues / Rental of subscriber lists / Payment for qualified names of potential customers / Payment for email and watching free video / Affiliate revenues / Rental of subscriber lists / Metered subscription: ‘pay as you go’ / Affiliate model: banner exchange, pay-per-click, revenue sharing                            |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Fee-for-Service-based Services                                                                                                                                                                                                        | Licensing of brand / Souvenirs, custom services/feeds                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Directory Services                                                                                                                                                                                                                    | Directory services / Lead generation / Auto-responder memberships / Community model: open source, open content, social networking sites                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Referral-based Content Providers                                                                                                                                                                                                      | Infomediary model / Content providers: affiliate revenues, sale of information, licensing of brand and content / Affiliate revenues / Sale of information / Licensing of content                                                                                                                                                            |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Markup-based Model                                                                                                                                                                                                                    | Reselling marked-up merchandise                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Product Sales                                                                                                                                                                                                                         | Product sales / E-commerce / Merchant model / Manufacturer direct sales / Sales of tangible products / Selling access to customers / Selling virtual content: information or experience in OCs / Transaction fees revenue                                                                                                                   |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Brokerage                                                                                                                                                                                                                             | Brokerage in B2B, B2C, C2C, marketplace exchange                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | Marketing services                                                                                                                                                                                                                    | More active involvement to OCs in the commercial basis via information / knowledge exchange / Top in the search engine listing / Increasing website traffic / Trust building / Fulfilling social and commercial needs / Adding value in providing information / Positive word-of-mouth / Marketing / Increasing brand awareness /commitment |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |
|                                                                                       | R&D                                                                                                                                                                                                                                   | Product development                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                         |  |                                                                                                                                                            |                                                                          |

(The table was adapted from Osterwalder and Pigneur 2010, p.44)

**Table 3: Business Model Research Framework for Online Communities**

| Business models                | Types                                                                                                                                                                                                                                                             | Dimensions and building blocks                                         |                                                                                                      |                                                                                                                      |                                                                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                |                                                                                                                                                                                                                                                                   | Stakeholders and CRM                                                   | Partly or totally virtual platforms and Infrastructure management                                    | Purpose of OC, with potential Revenues / gains                                                                       | Financing                                                                                                                                                         |
| Direct Advertisement           |                                                                                                                                                                                                                                                                   | Businesses, Customers                                                  | Direct advertisement, Emails, Buyers' online forums                                                  | Intangible benefits, Market growth, Branding                                                                         | Directly from marketing department's budget                                                                                                                       |
| Sales of products and services | <ul style="list-style-type: none"><li>• Product sales</li><li>• Subscription revenues</li><li>• Fee-for-service-based services</li><li>• Directory services</li><li>• Referral-based content providers</li><li>• Markup-based model</li><li>• Brokerage</li></ul> | Manufacturers, Shops and Auction platforms                             | Online shops, Online auctions<br>Social networking sites                                             | Tangible profits                                                                                                     | Income from customers (sales), Commission on sales<br>Subscription revenues / Affiliate revenues / Directory services / Sale of information, Licensing of content |
| Marketing services             |                                                                                                                                                                                                                                                                   | Businesses, Online advertising agencies, Customers                     | Advertisements via 3 <sup>rd</sup> parties, Access to potential customer base and their demographics | Intangible benefits, Market growth, Branding                                                                         | Business/ marketing fees                                                                                                                                          |
| R&D / Co-creation              |                                                                                                                                                                                                                                                                   | Open source software communities, Companies, Professional participants | Content creating/ sharing, Open innovation                                                           | Mixed revenues, hardly quantifiable, New products/ services, Knowledge base, Personal and work related opportunities | Consortium of companies, Foundations                                                                                                                              |

**Table 4: Key Findings and Research Gaps**

|                        | <b>Key findings</b>                                                                                                                                                                                                                                                                                                                                                                                     | <b>Research gaps</b>                                                                                                                                                                                                                   | <b>Potential research strategies</b>                                                                                                                                                                                                                                                                        |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Definitions</b>     | No single online /virtual community definition widely accepted.<br>Online community characteristics: online presence, IT platform, social participation and commitment, voluntarily involvement, common interest or shared purpose/norms/values.<br>Virtual community characteristics: social interaction, information and/or knowledge exchange, shared interest, protocols or norms, and IT platform. | Exploratory and qualitative research could help in formulating new definition to emphasise the essence and difference of OCs from other forms of online social interaction                                                             | Actor-Network Theory (ANT) perspective would allow not only for including technology as an active social actor, but also for formulating more clear online community definition and typology.                                                                                                               |
| <b>Dimensions</b>      | The existing literature points out three main dimensions of OCs:<br>People (who participates?),<br>IT platform (where?) / Social Platform,<br>Purpose/goal (why?)                                                                                                                                                                                                                                       | Participants: Limited number of the scholars made an attempt at classifying actors engaged in OCs,<br>Purpose: Analysis of the OCs participants and their motives may shed light on what economic impact OCs can bring to the society. | The overall strategic stakeholder analysis needs to be conducted in order to analyse their role in various business models.                                                                                                                                                                                 |
| <b>Classifications</b> | Multitude of classifications                                                                                                                                                                                                                                                                                                                                                                            | To enlighten business perspective of OCs, the qualitative analysis of various classifications in OCs is necessary, especially the ones that focus on business model differences.                                                       | Ethnographical studies can be implemented in order to differentiate between variety of OCs and create bottom-up taxonomy                                                                                                                                                                                    |
| <b>Business models</b> | Tangible values that OCs can offer to their business partners are primarily related to the sales of products and services. OCs also can bring non-financial values for the businesses. In a long term intangible values also provide financial returns but their size and timescale is hard to predict.                                                                                                 | There is a lack of systematic assessment of potential value that OCs can offer for businesses. There is a lack of in-depth studies on how OC businesses really work.                                                                   | Business value of OCs need to be further empirically investigated, especially in the beginning of an OC's lifecycle and examine how they develop in parallel with the development of OCs. Multiple comparative case studies of business models would fill the gap in the constantly developing area of OCs. |