

How Do Entrepreneurs Learn and Engage in an Online Community-of-Practice (CoP)? A Case Study Approach

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Abstract

This paper investigates the ways in which entrepreneurs use communities of practice (CoPs) to express themselves, using narrative theory and rhetorical analysis, to gain insight into an electronic social network medium, namely, *YoungEntrepreneur.com*. In particular, the study focuses on CoPs themes, including why entrepreneurs engage in CoPs, what role the moderators and resident entrepreneurs can play in managing online CoPs, on communication rituals of the knowledge sharing through interactivity, and on “how to develop an intervention” to maintain and stimulate entrepreneurs for engaging in on-line community. Findings reveal that topic title plays major role in attracting people. Successful topics with successful conclusion (in terms of the original query was answered) will not necessary get high responses and vice versa. It is observed that the domain expert does not play a big role in keeping the discussion going. Finally, the study also discovered that entrepreneurs like to communicate in story telling genre. A comprehensive set of engagement measurement tools are introduced to effectively measure the engagement in a virtual CoP, along with a classification to define and categorise discourse of messages in terms of content and context, which allow practitioners to understand the effectiveness of a social networking site.

Keywords – Entrepreneurial Learning, Engagement, Knowledge Sharing, Community of Practice, Social Network.

1. Introduction

An increasing interest in the way that entrepreneurs learn and share knowledge with others has surfaced in light of the importance of learning and knowledge in the knowledge-based economy (Harrison and Leitch, 2005). Entrepreneurial learning has been identified as one of the key thematic trends in behavioural research (e.g., Jansen et al. 2016). It can be defined as a process of learning to recognise and act on opportunities, and interacting socially to initiate, organise and manage ventures (Rae 2009). Despite the strong interests among practitioners, there is a knowledge gap with regard to entrepreneurial learning in the contexts of online environments, such as social networking and virtual communities (Rohde et al. 2011). Harrison and Leitch (2005) argue that where the scope for applying concepts of entrepreneurial learning within the wider field of management has gained currency, the application of these concepts to entrepreneurship has been limited.

The context of the research presented in this article arises from a need to further understand the way in which entrepreneurs acquire and share knowledge in an informal network, such as virtual environments, focusing more specifically on online communities of practice (CoP). Wenger et al. (2002) previously defined CoPs as, “groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis” (p.4). The original concept of CoP addressed knowledge sharing that occurred in face-to-face situations, such as apprenticeships of Mayan midwives in Mexico, work-learning settings of United States Navy quartermasters, and non-drinking alcoholics in Alcoholics Anonymous (Lave and Wenger 1991). Since then, there have been studies of CoPs in settings such as technicians (Orr 1996), claim processors (Lave and Wenger 1991), defense

lawyers (Hara 2000), telecommunication engineers, consultants (Haney 2003), and teachers (Baek 2002; Barab et al. 2003). However, the study of CoPs in online contexts as well as among entrepreneurs, has not yet been studied. This seems surprising as entrepreneurs frequently engage in informal networks that support their learning to build knowledge and develop a shared meaning among other members in similar situations (Hara 2000). Although there are some studies providing insights into how knowledge sharing can occur within an informal learning context, they nonetheless fall short in that most of the studies dealt with face-to-face environments. On the whole, little is known about online communities of practice among entrepreneurs. For example, Cope (2005) argues that many aspects of entrepreneurial learning are not well understood and suggests that a “learning lens” can be applied to create further avenues for research in entrepreneurial behaviour from the ‘learning’ perspective.

To fill the current research gaps in the literature, the study asks: *What do entrepreneurs learn from COP websites and how can we measure their engagement?* Specifically, this paper seeks to discover the ways that entrepreneurs are using CoPs to express themselves, and it will use narrative theory and rhetorical analysis to gain insight into this electronic social network medium. In addition, this study will focus on themes of CoPs, including why entrepreneurs engage in CoPs, what role the moderators and resident entrepreneurs can play in managing online CoPs, on communication rituals of these knowledge sharing through interactivity, and on “how to develop an intervention” to maintain and stimulate entrepreneurs for engaging in on-line community. The present research thus describes and explores the sharing of experiential knowledge amongst entrepreneurs in an on-line CoP.

Researchers define essential elements of discourse as text (i.e. content) and pre-text (i.e. context) (see for example, Dijk Van (2008), Squire (2006)). We have analysed the content and context of the narrative discourse of entrepreneurs' conversation in an on-line CoP to assess the strength of their engagement with the process. However, it is difficult ascertained the quality of the responses unless there is a right or wrong answer to this (and this is beyond the scope of our work). Thus, we have used 'content' and 'context' of the on-line discussion discourse to ascertain what type of wordings entrepreneurs have used to respond to a message. Also, we have analysed the final message as a proxy to determine if the topic discussion has satisfied the query of the topic initiator.

2. Literature Review

In the following section, we will highlight the underlying and most current literature that is relevant for this study, namely, the topics of online community of practice, knowledge sharing, and storytelling, which is frequently used in online communities to share knowledge.

2.1 Online Community of Practice and Engagement

Today, CoPs are transforming once private interior worlds into open books for members' viewing (Panteli, 2016; Yen, 2016). Before the Internet, many people simply did not have a forum to share living narratives with a mass audience (McNeill, 2003). A CoP Weblog allows a person to bypass the red tape of publishing by means of traditional print media. Members of a CoP typically engage in a variety of activities, which include problem solving, advising, and knowledge sharing (Hew and Hara 2006). Engagement is the sense of the belonging to a community and affects all aspects of the community. Without engagement between community

members, a CoP will cease to exist and joint enterprise cannot be negotiated and developed, and shared repertoire will fail to be shared between community members (Hsiao and Chiou, 2017). Participation has been argued to be an intrinsic part of learning (Wenger 1998). In CoPs, the shared values focus on notion of apprenticeship and the engagement of the newcomers in practices that move them from peripheral to central participation. Wenger (1998) defined the notion of engagement. From his social learning perspective, engagement is said to involve mutually. Engagement in an online CoP may involve two different activities - initiating a discussion, or responding to a message. Initiation was inevitably an activity that occurred less frequently than responding (Anderson 2006). Thus, a central concept runs through all CoP dimensions, i.e. engagement. While Lave and Wenger has defined three dimensions of a CoP, further development to refine the measurement of Lave and Wenger's (1991) model needs to start with engagement. Diemert (2002) has contextualised Lave and Wenger's model research context in a comprehensive way by identifying the attributes that are crucial to the engagement and enterprise of a community of a CoP and would like to know which ones hinder this engagement and/or enterprise. Handley et al. (2006) also emphasis concept of learning in a CoP through participation, identity and practice.

However, Ardichvili et al. (2003) state that very little is known about the factors that contributes to the success or failure of online communities of practice. Most research that has been conducted has focused on evaluating the contribution patterns of the online communities or interpreting textual messages posted by individuals (Tedjamulia et al. 2005). The former include studies examining how many individuals do and do not contribute, and thread length (Tedjamulia et al. 2005), while the latter includes studies that examine how language use both reflects and

influences culture in an online community using an approach based in cultural hermeneutics and textual analysis (Burnett et al. 2003). Even in cases where studies have been published to present details on incentives for knowledge sharing, the focus tended to be on barriers to knowledge sharing, rather than enabling motivators (Homburg and Meijer 2001).

Consequently, the reasons why some individuals decide to frequently share knowledge in online communities of practice are currently not well understood (Wasko and Faraj 2000; Ridings et al. 2002). As Constant et al. (1996) state, *“why would someone respond to a request for help from a stranger [share knowledge in response to a stranger’s request] when the likelihood of direct personal benefit is low? Friendship and similarity are unlikely explanations. Personal friendships are uncommon across geographically distances spanned by computer networks”* (p.121). A basic assumption of Wenger’s (1998) social learning theory is that engagement in social practice is the fundamental process of how we learn and become who we are. Since the studies CoP experienced a general decline in participation, there are still questions how community, meaning and identity develop within CoP as a result of social practice.

2.2 Knowledge Sharing

Knowledge sharing refers to an exchange of knowledge between people as members of a community or an organisation in the context of community of practice (CoPs) (Hung et al., 2005; Smith, 2003). In the past, knowledge sharing has been discussed in the context of traditional learning (Loucks-Horsley et al. 2009). However, this traditional learning approach has been criticised as being removed from the place where knowledge is to be applied (Brown and Duguid 1996; Robey et al. 2000). In contrast, informal knowledge sharing sessions (mentoring) occur in

the context of the learner's immediate curiosity, needs or desires. This need-to-know approach to learning can transform learners into active knowledge builders possessing substantial autonomy regarding the specific knowledge or skills required (Granger et al. 2002). One of the mechanisms to support informal knowledge sharing is by communities of practice. As Huysman and Wulf (2005) explain, "their [i.e. communities] greatest strength is that they facilitate informal sharing of knowledge among people" (p.81).

Ardichvili et al. (2003) believe that one of the critical reasons that determine and sustain an online community of practice's success is its members' motivation to actively participate in knowledge sharing. This view is also supported by Wasko and Faraj (2005) who argued that knowledge sharing is the key to sustaining an online community. Stuckey and Smith (2004) similarly believe that the sustainability of a community is strongly determined by the community's ability to preserve the focus and quality of its discussions; and this can only happen if its members are willing to share what they know with others in the first place, rather than simply lurking in the background which is a common occurrence in online communities. Hence, the reasons which motivate people to share knowledge for the benefit of others represent the most commonly discussed topic among knowledge practitioner and academics, and highlight an important arena for knowledge research (Hazel 2001a). As Hazel (2001b) wrote, "if no contributions [sharing of knowledge] are made, the results are drastic: the community will not live" (p.142). In order to capture the engagement or involvement of its members in an on-line discussion we have introduced and operationalised a number of engagement indices such as forum and sub-forum activity index, to highlight how active are its members.

Among the main reasons why communities of practice are efficient tools for knowledge sharing is the fact that most of an individual's expertise is embedded in the intangible and tacit knowledge (Ardichvili et al. 2003). Tacit knowledge refers to as the implicit, semiconscious and unconscious knowledge held in people's head (Leonard and Sensiper 1998), or knowledge that is understood without being stated (Biggam, 2001). It has a personal quality, which makes it hard to formalise (Polanyi 1966). Tacit knowledge has been observed to be found embedded in the stories people tell (Horvath 1999). Consequently, one of the methods to help people share and internalise tacit knowledge is to allow them to talk about their experiences (Ardichvili et al. 2003; Earl 2001). Since holding face-to-face interactions on a regular basis is costly and time consuming, online communities of practice supported by Internet technologies are among the few viable alternatives to live conversations and knowledge sharing (Ardichvili et al. 2003; Dubé et al. 2003).

2.3 Storytelling

Storytelling has been used extensively in organisations, as a communication tool to share knowledge (Donnellon et al. 2014; Pohjola and Iskanius 2014; Snowden 1999). Stories can be used to serve a number of different purposes in an organisation to meet different context, for example, Denning (2000) identifies that there are eight purposes for storytelling, which all relates to expressing complicated ideas and concepts. Authors (Donnellon et al. 2014; Harmeling 2011; Pohjola and Iskanius 2014) identified storytelling as an important part of identity construction. Harmeling (2011) suggests a conceptualisation of the entrepreneurial identity construction process as re-storying, in which 'individuals undertake to develop, maintain and exhibit both personal and social identities' (p.746). In addition, storytelling can be used to

illustrate perceived and enacted 'windows of opportunities' involving dialogues, which the entrepreneur has both with himself and with others (Johansson 2004). Wenger et al. (2002) assert that tacit knowledge also necessitates informal learning processes such as storytelling, conversation and coaching, of the kind that CoPs provide. The aim is to produce clear communication for converting knowledge into a form in which easier for others to understand.

Rae (2004) used entrepreneurial stories as a 'discursive approach' to entrepreneurial learning. Rae developed theories from the life story accounts (discourses) provided by entrepreneurs from a wide range of industries. These entrepreneurs were at different stages of life and a rich career experience, from first venture to experienced serial entrepreneur. Discourse material was consumed to support the theory of personal learning and development; identifying and developing innovative opportunities; creating new ventures; and managing growing businesses. In another study, Rae and Carswell (2000) suggest redesigning more effective entrepreneurial learning programs based on greater emphasis on personal development. For present research, we have used discourse of 'storytelling' as one way of engaging with the members of virtual CoP. We also identify how story telling has been used as a dominant theme for entrepreneurial teaching and learning.

In a CoP context, socialising in a formal or informal way provides opportunities for stories to be told as people relate their experiences and it is through the medium of storytelling that people are encouraged to share knowledge (Terjesen and Elam 2009). Storytelling is a powerful transformational tool, which if used appropriately can facilitate sharing of knowledge in a virtual CoP (Gammelgaard 2010). Research undertaken by Sinclair (2005) shows that stories can carry

symbolic information and convey meaning as well as greatly enhance both commitment and recollection as it help readers feel a closer connection to the issues and people whom the stories are told about. This study explains how various domain experts have made use of storytelling in our case virtual CoP for generating participants' interests and keeping them engaged with dialogue.

3. Method

Where positivism refers to the classic research and interpretivism is about conversational qualitative research, the research philosophy adopted in this study is '*realism*', that is, the combination of 'interpretivism' and 'positivism' (Saunders et al., 2011; Van Dijk, 2015). The authors also posit that '*deductive (data to theory) approach*' was suitable, as the purpose of the study is to gain deeper understanding regarding motivational aspects of participants in joining and engaging with a CoP. By following the deductive approach, this study is able to identify the key themes and factors that relates to peoples engagement in CoPs. Once the key issues and themes were investigated, the study is to investigate the CoP in-depth, which intend to provide deeper understanding of the members' engagement in the online CoP. Once the key themes were identified, the study aimed to provide measures to assess the intensity of engagement (how many replies were attracted), and longevity of engagements (how long topic remain alive), the role of the domain experts and members in intensifying the online discussions, the discourse and size of the message to play a role in intensifying the engagement.

Saunders et al. (2011) suggest that research can be '*snapshot*' taken at a particular time, or can be longitudinal, more similar to a '*diary*' and be a representation of events for a given period of

time. The main strength of longitudinal study is the capacity that it has to study change and development. Adams and Schvaneveldt (1991) point out that in observing people or events over time the researcher is able to exercise a measure of control over variables being studied, provided they are not affected by the research process itself. In addition time perspectives to research design are independent of research strategy.

This research adopted a case study approach that allowed us to get deeper understanding of the research area. As the current authority in CoP field, Wenger (2004) suggested to use case study for CoP studies, he posits that ‘case studies can be used to demonstrate the value created by communities, take the pulse of a community, evaluate the need for renewal, disseminate the stories of communities, encourage their development, understand what it takes, and learn from both successes and failures’. The research made use of the archives of the discussion on the selected CoP website and observed the pattern of discussions and the context (discourse) and the textual meanings of the discussions.

Observation is often a useful method in case studies, especially in the managerial field when the observer or the researcher wants to understand and explore the differences of managerial behaviour towards specific phenomenon (Van Dijk, 2015). This method is normally used in cultural studies when the researcher aims to understand a number of aspects such as customer behaviour to specific products, how customers take their buying decisions and also how managers respond and act upon specific questions. In this respect, Observation has been only partially accepted as scientific methods in management although it seems to meet with increasing sympathy (Saunders et al., 2011).

For the purpose of this study, we were interested in exploring and observing the attitudes (or actions) of the members of the community, i.e., (a) how they respond to an on-line enquiry (questions), (b) is the discourse (content and the context) of the message the important element that makes members engage in the discussion; or (c) is it the language, the syntax, the sender (the domain expert less active) or members? Indirect observation was used to monitor the movement of topics within the selected communities against time. We acknowledge that researchers identify the topic of entrepreneurship, specifically, social entrepreneurship, as a discourse of social identity. For example, Nicholls (2010) suggests that the dominant discourses of social entrepreneurship represent legitimating material for resource-rich actors in a process of reflexive isomorphism. However, in this study, we use ‘discourse’ in its simplistic textual meaning without associating to any social, psychological or institutional theory or paradigms.

3.1 Engagement Indices

Diemert et al. (2002) has proposed some measures to assess the degree of engagement of CoP members as identified in the first and second column (from L.H.S) on in Table 1. We have adopted this overarching principle to further to develop a comprehensive engagement measurement tool. Specifically, we have expanded the criteria ‘Few-to-Many’ into ‘topic engagement index’ that is a measure the number of replies received to a query to the total number of views of the topic. A ‘view’ is if a participant has read the topic (query), but has not posted any reply to the topic. We have also observed that a measure of successful engagement is that a discussion topic leads to generating further sub-topics (threads) for discussion. We capture

this by introducing a ‘Forum Activity Index’ that refers to ‘total number of replies’ for the forum to the total number of sub-topics generated.

Also, one other measure of engagement success is how long the topic stayed live under discussion and have kept entrepreneurs interests to keep engaging in knowledge sharing. We capture the ‘duration of engagement’ of ‘topic life cycle’ in number of days. We also define the ‘stage of engagement’ into three types. The topic-initiator is to identify who posted the topic, i.e., whether it is posted by the community moderator, or a member of a domain expert in the field. This is to measure if the degree of engagement intensifies if the topic is posted by a domain expert (a well-known or a respected member of the community) or the ‘moderator’ of the forum. Similarly, initial-engagement is to measure if the involvement of the domain expert or the moderator has an impact to intensify the engagement. The terminal-engagement is to observe who posted the last reply. Also, we observe if the topic ended by a successful conclusion; or it remained open ended. As mentioned earlier, one measure of the successful engagement is whether a topic leads to further discussion under a different ‘thread’ in a sub forum topic. Finally, we measure the degree of centrality by counting how many times a member (entrepreneur) has engaged in the discussion, and what was his/her total word contribution in the discussion.

“INSERT TABLE 1 HERE”

3.2 Membership Status

In regards to members status, each community use their own levels and names, but the common levels and terms that are used in most virtual communities are - Junior Member (for newly joined members) or someone contributing with very little participation in the discussion; Senior Member (who has made substantial contribution in the discussion), responding to a number of participants, Moderator (who can oversee specific forums), or the Administrator.

Moderators oversee specific forums and their discussions. They generally have the ability to edit and delete posts, move threads, and perform other actions. Becoming a moderator for a specific forum is usually rewarded to users who are particularly helpful and knowledgeable in the subject of the forum they are moderating. Administrators are the people who have overall control of everything that happens on the board. They oversee how the board is styled, what forums to create and how to organise them, what information to require from members and who to appoint as moderators. However, there are literatures that provide some guidelines where CoP initiator and members can assume different roles for the technical operationalisation and discourse stimulations.

3.3 Size of the Message

In this research, we aimed to investigate if there is a pattern of message length that could explain why participants engage in the discussion. Also, we investigated if can we identify whether the size of the message matters in a high intensity engagement topics to that in low-intensity or unsuccessful topics.first paragrpgh page 14,

Therefore, we classified the length (size) of message (reply) based on word count, as was suggested by Woods and Keeler (2001) and Masters and Oberprieler (2004). From our extensive

reading of over 10,000 messages in different CoPs, we defined the length of the message using number of words as follows: 1-50 'very short' message; 51-100 words as 'short'; 101- 250 'Medium'; 251-500 'Long'; 501- 1000 'Very Long'; +1000 'extended contributions'.

3.4 Analysing Content of Discourse

The term 'discourse' is used in varied way by different researchers, different communities and different cultures. In central European tradition, differentiation is made in between 'text' and 'discourse'; where discourse go beyond linguistic meaning to tradition and rhetoric (Wodak and Koller 2008, pp.2). In the English-speaking world, 'discourse' is usually related to both written as well as oral text (Gee 2015, pp.145). Lemke (1995) defines 'text' as the concrete realisation of abstract form of knowledge (p.9). Researchers such as Teun (1998) coming from the socio-cognitive theory perspective define discourse as structured form of knowledge, whereas 'text' refers to concrete oral utterances or written document (p.211). For the purpose of this paper, we refer 'discourse' related to 'textual' meanings without associating any social or cultural perspectives. We conducted the content analysis of the online discussion of the topics to relate discourse to some thematic groups.

For the selected case study, number of selected topics was chosen for further analysis. The analysis involved selection of topics with a relatively high, medium and low number of 'replies' but also involved numerous participants. Topics with no replies are included as well. In this regards, the content and context of each reply in the online discussion was classified under various discourse. The content of the discourse is classified as follows, (i) technical dialogue (Tech) - participants contribute specialist knowledge from a particular field, (ii) experiential

dialogue (E) - participants use anecdotes and reflections based on their own experiences to contribute in the discussion, (iv) philosophical dialogue (Ph) - participants refer to or are guided by a particular school of thought while making a contribution, (v) academic dialogue (Ac) - participants draw upon wider academic knowledge to contribute in the discussion, (vi) story telling (ST): participants share their experience in form of storytelling, (vii) mixed (Mix), participants combine two or more of the above categories, and (viii) other - any statements that do not fit into any of the above categories.

3.5 Analysing Context of the Discourse

In addition, through our extensive reading of many social network sites, we have classified the context of discourse within online discussion as follows, (i) *explanation (Exp.)* where a CoP member provides clarification of a point by giving reasons, (ii) *support*, where a CoP member shows one's loyalty or approval of a belief or argument, (iii) *inquiry (Inq.)*, where a CoP member is inquiring about a specific issue or problem, (iv) *contradict* - posts that encourage learners or challenge them to elaborate, or defend their opinions. This can constitute a simple disagreement to a direct contradict, (v) *acknowledgement* - posts that simply suggest the respondent has either read the post or are agreed with the content. This is normally a short phrase or sentence, and (vi) *mixed* - participants combine two or more of the above categories.

4. Case Study

YoungEntrepreneur.com was launched in 1999 and has grown to become one of the largest online forum communities for entrepreneurs worldwide. The early version of bulletin board website has now transformed into a full-fledge entrepreneurial marketing and learning tool. The

community has now LinkedIn, Facebook and Twitter presence as well. The *YoungEntrepreneur* social network and blog properties showcase Entrepreneurship, Marketing, Online Business Strategies, Entrepreneur Interviews, features, solutions and support to assist small business owners with starting, managing and growing successful business ventures. The latest version of network provides the audience the current news, entrepreneurial conversations, small business webinars, access to seasoned experts and of course access to the most active community of like-minded entrepreneurs.

The *YoungEntrepreneur.com* members are comprised of entrepreneurs and aspiring entrepreneurs who are truly passionate about economic development and enjoy promoting the formation and success of innovative and growth-oriented companies. Several topics discussed and some of the many features include networking with a like-minded business professionals, including venture capitalists, private investors, industry experts, business service providers, inventors, up and coming and successful entrepreneurs. When the website was accessed the community has nearly forty thousand members who have discussed 26,602 topics through 182,633 messages.

“INSERT FIGURE 1 HERE”

As indicated earlier, this CoP offers young entrepreneurs and business start-ups a combination of on-line services, tools, resources and one-on-one Start Up consulting. *YoungEntrepreneur* CoP utilises the power of the Internet to effect optimal idea and information exchange, facilitating on-line introductions that lead to the formation of successful, long-lasting business relationships. An

overall *YoungEntrepreneur* CoP forum structure is given below along with sub forum activity indices (Table 2). As illustrated in the table, some sub forums such as ‘General Business’ has attracted higher number of topic generations (16,495), but the engagement activity index is highest for the sub forum ‘Lounge’ (7.4) compared with the ‘General Business (5.7).

“INSERT TABLE 2 HERE”

4.1 Analysis of the Selected Topics

We selected 12 topics from the *YoungEntrepreneur* virtual CoP for further analysis based on relevancy, topicality and frequency. However, we present results of eight topics here for description as illustrated in Table 3. The remaining four topics will be included while describing the overall summary of the results. As explained earlier, the topic involved a selection of ‘highly discussed topics’, ‘moderately discussed topics’, ‘low discussed topics’ and topics that attracted ‘no replies’. For the purpose of this paper, we defined highly discussed topics as those that engaged a substantial number of entrepreneurs to engage in the discussion (i.e. attracted over 40 replies). Usually, these have higher number of views (over 2000 views, and the life cycle of these was more than 200 days. However, we took the number of replies as the prime condition of engagement. The moderately discussed topics are those that attracted over 20 replies. These usually have attracted over 800 views and have total life cycle of 20 days or more. The low discussed topics are those attracted up to 19 reviews. However, these attracted over 300 views, but members decided not to engage in these discussions. The life cycle of these topics was less than 10 days. As evident from the name, we selected two topics with ‘no replies’. While there were many topics that had none or very low number of views, for the purpose of enriching this

analysis, we chose the topics that still attracted over 200 reviews; but no entrepreneurs felt any motivation to engage with the topic discussion.

“INSERT TABLE 3 HERE”

4.2 Highly Discussed Topics

As given in Table 3, we analyse two topics that attracted high level of entrepreneurs’ engagement.

Topic 1: Bill Gates

The topic initiator was a *member* (Nick) and the length of initial message was classified as *long* (L) (250 to 500 words). The actual message worded as, *“though he never set out to be a millionaire, Gates not only became the world’s first centibillionaire in 1999, but also one of the world’s most respected entrepreneurs for having revolutionised the world of computers and setting new industry standards. “I really had a lot of dreams when I was a kid,” recalls Gates. How did he do manage to turn those dreams into reality?”*

The context of discourse is explanatory (EXP) and the content is classified as storytelling (ST). The topic engaged 41 participants. The context of the topic is very generic and broad, and perhaps, therefore, has attracted attention of many entrepreneurs to share their views about the richest person of the world. The context of the topic itself is *explanation* (Exp) relating to the story of a successful entrepreneur “Bill Gates”. A summary of the analysis of this topic is given in Table 4. Even the engagement level is classified high; however, around 53% of the replies did

not add any value to the discussion. Approximately 19% responses were classified as *acknowledgement* (Ack) and another 34% under *support* (supp). The table illustrates that most of the entrepreneurs participated only once in the discussion, and only a limited number twice. In terms of the length of the messages, it transpires that most of the discourses composed of *very short* (51-100 words length) messages.

We also observe that the main *context* of the discourse is *explanation* (Exp) that tied with the first message. This was followed by support (Supp) that is where members supported the ideas by earlier messages. The only other *context* included was *acknowledgement* (Ack) that came, invariably, in very short (VS = less than 50 words) message form. There was no message that followed *Contradict* (Cont.) or *Inquiry* (Inq.) format. In terms of the content of discourse, majority of the responses followed the *story telling* (ST) format, which again associated with the first message. This indicated that perhaps entrepreneurs related to Bill Gate story and shared their own. The only other notable content could be classified as *experience* (E); that is, contributors shared their experience in form other than storytelling.

Appendix 1 illustrates the *life cycle* of the topic delineating number of responses attracted per month. The total span of the topic was 270 days; and the highest number of message posted in one single month was 9, and interestingly this was towards the end of the life cycle of the topic. Appendix 2 illustrates the degree of centrality of engagement; i.e. the total contribution each member has made (in numbers of words contributed) during the topic life cycle. There were 5 members who played a dominant role in this discussion, contributing approximately 5% of the total each. Interestingly, the topic initiator neither responded back to any of the discussion.

“INSERT TABLE 4 HERE”

Topic 2: Are You Innovative?

The topic initiator codified himself as entrepreneur86 and the length of initial message was classified as *long (L)*. The message worded as, *“I am just reporting on a trend I have noticed recently (on this site and in general). I've been doing a lot of reading on the YE forums over the past few weeks, and I see a recurring theme in the types of businesses MANY people have been choosing to launch. Tons of people are starting proxy sites monetised by AdSense links. I do not believe that these ideas are innovative or sustainable. Sure, you may make \$20 on a good day, but where's the growth? Where's the fun in such a business? And how is that in any way innovative? So many people are doing this, and I just see such fierce competition in the online advertising/domain squatting industry, that I don't understand why ANYONE would choose to start such a business now. Everyone wants the dream of 'passive' online income, but I wouldn't even call it an income when you're making \$6 or even \$60 a day. Where's the upside there anyway?”*

The topic initiator posits somewhat his dismay about ‘on-line advertisement businesses’ indicating that this idea is not innovative and don’t make business sense. The entrepreneur is reflecting upon his learning experience of using this social media site. He argues that, members who own businesses should create an innovative product, deliver a superior and/or unique service, rather just start a websites and hope that people will click on their adverts. In short, this example shows rather the altruistic nature of the topic initiator. The content and the way the topic

was posited challenged many other members to participate and defend their opinions. Perhaps, therefore the *context* of most discussions was *explanation* (66%). Further analysis of the topic is illustrated in Table 5.

Appendix 3 illustrates the life cycle of the topic ranging 550 days (over a span of one and half year). However the highest number of response (12) was attracted in the first month of the topic initiation. Appendix 4 illustrates the degree of centrality or relative contribution by different members. One entrepreneur contributed over 18% of the total discussion; and there were another 9 members who contributed substantially in the discussion (over 8% each). The most engaged member was Galaz (coded AH) who contributed thrice using S, M and VL sized messages. The context of his messages was supporting the views of the topic initiator and then building upon discussion by incorporating his experience and knowledge of the industry. Like Topic 1; the topic initiator did not took part in further discussion.

“INSERT TABLE 5 HERE”

4.3 Medium discussed topics

The following subsection discusses the topics that attracted moderate level of engagement.

Topic 3: Entrepreneurial learning through a social network

The topic initiator was again a *member* (Lance) and the length of initial message was classified as *long* (L) 250 to 500 words. The *context* of the actual message was *Exp* as the topic initiator tried to promote another CoP website Gogme.biz that promote for entrepreneurial learning. The

above topic can be taken a case of promoting product/ services under the disguise of knowledge sharing and supporting in a CoP. The intention of posting this message can be regarded disruptive as it could mean to divert the traffic of the CoP to another website. This could potentially put the whole concept of forming CoP in a risky situation, as trust and loyalty are considered the binding characteristics for being involved with a CoP (Wenger, 2000). If not managed carefully, the profusion of this type of topic can diminish the existence of a CoP. This topic generated 21 replies from 14 participants.

Further analysis of the topic is illustrated in Table 6. Appendix 5 illustrates the life cycle of the topic ranging 24 days. However the highest number of responses (6) was attracted in the first month of the topic initiation. The life cycle profile is very interesting as there are pockets of high activity at the start and towards the end of the life cycle. Actually after the first day, the topic did not attract any response until about 2 weeks, and response from the topic initiator that initiated the further discussion. Appendix 6 illustrates the degree of centrality or relative contribution by different members. Actually the topic initiator Lance (coded E) contributed over 23% of the total discussion; and there were another 3 members who contributed substantially in the discussion (over 8% each). Lance contributed 4 times in the discussion, most of the time explaining (Exp) his point of view using mixed discourse to prove his argument using medium and VL text message sized text messages.

“INSERT TABLE 6 HERE”

Topic 4: South Bay, CA Entrepreneur meetings

The initiator of the above topic introduced himself as an owner of a company as well as consultant, retailer, financial manager etc. This topic is identical to the previous topic in terms of the purpose and motivation of initiating the topic. Here, the initiator is trying building a network and wanting to promote his business by using the platform of this CoP. *“Hi, I have gone both routes, opening up my own companies 3x in the past, with projects currently running now. I've also worked various jobs under others, i.e. retail management, consultant, and financial advisor. I'm looking to start up another business. I'm calling out to those of you in the South Bay or anybody who can make it out to the South Bay area in California. I am hoping to get regular meetings where we can meet at Starbucks, or Denny's, any spot where we can collaborate, shoot off ideas and pick each other's brains. I will continue to check back on this thread. Timetable is ASAP and this could be a biweekly thing or a weekly thing. Let's make it happen”*

The message length is of medium sized. The context of the discourse is mixed and the content of the discourse has an element of story of the topic initiator. The topic initiator *rtsai0069* (coded C) indicated that he will return to the discussion thread, which he did frequently posted most number of messages (5) in engaging with other members point of views by sharing his experiences and life stories. The topic attracted 22 replies from 14 participants with the short and very short messages mostly. Table 7 provide an overall summary of the discourse. The total life cycle of the topic lasted 107 days where there was more intensity of engagement. At the earlier stage of the discussion, the topic received 5 responses in one day. However, it clear that the topic initiator displayed the entrepreneurial spirit by kept the discussion alive by getting back to people interested in his idea to set up his business network. Appendix 8 gives the life cycle profile of the topic indicating a lot of engagement at the start of the discussion period. Appendix

9 illustrates the degree of centrality of the topic indicating that the topic initiator contributed the highest (22%) in the discussion. However, another 4 participants contributed 8% or over in the discussion.

“INSERT TABLE 7 HERE”

4.4 Low Discussed Topics

Topic 5: Thoughts about global entrepreneur cooperation

The topic started with the following narration, *“I’ve been thinking about what business to start this summer (apart from my web design studio) and I’ve got lots of Ideas. Many of them aren’t really new, most of them are about following some global business trends in my local area (Russia and Ukraine). I thought there are a lot of people who are doing the same in different locations around the world. And I thought that if we worked together on the same ideas we could save a lot of resources, share ideas, etc. Imagine we have completed several different projects... This means we have 100s of websites across the world, hopefully a lot of traffic, revenue, experience, etc. Think of the possibilities this kind of team may have!”*.

The topic mentioned above is a very interesting one, where the initiator is floating a business idea of like crowd funding, where he is proposing to develop websites for online selling across the globe with a free invitation to other entrepreneurs to become a partner with an initial investment of 100-200 USD. We have found such topics very common in this case CoP’s where the members try to utilise the platform for certain business gains. The message length was of medium sized and the content of the discourse was fairly technical (Tech) where the entrepreneur

is trying to influence other members to join in his idea as he has the technical knowledge of the business. The topic generated low amount of interest with five participants posting seven replies altogether. However, three of the replies were from the topic initiator 2 positive (coded as B) himself, responding to technical queries or explanation of other participants (see Table 8). The life cycle of the topic was very short (3 days) and most of the responses were generated in a single day (Appendix 10). In terms of degree of centrality, the author of the topic was the focal point to keep discussion going with 44% of the total contribution (Appendix 11).

“INSERT TABLE 8 HERE”

Topic 6: UK T-Shirt transfer paper site for sale on eBay

This is one of the very low discussed topics, where the topic initiator received only 1 response. This topic has engendered very low response for its very nature of selling intention, what is evidenced in the brief, *“UK T-Shirt transfer paper site for sale on eBay. If you have any questions please feel free to use ask a seller question in the auction however most information is up there”*. The topic initiator provided a link on eBay for paper site he wanted to sell what is followed by his contact details for contacting him. The brief of the topic itself is so dull that it did not create much engagement among the members of the community.

4.5 Topics with no reply

Two topics with no reply were analysed. The first topic entitled *“How to Turn Your Financial Problem Around”*. The topic was sent by a member providing link for people that contain free Guide to make money online. *“Are you broke? Are you STILL looking for a J.O.B Just over*

Broke! Read this FREE Guide to make money online! Free Information:
<http://www.newhomebusinessstartup.com>”.

The second topic that did not receive any reply entitled ‘*Japanese products*’ and was sent by a member advertising some Japanese made products. The main reason for is that in all three topics, members can communicate with the topic initiator via another link, which was provided in the main topic. “*We are Japanese company selling authentic/ original Japanese folkcrafts such as tablewares /kitchenwares, decorations, etc. at wholesale and retail price. If you have an online shop, this is a good business opportunity for you*”. We speculate that the first topic appears as spam (“free guide to make money online”) while the second topic simply did not had enough interest, as it was very niche (“Japanese folkcrafts”).

5. Findings

One key area of our interest with this research is to find out how knowledge sharing and learning take place in virtual community of practice used by entrepreneurs. In order to do this, we provide a summary of the all twelve topics used in this research as illustrated in Table 9. As explained earlier, we have included detailed analysis of the eight topics in the above discussion. However, we include further topics (Topics 9 to 12) in the summary table for making better generalisation of the results.

5.1 Context of Discourses

The overall contents of the messages have dominantly used *explanatory* discourse. Interestingly, this seems to be the preferred way of engagement, irrespective of high discussed topics to low

discussed topics. Nearly half of the total discourse (48%) was categorised under explanatory. This was followed by *support* (19%) where participants lend their support to other members' views. Of course in many messages the members converse using *mixed* discourse (15%). This was followed by respectively, *contradict* (8%) and *Acknowledgement* (7%). One interesting observation is that unlike face to face conversation where contradiction and a different point of view may lead to more (and at times heated debates) (e.g., Tajfel and Turner, 1979; Nguyen et al., 2017), surprisingly this did not give rise to further engagements. This seems to be a non-representative behaviour of entrepreneurs; who are usually understood to be very passionate about their ideas and viewpoints in real life. On the other hand, it could imply that perhaps entrepreneurs are more prudent and looking for moving on ideas forward, rather getting engaged in on-line philosophical discussions. Also, we observe that *inquiry* was the least adopted discourse during the discussions, perhaps indicating that entrepreneurs engage when they see an opportunity to share their war stories and experience through support other entrepreneurs in the online forum, rather looking for a direct learning or mentorship through social network medium.

5.2 Content of Discourse

It is interesting to see that the dominant category of the content are recognised as members sharing their *technical* knowledge regarding an issue (18%). Also equally observed were members sharing their 'war' stories to share their experiences. Surely *story telling* stood out as the main course for all highly discussed topics. This was followed by participants sharing their *experiences* (17.8%), but not necessarily in a story telling form. It is also interesting to note that only 10% of the total responses were categorised under *academic* that would involve sharing academic knowledge or theories for the purpose of learning. Not surprisingly, very few

responses (2.4%) were categorised under *philosophical* category. This is perhaps demonstrating the peculiar characteristics of entrepreneurs that are action orientated and learning by doing aspects of the entrepreneurial mind-set (Cope and Watts, 2000).

5.3 Size of the Message

Overall, the majority of contribution (36%; normalised value of 85 messages out of total 207 messages) preferred *very short* length messages (less than 50 words) to make contribution. This was evident across all, from highly discussed topics to low discussed topics. This pattern continued in ascending order. For example, only 17% (normalised from 75 out 207 messages) contribution was using short messages (51 to 100 words); medium messages (101 to 250 words) by 0.02% members; large messages (from 251 to 500 words) by 0.03% participants and very large message (from 501 to 1000 words) by a mere (0.05%) participant (only one message in the total analysis). There was no contribution beyond this message length. This can again relate to entrepreneurial characteristics by avoiding engaging in fruitless or long academic debates, and making a contribution only if they find it meaningful. Coupled with earlier results of the content of the discourse, it demonstrates that perhaps an entrepreneur seems to have mastered the art of *very short story telling* genre.

5.4 Topic Engagement Indices

In order to encapsulate the effectiveness of each topic, we have calculated topic engagement index. The higher the index, the better the engagement results. Clearly, high activity topics have higher topic engagement index. We further introduce an improved measure 'Life cycle based topic engagement index'. This is calculated as total number of replies to the total number of

reviews topic has generated times the number of days the community has engaged with the topic. This is to capture the importance of the time period (number of days) the topic has kept participant interest and engaged in the discussion. This index has the advantage not only to concentrate upon topics that have received higher engagement index and for how long. As we observe from Table 9, that although topic 2 and topic 9 received comparatively lower topic engagement indices, the score higher on the life cycle adjusted topic engagement index, signifying that the topics have kept the participants engaged over a longer period of time.

“INSERT TABLE 9 HERE”

5.5 Degree of Centrality: Is the discourse of initial message lead to better engagement and successful outcome?

We have already recognised that story telling was the most preferred way by the entrepreneurs in engaging in the discussions. We seek to understand that if the discourse of the first message (to trigger an on-line debate) can impact on the level of engagement. Table 10 illustrates that the dominant discourse for starting question with regards to highly engaged and medium engaged topics (3 out of 6) was story telling. We also observe that the topics that did not attract any response (dead topics) were initiated through a technical discourse, where the originator of the topic wanted to share a piece of technical knowledge in the discussion. We also observe the other most non-respondent topic was initiated using academic discourse, that, to somewhat explain the entrepreneurial mind-set that does not engage in the academic debate.

We also note that the word length of the first topic for high and medium discussed topics is long (from 251 to 500 words). This may suggest that the topic initiator has included sufficient pointers to excite and incite other entrepreneurs' imaginations to take an interest in his/her debate. Another interesting observation was that when a topic initiator started the discussion through story telling discourse, it is likely that the message length will be medium to long. This, however, complement our above findings where we have found that the entrepreneurs have engaged in discussion through a short story telling genre.

However, we were unable to associate if the size of the first reply can trigger to a successful engagement. What we have observed is that the first reply has been *very short (S)* to *very short (VS)* message (see Table 10). However, we note that, irrespective of the first reply, in most occasions members responded to the initial message. This also indicates an important characteristic of entrepreneurs that without losing the essence of the debate, they have focussed to the original questions while responding to the message. Similarly, we record that the size of the final message did not leave us much clue if the final message length was decisive factor in concluding the discussion. From Table 10, we observe that the length of final message range from very short (vs), short (s) and medium (M).

“INSERT TABLE 10 HERE”

We also set out to find how community respond to engaging in the discussion if the topic started by the community administrator, or moderator, or a domain expert (mature member or a junior member (JM). We could not identify if there was any significance with who initiated the

discussion. From Table 10, we notice a clear presence of all category of membership as the topic initiator. Similarly, who responded first; seems to have little impact on the successful engagement of the topic. Where clearly the community administrator responded to all *medium* discussed topics, there was no pattern that could be deduced with regards to highly discussed or low discussed topics.

We were also interested in to know that who send the last reply that perhaps led to conclude or kill the discussion. We see a clear pattern for the highly discussed topic that the last responses were send by the junior members of the community (Table 10). In fact in 6 out of 9 topics the last response was posted by a *junior member*. On one hand, it may be that the junior members been more active in the discussion forum. On the other, it may signify that that the senior members did not wish to engage with the junior member response to further the discussions.

We also wanted to find out if the outcome of the discussion has any bearing on the life cycle of the topic. Also, when the members see a successful outcome of the discussion, they stop engaging with the topic. We observe that four out of twelve discussions had a successful conclusion (Table 10). On the other hand, there was no outcome for 4 discussions, i.e., the topic remained open. There were no further efforts from the topic initiator or the moderator to bring the discussion to a close. However, the community lost interest with the topic to further any discussion.

We were also interested to know if the highly discussed topics lead to further discussion threads (sub-forum activity). Interestingly, we have found that one successful discussion and two open

end conclusions lead to starting other discussion threads, leading to further engagement. This seems to be a key characteristic of highly and moderately discussed topics. For the first highly discussed topic it lead to 4 further threads of discussion and for the third high discussed topic the discussion lead to another two threads for discussion. In the analysis process of the study, it was important that the results evolve from the data without bias from the participant observer. Themes developed as a result of the process of responding to the research questions. The value of recursive analysis and writing was proved to be accurate in this process.

6. Discussion

This research has been undertaken to establish a valid set of items that would measure the engagement of entrepreneurs who are involved in sharing knowledge in an on-line (virtual) Community of Practice. Hazel (2001) had suggested that the reasons that motivate people to share knowledge for the benefit of others represent the most commonly discussed topic among knowledge practitioner and academics, and highlight an important arena for knowledge research. In line with Hazel's (2001) suggestion, this study was formulated to examine knowledge sharing within the context of online communities of practice.

This study extended the research literature in examining how entrepreneurs engage in an online discussion and the way in which they learn from it. The findings support the notion that individuals construct themselves in their everyday interactions with others. Results indicated that examining members of online CoP and their engagement in the community as well as investigating storytelling as a tool for knowledge sharing was a fruitful endeavour, one that shed light onto the role of CoP in knowledge sharing and how those roles expanded over time. Hence,

this study added immensely to the developing body of literature regarding the analysis of CoPs and its importance in knowledge transfer in this era of information revolution.

There are two main implications for motivating knowledge sharing and entrepreneurial that can be drawn from the findings of this study. It is necessary to bear in mind that these implications are pertinent to the context of bottom-up emerged online communities of practice rather than for top-down management- or organization-mandated ones. The first practical implication is that if collectivism and reciprocity are the most common combination of motivators reported in the *YoungEntrepreneur.com* online CoPs, then logically this combination should be fostered and facilitated. Such facilitation could perhaps be done by the CoP moderator, or by some of the frequent knowledge sharers. As mentioned previously, people typically act out of collectivist motives because they commit to or value the group's or the profession's welfare. Very often such commitment to the group's or profession's welfare is fostered by becoming a member of the group (Batson et al. 2002) or the profession. In writing about collective membership, McMillan and Chavis (1986) described membership as a feeling of belonging, of being a part. If this is indeed so, then one of the keys to building membership is to foster social ties among members of the group or profession. Also, when people become more committed to a group's or profession's welfare, they feel that they should share knowledge especially when they have received help from the group in the past (Cheung et al. 2004); thus promoting reciprocity.

One of the ways to foster social ties among members is through socialization (Nonaka 1994), such as attending face-to-face conferences, or organizing networking events, annual gatherings etc. When members do that, it is very likely that they feel a sense of belonging when they know

that the other person whom they meet in the conferences is also in the same CoP. We observe in some other case studies that some of the frequent knowledge sharers going to the same conferences and meeting each other there. Some web developers even had after hour's socialization, such as having a drink together when their conference session ended. So in this respect, one of the possible ways for the CoP moderators or frequent knowledge sharers to motivate knowledge sharing in their respective CoPs is to promote socialization by organizing face-to-face conferences and encouraging members to attend them.

This study further suggests how knowledge sharing and entrepreneurial learning may take place in online CoP. The analysis reveals how individual's tacit knowledge may be transferred into explicit knowledge and communicated. Participants adopt devices of appropriate interventions not only to crystallise their own tacit knowledge but also to express their views and thereby share their knowledge. This demonstrates not only a willingness to engage with CoP members on a particular topic for exchanging knowledge. From the analyses of these topics, it is evidenced that some of the participants hidden or 'tacit' knowledge is converted to explicit knowledge as the information is stored in a systematic way.

Furthermore, the set of comprehensive engagement measurement tools are introduced to effectively measure the engagement in a virtual CoP. Along with a classification to define and categorise discourse of messages in terms of content and context would allow practitioners to understand the effectiveness of a social networking site. Particular attention is provided to the length of text utilised for the messages that dictate aspects of entrepreneurial learning. These set of measurements and interventions will allow the moderators (administrators) of a virtual CoP to

increase the engagement and participation in the discussion forums. Also the study provides an insight how do entrepreneurs engage with an on-line social network site and how this can be utilised for effective learning tool.

Regarding why entrepreneurs engage in online discussion, the findings suggest that the majority of frequent knowledge sharers were motivated by multiple rather than single motivators for sharing their knowledge. Overall, the following eight motivators were found: collectivism, reciprocity, personal gain, respectful environment, altruism, technology, interest of seeker, selflessness and outspoken personality. Using the framework of Batson et al. (2002), personal gain can be seen as falling into the egoism motivator category since personal gain is self-based consideration. This study validates that collectivism, reciprocity (principlism), egoism, altruism, and technology (as being described in the literature) being motivators of knowledge sharing (analytical generalization). Other motivators for people getting engaged in online discussion found in this study were respectful environment, interest of seeker, and outspoken personality. The most common combination of motivators was collectivism and reciprocity. Collectivism and reciprocity can be considered to be interconnected since one tends to feed on the other.

Moreover, the study suggests that storytelling can be a very useful tool for knowledge sharing in online CoPs. It has a great implication in the development and designing of an online CoP. The moderators of CoPs can develop strategies to encourage members to develop stories. Members who are willing to share personal stories can be encouraged to focus on the story, and find a way they felt comfortable telling it. The storyteller should expand the notion of the dramatic question, creating an opportunity to encourage the audience's self-reflection. Online storytelling is an

inclusive practice, encompassing a global community of practitioners who share their experiences online in the form of stories they create. Hence the moderators can develop strategies to facilitate the members to share their knowledge and experiences by creating a story, what will also allow the members feel that he/she is engaged in fuller participation in the community and is an integral part of that community.

6.1 Limitations of the Study

We concur with Soo's (2006) observation that 'one limitation pertaining to all self-report studies is that the veracity of the observation data depends entirely on the members of the CoP posting truthful and comprehensive information'. We could not completely discount the possibility that participants might have lied or misrepresented their meanings. As Soo (2006) argued, people would naturally want to cast their motivators or barriers for sharing knowledge in the best possible light. For example, they may not want to indicate that they are motivated by personal gains when they share their knowledge because doing so may make them appear selfish and self-seeking individuals. Such phenomenon has been referred to as social desirability responding which can be referred to as the tendency to provide answers that cause the respondent to look good (Rosenfeld et al. 1996). Social desirability responding has long been viewed as a potential source of error variance in self-report measures (e.g. Hancock and Flowers 2001). Nevertheless, we believed that we had been able to ameliorate the problem of social desirability by giving the explanations of our interpretations of observations that we did. Moreover, the objective of this study is to examine why people (entrepreneurs) share knowledge; rather than judge or appraise their performance or behaviour as members in the CoPs. We have utilised the on-line narratives from the perspective of engagement in terms of message size, message tone (content and

context) as Tajik Van (2008) explains, “It is not the social situation that influences (or is influenced by) discourse, but the way the participants define such a situation”. Although we have indicated the identity of entrepreneurs in terms of the membership role they have played in the CoP to help the learning process. Future studies could extend this work to analyse the on-line narrative from a critical discourse perspective, where the messages posted by different CoP members can be studied from the social “power” they enjoy in the community, and if this has any relevance to aspects of learning (Tajik Van, 2015).

Also, selection of the content of discourse (technical, Experience, Academic, Philosophical) and the context of discourse (Inquiry, Explanation, Acknowledgement, support, contradict, mixed) were based much on the understanding of these researchers experience through extensive reading of the postings (messages). This could be improved in future research. Lastly, the content analyses required a lot of time, and can be probably speeded up using some kind of software package such as NUDE or WEKA.

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Table 1: Matrix of the enabling engagement (adopted from Diemert et al. (2002))

Continua	Points on the continuum	Forum activity index	
Intensity of engagement	Few-to-Many	Sub Forum activity index	Total number of replies / number of topics discussed
		Forum activity index	Total number of replies in the forum / total number of topics generated
		Topic engagement index	Number of replies of the topic/ number of views of the topic
Duration of Engagement	Short-term, Long term	Topic life cycle	Total discussion period for each topic (in days)
Stage of engagement	Topic initiator Initial-engagement Terminal-engagement Outcome	<ul style="list-style-type: none"> - Who posted the topic? - Who posted the first reply? - Who posted the last reply? - Conclusive; inconclusive (and did it lead to open a new discussion topic) 	
Degree of Centrality	Re-engaging (The extent to which members are involved with the 'Community')	<ul style="list-style-type: none"> - How many times each person contributed to the discussion? - How much an entrepreneur contributed as proportion to total discussion (in number of words). This also identify which member has been more active, and if this member was the moderator or domain expert to keep the discussion alive. 	

Table 2: YoungEntrepreneur CoP structure and activity forum Index

Sub forum	Description	Topics	Replies	Sub Forum Activity Index
<i>Lounge</i>	In this section, members can share any new ideas, Entrepreneurial experiences or stories with fellow like-minded entrepreneurs.	4380	32840	7.4
<i>General Business</i>	<ul style="list-style-type: none"> - Features great success stories on well-known entrepreneurs, - Advice and assistance with your marketing mix and Page Ranking activities, Investment Firms and people seeking investment. - Business Law including general advice, contracts, employment issues, and company structures. - Buying or selling an entire site. - Have Management ideas or issues. - Discuss your thoughts and concerns. - Discuss franchising strategies, successful franchises. 	16495	94918	5.7
<i>General Interest</i>	<p>General business discussion, advice and assistance for the online portion of your business</p> <ul style="list-style-type: none"> - Search engine optimization - Marketing your business online. - Technical advice and assistance (including non-ecommerce websites) related issues. 	6283	44420	7
<i>Business Start-up phase</i>	<ul style="list-style-type: none"> - From concept to a finished business plan, the planning stage is considered to make it or break it stage. - Ask questions or seek advice if you are thinking about starting up, a business. 	990	5829	5.8
<i>Ask A business Question</i>	This is the place where members post their questions and other members and panel of experts try and assist them.	692	4717	6.8
Overall Forum Activity Index		28840	182724	6.3

Key: Sub forum activity Index = Total replies of the forum/ total topics generated by the forum

Table 3: A list of selected topics from *YoungEntrepreneur* CoP

	Topic	Topic Intensity	No. of views	No. of replies	Topic generator	Topic Life Cycle	Topic Engagement Index
1	Bill Gates	Highly discussed	2933	41	Nick R	270 Days	0.013
2	Are You Innovative	Highly discussed	5950	61	entrepreneur6	550 Days	0.01
3	Entrepreneurial Learning through A Social Network	Moderately discussed	945	21	lance	24 Days	0.022
4	South Bay, CA Entrepreneur meetings	Moderately discussed	1271	22	rtsai0069	107 Days	0.017
5	Thoughts about global entrepreneur cooperation	Low discussed	735	7	2positive	3 Days	0.0095
6	UK T-Shirt transfer paper site for sale on ebay	Low discussed	378	1	quiteshirty.com	1 Day	0.0026
7	How to Turn Your Financial Problem Around	No replies	363	0	IntrnetBizPro	-	0
8	Japanese products	No replies	216	0	001979	-	0

Table 4: Discourse analysis of the topic ‘Bill Gates’

Number of participants	Community Members	Membership Code	No. of Messages	Message Length (in words)	Context of Discourse	Content of Discourse
-	Nick R	-	-	L	Exp (topic generator)	ST
1	NewIQ	A	1	VS	Ack	Other
2	Xanifur	B	1	S	Supp	Phil
3	Zoobie	C	1	S	Ack	Other
4	Kihtmaine	D	2	VS, VS	Ack, Supp	Phil, other
5	Sincere program	E	1	VS	Exp	E
6	Big Lou	F	1	VS	Ack	Other
7	Criniit	G	1	VS	Exp	Mixed (Expand ST)
8	Check m	H	1	M	Exp	E
9	Xalimx	I	1	VS	Supp	ST
10	Gredavidson	J	1	VS	Cont	ST
11	BerlinaBlack	K	1	VS	Cont	ST
12	Hokey97	L	2	L, M	Exp, Cont	ST, E
13	Theros	M	2	M, M	Supp, Cont	Mixed, E
14	Sachie	N	1	VS	Ack	Other
15	Shaggy	O	2	VS, S	Exp, Supp	ST, ST
16	Shopping now	P	2	S, VS	Exp, Exp	ST, ST
17	Icelarry	Q	1	S	Exp	Other
18	RLorenzen	R	1	S	Exp	ST
19	Terra Anderson	S	1	VS	Supp	ST
20	Consoleupdates	T	1	VS	Supp	ST
21	Allysa	U	1	VS	Supp	ST
22	FormPay	V	1	VS	Ack	Other
23	Jay Brass	W	1	S	Inq	Tech
24	Serial Entepuner	X	1	S	Supp	Mixed

25	JShua	Y	1	VS	Supp	ST
26	S2008aw	Z	1	S	Supp	ST
27	Strategy	AA	1	S	Exp	E
28	RobJr	AB	1	VS	Exp	E
29	Grants	AC	1	VS	Exp	Phil
30	M-hunter	AD	1	S	Supp	ST
31	Mik rose	AE	1	VS	Ack	Other
32	Buyitused	AG	1	VS	Inq	Other
33	Business mind	AH	1	VS	Ack	Other
34	Mat 15	AI	1	VS	Exp	ST
35	Si 2009	AJ	1	VS	Supp	ST
36	Da business	AK	1	VS	Supp	ST
<p>Key: Message Length (in words). 1-50 Very Short (VS); 51-100 Short (S); 101- 250 Medium (M); 251-500 Long(L); 501- 1000 Very Long (VL); +1000 extended contribution (EC) Context of discourse: Explanation (Exp.); Support (Supp); Contradict (Cont.); Inquiry (Inq.), Acknowledgement (Ack), Mixed Content of Discourse: Technical (Tech); Experience (E); Philosophy (Ph); Academic (Ac), Storytelling (ST); Mixed, Other</p>						

Table 5: Discourse analysis of the topic ‘Are you innovative?’

Number of participants	Community Members	Membershi p Code	No. of Messages	Message Length (in words)	Context of Discourse	Content of Discourse
-	entrepreneur86	-	-	L	Mixed (Inquiryand Exp)	ST
1	Sam Barona	A	2	L, M	Exp, Exp	Phil, Phil
2	The Stealthy	B	1	M	Exp	Mixed (Tech and ST)
3	One corp	C	1	S	Exp	Mixed (Tech and ST)
4	entrepreneur86	D	2	VS, S	Ack, Exp	Other, Ac
5	Labrat	E	1	S	Exp	E
6	MajaCity	F	2	M, VS	Supp, Exp	ST, E
7	Satch	G	1	S	Supp	Mixed
8	Envy	H	1	VS	Exp	ST
9	Vishenda	I	1	VS	Ack	Other
10	Light house	J	1	S	Exp	Phil
11	1xtravel	K	2	M, S	Exp, Mixed	Mixed, Other
12	Robben salter	L	1	VS	Ack	Other
13	SkyJoe	M	2	M, S	Exp, Exp	Ac, Tech
14	ZendURL	N	1	S	Exp	Ac
15	Idea2earn	O	1	S	Exp	Mixed
16	Allysa	P	1	S	Exp	Ac
17	Aletheides	Q	1	S	Supp	Ac
18	NIPS	R	1	VL	Exp	Ac
19	Greatguy	S	1	M	Exp	Ac
20	Collider	T	1	S	Exp	Ac
21	proLogic	U	1	VS	Exp	ST
22	Buy nick	V	1	S	Supp	E
23	WILL	W	2	S, S	Supp, Exp	Mixed, Ac
24	Nudge	X	1	M	Cont	Ac
25	Nookytz	Y	1	S	Exp	E

26	Marketer	Z	2	S, S	Inq, Exp	ST, ST
27	Darkman	AA	1	M	Supp	E
28	Phil v	AB	2	VS, VS	Exp, Exp	E, Other
29	Money mnky	AC	1	L	Mixed (Inq and Supp)	ST
30	Toad trip	AD	2	S, S	Exp	Ac, E
31	Rejoice	AE	1	S	Exp	E
32	Wullyoo	AG	1	VS	Exp	E
33	Galaz	AH	3	S, M, VL	Mixed, Supp, Exp	Ac, Mixed, Tech
34	Fromantv	AI	1	S	Ack	Other
35	liveload	AJ	1	S	Inq	ST
36	Jonthan	AK	1	S	Exp	E
37	Lightwerk	AL	1	S	Exp	ST
38	David90	AM	1	VS	Inq	Mixed
39	Integtity	AN	1	VL	Exp	Mixed
40	Schumi	AO	1	VS	Exp	Tech
41	Biz doggy	AP	1	VS	Ack	Other
42	Chi Town22	AQ	1	M	Exp	Tech
43	Jsabol	AR	1	S	Ack	Other
44	Tnglobe	AS	1	VS	Exp	E
45	Sentreprenuer	AT	1	S	Exp	E
46	New worthy	AU	2	S, S	Exp, Exp	E, Other
47	Snobello	AV	1	VS	Inq	Other
48	Zharlene	AW	1	M	Exp	E
49	Buzzmentor	AX	1	S	Exp	E
Key:						
Message Length (in words). 1-50 Very Short (VS); 51-100 Short (S); 101- 250 Medium (M); 251-500 Long(L); 501-1000 Very Long (VL); +1000 extended contribution (EC)						
Context of discourse: Explanation (Exp.); Support; Contradict (Cont.); Inquiry (Inq.), Acknowledgement (Ack), Mixed						
Content of Discourse: Technical (Tech); Experience (E); Philosophy (Ph); Academic (Ac), Storytelling (ST); Mixed, Other						

Table 6: Discourse analysis of the topic ‘Entrepreneurial learning through a social network’

Number of participant	Community Members	Membership Code	No. of Messages	Message Length (in words)	Context of Discourse	Content of Discourse
-	Lance	-	-	L	Exp	Mixed
1	Roger	A	2	M, VS	Cont, Exp	E, E
2	Andrew	B	1	S	Cont	ST
3	Kindafishy	C	1	S	Cont	ST
4	Monster	D	1	VS	Ack	Other
5	Lance	E	5	M, M, M, S, VL	Exp, Exp, Exp Exp Exp	E, Phil, Mixed, Mixed, Mixed
6	Allysa	F	1	VS	Cont	ST
7	Zharlene	G	1	VS	Cont	E
8	Titansgs	H	2	VL, VS	Exp, Exp	Ac, Phil
9	Gowriter	I	1	M	Exp	Ac
10	Jmaster	J	1	VS	Exp	Ac
11	Crysc0	K	1	S	Mixed	ST
12	Matt_15	L	1	VS	Cont	ST
13	Aletheides	M	1	VS	Supp	E
14	Biz dev	N	2	M, M	Exp, Exp	E, Ac
Key:						
Message Length (in words). 1-50 Very Short (VS); 51-100 Short (S); 101- 250 Medium (M); 251-500 Long(L); 501-1000 Very Long (VL); +1000 extended contribution (EC)						
Context of discourse: Explanation (Exp.); Support; Contradict (Cont.); Inquiry (Inq.), Acknowledgement (Ack), Mixed						
Content of Discourse: Technical (Tech); Experience (E); Philosophy (Ph); Academic (Ac), Storytelling (ST); Mixed, Other						

Table 7: Discourse analysis of the topic “South Bay, CA Entrepreneur meetings”

Number of participant	Community Members	Membership Code	No. of Messages	Message Length (in words)	Context of Discourse	Content of Discourse
-	rtsai0069	-	-	M	Mixed	ST
1	Mxer210	A	2	VS, S	Supp, Mixed	ST, Mixed
2	Jgari	B	2	S, L	Supp, Mixed (Expand Inq)	ST, ST
3	rtsai0069	C	5	S, S, S, M, S	Exp, Exp, Exp, Exp, Exp	ST, ST, ST, ST, Mixed
4	Valeo	D	2	VS, S	Supp, Exp	ST, ST
5	Bbllnis	E	1	VS	Supp	ST
6	Bookrenter	F	1	M	Exp	ST
7	Guy3d	G	1	VS	Supp	ST
8	Badxmaru	H	1	VS	Cont	ST
9	Charles	I	1	VS	Supp	ST
10	Bhgayrav	J	1	S	Supp	ST
11	Sarcastic	K	1	VS	Inq	Mixed
12	Zevanish	L	1	VS	Supp	ST
13	Yngentrepreneur	M	2	S, S	Exp, Exp	Mixed, Mixed
14	Bugleroller	N	1	VS	Exp	Other
<p>Message Length (in words). 1-50 Very Short (VS); 51-100 Short (S); 101- 250 Medium (M); 251-500 Long(L); 501- 1000 Very Long (VL); +1000 extended contribution (EC)</p> <p>Context of discourse: Explanation (Exp.); Support; Contradict (Cont.); Inquiry (Inq.), Acknowledgement (Ack), Mixed</p> <p>Content of Discourse: Technical (Tech); Experience (E); Philosophy (Ph); Academic (Ac), Storytelling (ST); Mixed, Other</p>						

Table 8: Discourse analysis of the topic ‘Thoughts about global entrepreneur cooperation’

Number of participant	Community Members	Membership Code	No. of Messages	Message Length (in words)	Context of Discourse	Content of Discourse
-	2positive	-	-	M	Mixed	Tech
1	New billionaire	A	1	S	Exp	Tech
2	2positive	B	3	M, S, VS	Exp, Supp, Ack	E, E, Other
3	Ultra KBS	C	1	M	Cont	E
4	Akula	D	1	S	Ack	Other
5	Young bizty	E	1	VS	Exp	ST
<p>Message Length (in words). 1-50 Very Short (VS); 51-100 Short (S); 101- 250 Medium (M); 251-500 Long(L); 501- 1000 Very Long (VL); +1000 extended contribution (EC)</p> <p>Context of discourse: Explanation (Exp.); Support; Contradict (Cont.); Inquiry (Inq.), Acknowledgement (Ack), Mixed</p> <p>Content of Discourse: Technical (Tech); Experience (E); Philosophy (Ph); Academic (Ac), Storytelling (ST); Mixed, Other</p>						

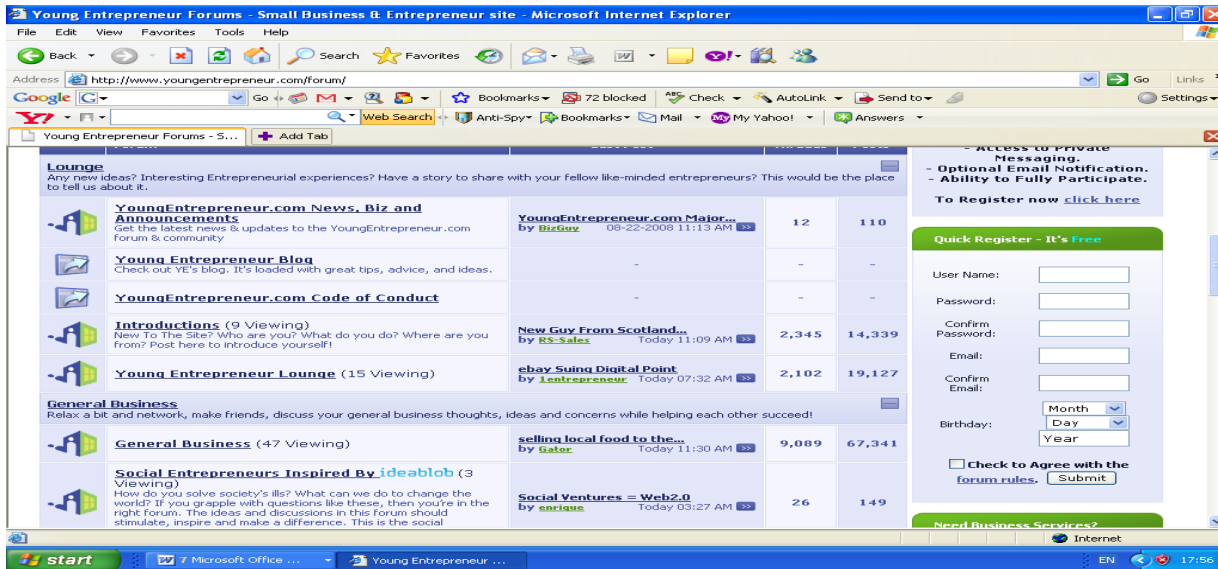
Table 9: A Summary of *Young Entrepreneur VCoP* analysis

Context of discourse		High discussed topics						Medium discussed topics						Low discussed topics						Topics with no reply			Average %
		Topic 1		Topic 2		Topic 9		Topic 3		Topic 4		Topic 10		Topic 5		Topic 6		Topic 11		Topic 7	Topic 8	Topic 12	
			%		%		%		%		%		%		%		%		%				
Context of discourse	Inquiry	2	5	4	7	0	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	1.7
	Explanation	13	32	40	66	26	72	12	57	10	46	6	46	3	42	0	0	6	75				48.4
	Contradict	4	10	1	2	0	0	6	28	1	5	2	15	1	15	0	0	0	0				8.2
	Support	14	34	7	11	5	14	1	5	8	44	3	24	2	28	0	0	1	13				19.2
	Acknowledgment	8	19	6	10	2	6	1	5	0	0	0	0	1	15	0	0	1	12				7.4
	Mixed	0	0	3	6	3	8	1	5	2	9	2	15	0	0	1	10	0	0				15.1
Content of discourse	Academic	0	0	12	20	0	0	4	20	0	0	2	15	0	0	0	0	5	63				13
	Philosophy	3	7	3	5	0	0	2	10	0	0	0	0	0	0	0	0	0	0				2.4
	Experience	6	15	15	25	5	14	6	30	0	0	0	0	3	42	0	0	0	0				13.77
	Technical	1	3	4	7	21	58	5	25	0	0	9	69	1	15	1	10	0	0				19.8
	Story telling	18	44	8	13	8	22	3	15	17	77	1	8	1	15	0	0	0	0				19.8
	Mixed	3	7	9	14	0	0	1	5	4	19	1	8	0	0	0	0	2	25				8.6
Other	10	24	10	16	2	6	0	0	1	4	0	0	2	28	0	0	1	12				10	
Size of message	Very short	26	63	14	23	21	58	8	38	9	41	5	39	2	29	0	0	1	12				41
	Short	11	27	31	51	12	33	4	19	10	46	3	22	3	42	1	10	5	64				36
	Medium	3	7	11	18	2	6	7	33	2	9	5	39	2	29	0	0	1	12				17
	Long	1	3	2	3	0	0	0	0	1	4	0	0	0	0	0	0	0	0				0.02
	Very long	0	0	2	3	1	3	2	10	0	0	0	0	0	0	0	0	1	12				0.03
	Extended contribution	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0				0.005
No. of replies		41		61		36		21		22		13		7		1		8		0	0	0	-
No. of viewers		2933		5950		3612		945		1271		467		735		378		163		363	123	216	-
Topic Engagement index		0.014		0.010		0.0099		0.02		0.017		0.027		.0095		0.00264		0.049		0	0	0	-
Total no. of days		270		550		743		24		107		31		3		1		3		1	1	1	-
Life cycle adjusted Topic Activity index		3.78		5.5		7.35		0.048		1.819		0.837		.0285		0.00264		0.147		0	0	0	-

Table 10: A Summary of the analysed topics from Young Entrepreneur CoP

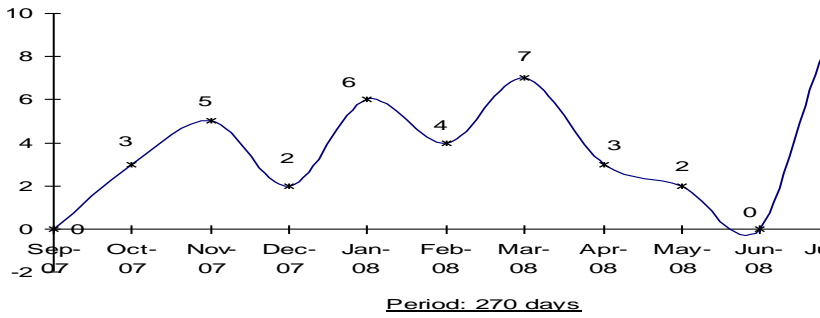
	Content of the initial message	Message length			Member status			Outcome	Does it lead to another thread (topic)? If yes, How many?		
		Inquiry length	First reply	Last reply	Topic initiator' status	Who send the first reply	Who send the last reply				
High Discussed topics	Topic 1	Storytelling	L	VS	VS	Admin	JM	JM	Successful	Yes	2
	Topic 2	Storytelling	L	L	S	JM	SM	JM	Open	Yes	4
	Topic 3	Technical	S	VS	M	M	JM	JM	Successful	No	-
Medium discussed topics	Topic 1	Mixed	L	M	M	JM	Mod	JM	Successful	No	-
	Topic 2	Storytelling	M	VS	M	JM	Mod	SM	Open	Yes	1
	Topic 3	Technical	S	S	M	M	Mod	SM	Unsuccessful	No	-
Low discussed topics	Topic 1	Academic	M	S	VS	JM	SM	JM	Open	No	-
	Topic 2	Technical			S	M	JM	JM	Unsuccessful	No	-
	Topic 3	Experience	M	S	S	M	SM	M	Successful	No	-
Topics with no reply	Topic 1	Academic	S	-	-	M	-	-	Unsuccessful	No	-
	Topic 2	Technical	M	-	-	M	-	-	Unsuccessful	No	-
	Topic 3	Technical	M	-	-	M	-	-	Unsuccessful	No	-
Respond rate:	High (H), Medium (M), Low (L), None (0)										
Message length:	Very short (VS), Short (S), Medium (M), Long (L), Very long (VL), Extended Contribution (EC)										
Member Status:	Member (M), Junior Member (JM), Senior Member (SM), Moderator (Mod.), Administrator (Admin)										
Conclusion:	Successful, Open Conclusion, Unsuccessful										

Figure 1: Young Entrepreneur CoP interface and profile

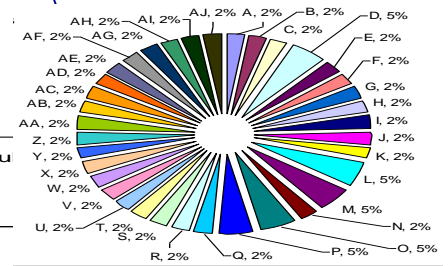


Source: youngentrepreneur.com/forum (2015)

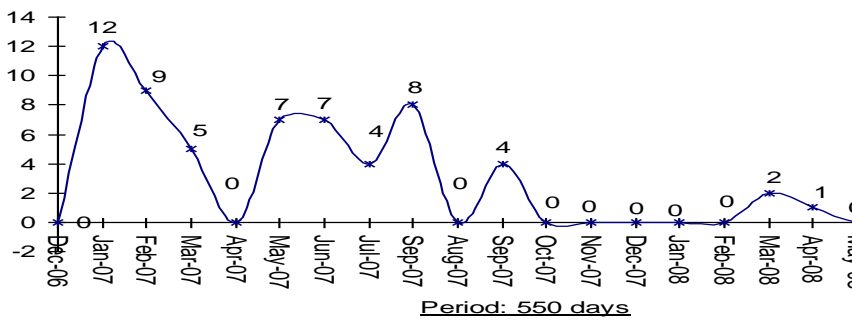
Appendix 1: Life cycle and discussion profile of the Topic: 'Bill Gates'



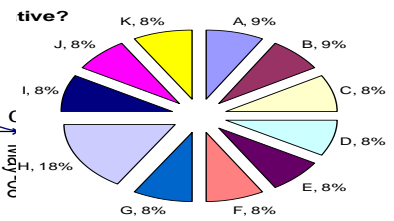
Appendix 2: Degree of Centrality: Authors' relative contribution in the topic 'Bill Gates'



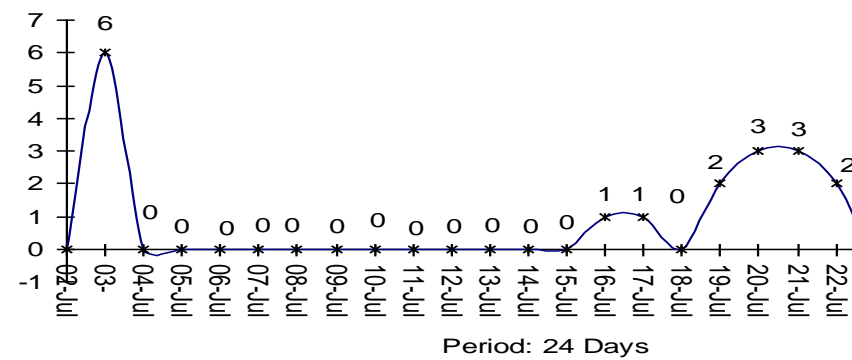
Appendix 3: Life cycle and discussion profile of the Topic: 'Are You Innovative'



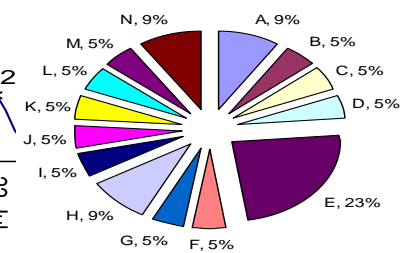
Appendix 4: Degree of Centrality: Authors' relative contribution in the discourse: 'Are you Innovative?'



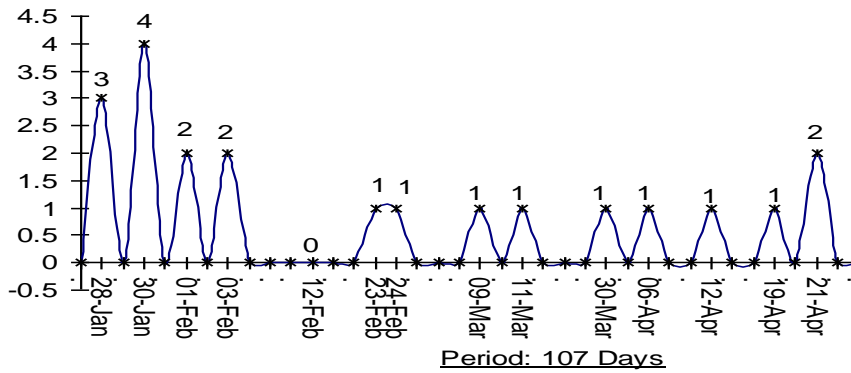
Appendix 5: Life cycle and discussion profile of the Topic: 'Entrepreneurial learning through a social network'



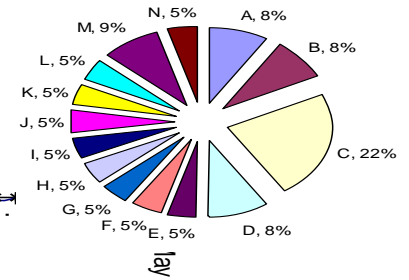
Appendix 6: Degree of Centrality: Authors' relative contribution in the discourse: 'Entrepreneurial learning through a social network'



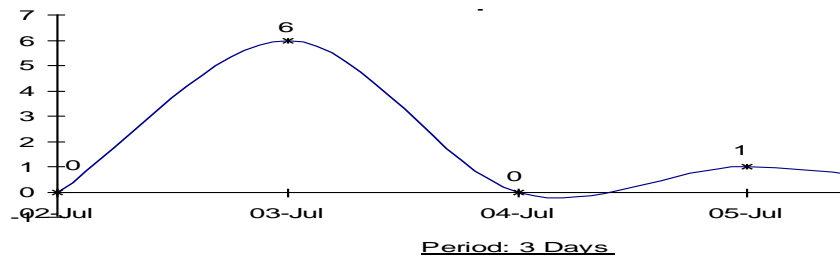
Appendix 8: Life cycle and discussion profile of the Topic: ‘South Bay, CA Entrepreneur meetings’



Appendix 9: Degree of Centrality: Authors’ relative contribution in the discourse: ‘South Bay, CA Entrepreneur meetings’



Appendix 10: Life cycle and discussion profile of the Topic: ‘Thoughts about global entrepreneur cooperation’



Appendix 11: Authors’ relative contribution in the discourse: ‘Thoughts about global entrepreneur cooperation’

