Collaborative Content Development

Ajazur Rahman

Abstract

The 90's saw a substantial increase in the power and reach of the Internet. The beginning of this century has witnessed a sudden downfall in its potency as a commercial force. The problem lies not only in business and financing models but also website content. Tools such as computers, digital video cameras, cameras in mobile phones etc make it easy to create digital content and, at the same time, Internet platforms support sharing and publishing people's own creations. Collaborative content, created with web2.0 technologies, is part of the social computing phenomenon. The key feature of collaborative content is that it is created, reviewed, refined, enhanced and shared by interactions and contributions of a number of people. This paper focuses on collaborative Web content development in two broad areas. The features are illustrated by a few relevant case studies.

Keywords: Groupware, Web 2.0, Online Encyclopedia, Wikipedia, Integrated Library Management System, ThinkQuest

1. Introduction: What is Collaboration?

Collaborative Content Development (CCD) refers to working jointly with others / in groups especially in an intellectual endeavor to put together content. It is content created by a group of persons as against content development by a single person or organization. Collaboration is a recursive process where two or more people work together toward an intersection of common goals for example, an intellectual endeavor that is creative in nature by sharing knowledge, learning and building consensus. In another words collaboration is an intricate concept with multiple attributes. It is defined in a variety of ways, many of them explicitly referring to interdisciplinary collaboration (Henneman, Lee, & Cohen, 1995). Attributes identified include sharing of planning, making decisions, solving problems, setting goals, assuming responsibility, working together cooperatively, communicating, and coordinating openly (Baggs & Schmitt, 1988). Related concepts, such as cooperation, joint practice, and collegiality, are often used as substitutes. They share some, but not all, of collaboration's attributes. Sometimes newspapers and magazines provide a platform for discussing various societal issues. This is a good example of print-based collaborative content; but web-based collaborative content has gained prominence and importance thanks to Web 2.0. technologies.

There are many different collaborative models and the activity goes under many terms, such as:

→ Partnership
→ Outsourcing
→ Strategic alliance
→ Skill sharing
→ Teamwork
→ Networks, and a more recent term
→ Business-to-business (B-2-B) cooperation.

Collaboration is no longer an alternative to competition. It is fast becoming a fundamental strategy through which organizations can achieve

competitive advantage. Collaborative work or project focuses on different points. Some important points are such as:-

(a) Collaboration allows institutions to share resources, personnel, and equipment.

(b) You can reunite dispersed collections, increase awareness of holdings and improve access to collections by working with others whose collections complement your own.

(c) A joint project involves two partners who hold parts of a dispersed collection or complementary collections.

(d) A digital consortium is the largest and most complex type of collaboration. It may involve institutions of different types and sizes, and is often defined by a geographic area, state, region or country.

(e) Collaborative involves challenges as well as benefits. Areas where problems arise include metadata,

interoperability, scanning and presentation of images, security, rights management, and digital archiving. The difference in organizational cultures of the project partners is behind many of these conflicts.

(f) Working together effectively requires commitment to a common goal, accountability, mutual respect, flexibility and communication.

2. What is Collaborative Content Development?

The actual application of the word "collaboration" implemented in the field of web-based information, after existence of Web 2.0. Web 2.0 is phrase coined by O'Reilly Media in 2004, refers to a supposed second generation of internet-based services, such as social networking sites, wikis, communication tools, and folksonomies that emphasize online collaboration and sharing among users. Web 2.0 toolbox is full of internet-based applications that can bring ideas and information together in a user-friendly, web-based workspace.

3. Tools for Collaboration

Groupware / teamwork can be divided into three categories depending on the level of collaboration. First communication tools, second conferencing tools and third one is collaborative management (Co-ordination) tools.

Communication can be thought of as unstructured interchange of information. A phone call or an IM Chat discussion is an example of this. Conferencing (or collaboration level, as it is called in the academic papers that discuss these levels) refers to interactive work toward a shared goal. Brainstorming and voting are examples of this. Co-ordination refers to complex interdependent work toward a shared goal. A good metaphor for understanding this is to think about a sports team; everyone has to contribute the right play at the right time as well as adjust their play to the unfolding situation - but everyone is doing something different - in order for the team to win. That is complex interdependent work toward a shared goal: co-ordination.

Different initiatives emphasize different types of collaboration and different types of content, be it informative, creative or communicative. Blogging is a tool for individuals and organizations to open a communication channel relating to the topics they are interested in. Blogs allow viewers to comment on and discuss issues, which sometimes leads to community formation around blogs. Wikipedia is an example of a highly popular collaboratively-created information resource, where anyone can

create, modify, enhance or discuss its content. Collaboration and content quality management are steered by guidelines developed by the community itself. Scholarpedia is an example that aims to improve the credibility of articles with expert control, but allows public contributions by registered contributors. Wiktionary is a collaboratively edited Internet dictionary that anyone can contribute to develop a free-content multilingual dictionary. It is sister project of wikimedia. There are many other web-based on-going projects in different domains subject fields. In this paper we will briefly examine some products of collaborations in two broad areas, viz., online encyclopedias and Learning Management System. The two areas have been chosen in view of some ongoing innovative projects in the two areas.

4. Areas of Collaboration on the Web

There are different areas of collaboration on the web. These include online encyclopedias, Project Management, Document Management, Learning Management System, Community Information System and Content Management among several others. We will discuss about two major projects, online encyclopedia and learning management system.

5. Online Encyclopedia

There are many projects that come under online encyclopedia. These projects are collectively created by the people. Wikipedia, Scholarpedia and wiktionary are the most famous among others.

5.1. Wikipedia

Wikipedia is an example of a collaborative content initiative that aims to create freely available information resources. Anyone can create, modify, enhance, delete and discuss existing or new content, but only a small number of administrators have higher level management rights for the content and the power to solve disputes and lock pages.

Wikipedia was launched on 15 January 2001 by Jimmy Wales and Larry Sanger, as a single English-language edition, as a complementary project to Nupodia, which contained peer reviewed expert written articles. Wikipedia was an attempt to try something new, giving the power of editing to everyone and it soon surpassed the popularity of Nupodia, which was later incorporated into Wikipedia.

5.1.1. Content

A snapshot of Wikipedia content in June 2008 shows that Wikipedia had 253 different language versions, of which 236 were active. The English Wikipedia is the largest, with over 2,397,000 articles. In addition to article pages, all wikipedias contain a significant number of content-related discussion pages for the community (in June, the English Wikipedia contained 13.4 million pages in total). The five largest language editions in order of article count are the English, German, French, Polish and the Japanese Wikipedias. The speed of new article creation grew until 2007, after which it has remained at a more or less stable rate. (Based on Figure 1 and most recent statistics).

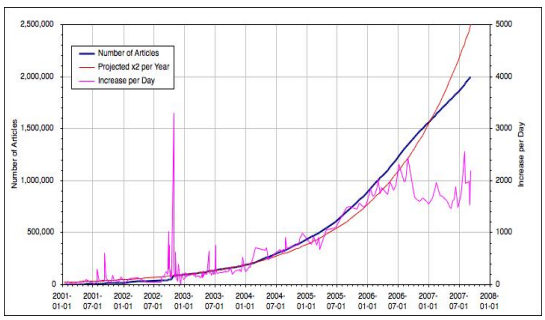

Figure 1: Wikipedia article development (source: Wikipedia)

Wikipedia has several community guidelines requiring, for example, that the content is written from a "neutral point of view" they need to be on "notable" topics, contain "no original research" and only "verifiable" material.

5.1.2. Usage

Users. According to Wikipedia, ComScore data shows that 244 million unique visitors viewed Wikipedia sites (25.7% of the total internet audience) in July 2008. However, this counts for several different Wikimedia sites and initiatives. Alexa.com suggests in August 2008 that Wikipedia reached 9.2% of the global Internet audience (average reach of three months), and that Wikipedia audiences were mainly from the US (26%), and then Japan (11%), Germany (8%), India (5%) and the UK (4%). Of

the visitors, 52% go to the English version Wikipedia, 19% to the Spanish version and 5% to the French version.

Country	Traffic rank
Global	8
US	9
Japan	8
UK	11
France	13
Germany	6
Italy	9
Spain	10

Table 1: Alexa.com traffic rankings for ww.wikipedia.org (30th August 2008)

English Wikipedia had, in August 2008, over 7.7 million registered and altogether, wikipedias had 9.5 million registered users, and an unknown number of unregistered users. Based on its own statistics, Wikipedia claims to have 75,000 active contributors. In the English wikipedia, unknown users create about a third of all edits, and both new user registrations and article edits grew until January 2007 and have stabilized since.

Wikipedia is free multilingual encyclopedia project software and incorporates programming features such as:

- Wikipedia contributors: Anyone with web access can edit Wikipedia, and this openness encourages inclusion of a tremendous amount of content. About 75,000 editors from expert scholars to casual readers.
- Basic Navigation: Wikipedia articles are all linked, or cross-referenced. Wherever some text is highlighted, it means there is a link to some relevant article or Wikipedia page with further in-depth information.
- As a research tools: As a wiki, articles are never complete. They are continually edited and improved over time, and in general, this results in an upward trend of quality and a growing consensus over a fair and balanced representation of information.
- Anyone can edit: Allowing anyone to edit. Wikipedia means that it is more easily vandalized or is susceptible to unchecked information.

5.2. Scholarpedia

Scholarpedia is the free peer reviewed encyclopedia written by scholars from all around the world. It is an English-

language online wiki-based encyclopedia. Only registered users can edit an article, and those edits are subject to approval by the curator of the article, who is typically the author.

The project was created in February 2006 by Eugene M. Izhikevich, a researcher at the Neurosciences Institute, San Diego, California. Scholarpedia is at this time not a general encyclopedia; it currently focuses on the fields of computational neuroscience, dynamical systems, computational intelligence, and astrophysics.

However, Scholarpedia differs from Wikipedia in some very important ways:

- Each article is written by an expert (elected by the public or invited by Scholarpedia editors).
- Each article is anonymously peer reviewed to ensure accurate and reliable information.
- Each article has a curator — typically its author — who is responsible for its content.
- Any modification of the article needs to be approved by the curator before it appears in the final, approved version.

5.3. Wiktionary

Wiktionary is a collaboratively edited Internet dictionary that anyone can contribute to produce a free-content multilingual dictionary. It has designed as the lexical companion to Wikipedia, the encyclopedia project, Wiktionary has grown beyond a standard dictionary and now includes a thesaurus, a rhyme guide, phrase books, language statistics and extensive appendices. It aims to include not only the definition of a word, but also enough information to really understand it. Thus etymologies, pronunciations, sample quotations, synonyms, antonyms and translations are included.

Wiktionary is a wiki, which means that anyone can edit it, and all the content is licensed under the GNU Free Documentation License. Wiktionary do things quite differently from other wikis. In particular it has strict layout conventions and inclusion criteria. The goal of Wiktionary is to create information that is available to everyone. Wiktionary entries may include text, images, sounds, or other material from external sources with different copyright terms, and which is used with permission or under "fair use" doctrine. In this case, the material will be identified as from an external source (on the image description page, history page, or talk page as appropriate) and copyright holders of that material retain their rights.

6. Learning Management System

There are several learning management software for creating a learning management system. LMSs range from simple systems for managing training records to software for distributing courses over the Internet and offering features for online collaboration. Most LMSs are web-based to facilitate "anytime, any place, any pace" access to learning content and administration. Some LMSs provide for development of the content collaboratively. Different students discuss a topic and all that may be stored together as a piece of complete information. So LMSs play a role of collaborative content development.

There are many projects, which are running under LMS. Different projects have different ways of providing and collecting the information. ThikQuest is a unique example of such type of projects.

6.1. Think Quest

ThinkQuest is an international website building competition sponsored by the Oracle Education Foundation. Founded by Allan H. Weis in 1996 using his company Advanced Network and Services, Inc. Think Quest International is now organized by Oracle Corporation through its Oracle Education Foundation initiative.

ThinkQuest is a platform for collaborative learning where teachers and students create learning

projects, participate in a website competition, and browse a library of student projects. Student teams consisting of 3 to 6 students and a Coach who must be a teacher or librarian at an accredited educational institution and an Assistant Coach (optional) are challenged to build websites on various educational topics. Projects come to life when students create pages with text, pictures, multimedia, votes, brainstorms, debates, and messages. Coaches choose a topic assemble a team and build a website. These websites are published in the ThinkQuest Library, a public presentation of competing websites. Participants develop 21st Century skills such as critical thinking, teamwork, communications, creativity, technology, self direction, and cross cultural understanding

The competition is split into three age groups (19 & under, 15 & under and 12 & under) and twelve website categories. The competition formerly had two cycles per year, the April-December competition and the October-May competition. However, after the October 2004 cycle, ThinkQuest switched to a single-cycle format. At the end of each competition, winning teams are chosen from each of the three age groups and each member of the winning team is presented with a prize. Prizes vary between 1st Place, 2nd Place, 3rd Place, and Honorable Mention. Other awards include the "Global Perspectives" award, awarded to the website that best shows a sense of global community. Prizes may include a laptop computer and a trip to San Francisco to participate in ThinkQuest Live.

6.1.1. ThinQuest has categorized into 12 different fields or subjects to develop a website. These fields are as follows.

1. Arts & Entertainment
2. Books & Literature
3. Business & Industry
4. Computers & the Internet
5. Geography & Travel
6. Health & Safety
7. History & Government
8. Math
9. Philosophy, Religion & Mythology
10. Science & Technology
11. Social Science & Culture Sports & Recreation
12. Sports & Recreation

6.1.2. Procedure of participation in ThinkQuest

- **Enroll:** A teacher, librarian or school administrator completes the online application form. After submission the application ThinkQuest team reviews the application and verifies that the school is accredited. Finally the school contact is now ready to create projects or join the competition.
- **Assemble a Team:** All teams need a Coach (teacher or librarian) and 3-6 students. There are 3 age groups 19 & under, 15 & under, and 12 & under. Extra points will be awarded to teams that have members from different countries, cultures, and backgrounds.
- **Build a Website:** Choose a category and create a website that the participants will upload to its server.
- **Win Prizes:** Prizes for ThinkQuest competition winners may include a trip to ThinkQuest Live in San Francisco, laptop computers, digital cameras, and school monetary grants. Every team that enters will have a chance to have their site published in its Library.

6.1.3. Evaluation criteria of ThinkQuest websites

♦ **Content:** Website expertly explores the chosen topic, evidenced by depth of information, supporting details and a variety of sources. All content should be accurate and current.

♦ **Writing & Organization:** Content should be written in English using correct grammar, punctuation and spelling. Writing is concise and easy to understand.

♦ **Originality:** Website should be creative and original in its approach to presenting the topic. The majority of written content should not be paraphrased or copied from outside sources.

♦ **Educational Relevance:** All content (written, media elements) should be educational and informative and should be written and organized for a student audience.

♦ **Global Impact:** Website should intentionally raise awareness, presents action steps, and effectively engages others in addressing the issue and making a difference.

♦ **Citations:** All sources used to research and create the website are clearly identified and credited, ideally as footnotes on the relevant page as well as on a summary citations page.

♦ **Collaboration:** Site Profile and website should include a candid narrative on how the team worked together to create the website, divide tasks, share responsibilities, and overcome challenges.

♦ **Team Diversity:** Student team members come from multiple socioeconomic backgrounds, cultural groups, or have overcome other challenges to participate. Site Profile and website should explain how the team is diverse and the ways in which this diversity is reflected in the development and content of the website.

♦ **Website Structure, Appearance, and Function:** The site's design and layout make it easy to use. Every page should be visually well organized. Colors, fonts, and overall layout should be creative, artistic and consistent across the website.

6.2. Sakai

Sakai is a community of academic institutions, commercial organizations and individuals who work together to develop a common Collaboration and Learning Environment (CLE). The Sakai CLE is a free, community source, educational software platform distributed under the Educational Community License (a type of open source license). The Sakai CLE is used for teaching, research and collaboration.

It is a free and open source product that is built and maintained by the Sakai community. Sakai's development model is called "Community Source" because many of the developers creating Sakai are drawn from the "community" of higher educational institutions and commercial affiliates which have signed on as formal, fee-paying partners in the endeavor. Its direction and development are guided by member collaboration, while central resources are coordinated by a foundation and an elected board.

Sakai is a powerful yet flexible solution that supports not only teaching and learning but also research and administrative collaboration. It is designed to encourage innovation and customization in order to meet local campus needs. It is an active community of educational institutions working together to solve common problems and share best practices. The professional development and cross-institutional knowledge sharing are benefits hard to find elsewhere.

7. Advantages and Limitations

Collaborative content is impacting the social fabric of society; it has resulted in significant changes in information provision and has provided new participation possibilities affecting the different roles people play in society. Citizens are becoming better informed on what is happening in society, at work and in everyday life. They have better access to resources they need for their individual tasks and goals, whether related to their jobs or personal interests. Collaborative content also brings many challenges and problems, which arise from the openness of participation. These challenges need to be addressed before the benefits arising from the potential of collaborative content approaches can be realized.

7.1. Quality of Content: The quality of collaboratively-produced content information can be questioned, as

in principle, anybody can write anything. Information may be inaccurate as authors could make errors. Also, an author's personal, political or commercial motivations may influence the content. For example, a study on Amazon book reviews showed that actually many of the reviews were not "real" product reviews but done by friends and the authors themselves. Sometimes they were just copied from other reviews in order to increase the reviewer ratings

7.2. Legal and personal misuse: Since anybody can use, create and publish content online, both conscious and accidental infringements of copyrights and moral rights, and personal misunderstandings can occur.

7.3. Copyright infringing content contributions: Although most platforms require users to agree to a declaration saying that there are no copyright violations in their contributions, it is difficult to monitor extensively. Although the removal of illegal content can be requested and automatic detection systems for uploaded content have been developed, some illegal material remains undetected and is a challenge for copyright-owning industries.

7.4. Risk of digital divides: There are large differences between and within countries, especially rural and poor areas where Internet penetration can be low. Furthermore, there are different social groups at risk of exclusion, such as older people, the less educated or the unemployed. Studies suggest that ICT skills are a major factor in explaining the different participation rates in collaborative content creation between men and women. In 2007 in the EU, 71% of 55-74 year olds indicated that they have no Internet skills (as opposed to only 11% of 16-24 years olds). Furthermore, thelevel of education has a strong effect.

7.5. Privacy and Security: Examples show that collaborative content may reveal personal information in the content itself and in social metadata such as tags and that this can be a concern for content creators. Thus collaborative content may provide an easy way to collect personal information about the users without them knowing it.

7.6. Challenges for organizations: Employing participative approaches and collaborative content creates new challenges, requiring new learning for organizations and

individuals and finding the best models for benefiting from the new opportunities.

8. Conclusion

Collaborative content applications and platforms give new ways of forming connections and communities for sharing and supporting knowledge and experiences on various issues relevant to society. Collaborative content, created with web2.0 technologies, is part of the social computing phenomenon. The key feature of collaborative content is that it is created, reviewed, refined, enhanced and shared by interactions and contributions of a number of people.

References

1. http://www.google.com/search?hl=en&defl=en&q=define:collaboration&sa=X&oi=glossary_definition&ct=title (Accessed on 28.12.2008)
2. http://en.wikipedia.org/wiki/Collaboration (Accessed on 28.12.2008)
3. http://www.destinationcrm.com/Articles/Older-Articles/Experts-on- Call/What-is-collaboration-41669.aspx (Accessed on 30.12.2008)
4. http://oedb.org/blogs/wideopen/category/collaborative-content-development/ (Accessed on 03.01.2009)
5. http://wiki.alfresco.com/wiki/Collaborative_Content_Production (Accessed on 04.01.2009)
6. http://www.ibm.com/developerworks/webservices/library/ws-web2method/ (07.01.2009)
7. http://en.wikipedia.org/wiki/Main_Page (Accessed on 08.01.2009)
8. http://www.scholarpedia.org/ (Accessed on 09.01.2009)
9. http://en.wiktionary.org/wiki/Wiktionary:Entry_l ayout_explained (Accessed on 09.01.2009)
10. http://www.thinkquest.org/en/ (Accessed on 12.01.2009)
11. http://en.wikipedia.org/wiki/ThinkQuest (Accessed on 16.01.2009)
12. http://www.ohloh.net/p/3551 (Accessed on 16.01.2009)
13. http://sakaiproject.org/portal (Accessed on 14.01.2009)
14. http://en.wikipedia.org/wiki/Sakai_Project (Accessed on 18.01.2009)
15. Ala-Mutka, K., Malanowski, JRC Scientific and Technical Reports (2008), Social Computing: Study on the Use and Impacts of Collaborative Content. In pdf format. (Available at http://ftp.jrc.es/EURdoc/JRC47511.pdf) (Accessed on 02.01.2009)

About Author

Mr. Md. Ajazur Rahman, DRTC (Documentation Research and Training Center), ISI (Indian Statistical Institute)