Using Web 2.0 Tools for Qualitative Analysis: An Exploration

Silvana di Gregorio
SdG Associates
Silvana@sdgassociates.com

Abstract

CAQDAS (Computer-Aided Qualitative Data Analysis Software) has been around since the 1980s but uptake has been slow compared to the uptake of statistical packages among social science researchers using quantitative data. While these packages have improved over the years, they are still not very intuitive but more importantly they are not part of the practice of senior researchers in the field and many researchers who have tried to use this software without support have failed and given up. At the same time, the development of Web 2.0 tools has exploded in recent years. They are intuitive and free or low cost. There are many Web 2.0 tools that would support the analysis of qualitative data – in particular, collaborative analysis in teams. This paper will explore the benefits of using these tools as well as the challenges – especially, issues of privacy, ownership, and lack of affordances offered by current CAQDAS packages.

1. Background

I am writing this paper from the perspective of a sociologist who learned how to conduct qualitative analysis in the 1970s before computers were accessible to students, who has been involved in conducting and supervising qualitative research in the 1980s and 1990s and from the mid-1990s has been involved in training and consulting on projects using tools to support qualitative analysis – often called CAQDAS (Computer Aided Qualitative Data Analysis Software). Unfortunately, these tools are still not part of the everyday practice of most senior members in the field. The push for the use of the software has come from below – from doctoral students – and from the side – from fields which are relatively new to the use of qualitative analysis – such as health and management research [14]. While in recent years some universities have provided their own training on-site, they are still, for the most part, of the one or two day training focussed on a particular software. There are very few courses that integrate the use of CAQDAS software within a semester long course on qualitative analysis.

Why have qualitative researchers been slow to adopt CAQDAS? One explanation is that CAQDAS came to the fore during the 1990s at the same time that Strauss and Corbin’s [37] book on how to conduct grounded theory analysis became widely read [8]. While the step-by-step guide their book offered attracted many researchers from traditionally quantitative fields, it also provoked criticism from established and experienced qualitative researchers. Charmaz [4] comments that, while Glaser and Strauss [16] challenged the dominance of positivistic quantitative research, by the 1990s the Strauss and Corbin version of grounded theory was criticised for its positivistic assumptions. The development of qualitative research was going through a post-modernist turn during this time [9] and any whiff of scientism was rejected. CAQDAS developers were quick to note the popularity of grounded theory among those new to qualitative research and encouraged the link between grounded theory and CAQDAS. However, this association brought forth concerns from experienced qualitative analysts about the epistemologies of the software developers and the impact this had on the shape of the tool [5]. While these critiques were rebutted by those immersed in the use of CAQDAS [21; 22], those outside the CAQDAS world became suspicious of any in-built epistemological stances in these tools. The epistemological debates of the time overlooked the work of Renata Tesch [38] who argued that while there may be 46 types of approaches to qualitative research, most of them share ten common principles for managing the analysis. QDAS, in fact, are generic tools that can be used with a range of approaches, not only grounded theory.

Despite the reservations of experienced qualitative researchers, many new to qualitative research and possibly unaware of these debates still try to use qualitative data analysis tools without support. Many fail and give up. Others use the software in very limited ways: as a tool to manage
their data set and to code and retrieve their coding. The interfaces have improved over time, taking advantage of general developments in computing. But they still are not user-friendly. These are not packages that one can just pick up quickly and use. One must invest considerable time to learn them. But they are very powerful, if used well.

Figure 1 illustrates the basic functions of CAQDAS tools.

Figure 1. The basic functions of CAQDAS tools [35]

Figure 1 highlights the various iterative processes supported by CAQDAS in analyzing qualitative data – organizing the data, retrieving and exploring material and ideas, comparing and contrasting different pieces of data, identifying patterns and relationships, and re-conceptualizing the data. These same processes researchers used when using traditional methods of analysis [24; 25; 28]. However, without the power of the computer, it was difficult to retrieve data limiting how much you could compare sub-sets and identify patterns which had a knock-on effect on your ability to re-think data [8].

Another key advantage that CAQDAS has over traditional methods is that the CAQDAS project or E-Project is a container that holds in one place not only the raw data but ideas or memos about the data, the research journal, initial analysis products such as diagrams, and hyperlinks to different parts of the data and the report itself. The analysis process is not only accessible by being in one place but also transparent and subject to scrutiny [11].

However, for those qualitative researchers suspicious of CAQDAS, Web 2.0 applications may offer an alternative. They are very user friendly and many are also free or low-cost. They are not associated with a particular approach to qualitative analysis as CAQDAS is often erroneously linked to just grounded theory. In addition, they support collaborative work (essential for research teams) which CAQDAS currently do only in a cumbersome way. We have seen the rise of the amateur and user generated content. There are a whole range of tools for sharing content. Wikis are for shared knowledge creation, social bookmarks are for finding and sharing knowledge, blogs are for journaling and getting feedback for ideas and online bibliographies are for storing, finding and sharing literature.

I have used a recent application developed by Google Labs [18] – Google Trends - still in experimental stage to illustrate the rise of these applications and compare them with non Web 2.0 tools including CAQDAS.

Figure 2. Google Trends for three CAQDAS compared with two wikis

Figure 2 compares the number of Google searches for the most popular CAQDAS - ATLAS.ti, NVivo and MAXqda - compared to two wiki brands – PBWiki (now PBWorks) and WetPaint. Searches register for NVivo only during 2004-2005. Searches for PBWiki, WetPaint and ATLAS.ti start registering during 2006 with the two wiki brands taking off in comparison to the CAQDAS software from 2007. The graph at the bottom represents how much these brands appeared in Google News Stories. While this figure just represents the amount of Google searches that have been done for the names of these brands and are not an absolute representation of interest in these applications, they do indicate a trend and the trend shows while interest in CAQDAS remains constant since 2006, interest in wikis have increased over this period.

It is difficult to get accurate figures about how widespread is the use of CAQDAS, partly because the developers are in competition with each other and keep their sales figures confidential. The CAQDAS Networking Project in the UK which has been involved in training in these packages since 1994 report that they have trained 4500 people in the UK between 1994-2006 [14]. Their feeling is that while interest is growing particularly in non-academic and non-social science communities, many academic users still feel isolated, judging by the amount of requests they get about details of how the software has been used [36].
Figure 3 takes a closer look at Google searches for some Web 2.0 applications – YouTube, Blogger, Wetpaint, Facebook and Flickr. The surge in interest starts in 2006 with YouTube and Facebook storming ahead. The popularity of these Web 2.0 applications is in no doubt. However, Anderson [2] reports that opinion is divided about the extent that Web 2.0 tools are used by scholars although he cites many examples of the use of blogs to share ideas with peers and to engage in debate, the use of folksonomies in scientific research, the use of social tagging and bookmarks as exemplified in online bibliographic sites such as CiteULike, and scientific data mashups.

This paper looks at how lay people are using Web 2.0 applications not only to generate their own content but to use Web 2.0 tools to organize and analyze their own and other people’s content. Users comment on each other’s data and many form or join groups around common interests. The first step in analyzing unstructured information is to organize it. It can be argued that the application developers are shaping how users organize their data. But users are actively using these tools to manage their information and to search for information from others. There are a similar range of tools across applications. All involve tagging to classify each item uploaded; content can be organized in sets (sometimes called Playlists e.g. ITunes and YouTube); in some applications users can use Google maps to locate where the item is from (e.g. Flickr); all have a facility to Add to Favourites, a kind of quick link tag; as well as to subscribe to a particular user’s content. The social aspect of organizing data gives a new powerful twist to analysis and this is epitomized by the phenomenon of tagging.

The activity called “tagging” was developed by Joshua Schachter who created Del.icio.us – the first social bookmarking site. With Del.icio.us, Schachter added a social aspect - users could access not only their own bookmarks, but the bookmarks of other users, as well as the users themselves. [29]. The idea of social bookmarking became popular very quickly. Other sites started to add tagging - Flickr, SlideShare, CiteULike, Connotea.

Vander Wal coined the term “folksonomy” in 2004 to describe the catalogue system social tagging creates [40]. According to Vander Wal, the three tenets of folksonomy are:

- the tag
- the object being tagged
- identity

The three together provide an understanding of the object being tagged.[40].

There have been many studies on tagging and folksonomies but the literature is dominated by information/ library scientists, information architecture and new media. Qualitative social scientists have not been engaged in this discussion. Not surprisingly the literature has been focused on the value of folksonomies vs. traditional classification systems. Research issues that have been identified include the value and challenges of tagging [19; 27; 32] and on how people use tags [17].

This move of users from not only being content creators but also being content analysts has not been lost on application developers – particularly those from IBM, Google and Microsoft. For example, IBM established a Center for Social Software in September, 2008. Fernanda Viégas and Martin Wattenberg are IBM researchers who created ManyEyes [26] which offers tools to visualise data with the intention of tapping into users growing tendency to analyse data. They designed ManyEyes [26] for the lay person as there was nothing out there for people to play with in terms of interactive visualizations, but it is also powerful enough for scientists and scholars to come on the site and use it for analysis. Viégas counters arguments that ordinary folk are not able or not interested in analyzing data by saying that they will, if it is in a fun environment. Lay people using ManyEyes have found some mistakes in official datasets as well as engaged in
political debates through the visual analysis of politicians’ speeches. [39].

From a qualitative researcher’s perspective, the fact that ordinary folk are engaged in what we would call ‘coding’ is extraordinary. Coding is often seen as a tedious but necessary activity to manage unstructured data. It seems people find tagging useful – as a way to find not only their stuff but other people’s stuff. Qualitative analysts use many approaches to coding depending on their research questions and approach to analysis e.g. grounded theory, discourse analysis, narrative analysis, thematic analysis etc. However, the aspect of tagging which would be new to qualitative researchers is its ‘social twist’. Qualitative researchers vary in epistemological backgrounds from those who feel that inter-coder reliability (requiring multiple coders to be in close agreement when coding) is of paramount importance to those who feel that interpretation is unique to individuals and expect a variation in coding decisions. This latter approach is consistent with the development of a folksonomy which encourages original, non-mainstream ideas. The former approach is more consistent with a collabulary [48] where there is an attempt to come to a common understanding of an object (or piece of data). Web 2.0 tools that support collaborative tagging are useful to qualitative researchers whatever epistemological stance they take towards coding. They provide an easy way to track collaborative coding whether in research teams or as a single researcher who asks a colleague to look at her data. The current range of CAQDAS tools does not support this ‘social twist’.

In addition to tagging, lay users are commenting on their own and other users’ material on Web 2.0 applications. Commenting is the same as annotating which is another technique used by qualitative analysts. The commenting/annotation tools in Web 2.0 applications are superior to the annotation tools in current CAQDAS packages as they support collaborative commenting – very useful in research teams. In particular, when the commenting tool is structured as a threaded discussion it provides a useful audit trail of the discussion around data and ideas.

The range of tools already available in Web 2.0 that can aid in the analysis of qualitative data is summarized in the following table.

<table>
<thead>
<tr>
<th>Table 1. Web 2.0 tools for qualitative analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizing tools</td>
</tr>
<tr>
<td>Reflective tools</td>
</tr>
<tr>
<td>Exploring tools</td>
</tr>
<tr>
<td>Integrating tools</td>
</tr>
</tbody>
</table>

Table 1 organizes tools that support qualitative analysis into four types – tools that support organization, reflection, exploration and integration. There already exist web tools to support all four analysis processes. Their counterparts in CAQDAS are in parentheses in the table. It is important to stress that whether the tools are CAQDAS tools, Web 2.0 tools or traditional tools (pen, paper, highlighters, index cards etc.), they are simply tools. There is always a dialectic between researcher and technology; whatever the technology. There is nothing intrinsic in CAQDAS, Web 2.0 or traditional tools that enhances rigor or the quality of analysis. It is the skill of the qualitative analyst, their knowledge of the particular approach to analysis they are undertaking (grounded theory, narrative analysis, thematic analysis etc.) and their knowledge of how the tools they use can support them in the analysis that determines the quality of their work. [11; 23; Richards (2005). Different tools can support different ways of ‘seeing’ or manipulating the data, but it is up to the researcher to interpret what they ‘see’.

At the same time, there are affordances that CAQDAS offer which are not available in Web 2.0 tools (at least not yet). First and foremost, CAQDAS is a container that holds in one place all the material related to a piece of research. That not only includes the data itself but all documentation, literature, journals, memos, codes, and results of searches. Secondly, it is a flexible database – it is easy to change and adapt; the data can be manipulated in many ways to aid analysis. Thirdly, it is transparent and accessible. The analysis process can be documented and others can conduct further analysis. It is an archive of a piece of research which can be mined.

The benefits of CAQDAS are clear. These packages were designed specifically for analyzing qualitative data. They have been around long enough that there are now many exemplars of good practice, although there is still a need to disseminate them more widely. They also have very powerful tools for searching and retrieving data to aid analysis.
The downside of CAQDAS is that while they have improved over the years, they are still not very user-friendly. They require training to be used efficiently and training is still not widely available. The software themselves are costly for students. Finally, collaboration tools for research teams could be improved.

In contrast, Web 2.0 tools are intuitive and very user-friendly. They are free or low cost. They are designed to facilitate collaboration. And it is relatively easy to combine several tools and create your own mash-up to serve your analysis needs.

The challenge of Web 2.0 tools is that there are no models of how they can be applied to qualitative analysis. In particular, there is a danger that one of the key affordances CAQDAS offers – a container that holds all research materials – could be lost by the uncoordinated use of a number of Web 2.0 applications. Currently, they do not have search tools that equal the power of the search and retrieve tools in CAQDAS. However, some qualitative researchers are turning to Web 2.0 tools for at least part of the analysis process. It is not uncommon for doctoral students to use blogs to document their research process and also promote their research. Graduate Junction http://www.graduatejunction.com is a social networking site for graduate researchers to network, contribute to their own mini-blog on the site and with a future objective to include links to industry. Dario da Re [7] used video, multi-media and the web as a new form of presenting findings (see www.raccontiditerra.it/ available in Italian and English) while conducting the analysis in the CAQDAS package - ATLAS.ti. Paolo Parmeggiani [30] describes the use of a mash-up of free software (although not Web 2.0 applications) for his analysis of visual data. His reason for doing so was the expense of CAQDAS packages and his work indicates that qualitative researchers are willing to search for and combine tools that they need for analysis. Melanie Hundley [20] used a website for her autoethnography – The Bard on the Digital Porch. She takes a constructivist approach inviting the reader to decide how to traverse the hyperlinks she has laid out so the reader can participate in co-constructing an interpretation of the material.

The idea of conducting an analysis using Web 2.0 tools is very new. However, researchers are exploring using blogs and social networking sites to reflect on their research and communicate with researchers in their subject area. Dicks and Mason [10] describe their work on their Ethnographic Hypermedia Environment (EHE) as an “experiment in qualitative hyperlinking”. They constructed “...a reasonably dense network of hyperlinks that grant access both to examples of linear scholarly exposition and to a complete set of data records in multimedia form, both of which can be explored freely by readers” [10:583-584]. While they used Storyweaver to do this which they found very labour intensive, they see Web 2.0 tools, particularly the wiki, as a way to turn this kind of analysis into an open interactive endeavour “...which allows informants and participants, other academics and indeed the general public to make contributions, allowing the work to grow and develop organically over time” [10:584]. They acknowledge, though, that this approach would be a radical departure for academic publication.

Fielding goes further and argues that “...combining XML with scripting language such as Perl makes it possible to approach CAQDAS-type functionality (retrieval by text and codes, attachment of memos to text segments, generation of tables, matrices, and other means of summarizing data) via a standard Web browser” [15:692]. Like Dicks and Mason, he finds attractive the idea that this development would enable extending the role of a research participant into engaging in the interpretation of data. He envisages an “expert system” approach to analysis with progressive layers of interpretation added by both research users and respondents.

Care has to be taken about the terms of use of Web 2.0 tools and who ultimately is in control of the data and information uploaded. Finally, there are serious issues surrounding privacy and the security of the information held within Web 2.0 applications which will be addressed in the concluding section of this paper.

3. New Analysis Tools for Users

While there are challenges in adopting Web 2.0 tools for qualitative analysis, there are a lot of interesting applications currently available that can support analysis. This is a very dynamic field and it is constantly changing. The number of applications can be overwhelming. I have selected a few applications and developments that seem particularly useful for analyzing qualitative data. These tools were not developed specifically for qualitative analysis but they develop new options for social science researchers.

3.1. A.nnotate

A.nnotate [1] - http://a.nnotate.com/ - is a web-based application that supports annotating and
Web 2.0. the potential to combine the best of CAQDAS and collaborating tools. If further developed, it has search tools are basic but it offers strong annotating uploaded and team members can comment on it. Its dedicated integration tools but writing up can be reflection members have uploaded. This collective analysis, and interpret not only their data but data that other for free and then upload their data. They can chart quantitative and qualitative data. Members register /About.html (accessed 3 June 2009) http://manyeyes.alphaworks.ibm.com/manyeyes/page "democratize visualization and to enable a new social kind of data analysis”. They see visualization as “a catalyst for discussion and collective insight about data”. http://manyeyes.alphaworks.ibm.com/manyeyes/page /About.html (accessed 3 June 2009)

ManyEyes has visualization tools for both quantitative and qualitative data. Members register for free and then upload their data. They can chart and interpret not only their data but data that other members have uploaded. This collective analysis, according to IBM, “points to a future where our collective interpretation of the world is more firmly rooted in data”.

The tools for the visualization of qualitative data are: Tag clouds, Wordle, Word tree, and Phrase net. The ManyEyes tag cloud can show one of two kinds of data: free text, or a two-column table of tags and numbers. If you choose to use free text, the tag cloud will strip out punctuation, calculate the frequency of each word, and draw the word at a size that is based on its frequency. Whenever the mouse is over a word, information about the occurrences of that word and the context it was used in will be shown in a tooltip. The tag cloud can show frequency of single words or pairs of words. It can also produce a tag cloud comparing two texts e.g. comparing the speeches of two politicians.

Wordle was first published by Jonathan Feinberg on wordle.net. It was designed for fun not for analysis but many people have found it insightful. The layout algorithm is different from the ManyEyes tag could as it is focussed on the efficient use of typographical space. You can alter a Wordle to show or not to show common words.

A word tree is a visual version of a traditional concordance. It lets you pick a word or phrase and shows you all the different contexts in which it appears. The contexts are arranged in a tree-like branching structure to reveal recurrent themes and phrases. It is possible to manipulate the tree in several ways – by zooming in on a particular branch of the tree or selecting a word to be the new search term.

Phrase net analyzes a text by looking for pairs of words that fit particular patterns. For example, you can look at pairs of words that are linked by the word ‘and’ or ‘or’ or any word you want. The size of a word is proportional to the number of times it occurred in a match; the thickness of an arrow between words tells you how many times those two words occurred in the same phrase. The colour of a word indicates whether it was more likely to be found in the first of second slot of a pattern. The darker the word, the more often it appeared in the first position. IBM sees the phrase net as a half-way point between a tag cloud and a word tree.

ManyEyes contribute new exploratory tools for qualitative analysis. Word clouds have already been incorporated in some CAQDAS packages but they are not yet as sophisticated as ManyEyes’ word clouds. As yet word trees and phrase nets have not been incorporated in CAQDAS. ManyEyes also has reflective tools in that it allows collaborative commenting on the results of its tools.

In terms of strategy, these tools are powerful when used in combination. A tag cloud and/or
Wordle can be used to identify key words in a text. These words can then be explored in context in a word tree. The word tree may give some clues on what connector words to use to further explore using the phrase net.

3.3 New Search Developments

Google Labs have also been experimenting with new applications that can be used to support qualitative analysis. In particular, they have developed an audio indexing tool which uses speech technology to search for spoken words within videos. The application is currently experimental – it just works with the political channel of YouTube although you can request to have your YouTube channel voice searchable.

Another company, Delve Networks [6] http://www.delvenetworks.com/product/search-inside/ - has also developed an audio indexing application. However, their tool uses semantic search technology to retrieve spoken words with similar meaning. For example, a search for a search for Financial will also retrieve wealth, business, and growth.

Google Labs has also developed an image search application - http://similar-images.googlelabs.com/. It searches for images matching pictures instead of words.

All three of these applications offer new exploratory tools not currently available in CAQDAS. These developments are very powerful and have a lot to offer those who use visual data.

4. Implications for researchers: Moving from traditional methods to CAQDAS to Web 2.0 analysis

Some qualitative researchers have already explored the benefits of using Web 2.0 tools to collect data e.g. Using wikis to conduct qualitative research - YouTube video from wildnatureadventures http://www.youtube.com/watch?v=JwfeBwNmuk . Qualitative market researchers have used a range of Web 2.0 tools to collect qualitative data such as using on-line focus groups, video blog booths where participants can leave an audio or video message at the end of an online survey and use of social network sites such as Facebook for access to potential participants [33]. But the examples are limited to qualitative data collection and collaborating in writing up – not on the analysis process.

As mentioned at the beginning of the paper, CAQDAS offer powerful tools to support qualitative analysis but despite being around for almost 30 years, they still are not part of the mainstream practice of most social scientists – although their use has been steadily increasing [14]. The main barriers have been the amount of time needed to learn how to use them, their cost and the lack of institutional training and support for their use [11]. In general, the advent of Web 2.0 tools is very attractive, as exemplified by the applications discussed in this paper, at the moment, there is no one application that combines the benefits of CAQDAS and Web 2.0 - although A.nnotate does so in a very basic way. There is a danger that researchers will be tempted to use a variety of tools and simply replace a system of multiple ‘piles of paper’ with a system of multiple links. They will not appreciate the affordances that CAQDAS offers in supporting qualitative analysis. One of the key benefits of CAQDAS is that it is a container that holds all the material of a research project in one place – including not only the research data but also ideas about the data – the memos and annotations – as well as the ability to apply detailed coding to parts of text or visual/recorded data which can be retrieved by a powerful system of queries. It is my contention that a wiki could provide a similar kind of container for a research project. Current wikis have the capacity to store and organize a variety of qualitative data – text, images, audio and video recordings. Individual wiki pages can be tagged as can an individual piece of data, yet there is not yet an ability to tag within a piece of data. (Although applications such as A.nnotate indicate that fine-grained tagging is possible.) Tags need to be organized in a way so that they are easily accessible. Wikis already support well reflective tools such as commenting features and blogs can be integrated in some wikis. Exploratory tools such as searches need to be sophisticated in order to allow comparison of different types of data and groups of research participants. Yet the development of sophisticated search tools should not be at the expense of a key Web 2.0 feature – user friendliness. There also needs to be visualization tools to help explore patterns in the data. Some of these tools exist as separate applications e.g. ManyEyes, mind mapping tools, timeline tools etc. but they need to be embeddable and useable within a wiki environment.

However, CAQDAS developers may already be looking to Web 2.0 to improve the ease of use of their software and take advantage of the collaborative...
affordances of such applications. The developers of Qualrus [31] have announced Project Evolution – a web-based companion application to Qualrus which also can be used as a stand-alone data analysis tool http://www.ideaworks.com/qualrus/development.htm1 Among their motivations they mention wanting to overcome the need for extensive training and to take advantage of the collaborative strength of Web 2.0. The beta version should be available at the end of 2009.

Whether Web 2.0 applications for qualitative analysis are developed by qualitative researchers mashing-up existing applications, by software giants such as Google, IBM or Microsoft seizing on the popularity users have in generating, sharing and commenting on their own content, or by current CAQDAS developers, there remain serious ethical issues over privacy, security and ownership of data that qualitative researchers need to address. Ess and Jones [13] summarise the recommendations of the Association of Internet Researchers as guidelines given the diverse national and cultural frameworks that exist on ethics. Their guidelines relevant to working with and storage of data on the internet include:

• checking the ethical considerations established by the site; Privacy statements; Technical limits to privacy; Terms of use
• Obligation to protect children and minors
• Informed consent on locating data on the internet given at beginning of research
• Respecting EU privacy laws

In addition, there are issues of who owns the data including copyright issues, the security of the data from hackers, and provisions for archiving the data. Roberts et al. [34] stress that “confidentiality relies upon data security. Confidentiality may be breached at the site of data collection, during transmission of data and or in the storage of data” p. 168. Many of these issues are equally relevant for CAQDAS users. In the UK, a series of high profile cases of sensitive data loss through stolen laptops, memory sticks and CDs have heightened the public’s awareness of the lack of security around digital data [3], di Gregorio and Davidson [12] have advocated a similar checklist of ethical issues for CAQDAS users including keeping confidentiality through the use of pseudonyms within the E-Project itself, developing security procedures for the E-Project i.e. protocols for security of laptops, memory sticks etc. and clear communication with research participants and ethics boards on the objectives of the research, who will have access to the data and the procedures in place to ensure confidentiality and security.

5. Conclusion

CAQDAS tools continue to be developed to support the needs of researchers using qualitative data. However, despite being around since the 1980s, they are still not part of mainstream practice although their use is growing particularly in disciplines new to qualitative analysis. Many researchers find them costly and difficult to learn how to use.

Web 2.0 applications have a lot to offer qualitative researchers but such researchers need to get involved with those developing these tools so that they suit the needs of qualitative analysts. The push for development by the large corporations such as IBM and Google are the engagement users have with Web 2.0 which could have lucrative business spin-offs. The academic research world need to engage with all those involved in development so that their needs are addressed as well. In particular, the ethical and security issues raised are areas that have already been addressed for the business sector – as anyone who has used on-line banking or made credit card purchases over the internet are aware.

Web 2.0 tools will not replace CAQDAS tools but they offer new possibilities for researchers which are low cost and easy to use. Qualitative social science researchers can learn a lot from the information and library science research already done on tagging and folksonomies and the use of Web 2.0. Combining this knowledge with the knowledge of experienced CAQDAS users could lead to the development of a powerful Web 2.0 tool for qualitative analysis.

References


[7] Da Re, D. Research results showed by a video and by a website, Paper presented at the CAQDAS 2007 Conference: Advances in Qualitative Computing, Royal Holloway, University of London, 18-20 April 2007. (website for the project discussed in this paper [www.raccontiditerra.it](http://www.raccontiditerra.it) [last accessed 14 August 2009]).


[38] Tesch, R. Qualitative Research: Analysis Types and Software Tools, Falmer, Basingstoke, 1990.

