

# Social Economy and Sustainability Research Network

Bridging, Bonding, and Building

Atlantic Sub-Node 6 (Communication)

Bridges, Pathways, Detours: Evaluating a Collaborative Web Community

Part 1: Content Analysis of SES Atlantic Web Communities

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Sub-Node 6 (SN6) of the Atlantic team of the Social Economy and Sustainability (SES) Research Project proposed to investigate the exchange and transfer of knowledge within the social economy sector. One portion of that investigation entailed the development of online communities for the Atlantic Node and each of the six Sub-Nodes involved with the project, and the subsequent evaluation of those communities. This report presents findings after 20 months of use of the web communities.

A primary research theme of the SES Project is to model and research innovative, traditional and Information Technology (IT)-based communications and dissemination processes. The web communities were developed by community partner Community Services Council Newfoundland and Labrador (CSC) to enable web-based sharing throughout the life of the SES project. They were tested in the early stages of development by a core group of SES members and supported by tutorials written and delivered by CSC in both official languages throughout the fall of 2006. Everyone working on the SES project was invited to enrol in the web communities.

The communities were created at the CSC's Voluntary Gateway online portal using Drupal. Drupal is a free, open source content management system used to set up communications network websites and modify their components for specific needs (e.g., create and organize content, customize presentation, and manage site visitors/contributors). Prior to the launch of the web communities, 31 team members completed a short questionnaire whereby they indicated whether they agreed, disagreed, or did not know that different web tools were important for a web community. The results of the questionnaire are presented in Table 1. As shown, *file sharing* was the most

Table 1. Ranked Preference for Online Tools

Online Tool	Agree	Do Not Know	Disagree
File sharing	31 (100.0%)	0 (0%)	0 (0%)
Public events calendar	28 (90.3%)	2 (6.5%)	1 (3.2%)
Discussion forums	25 (80.6%)	4 (12.9%)	2 (6.5%)
Creation of web-based surveys	23 (74.2%)	6 (19.4%)	2 (6.5%)
Collaborative editing of documents	21 (67.7%)	8 (25.8%)	2 (6.5%)
Project management tools	19 (61.3%)	9 (29.0%)	3 (9.7%)
Listserv	19 (61.3%)	5 (16.1%)	7 (22.6%)
Voice over Internet protocol (VOIP)	15 (48.4%)	11 (35.5%)	5 (16.1%)
Video conferencing	15 (48.4%)	9 (29.0%)	7 (22.6%)
Calendar using a personal calendar tool	11 (35.5%)	12 (38.7%)	8 (25.8%)
Remote access to email	11 (35.5%)	9 (29.0%)	11 (35.5%)
Shared desktop	9 (29.0%)	12 (38.7%)	10 (32.3%)
Chat	8 (25.8%)	16 (51.6%)	7 (22.6%)

Source: Community Services Council NL Feb. 9, 2006: Halifax, NS.

preferred tool, with significant numbers of members also agreeing that *public event calendars*, *web-based discussion forums*, *creation of web-based surveys*, and *collaborative editing of documents* are important components of a web community. These preferences were considered in the design of the SES communities, most notably regarding what folders (hereafter referred to as *buckets*<sup>1</sup>) to make available on the main page of each web community. Eight buckets were included with the following titles:

<sup>1</sup> The term bucket is a common term to describe a place where electronic files or folders can be stored, as evidenced by the emergence of repository websites such as [photobucket.com](http://photobucket.com) and [filebucket.net](http://filebucket.net).

*about us notes, events, discussions, working document folders, final document folders, team logistics, library article folders, and image folders.*

When posting to a web community, the user first has to select a bucket for the post, and then enter a title and body explaining the posting. In *working documents folders, final documents folders, team logistics, and library article folders*, users can upload files associated with the posting. Each posting can be made visible to members of other communities by selecting those communities from a checklist that appears on the posting submission page. Once the posting is submitted, its title appears as a hyperlink on the community page under 'Recent Postings.' Web community members with which a posting is shared can view or comment on the posting, and add, delete, or edit the files if the author of the posting enabled the 'Community Edit' option. The *about us notes, events, and discussions* buckets are similar but lack the option for sharing files, and instead prompt the user for additional relevant information (e.g., the date and location for an event). In addition to making postings or commenting on postings, members who log in to the communities can chat online with other community members or email all members of a community via a listserv.

The operation of each community is overseen by a community manager at Mount Saint Vincent University (MSVU) in Halifax and the Voluntary Gateway webmaster at CSC in St. John's. When the project was in its early stages, the manager, who was the coordinator of the SES project at MSVU, handled a large portion of the postings for all seven web communities. Community members were instructed to email important documents to the manager who ensured they were properly posted in the appropriate web community. Later, however, community members were encouraged to do the posting

themselves. The webmaster oversees all aspects of the Voluntary Gateway's design and operation and responds to suggestions for improvements or troubleshoots technical difficulties identified by users.

Several factors related to the level of participation in a community can be found in the web community research literature and can be used to derive expectations of the level of participation in the SES Atlantic communities. The complexity of a community is one such factor. Complexity is inversely related to the level of communication that is conducted through the community (Duarte & Snyder, 2006). According to Duarte and Snyder's team complexity checklist (p. 9), the SES web communities should be considered moderately to highly complex because, for instance, they involve members from more than one organization, have members who are not formally assigned to the SES Atlantic team (e.g., research assistants), and some of them include (francophone) members whose native language is different from the majority of the team. A second factor related to web community participation is the level of trustworthiness that exists in a web community (e.g., Hessian & Schlack, 2006; Preece, 2001). Trust is usually associated with higher rates of community participation among members. Trust is also higher in private communities (Hessian & Schlack, 2006). It is therefore expected that trust will not be a concern for the SES communities. It should be noted that these assertions about complexity (low participation) and trustworthiness (high participation) in the SES communities elicit contradictory expectations about the level of participation. If these assertions are correct, this study can contribute to the literature on evaluating web communities by partially demonstrating how these two factors interact.

This content analysis is largely descriptive in nature (Krippendorf, 2004). Data extracted from the web communities and provided by the Voluntary Gateway webmaster will be presented to demonstrate the level of participation in the communities, the content of the community postings, and the frequency of visitation to the community web pages. Future components of the Sub-Node 6 project will supplement the findings from this content analysis through direct communication with some members of the SES project regarding their experiences with using the communities.

## Method

This is a descriptive content analysis (see Krippendorf, 2004, for an explanation of different types of content analyses) involving an examination of the content of seven Drupal web communities that were developed for the Atlantic team of the Social Economy and Sustainability (SES) Research Network: one for the project's Atlantic Node and one each for Atlantic Sub-Nodes 1 to 6. All data from November 1, 2006 (a date by which the communities had been established and users were first encouraged to participate) through June 30, 2008 were included in this analysis.

There were two main data sources for the content analysis. First, the Voluntary Gateway web communities and related administrative records from the webmaster were used to determine:

1. The level of participation in each community and for the 7 communities overall: the number of members registered, the number of members who posted at least once, the number of postings made, the number of files shared, and the number of comments provided was recorded. Note that each individual community member, posting, shared file, or comment was counted only once when calculating the overall values.
2. A description of the content of the community postings: the postings were first broken down by bucket. Then the content of the most frequently used buckets was further described by examining the titles of the postings and files therein.
3. Whether users logged in after their initial login: the date of each community member's first and last login was compared.

Second, AW Stats<sup>2</sup> was used to record data regarding visits to each URL<sup>3</sup> within the 7 communities. These data were used to measure the frequency of visits to the web communities for each month from November, 2006 through June, 2008. The frequencies were subdivided by language and community.

A comparison of the number of members registered for each community to the number of members in the corresponding sub-node was attempted because it would have indicated the proportion of SES team members who registered for the web communities. This comparison was shown not to be useful, however, for measurement purposes because it was difficult to ascertain how many members were in each sub-node. Some members of the web communities, for example, are not officially part of the research network (e.g., student assistants) and, further complicating the matter, some student assistants on the project were considered team members by their sub-nodes whereas others were not. For the purposes of the analysis, it is presumed that the Atlantic team includes 80 to 90 core members.

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<sup>2</sup> <http://awstats.sourceforge.net>

<sup>3</sup> Uniform Resource Locator. A unique number is created for each page within the web community (e.g., the main page or the *about us notes* bucket page) that can be used to measure visiting frequency to each page on a daily, weekly, monthly, or yearly basis.

## Results

### *Participation in the Web Communities*

Table 2 shows several pieces of important information regarding the level of participation in the SES Atlantic Team web communities. The *Overall* row at the bottom of the table summarizes participation in all seven web communities. Between November 1, 2006 and June 30, 2008, there were 45 people who registered for at least one of the web communities (24 people were registered for all seven communities). Seventeen of the 45 members made postings to the web community server. These 17 people were responsible for 164 postings and between 300 and 400 shared files (see footnote 4). The

**Table 2. Web Community Activity from November 1, 2006 to June 30, 2008**

Group	Number of Members Who			Postings Made	Files Shared	Comments Made
	Registered	Logged In	Posted			
<b>Atlantic Node</b>	40	36	10	76	297	1
<b>SN1</b>	29	26	6	62	161	1
<b>SN2</b>	31	29	6	26	134	1
<b>SN3</b>	29	28	6	25	107	1
<b>SN4</b>	30	29	6	24	107	1
<b>SN5</b>	29	28	5	29	125	1
<b>SN6</b>	29	28	7	27	119	1
<b>Overall</b>	45	41	17	164	300-400 <sup>4</sup>	1

<sup>4</sup> This is an estimate. The only way to obtain a value for the number of shared files is by viewing the list of community postings and summing the number of shared files in each posting, but using this procedure resulted in some files being counted more than once because many files are cross-posted to more than one community. The other values in the Overall row of Table 1 were derived by examining the data for individual users.

community manager was responsible for 70 of the 164 postings. Information on initial versus last logins obtained from the webmaster and over-the-telephone confirmation from the community manager indicated that 41 of the 45 members continued to log in after their initial registration for the communities (*logged in* column). Because only 17 of these members logged in to post items, the remainder presumably logged in to view items posted by other members. This is an encouraging finding. Just one posting attracted a comment from another member, however, indicating very low use of the 'Comments' feature of the communities.

#### *Content of the Web Community Postings*

Table 3 is a partial breakdown of the postings in each community. The column headers represent the buckets on the main page of each web community. It can be seen that, overall, most of the bucket postings were *final document folders*, followed by items involving *team logistics*, *library article folders*, and *event postings*, although this varied across communities. Common items posted in *final document folders* included final reports or power point presentations of SES research, abstracts of SES research, proposals and related documents, and research instruments (e.g. surveys). In *team logistics*, minutes and other information regarding team meetings were most common, as well as Social Sciences and Humanities Research Council (SSHRC; the project's funding agency) guides and reports, and information for students or coordinators about student research assistants. In *library article folders*, some of the postings were made to archive and share references pertaining to a specific topic. The other postings generally contained one link to an article or a presentation that was considered relevant to the SES project and

Table 3. Breakdown of Web Community Postings by Bucket

Community	Final Document Folders	Team Logistics	Library Article Folders	Events	Working Document Folders	About Us Notes	Dis-cussions	Image Folders
<b>Atlantic Node</b>	6	27	18	21	1	1	1	1
<b>SN1</b>	16	16	19	5	3	0	2	1
<b>SN2</b>	6	12	5	1	0	1	1	0
<b>SN3</b>	7	12	5	0	0	0	1	0
<b>SN4</b>	4	15	4	0	0	0	1	0
<b>SN5</b>	11	12	3	2	0	0	1	0
<b>SN6</b>	4	12	6	0	3	1	1	0
<b>Overall</b>	53	45	31	21	6	3	2	2

therefore useful for community members to read. Most of the *events* postings were links to websites of upcoming conferences or announcements of upcoming educational sessions.

There appears to be some inconsistency in the way that members of the community organized their postings. Sometimes a new posting was created for every file or link, resulting in many postings with few related shared files. At other times, postings were created as folders wherein a few or even dozens of files were placed. Examining the information content solely based on the title of the posting could therefore produce an inaccurate perception of the most frequent type of information communicated through the communities. In *final document folders*, an inspection of the shared files indicated that reports and presentations were most frequent, although examining just the posting titles

would make it appear that research abstracts are more frequent in this bucket. The results of the content analysis of the other buckets were not influenced by this discrepancy.

### *Visits to the Web Communities*

The median number of monthly visits to all seven web communities combined was 363. The following two figures depict trends in visiting the web communities between November 1, 2006 and July 1, 2008. Figure 1 shows the total visits to all seven communities on a monthly basis, as well as the breakdown of visits to the English and French versions of the web communities. Visits to the English versions were most frequent and visits to both versions of the communities were highest during the period of May, 2007 to August, 2007. June, 2007 showed the highest single monthly participation, with 1894 visits.

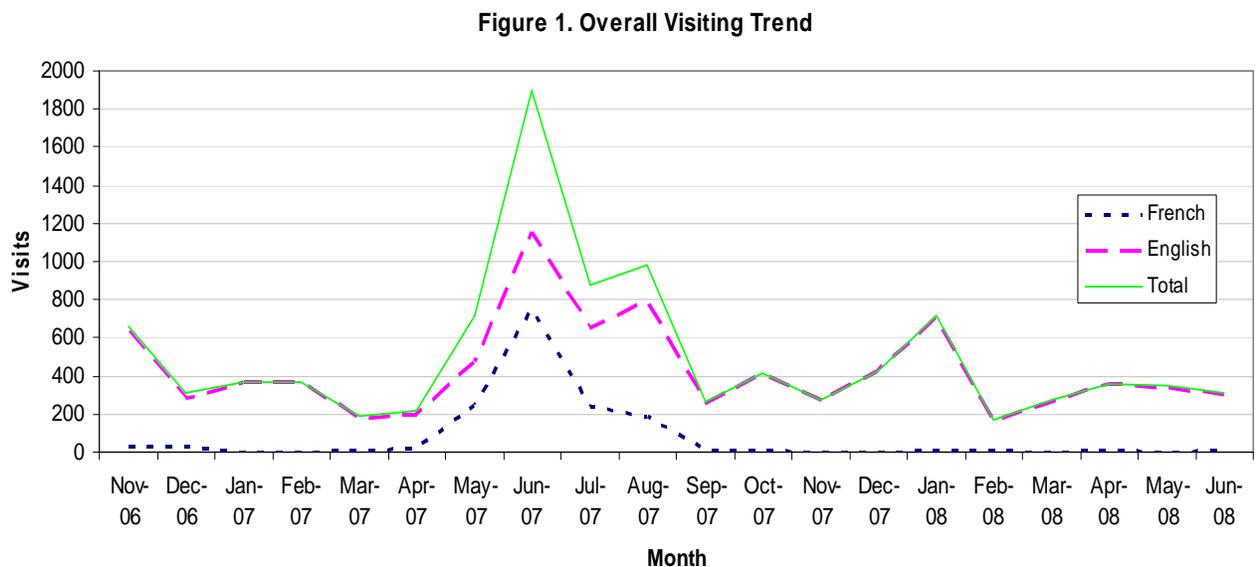
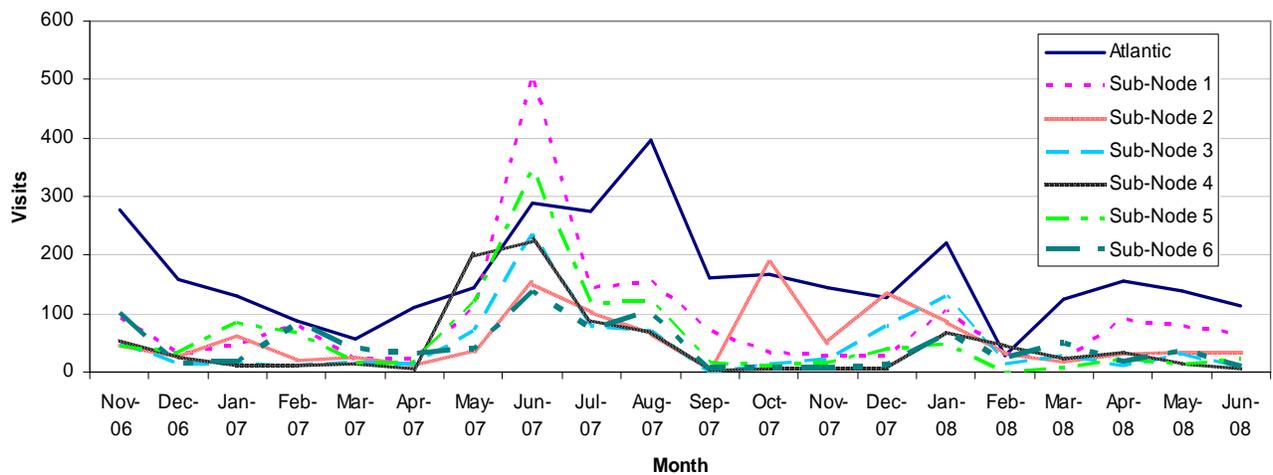


Figure 2 shows separate visiting frequencies for each of the seven communities. Based on these data, it appears that the surge of visits from May to August, 2007, was largely the result of increased visits to the Atlantic Node, Sub-Node 1, and Sub-Node 5 communities during that period, although visits to all 7 communities were relatively high in June, 2007. Data on individual users, furthermore, revealed that one member in particular posted relatively frequently to the Sub-Node 1 community during June, 2007. It is likely that the simultaneous increase in visits to that community was at least partially due to that member’s postings because each time one member posts something to the community, every other member of that community (or any cross-listed community selected by the author of the posting) is sent an email notification with an easy to follow link to the posting. Upon notification, the other members presumably followed the link to view the new postings, which was reflected in an increase in visits.

Figure 2. Visiting Trend by Community



## Conclusions

The content analysis revealed that about half of the number of people involved in the SES Atlantic project signed up for the web communities that were developed for the project, although this proportion might be mildly inflated due to counting student assistants as SES project members, when in fact some of them are not. Although just 17 members posted information to the site, almost all registered community members appear to have logged in to the site at least occasionally to access information posted by others. Visits to the web communities were especially frequent during the summer of 2007. It can be speculated that this increase was related to an increase in postings during that time, but a corresponding increase in postings was found only for Sub-Node 1 (which had the highest visiting frequency in one month with 509 visits in June, 2007). The relative increase in visits during that period for nearly all of the communities may have been due to external factors not examined in this study, such as promotion of community usage by the community manager. Further research, including interviews with web community users and the community manager, may shed some light on other likely causes of this seemingly sudden increase in interest in the web communities, as well as the ensuing decrease.

The most common categories of postings were *final document folders*, *team logistics*, *library article folders*, and *events*. Most of the *final document folder* postings were labelled as SES research abstracts. However, most of the files shared in this bucket were reports or presentations of SES research (more than one file can be included with each posting). This speaks to a need for more training on how to organize posted files. The *team logistics* bucket was used to share meeting minutes, SSHRC reports, and

managerial information about research assistants. Most of the *library article folder* postings were folders for archiving references on a topic relevant to the web community's research. *Events* were relatively frequent, but only in the Atlantic Node and Sub-Node 1. *About us notes* were posted by 3 of the 7 communities, *working document folders* were posted by 2 communities, and *discussions* and *image folders* were essentially unused. The online chat option was likewise unused.

These results indicate some consistency as well as some discrepancy between intended and actual use of the communities. For instance, just 26% of team members indicated that chat was an important component of a web community on the 2006 questionnaire (consistency), whereas 81% indicated that discussions were important (discrepancy). Subsequent components of this project should explore whether all of these buckets are of practical value to the communities. There is the possibility that they are potentially useful, yet remain unused for other reasons, such as a preference for easier or more familiar methods of communicating on research projects (e.g., using email to collaborate on working documents or have discussions).

The web community members appear to have freely posted their meeting minutes as well as final reports and presentations to date. It thus appears that trustworthiness is not a major concern. There is still a question regarding why some members did not post anything, however. This will be explored further in additional components of this study. The posting pattern of the web community members may simply reflect their roles on the SES project. For instance, the project coordinator / web community manager was responsible for 70 of the 164 postings made during the 20-month period that was studied for this content analysis.

In sum, the web communities developed for the SES Atlantic project have achieved moderate success to date in that they have attracted the membership of about half of the 80 to 90 researchers working on the project and continue to receive visits from a significant majority of those who registered as members. Given that the 5-year SES project is only at its midpoint, these results are encouraging. Participation and file sharing will probably increase as the Sub-Nodes move into the results dissemination stage of their research. Some aspects of the communities appear to be for the most part unused, however, hence some re-thinking of what aspects of the community are important for the communication between researchers may be required as the project moves into the remaining years.

### References

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