

## Legacy Technology Still in Use: Lessons from FLOSS Development

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### 1. Introduction

In science, including geospatial and earth science, use of the Internet is becoming more and more important. Institutions provide more and more, spatial data and scientists share the information or work on a project regardless of geographical boundary. In such situation, social media will be becoming more and more important, but the popularity changes so easily. On the other hand, there are several social tools which have been around for more than 30 years, such as IRC and CVS/Subversion/git. In this paper, the advantages and disadvantages of the current and legacy social tools.

### 2. Underlying Philosophy

IRC and CVS/Subversion/git are very popular among free and libre open source software (FLOSS) developers. One of the most important factor of free software was revealed by Eric Raymond, who contrasted two different free software development models:

The cathedral model: source code is available with each software release, but code developed between releases is restricted to an exclusive group of software developers.

The bazaar model: the code is developed over the Internet in view of the public.

In fact, all the commercial projects and many FLOSS projects are organized in the cathedral model. The point is, only FLOSS software can be developed in the bazaar model. The most well-known project which adopted the bazaar model is perhaps Wikipedia. What can we learn from the project?

### 3. IRC vs twitter

There are many real time chat tools, such as IRC, Skype, Messenger, Twitter and LINE.

IRC is a communication protocol developed in 1988. In IRC, users join a server (e.g. freenode.net) using IRC clients (e.g. xchat), then joins a room (e.g. #qgis, #grass) to talk and discuss issues. It is said that there are more than 50,000 users on Freenode. The figure may be small, when compared to twitter or LINE. It is noted that the author(s) asked several Fink developers to review this article. IRC can be compared to twitter in that they are both for "short text" and real-time communication.

When using twitter, you can browse information about a certain topic using hash tag (#). However, twitter is in its essence a "twit", expressing one's opinion and rarely becomes a place for conversation/discussion.

ITO (MTT38-01) discusses that the information is well organized at together by a coordinator. By the summary on together is often very difficult to read. On the other hand, chat logs of many IRC channels are very useful without any editing. Perhaps, something can be learned from IRC. But so far, my suggestion is to use IRC for scientific discussion.

### 4. Discussion

As seen in the previous section, there are several legacy tools that are still widely used, especially among FLOSS developers. One of the advantages of these legacy tools is that they have been evolved to support the "cathedral" model explained above.

For geospatial and earth science, such tool may be useful to share the information of, say, open data. There are many institutions, public or private, which offer GIS data on the Internet. The official data, such as shape files provided at data.gov.uk or nlfpt.mlit.go.jp/ksj/, would be more useful when one finds an error, fix it and report and/or redistribute it. The download pages may be more enhanced with wiki, where users can post their ways of using the data. Google maps, or its more "open" alternative, OpenStreetMap, may be more sustainable if they learn more from legacy tools.

MTT44-01

Room:311

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#### 5. Conclusion

Several social tools for FLOSS development, which have been developed since 1980s, are reviewed. Some tools, such as IRC, are still used despite the recent advancement of newer social tools. In fact, these tools may be more advanced, in that they give more powers to users, than the recent and more popular social media, such as Facebook and twitter.

Keywords: FLOSS, IRC, CVS, Bug Tracking

**Abstract (English):** In science, including Earth and Planetary Science, software development has played an important role, in many cases with package management systems. Fink Project, one of the package management systems, has been involved in a number of free software to Mac OS X. Such package management systems are supported by a large number of maintainers, with the aid of SourceForge, CVS and/or git, IRC and many other tools.

## Establishing Technology of Environmental Monitoring Using Social Media

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This paper discuss the way to enable environmental monitoring using social media. Several existing approaches such as development of original software and utilizing crowdsourcing service are introduced with there advantages and disadvantages. Finally the author emphasizes the need of further research on theory and technology.

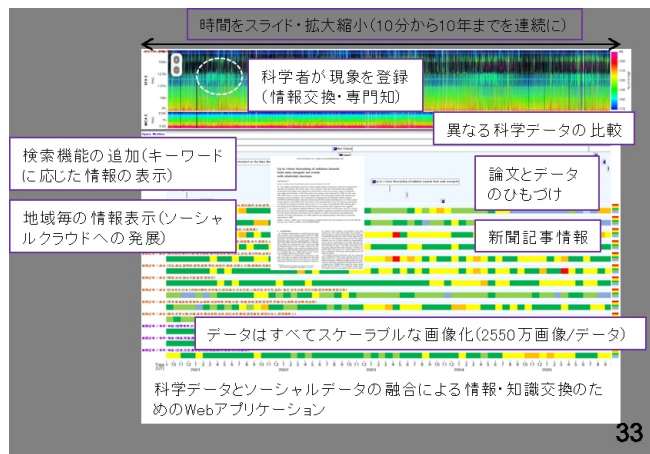
Keywords: Social Media, Environmental Monitoring, Crowdsourcing

## A Web-application for Time-dependent Observation Data for both Scientific and Social Data

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The NICT Science Cloud is one of the science clouds proposed for development of sciences. A variety of science data are collected and stored in the science cloud to be analyzed interdisciplinary. After the Internet is widely used, new concept and information technology have shown up; semantic web and linked open data (LOD). These technologies enable information on the Internet machine readable. In many science fields, it is pointed out that the semantic web will play an important role for the interdisciplinary research works. However, there have been few ideas to be ever proposed as a methodology or roadmap to the interdisciplinary science using semantic web. Herein we present a concept of professional knowledge and academic knowledge following collective knowledge proposed as a Web 2.0. Based on the concept, we design a Web-application for interdisciplinary science. The application (named STARS touch) provides users with an environment of dynamic and light preview of any types of time-dependent data. In the demonstration, we show an example of simultaneous preview of both scientific data (satellite observation data) and social data (newspaper information).



## The trial which carries out information dissemination by SNS at a high school students

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Even if it thinks that a teacher will take communication with a student, it is very difficult to try to be connected with a high school student.

Then, "whether, during session, communication can be taken with a student" is important.

The method for being connected with a student in the first half is reported.

It is what "the atmosphere which a student says easily is built for", and "a lesson which a student tries to hear positively that the talk is" that I take care by the lesson.

Therefore, I am made to prepare time to concentrate only for a short time several times while I accept a student's positive remark.

As a mistake is made in being right, it catches not related to a student's remark and its head is bowed in assent, the boundary of the mistake is clarified if behind right.

Thus, by corresponding from a student's viewpoint, I think that a student opens the heart to a teacher.

If it comes so far, a student will be connected in SNS.

The most is a student and a graduate although the number of the followers of my Twitter is 95 now.

In order to usually disseminate the information on extension and geography of a lesson, or earth science the second half using SNS, practice using SNS is reported.

Even if it can take communication by SNS with the present condition and a student, there is no reaction in the photograph and comment related to geography.

Most of the reasons are a thing with a "petty" photograph, and a thing with "many" character numbers.

For example, even if it shows the photograph of a terrace, only the comment "it is peaceful" comes.

If the number of characters exceeds 70 characters, it is tired of reading a character.

It is adiaborous, even if the contents of the photograph also have a reaction in the direction where the scene is mixed and it shows geographical feature, vegetation, etc.

The photograph about geography is published, and since a result which is considered even if it is going to ask for a comment or is going to offer teaching materials has not come out, I would like to obtain a comment from you, although SNS is convenient.

Keywords: Twitter, Line, Lesson

## Social media as a source of innovative ideas for education and outreach in geoscience

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Scientists are often expected to contribute to education and outreach in their specialized fields. They can provide scientifically accurate information about their fields based on deep knowledge. However, they may be much affected by the customs and common sense of their fields, and may not be good at attracting attention of people who do not have specialized knowledge in the fields. Social media contribute to the reduction of this problem, through interactions of people with various backgrounds. Scientists of a particular field often interact with those who are interested in the field but have different backgrounds including non-scientists. Such people sometimes provide scientists with novel ideas for effective education and outreach. Subsequent comments from scientists on the ideas may be useful for those who provided the ideas. In this presentation, we discuss such constructive interactions among persons in social media, with reference to geomorphological examples.

Keywords: social media, education, outreach, interaction among persons

## The possibility and current issues of sharing information with social media in geoparks

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This presentation reports on the possibility and current issues of sharing information with social media in the case of San-in Kaigan Global Geopark. Sharing knowledge and experiences is necessary for the development of the geopark network. Communication is one of the best ways to share them among people. There are various ways of communication; for instance, face-to-face communication, non-face-to-face communication, mass media and social media. In the case of San-in Kaigan Geopark which spans across 110 km from east to west and 30 km from north to south, social media is a complementary tool to communicate among local actors, stakeholders and shareholders in the wide territory of the geopark.

Keywords: social media, communication, sharing information, San'in Kaigan Geopark

## ”San’in Kaigan Geopark \*Fortune Cookie in Love” Project

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San’in Kaigan Geopark Promotion Council conducts ”Questionnaire on Recognition of San’in Kaigan Geopark” every year. In a questionnaire survey conducted at PR campaign in Keihanshin area in 2013, San’in Kaigan Geopark recognition was low among 10s (27%) and 20s (24%) compared to 70s over (68%). An issue for the future is considering ways to raise awareness of geopark activities among young people. One of the reasons why many young people are not familiar with geopark is insufficient PR activity through the use of the internet. Now the council provides information available on the official website and Facebook. The problem is that those websites are not well-known to the general public.

For this reason, San’in Kaigan Geopark undertook ”San’in Kaigan Geopark \*Fortune Cookie in Love” Project, which local guides, tourism facilities, local residents, geopark-related officials and researchers dance along ”Fortune Cookie in Love”- by J-pop’s most popular girl group AKB48. We uploaded a video to Youtube on January 31, 2014 and promote the San’in Kaigan Geopark to the general public. There are 43 different scenes and 265 wonderful performers including mascots in about 4-minute video. Organized yet creative dancing entertains those who watch the video. We also advertise it to the media, and people who access to this video on Youtube easily exceed 10,000.

From now on, we will analyze the awareness and the effect of this project through a questionnaire and any changes in the number of visitors across the San’in Kaigan Geopark.

Keywords: sns, youtube, Fortune Cookie in Love, San’in Kaigan, geopark



## San'in Kaigan Geopark Tourism Promotion By Female Bloggers

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While there is a strong trend among independent travelers to gather information and plan trips within Japan through the use of the internet and word-of-mouth information, there is a lack of information regarding geotourism available online. In response to this situation, a number of San'in Kaigan Geopark model tours were operated in Tottori Prefecture. These were promoted by female bloggers who are popular and influential in the independent tourism market. In 2012 and 2013, a total of 70 female bloggers established their own themes and planned trips to the San'in Kaigan Geopark. Each blogger posted their travel reports on their blog sites and on twitter. At the same time, a "San'in Kaigan Geopark Model Tours for Women" facebook page was established so that each of the travel reports could be posted and shared. As a result of this continual availability of travel information, San'in Kaigan Geopark related pages received a high number of online hits, and increased awareness and popularity regarding the Geopark was achieved.

Keywords: San'in Kaigan Geopark, Tours for Women, Geotourism, Female Bloggers