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Mashing-up a DGroup and third party online applications for a cause
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Mashing-up a DGroup and third party online applications for a cause

Giacomo Rambaldi

> *"I can't think of another e-network that works so well. It is impressive and so good to see people offering help and being responsive. It is hard to keep these things going",* **feedback from a network member.**

ACKNOWLEDGEMENTS

INTRODUCTION

When I started developing my first web site in 1999 (www.iapad.org) I was dreaming of creating a community of development practitioners sharing common interests about what was then termed as "community mapping" and was later on redefined as participatory GIS (PGIS) practice or public participation GIS (PPGIS), depending on the level of technology input and developmental context.

While based in South-east Asia, I was hosting my websites in the USA because of the good quality and reasonably-priced services. My hosting package included Mailman, an open source platform for managing electronic mail discussion and e-newsletter lists. The package allowed for a maximum of 250 users. I tested it but found its appeal and functionalities too basic and the membership limit constraining. My search for a non commercial electronic discussion and information exchange platform continued until I happen to come across DGroups. In 2004, having already registered the primary domain ppgis.net I approached a representative from Bellanet inquiring about the possibility of setting up a discussion list named [ppgis]. In the meantime I had contacted a number of development practitioners and researches from around the globe, proposing them to become moderators of a list which would focus on *participatory use of geo-spatial information systems and technologies*.

All this happened in a "pre-Google-Earth" era when online geo-referencing was in its early stages of development. Nonetheless participatory mapping using ground-based technologies was widespread even if poorly documented and the knowledge scattered among the many activists, practitioners and researchers. The feedback from invited moderators was quite successful and the resulting group of four included representatives from Africa, Europe, North America and the Pacific.

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THE PREPARATORY PHASE

Website design and development

The launching of the e-discussion group was preceded by the development of the web site known as "PPgis.net - Open Forum on Participatory Geographic Information Systems and Technologies" at www.ppgis.net. Its visual distinctiveness (Figure 1) was similar to the one of the standard DGroup interface. This made the [ppgis] DGroup appear as integral part of the whole site and seamless the transition from the website to the discussion platform which was hosted elsewhere. Likewise for my previous websites, I used a WYSIWYG (What You See Is What You Get) HTML editor.

Figure 1   Web site interface

My intention was to develop a beacon on the internet for PPGIS/PGIS practice and science. Therefore I had to make sure that the website would serve as a one-stop place for those searching for information or for peers sharing common interests. To this end I started adding free third party applications which would draw traffic to the site, improve its ranking on major search engines and increase interactivity.

Web site promotion

Promotional activities included establishing reciprocal links with websites from important development institutions and offering webmasters ready-made text and graphics (e.g. banners of different sizes) for establishing annotated links pointing

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towards my web site. I registered the URL on all major search engines and on the Open Directory Project www.dmoz.org at no cost. These were important stepping stones for the emergence of the website within a competitive Internet ranking environment. To date the web site ranks first[1] on Google, Yahoo, Live search (MSN) and other search engines when searching for the term "ppgis" and within the first 10 using subject-related keywords or queries.

Launching of the website

The **www.ppgis.net** website and embedded [ppgis] DGroup were launched in July 2004 via information gateways like www.developmentgateway.org, www.eldis.org and www.mekonginfo.org. At the onset membership grew mainly by invitation.

On the ppgis.net home page the mission of the initiative was summarised as follows:

> *This forum serves as global avenue for discussing issues, sharing experiences and good practices related to community mapping, Participatory GIS (PGIS), Public Participation GIS (PPGIS), and other geo-spatial information technologies and system used in participatory settings to support integrated conservation and development, sustainable natural resource management and customary property rights in developing countries and First Nations.*

WEBSITE ELEMENTS – THE MASH-UP COMPONENTS

The mash-up is fundamentally composed of the DGroup [ppgis], representing the core, and static web pages offering an introduction, key issues related to the thrusts of the forum, short biographies of the DGroup moderators, a bookstore, a bibliography section, selected links, pages dedicated to specific resources, custom search and site search interfaces, RSS feed, link-to-us, feedback pages and a gateway to the Spanish chapter of the DGroup [ppgis-sp]. A number of third party applications are embedded into the site. These include a WebRing navigation facility, Google Translate, Google-Coop, Google AdSense, Google analytics, various affiliate programmes and del.icio.us bookmaking buttons. The English and Spanish DGroups offer mailing list, member directories, posting archives, file repositories, announcement and calendar facilities.

The DGroup and its uses

On 31 May 2007, the main (English-speaking) DGroup [ppgis] had 6 moderators (3 with administrative rights), 1093 members, 1500 messages and 79 resources.

So far the main uses of this DGroup and related website components have been the following:

- Information sharing via the discussion list, the resource upload function and topical summary pages based on content posted on the DGroup. These

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[1] Google delivers close to 50,000 results when searching for the term "ppgis"

resources include reputable sources of (free) data and applications, on-line training facilities, and more.

- Debates on key issues related the practice such as:
    - Reflections on theory and practice: Practical ethics, best practices, social learning, mental mapping, Participatory GIS (PGIS) practice *versus* Public Participation GIS (PPGIS) *versus* community mapping;
    - Economics: cost and benefit analysis of PGIS;
    - Methodologies: Scale mapping, Participatory 3D Modelling, Global Positioning Systems, Geographic information Systems (GIS); Community Information Systems; Community integrated GIS, Mobile Integrated GIS, counter mapping, Google Earth;
    - Applications: Collaborative natural resource management, environmental impact assessment, gender, health, HIV/AIDS, risk management; disaster response; protected areas, resource tenure and access; and neighbourhood mapping.

    A number of these debates have fed into the development of printed and electronic publications[2], e-bulletins, blogs, and announcements distributed via other like-minded e-lists and online facilities;

- Advocacy: Counselling;
- Networking: Practitioners/researchers looking for peers in specific countries or regions;
- Technical questions posted mainly by newcomers to the practice, students and eager adopters;
- Announcements including calls for papers, announcements on scholarships, grants and training opportunities, launching of new publications, applications and technical innovations;
- Preparation of and follow-up on events such as workshops and conferences (e.g. Mapping for Change http://pgis2005.cta.int)
- Calls for action and fundraising in emergency situations like the one which followed the Tsunami on 26 December 2004;
- Stimulate voluntary services e.g. in establishing a small group of researches and practitioners who guest-edited issue 54 of the IIED journal *Participatory Learning and Action* (PLA) and in coalescing funds and voluntary contributions for translating the 150-page publication in twelve languages;
- Administration of online surveys by the list administrator and members.

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[2] A case in point has been the collegial development of a code of ethics for the practice in Rambaldi G, Chambers R., McCall M, And Fox J. 2006. Practical ethics for PGIS practitioners, facilitators, technology intermediaries and researchers. PLA 54:106-113, IIED, London, UK

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The PGIS/PPGIS WebRing

The website is part of a thematic WebRing http://t.webring.com/rs?ring=ppgis which I launched in January 2004. The WebRing connects an online community of websites sharing a common vision and complementary missions across cyberspace.

The mission of the PGIS/PPGIS WebRing is complementary to the one of PPgis.net and reads as follows:

> *"This is the Ring of Webs sharing common interests in community mapping and in all forms of collaborative spatial information management practices aimed at supporting integrated conservation and development, sustainable natural resource management, customary property rights and peer-to-peer communication. In building a community of practice around the concept of Participatory GIS practice, this WebRing aims at stimulating exchange of information on progress made in visualizing community-based knowledge and perceptions in order to provide stakeholders and less-favoured community members added stake in designing and owning development and natural resource management initiatives."*

As of 31 May 2007 this unique ring included a total of 16 web sites. Since its creation the statistics record 27,840 hits, resulting in 18,260 horizontal movements (or visits to affiliated web sites) along the ring.

Google Translate

In order to offer at least a basic understanding of the website content to non-English speaking visitors I incorporated Google-Translate to convert the pages into French, Spanish, Portuguese and Chinese.

Google-Coop

In 2006 with the advent of Google-Coop technology, I launched an initiative aimed at developing a highly specialized custom search engine reflecting knowledge and interests in PGIS/PPGIS practice and science. Researchers and practitioners were invited to contribute to its development. I included the query interface into the web site. As of the writing of this paper a total of twelve people have contributed to the development of the search engine.

RSS feeds

In 2006 I added RSS feeds to the web interface to promote wider dissemination of content. The feed offers information which is syndicated from resources posted on the DGroup.

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VOIP communication

Starting in 2005 I promoted the use of VOIP communication among the moderators of [ppgis] and made use of it as a cost-effective way of coaching moderators of affiliated DGroups.

Google-Apps

In order to strengthen network identity among core members, I obtained a Google Apps account, and am now in the position to offer Gmail based email accounts with the @ppgis.net domain.

On-line surveying

Four months after the launch of the web site the number of DGroup members had grown to a total of 300. In order to better serve and motivate the audience I needed to gain a better understanding of the list membership composition. To this effect I administered an online survey using www.surveymonkey.com. As many as 30% of the 300 network members responded. In April 2007 a second survey administered to 1050 members of the DGroup yielded a 17% response rate. The comparison of the results produced interesting findings which are relevant to understanding the spread of the network and the role of the different online components in influencing its growth and development.

2004 Survey results and follow-up actions

The results indicated that at as of November 2004 55% members were located in North America and Europe, although most of the operations (66%) took place in developing countries. Among others, respondents were invited to rank services they considered as important to their work. Online databases on case studies and training resources were identified as top priorities. The results, shared among members of the network, sparked the development of related initiatives. As an example the Department of Geomatic Sciences of the Laval University, Canada took the lead in developing a case studies database which was launched in 2006 under the name of PPGIS Observatory http://ppgis-obs.scg.ulaval.ca/. The members of the network, called to action via the DGroup, played a key role in determining its design.

2007 Survey results

The 2007 survey indicated that registration of members occurs via the website interface (www.ppgis.net) after searching the internet (34%), by word of mouth (24%) or via suggested links (14%). Only 16% of the respondents recalled having been invited. This differs substantially from the 2004 results, where 36% of the members joined by invitation, and 16% after locating the website via a search engine. The comparison of the two data sets suggests that over a period of two and a half years the web interface got more visible on the internet.
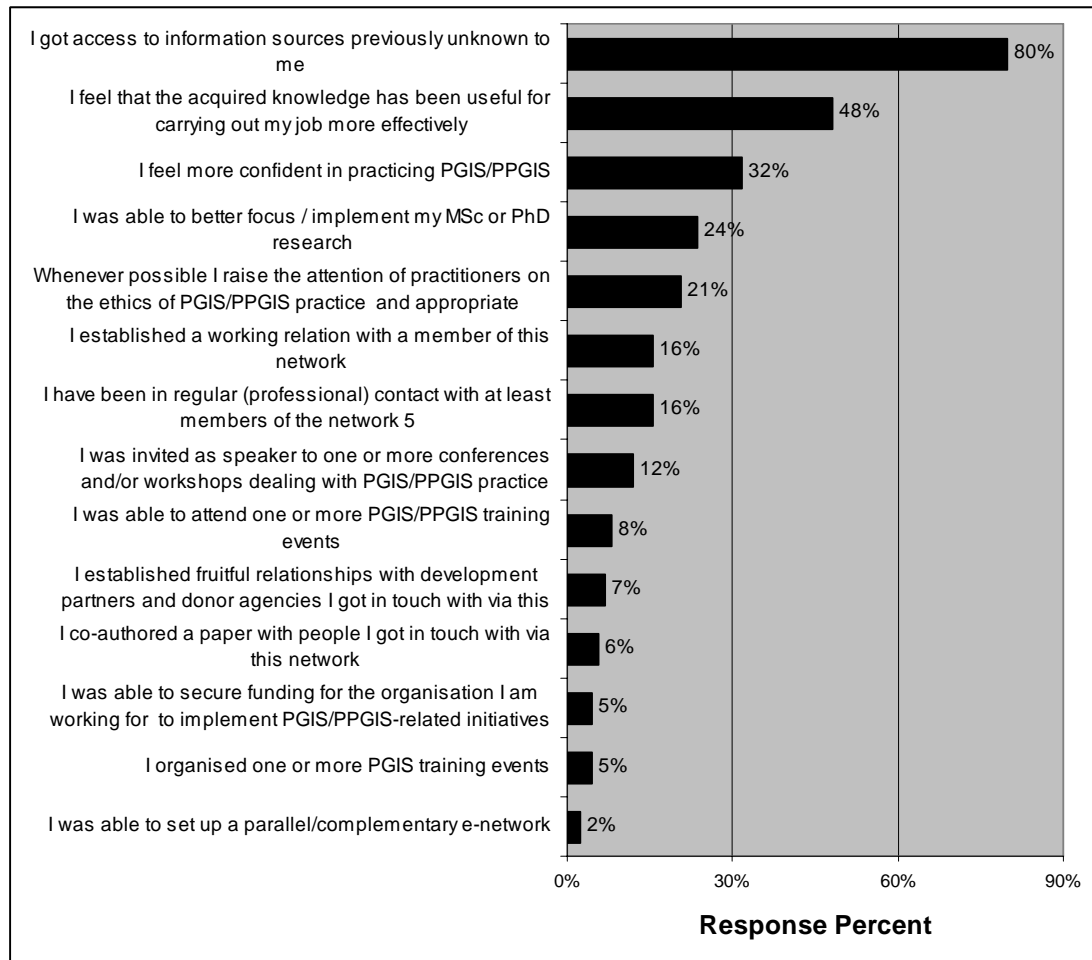
Members' perceptions

Online surveying was also used to assess members' perceptions vis-à-vis the existing services offered by the mash-up. The 2007 survey (Figure 2) revealed that 80% of the respondents gained access to information previously unknown to them; 48% felt that they could perform the work more effectively thanks to their membership in the

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network; 32% felt more confident in practicing PGIS/PPGIS, 24% was able to better focus his/her research, and 21% was more aware about ethical issues related to the practice.

Figure 2   **Please select circumstances you think have materialised as a result of your participation in the [ppgis] forum**

Circumstance	Response Percent
I got access to information sources previously unknown to me	80%
I feel that the acquired knowledge has been useful for carrying out my job more effectively	48%
I feel more confident in practicing PGIS/PPGIS	32%
I was able to better focus / implement my MSc or PhD research	24%
Whenever possible I raise the attention of practitioners on the ethics of PGIS/PPGIS practice and appropriate	21%
I established a working relation with a member of this network	16%
I have been in regular (professional) contact with at least members of the network 5	16%
I was invited as speaker to one or more conferences and/or workshops dealing with PGIS/PPGIS practice	12%
I was able to attend one or more PGIS/PPGIS training events	8%
I established fruitful relationships with development partners and donor agencies I got in touch with via this	7%
I co-authored a paper with people I got in touch with via this network	6%
I was able to secure funding for the organisation I am working for to implement PGIS/PPGIS-related initiatives	5%
I organised one or more PGIS training events	5%
I was able to set up a parallel/complementary e-network	2%

As shown on Figure 3, the same survey revealed that members of the DGroup put acquired knowledge into practice in the domains of networking and communication (34%), collaborative planning and management of natural resources (33%); conducting collaborative research (32%) and supporting collaborative planning and management of social services and neighbourhood development (31%).

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Figure 3 **In which areas of work did you put your acquired knowledge and contacts into practice?**
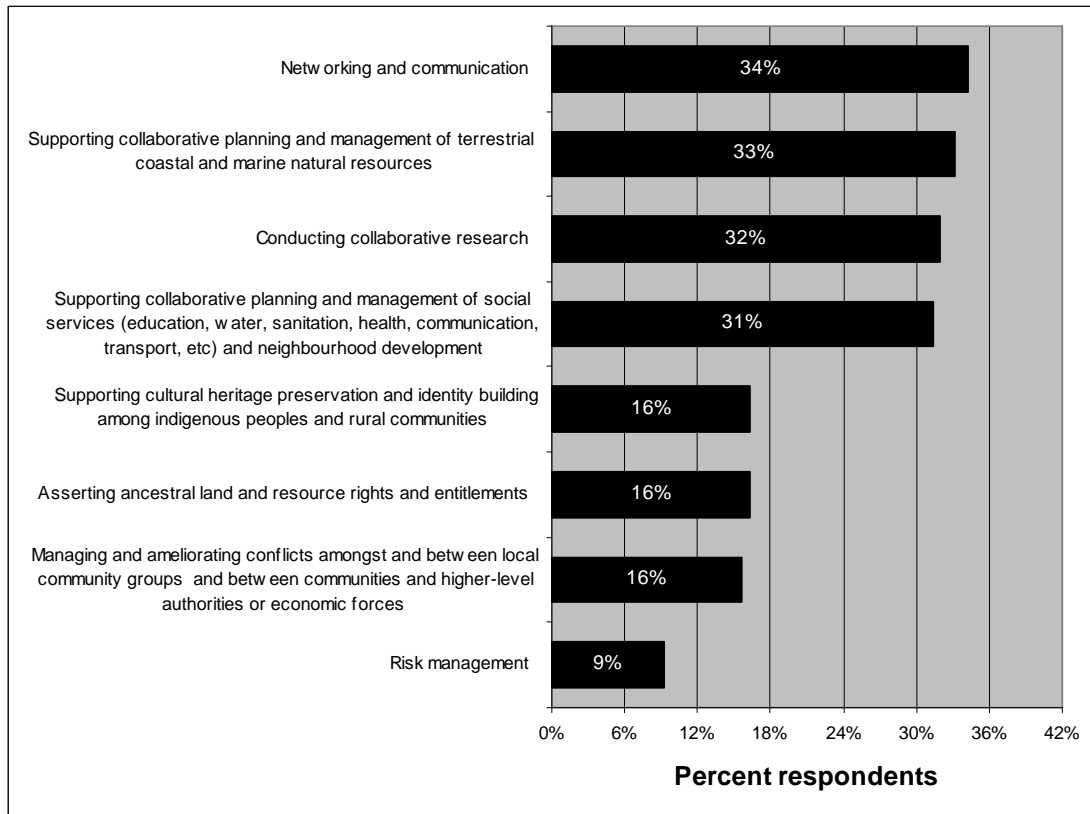
Ensuring financial sustainability

In 2001 I started experimenting with a number of *affiliate* programmes with little financial return, until I started using Google AdSense. AdSense delivers content-specific and discrete advertisements on pages where a custom-generated code is inserted. The income has since been sufficient to cover the costs I usually incur for web hosting and procurement of licensed software. At a later stage I added a library section where a selection of books related to the practice is offered on behalf of an online bookstore.

Compiling and exposing information shared on the DGroup

The DGroup runs mainly on voluntary part-time contributions by moderators. Therefore there has been limited facilitation of discussion threads on pre-defined subjects. The debate usually stems from questions or comments posted by network members. Some of these discussion threads have led to the sharing of valuable information which deserved collating and exposing via the development of specific pages on the web site. This practice has made content generated by the e-discussion focused and easily accessible.

Monitoring website statistics

For many years I had been monitoring website statistics using Analog. In 2006 I started using Google analytics www.google.com/analytics/ and gained access to a totally different world. The facility allows the tracking of visitors and produces

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extremely detailed and customizable data. Google Analytics is free to use and serves daily updated statistics.

Figure 4   Distribution of website visitors - (source: Google analytics)
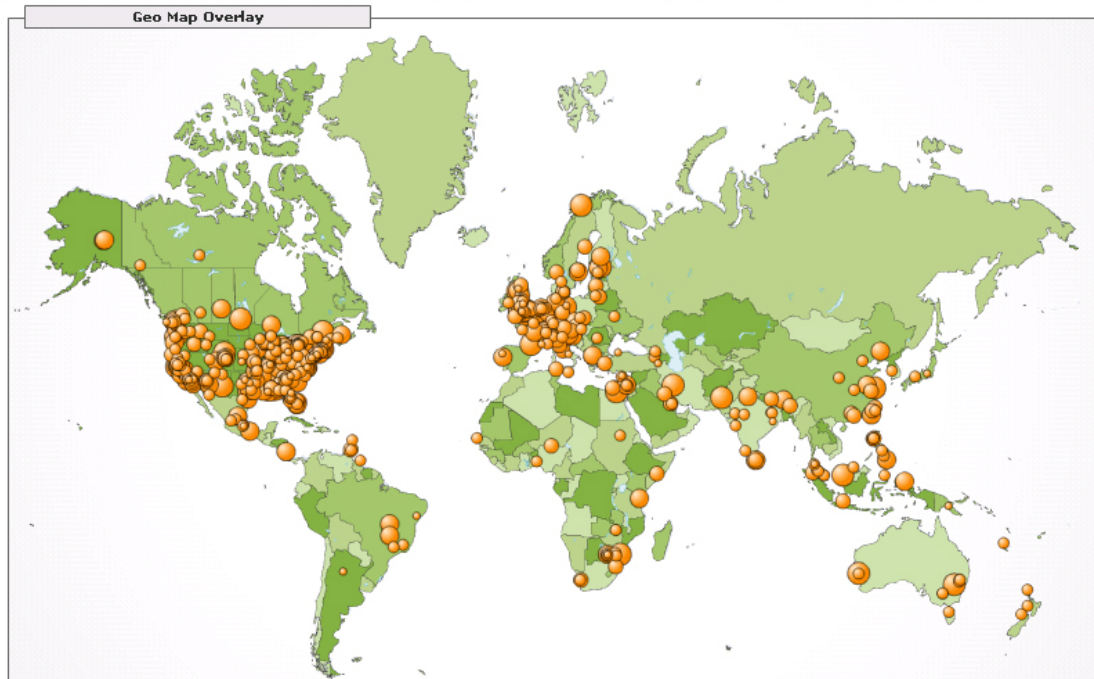
I have been sharing selected outputs (e.g. the geo map overlay shown in Figure 4) via the web site in the section "About ppgis.net" to stimulate users' identification with the network, and better understanding of its worldwide distribution and outreach.

PRESENT AND FUTURE DIRECTIONS

Regular feedback behind the scene and positive results of both the 2004 and 2007 surveys have played an important role in motivating me to invest time and resources to further develop the facility and to call additional proactive members of the community to join forces in parallel activities. Typical examples include the development of the PPGIS Observatory discussed above, the setup and development of two regional networks in 2004[3] and 2005[4] and the recent launching of a Latin American Spanish-speaking chapter named [ppgis-sp].

PPgis.net Spanish [ppgis-sp] and French [ppgis-fr] chapters

In 2006 I was invited to set up a discussion group for the Spanish-speaking community. Requests intensified in the first quarter of 2007. Members of the global [ppgis] DGroup volunteered to moderate a Latin-American chapter of the list. With the assistance of Bellanet, the active participation of *Acción Contra el Hambre (Centroamérica)* and five volunteer moderators, the Spanish-speaking DGroup platform [ppgis-sp] was set up and runs now with minimal inputs from my side. In

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[3] Community Mapping Network – South East Asia [cmn-sea]
[4] Community Mapping Network – East and Central Africa [cmn-eca]

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parallel I initiated a similar initiative concerning the establishment of the French-speaking chapter [ppgis-fr] of the list.

Concerted efforts by network members have set the foundations for increasing awareness on and promoting the dissemination of good practice and for initiating a number of important initiatives of local, regional and global relevance.

LESSONS LEARNED

The success of PPgis.net rests in its multifaceted dimensions, the content-niche it occupies, the increasing interest by individuals, groups and organisations in mastering geo-spatial technologies for information management and communication, and the dedication which has driven its development.

The fate of an informal network depends on its members, internal driving forces and enabling environments. Mashed-up free online applications allow individuals to create the needed environments with limited financial - but substantial time – investments, and make such communities of interests coalesce and thrive.

In this particular case an increasing number of freely available third party applications have added value, outreach and networking power to its core, the DGroup. On its own, an open DGroup struggles to be visible on the Internet. On the other hand, an open DGroup which is embedded into a multi-application platform acting both as a funnel for internet surfers and as a conduit for coalescing, surfacing and disseminating content, becomes a huge, culturally-diversified think tank, in the position to generate landmark documents, mobilize activists and development agencies, attract the media and ultimately influence policy making.

Abstract

This paper describes how a number of free third-party online applications have been mashed-up with the [ppgis] DGroup in order to maximise its online visibility, functionality and outreach. The mash-up provided the foundation upon which an informal network has thrived over a period of 3 years reaching a membership of close to 1200 people scattered around the globe and communicating, collaborating and networking via the www.ppgis.net mush-up. As developer and animator of this initiative, the author describes the process undergone, strategic choices made, web applications used, and the main uses to which the core DGroup [ppgis] has been put by its members. In addition - based on members' feedback – the author summarises their perceived impact deriving from their affiliation to the network.

About the Author

Giacomo Rambaldi is a senior programme officer at the Technical Centre for Agricultural and Rural Cooperation (CTA) in the Netherlands. he has worked in development since 1982 in Africa, Asia, Latin America, the Caribbean and South Pacific. As a personal contribution to development, in 2000 he launched *Participatory Avenues* www.iapad.org, a website dedicated to sharing knowledge on community

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mapping. In 2004, he launched the *Open Forum on Participatory Geographic Information Systems and Technologies* www.ppgis.net. His areas of professional interest include visualizing indigenous spatial knowledge for improving communication, facilitating peer-to-peer dialogue and managing conflicts on issues related to the territory; collaborative natural resource management; participatory spatial planning; networking and web publishing. Giacomo is currently undertaking a part-time PhD in Communication Sciences at the Wageningen University in the Netherlands.

Giacomo Rambaldi, Burgemeestersplein 15, 6814 Arnhem, The Netherlands.
Email: grambaldi@iapad.org