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EXECUTIVE SUMMARY

This report documents the usage of Web 2.0 and social networking tools for DPE, WePreserve and Digital Preservation/Curation for dissemination on the Internet as well as for internal project communication. The report is based on internal report from Autumn 2008 called 'How can DPE profit from Web 2.0?'.

Firstly, we provide an overview of the target communities. Then we discuss the basic terms such as Web 2.0, social networking, social marketing, and delineate possible uses for projects like DPE.

Secondly we describe the Web 2.0 and social networking services which DPE used in the later part of the project life one by one and show their impact on the traffic of the website where possible. We highlight that some tools for collaborative authoring and instant communication were especially important for project workings. On-line publication tools like slideshare or issuu were used with varying success for dissemination. Use of the social networking tool Facebook promises to have a high potential for future projects.

In the third section we will give a short review of the DPE website development highlighting which Web 2.0 applications are integrated into the website.

Finally we provide recommendations for future European Commission funded projects. The experiences and lessons learned DPE gained through our venture into Web 2.0 can help shape the way future projects approach their community building and dissemination so that they can achieve greater impact and success.

> *"With social networking sites, and all sites that seek to capitalize on user input (reviews, annotations, profiles, etc.), the true value of each site is defined by the number of people it can bring together."(Lan 07)*

INTRODUCTION

DigitalPreservationEurope (DPE) is a coordination action funded under the FP6 Information Society Technologies Programme. The project addresses the current fragmentation of digital preservation efforts in Europe. It aims to foster synergies and pool the digital preservation expertise that exists across the academic research, cultural and public administration and industry sectors in Europe. DPE had three main objectives; first DPE aimed to create a coherent platform for proactive cooperation, collaboration, exchange and dissemination of research results and experience in the preservation of digital objects. The second objective was to increase the prevalence of preservation services, their viability and accountability. Finally DPE aimed to improve awareness of Digital Preservation, skills and available resources.[1]

DPE's aim is to secure a shared knowledge base of the processes, synergy of activity, systems and techniques needed for the long-term management of digital material. The DPE website visualizes all activities for the target communities. It is not enough for a coordinating action to hope that the target community finds the website. DigitalPreservationEurope saw that it must actively approach its target-communities to attract attention both through traditional events, activities and also on the Internet.

This report describes how existing social networking tools and services were used to improve the image and outreach of DPE. It is delivered under Workpackage 7: Website Launch and Maintenance.

Our first step was to review the possibilities and determine which tools and services were appropriate for DPE. Through this process, of reviewing the deluge of information about each tool, we experimented with the use of some of the applications. The quantities were such that we certainly could not analyze all types of Web 2.0 tools available on the Internet in detail. In addition to this there is a limited amount of comparable data about the popularity or market share of these applications, any global analyses would be necessarily incomplete. There are some representative surveys on Web 2.0 (Whi 07). There are websites which feature the most popular Web 2.0 applications of the year[2], and there are market share reviews about Web 2.0 applications for business purposes[3]. However, none of the sources can give us a complete picture about user behaviour in all parts of the world, and all applications.

Through our experimentation with Web 2.0, the DPE approach to Web 2.0 has changed. Some tools were implemented in the website, others remained unused due to lack of time or resources.

In this report we show which Web 2.0 tools and services were used to reach out to our target communities. Firstly we will introduce DPEs target communities and provide an overview of those Web 2.0 services that were available at the time of our review and considered relevant to the project. We will also discuss Web 2.0 as a social Marketing tool. Secondly we will discuss the Web 2.0 and social networking applications that were implemented by DP and the success that we enjoyed as a result. To better understand this evolution of the website an overview of the website before these changes is also provided.

Finally we will review the lessons learned by DPE throughout this process, providing advice and guidance to future similar European Commission funded projects.

[1] http://www.digitalpreservationeurope.eu/about/objectives/

[2] http://news.cnet.com/html/ww/100/2008/winners.html or http://www.seomoz.org/web2.0

[3] http://www.hitwise.com/press-center/hitwiseHS2004/socialnetworkingmarch07.php

1 STARTING SITUATION

1.1 DPE TARGET COMMUNITIES

In June 2006 DPE produced its first document describing its target communities, the dissemination plan, Deliverable 7.1. This document was updated in October 2007 and describes the main dissemination activities and channels for the project (see Figure 1).

The original definition of the target audience of the DPE project spoke about "*all the stakeholders producing (creators), storing (curators) and using (users) digital data from the cultural, educational, industrial and public sectors, ranging from memory institutions, schools and universities, private foundations, private companies, government agencies and local authorities, mass media and publishers to individual citizens*" (Nár 06).

The report also distinguished between better and worse informed audiences and described in detail its dissemination model and communication channels.

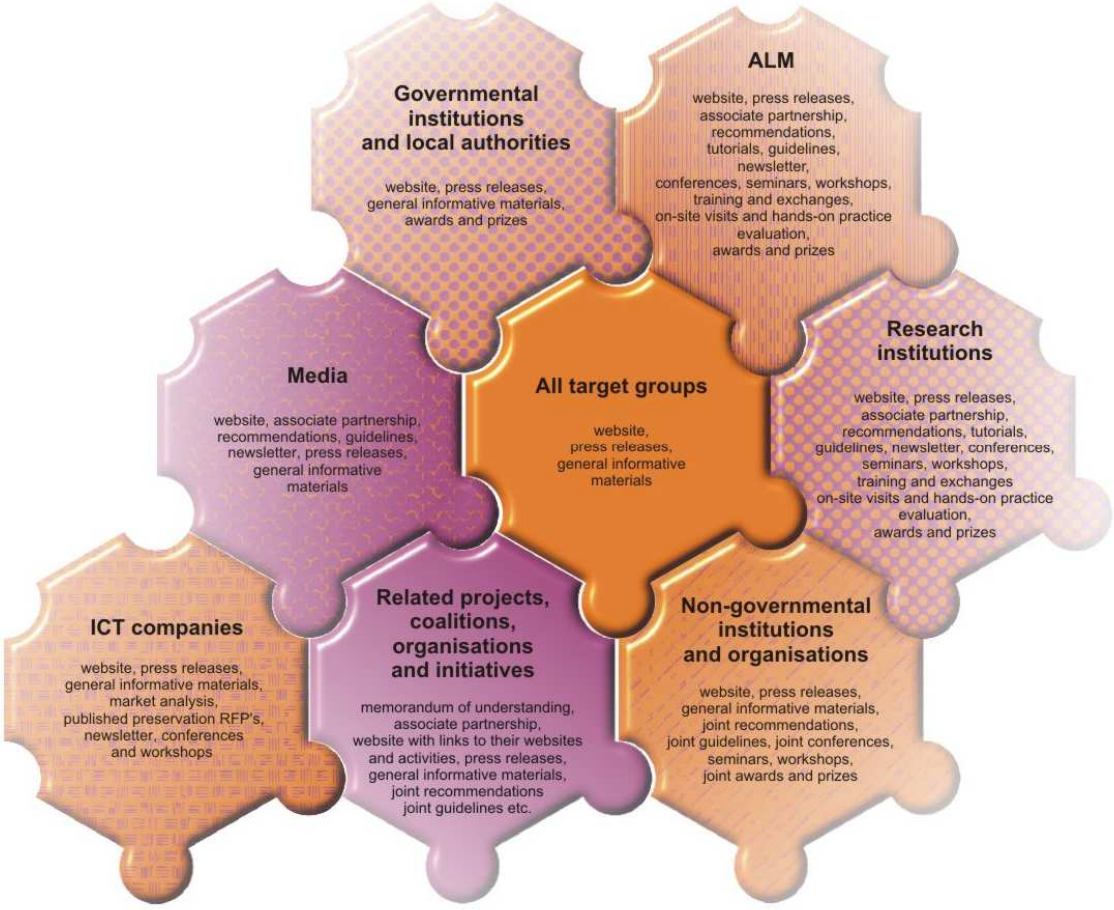


Figure 1: DPE Dissemination Model

Those already aware to some extent are:

- Non-governmental institutions and organisations (e.g. UNESCO, IFLA, ICA, ICOM, ICRC or other foundations, societies, associations)

- Related projects, coalitions, organisations and initiatives (e.g. CASPAR, PLANETS, DELOS, DPC, DCC, PADI)[4]

Those with low awareness:

- Archives Libraries and Museums (ALM)
- Research Institutions (public and private, commercial and non-profit: e.g. universities, Open Archives community)
- Governmental institutions and local authorities (e.g. EU institutions, e-government community, e-health community)
- ICT (Information and Communication Technologies) companies
- Media

DPE also targeted all the players considered to be responsible for increasing awareness of digital preservation (especially the media) or to manage programmes capable of funding the digital preservation solutions and applications. Recently DPE added radiologists and photographers as target groups that have to deal with growing amounts of digital information.

It was clear, that aiming at ICT companies and the media was a difficult task as DPE partners come mainly from higher education or the ALM sector. DPE successfully reached out to and built relationships and cooperation with those communities or target groups that were identified as already aware in its first project phases. It proved relatively more difficult to reach the ALM communities, and research institutions, so DPE prioritized and focused awareness-raising activities on ALM, research institutions and governmental institutions as well as local authorities in the last phase of the project. These activities were successful, the ALM and research and higher education community are now better aware of the digital preservation issues, attend DPE lead awareness raising events and participate in the DPE user community. ICT and Media bodies were more difficult to reach and DPE enjoyed less success in this area despite considerable effort.[5]

To be more effective, DPE or other future projects should:

- systematically survey Web 2.0 platforms to identify the areas their target communities are present (archivists, museologists, librarians, ICT communities, e-health communities and companies, radiology and imaging services, e-government communities)
- prepare a communication plan and test it
- register on these platforms and address the communities with digital preservation agendas

[4] Cf. also Erpanet Report Conclusions about situation in 2003:

"The pharmaceuticals are among the most highly preservation aware.

External regulation (e.g. FDA), compliance requirements, and perceived

market advantage and exploitation opportunities have created an environment which has

prompted pharmaceuticals to develop an awareness of digital preservation challenges."

http://www.ifla.org/IV/ifla69/papers/209e-Ross.pdf

[5] http://www.digitalpreservationeurope.eu/publications/reports/FINAL_DPE_CeBIT_Evaluation_Report.pdf

1.2 OUTLINE OF WEB 2.0 SERVICES

There is little doubt that the Internet is used in a different way today than it was only a few years ago. More dynamic methods of communication, collaborative work, sharing and social-networking have influenced the behavior of all Internet users. The term "Web 2.0" was born as a metaphoric title for a brainstorming session by Tim O'Reilly in 2004 and is a synonym for the way people interact with the Internet and with each other using the Internet today.[6] The transformation from web 1.0 to Web 2.0 is a shift from reading static websites to an interactive use of the web, sharing information, expressing opinions, commenting on other people's entries, reviewing documents etc. Even though the main flagships of Web 2.0 (e.g. YouTube, Face Book, Wiki, or the concept of blogging) are usually seen as entertainment, the role of YouTube in the election campaigns in many countries documents wider social impact of these technologies. A survey by David White shows that the impact of Web 2.0 applications is not limited to leisure activities or focused only on the youngest user group of the total of 2 billion Internet users. Businesses already recognized the Web 2.0 potential for generating additional revenues, even when having to rethink customer behaviour. Focusing on "long tail" consumers appears as an important part of the growing Internet market. According to Forrester Research, Web 2.0 technology spending will grow to $4.6 billion in the next five years. That would make it almost as big as business intelligence, one of the hottest software growth areas of the last few years. (You 08)

[6] "The concept of "Web 2.0" began with a conference brainstorming session between O'Reilly and MediaLive International. Dale Dougherty, web pioneer and O'Reilly VP, noted that far from having "crashed", the web was more important than ever, with exciting new applications and sites popping up with surprising regularity. What's more, the companies that had survived the collapse seemed to have some things in common. Could it be that the dot-com collapse marked some kind of turning point for the web, such that a call to action such as "Web 2.0" might make sense? We agreed that it did, and so the Web 2.0 Conference was born." (http://www.oreilly.de/artikel/web20.html#mememap)

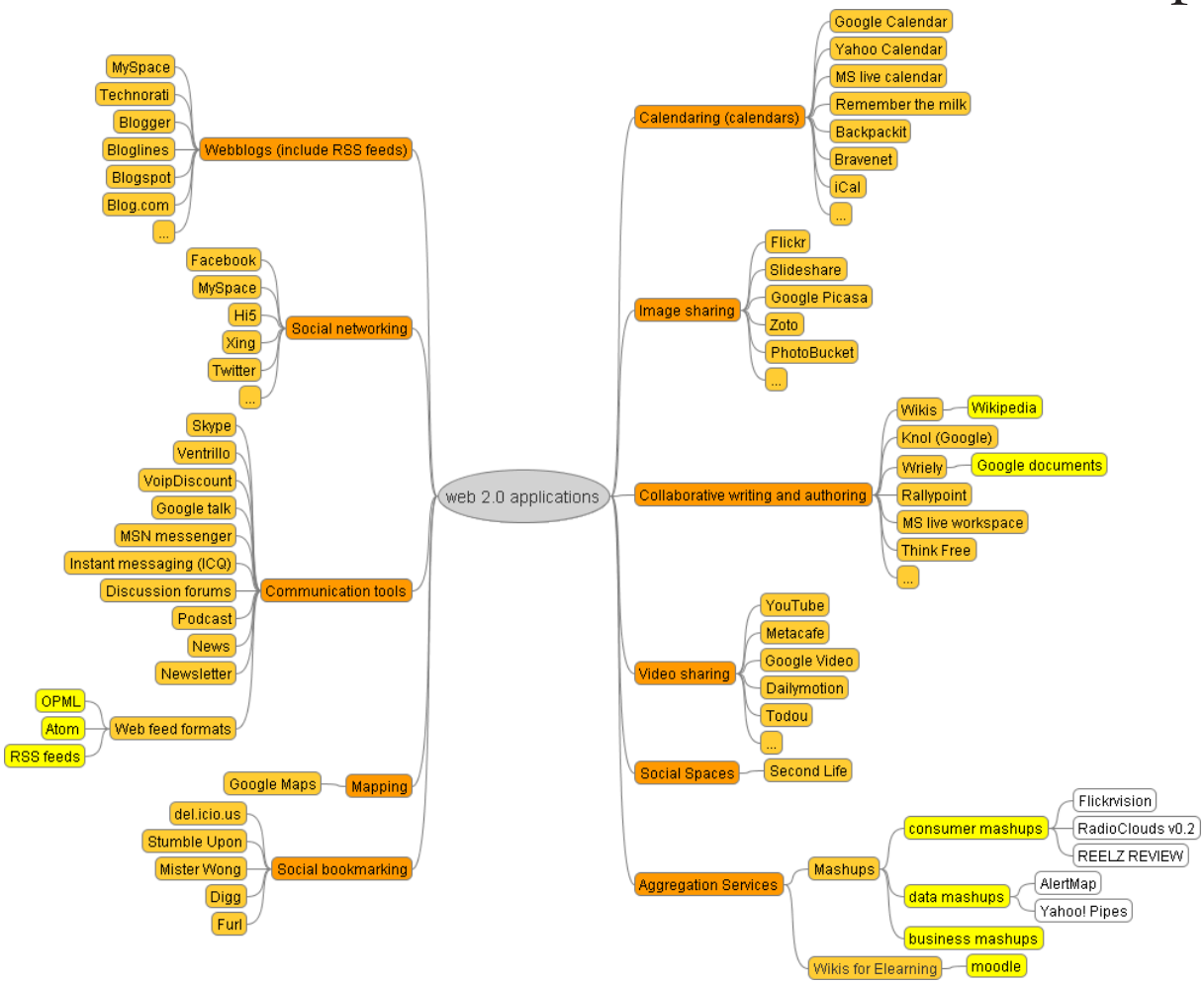


Figure 2: Web 2.0 applications

1.3 WEB 2.0 AS SOCIAL MARKETING TOOL

As we have seen a primary goal for DPE is to raise awareness about preservation issues. By using sociological terminology, DPE constructed digital preservation as socially acknowledged problem. To paraphrase the classical definition of Spector and Kitsuse (1977) formulated in the area of social problems: according to them, there are no objectively harmful social problems; there are just better or worse defined issues, which are more or less successfully promoted in the public sphere by some interest groups (Kitt 77).

DPE simply had to try to persuade the relevant public that digital preservation is an issue worthy of attention. From the marketing perspective DPE did not try to sell or promote a product or service, but wanted to alter the thinking of its audience. Following successful awareness raising about digital preservation in the target community, the next step is to push the community into a research phase, when interest in the topic drives the audience to get more information about the issue. The aim was to cause a change of behaviour in the community to become more involved or active. As a result some of the audience should have started to further recommend and promote the DP issues.

Awareness > Research > Change in behaviour > Advocacy

With this type of marketing approach, DPE had to face real difficulties in accurately measuring the impact of its specific marketing activities. Measurement of the impact of a project like DPE is difficult for a number of reasons:

- DPE is not the only project focusing on digital preservation issues; we can find a number of research projects both at a European and national level in most European countries. For example it would be impossible to accurately measure whether an increase in interest in digital preservation is a result of DPE's activities. While it is clear that awareness levels have risen in the past three years, it is likely that this is resulting not only from DPE actions but a culmination of this, other projects, arising needs and changing circumstances within organisations.
- The massive growth of the amount of digital information globally produced (Gan 08) naturally calls attention to the digital preservation issues. So the "raise of awareness" is partly a natural process, which could be hard to ascribe to any single project action.
- Measuring the impact of DPE on Web 2.0 platforms is difficult, as not all the communication channels are in control of the project's staff. Spreading the message in this context means having content reused by individuals which might happen without giving reference to where it was originally taken from.

One of the ways to exploit the potential of Web 2.0 and social networking is Internet social marketing (Table 1). Today's Internet marketing is based upon usage of multiple communication channels and careful analyses of the channels efficiency. Social networking tools are used as a communication channel which can provide the traffic and especially the "conversions." Conversion rates, the buzz word of the Internet marketing, refer to the percentage of visitors, who take a desired action or visit our page, be it by e.g. registering, downloading, or buying.

Table 1: Characteristics of social marketing (Bas [s.a.]).

Social marketing is	Social marketing is not
A social or behaviour change strategy	Just advertising
Most effective when it activates people	A clever slogan or messaging strategy
Targeted to those who have a reason to care and who are ready for change	Reaching everyone through a media blitz
Strategic, and requires efficient use of resources	An image campaign
Integrated, and works on the “instalment plan”	Done in a vacuum
	A quick process

For effective Internet marketing we have to know what our goals are and how we will measure our progress, using key performance indicators. Integrated marketing combines online and offline strategies, and sources of conversions from different communication channels using clever systems like Unica, Omniture or Google Analytics.(Ramos and Cota, 2009)

In this area DPE initially had only broadly defined goals, like “raising awareness” of the digital preservation issues. Later some measurable goals were set, e.g. website traffic, number of downloaded documents, number of users coming from different sources, location or domains. These form our "key performance indicators." **(Gan 08)**

2 WEB 2.0 AND SOCIAL NETWORKING APPLICATIONS USED BY THE DPE

We felt that the interactivity of the website was still very low. The pages were filled with content didn't attract as much attention as we had hoped. We realized that Web 2.0 is something which might be useful, not only to make our DPE website more appealing, but even to provide more visibility of DPE on the Internet especially outside the DPE website itself. We decided to improve the DPE website with some Web 2.0 elements and started to use various Web 2.0 services for dissemination of the project outcomes.

Unfortunately most of these enhancements were done during the last year of the project, so we had only around 8 months to improve upon the website. Before that the focus was set on adding relevant content instead of its presentation and accessibility. Today's users expect Web 2.0 features on web pages. This should be considered when initially designing the webpage of any project which has dissemination among its aims.

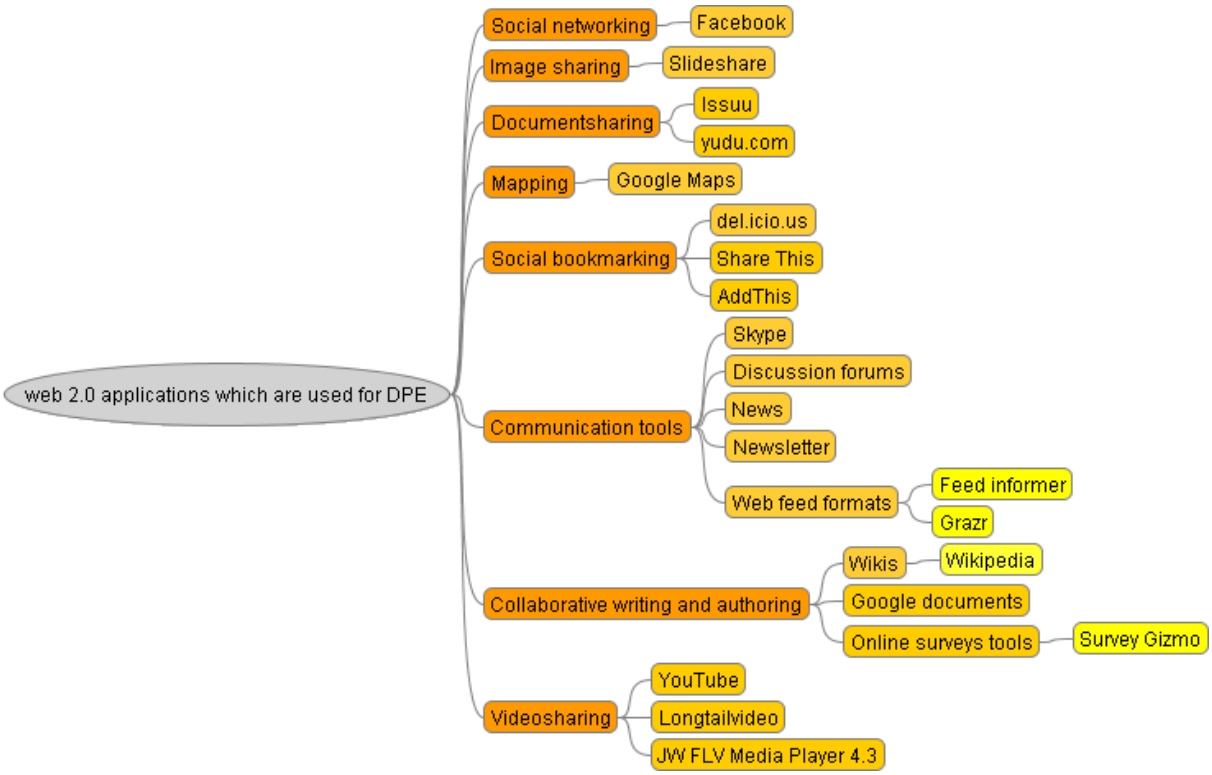


Figure 3: Web 2.0 applications which used in DPE

2.1 SOCIAL BOOKMARKING

Definition

"Social bookmarking is the practice of saving bookmarks to a public web site and "tagging" them with keywords. Bookmarking, on the other hand, is the practice of saving the address of a Web site you wish to visit in the future, on your computer. To create a collection of social bookmarks, you register with a social bookmarking site, which lets you store bookmarks, add tags of your choice, and designate individual bookmarks as public or private. Some sites periodically verify that bookmarks still work, notifying users when a URL no longer functions. Visitors to social bookmarking sites can search for resources by keyword, person, or popularity and see the public bookmarks, tags, and classification schemes that registered users have created and saved" (Ini 05).

Delicious http://delicious.com/

Delicious is one of the best known social bookmarking services. It allows users to tag, save, manage and share web pages from a centralized source. With emphasis on the power of the community, users are able to discover, remember and share their bookmarks on the Internet.[7] Instead of having different bookmarks on every computer, social bookmarking services make it easy to have a single set of bookmarks kept in sync. Even if they are not on their own computer, they can still get to their bookmarks on the website of the different services.[8]

Other examples

Stumble Upon

http://www.stumbleupon.com/

Mister Wong

http://www.mister-wong.com/

Digg http://digg.com/

Furl http://www.furl.net

Moreover there is the bookmarks-sharing option. It is very easy to send interesting bookmarks to friends on Delicious that they can check out next time they log on. An additional and helpful feature of the bookmarks-sharing option is that when you find interesting users (for example digital preservation experts), you can use the Subscriptions and Network features to keep track of their Delicious tags. This could also be an option to spread knowledge about digital preservation, to add bookmarks to interesting resources and be part of the digital preservation community on Delicious. Delicious is free to use, developed by Yahoo Inc. There are probably around 5 million registered users of Delicious.[9]

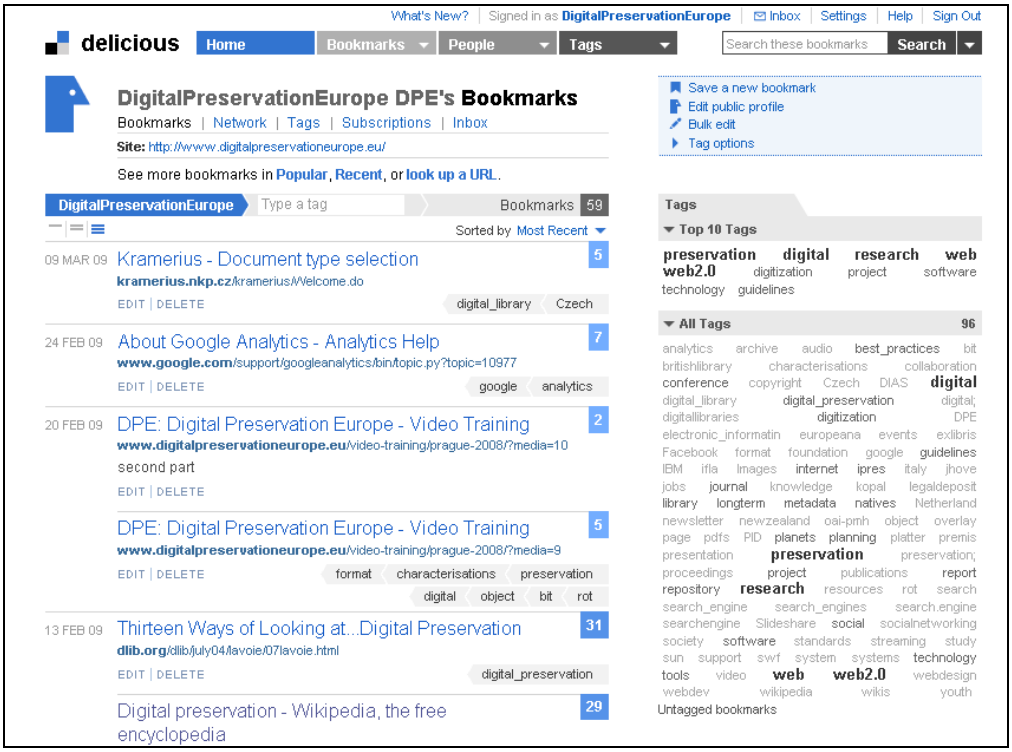


Figure 4: tagging individual briefing paper and DPE profile on Delicious

[7] http://www.thegoodwebguide.co.uk/index.php?rid=4790

[8] http://delicious.com/

[9] http://blog.delicious.com/blog/2008/07/oh-happy-day.html

How DPE used social bookmarking

There are two ways DPE used social bookmarking for its website: as publisher, DPE provided bookmarking buttons to the users on its website using free services linking too many bookmarking pages (see section 3.2.4). In addition to this we established a DPE community bookmarking identity on Delicious to give the opportunity to share our interests with other groups. DPE staff then generated an open list of bookmarks, which anyone can see and, if logged on, can enrich. DPE Delicious bookmarks are available directly on Delicious website in our DPE profile or as embedded on the DPE website. More over, the Delicious channel is available even through our DPE Facebook Page. Naturally we did not tag only DPE website sections, but also other interesting resources, thus attracting more people. Users of Delicious can see how many other users have actually already tagged some resource, can see their list and look through the tags of each of them. This creates clusters of interests – somebody tags resources and sees that there are 50 other users tagging the same resource, and by looking at the lists of these users can see that some of them share this interest. Later users can connect, create groups, and automatically follow the new tags of the group or friends. In addition, as always in the social networking area, all the DPE staff were encouraged to tag their own private profiles. DPE staff logging into Delicious while working and adding bookmarks as they browse ensures that bookmarks will be up to date and interested readers can use them as special resource. Last but not least DPE is also present on Delicious and if anybody searches for digital preservation, he or she will get to the DPE profile, which in turn generates more traffic on the DPE website.

Conclusion

Working with Delicious and adding bookmarks is very easy, it only requires some DPE staff to be logged into Delicious while working and add bookmarks as they are browsing through some interesting materials about digital preservation. This will ensure that bookmarks will be up to date and interested readers can use them as special resource. Only if the DPE bookmarks are reflecting actual activities, documents, calls for papers etc. will it be successful and will people use it regularly. An additional positive outcome of this activity is that if anybody searches for digital preservation, in Delicious or Google, he/she will get to the DPE profile, which generates more traffic on the DPE website.

2.2 IMAGE SHARING

Definition

"Image sharing" bundles Image and Video hosting websites, web service suites and online community platforms that provide users with free Web space to share their personal photographers, videos, slideshows and images over the web. Users can then share these objects with friends or with the public at large.

Other examples

Flickr http://flickr.com/

PhotoBucket http://photobucket.com/

Google Picasa http://picasaweb.google.com/

Slideshare http://www.slideshare.net/

Slideshare is primarily for sharing slide presentations and has been available since 2007. Slideshare is freely available to everyone who wants to upload their presentations by creating an account with them. There is a maximum limit on uploaded data per registered user. Power point formats, open office formats or PDFs are all transformed into Flash animations, so it is usable in both Windows and Linux. There are more than 300,000 presentations currently posted on Slideshare covering a wide range of topics. Many presentations come from scholars and other experts. They use Slideshare as a service to make their presentations available. Slidshare offers also the possibility to comment on the presentations, create user groups; it also offers special APIs for embedding into blogs, social networking sites or other websites. DPE used this feature for presenting many DPE publications on DPE web in a nice and interactive way. Slideshare is an attempt to reach out to users in their preferred online

environments. Each presentation is indexed; it has a text version bellow for indexing, and has keywords and other metadata. The uploaded presentations can be made public or available only to invited users.

How did DPE use Image sharing?

DPE used slideshare mainly to distribute presentations from training events and conferences. The DPE community as well as interested people could than see presentations directly on the web without downloading them on their computers. User can also embed our presentations to their websites. A positive outcome from this activity is that by having our own Slideshare profile with many DPE presentations, DPE gains extra visibility on the Internet, increasing the number of people we reach (see figure 5).

DPE also experimented with other Web 2.0 publishing tools, like Yudu or Issuu but these tools were more designed for text based documents and PDF files. We used them to make DPE publications (briefing papers, handbooks) visually more attractive and reader friendly. With 300 views between 10th December 2008 and the end of February 2009, the PLATTER document was the most viewed DPE document on Issuu.com. The traffic on briefing papers made available through this tool was much lower.

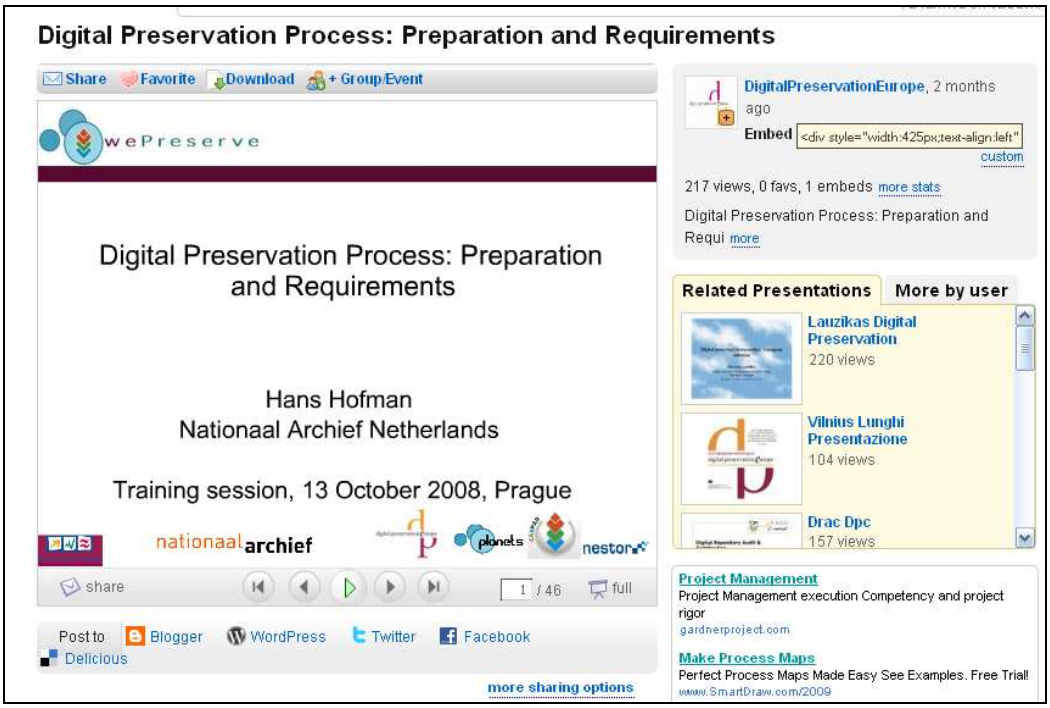


Figure 5: Slideshare account of DPE

Conclusion

We found that disseminating information on social publishing tools was a successful strategy. All these tools use flash technology, with nice embed facilities such as tagging, users group creation, messaging, commenting, and statistics. Slideshare especially proved to be a very important tool for DPE. Between October 2008 and February 2009 almost 12,000 downloads of DPEs 85 presentations have taken place. The most frequently downloaded presentation was the presentation 'File formats

and registries'[10] by Manfred Thaller on slideshare with 837 views, this corresponds to participant feedback from our training events which sited this as among the favourite presentations. In our opinion presentation sharing has the greatest potential of all Web 2.0 services for projects like DPE. Slide sharing has helped DPE to offer online viewing of all presentations without the need to download them or open in any other software (see Figure 5).

Future projects should also consider making some of their reports available in a visually attractive way, using tools such as issuu, including more illustrations, photos and with focus on good design to fully exploit the potential of similar image sharing tools.

2.3 COLLABORATIVE WRITING AND AUTHORING

Definition

Collaborative authoring is also known as collaborative editing, computer-supported collaborative writing, cooperative writing, cooperative editing, shared editing, group editing etc. Real-time, or synchronous, collaborative editors allow users to edit the same file at the same time. Non-real-time, or asynchronous, collaborative editors do not allow editing of the same file at the same time. In this way these tools are similar to revision control systems (Wik 08b). There are two main types of these applications. Firstly there is the wiki based tools which allow basic word processing and website-layout. The second type is closer to MS Office, featuring more advanced word processing and layout options.

Other examples

Wikipedia http://www.wikipedia.org/

Writeboard http://www.writeboard.com/

MS live workspace

http://workspace.office.live.com/

Zoho http://www.zoho.com/

ThinkFree http://www.thinkfree.com/

Knol (Google) http://knol.google.com/

Wikipedia http://en.wikipedia.org/wiki/Main_Page

The Wikipedia project was founded by and is owned by the Wikimedia Foundation, a non-profit organization that also manages other online collaborative projects, including Wiktionary or Wikiquote. This web-based encyclopaedia formally began in January 2001. The project has two main purposes. First, to offer free encyclopaedic content to everyone. Secondly, to provide a room for anyone to freely create an entry or to correct it, arrange it or add more information etc. Whether a high school student or university professor, anyone can became a content creator. To allow this collaborative editing and creation, there is an underlying user-friendly software application, Media-Wiki.

Now, in 2009, Wikipedia shares human knowledge in more than 250 languages and in almost 10 million articles. It is a most exemplary case of "collective intelligence", the concept of French digital culture theorist Pierre Levy, involving, sharing ideas between thousands of students, researchers and others around the world through the state-of-art ICT technology. On the other hand, there has always been a controversy surrounding Wikipedia. As anyone can contribute here, questions of vandalism (eg. deleting texts at malicious will) propaganda, conspiracy theories and other non-standard or illegal issues have frequently arisen. As anyone can write there, there is no guarantee for the quality of articles. A school child can contribute and edit articles on a subject in the same way, and indistinguishable from a university professor. To address this there are Wikipedia editors (volunteer users enjoying a good reputation in Wikipedia community) who enforce the rules and check article content. On the other hand, this can be considered to be a form of censorship. Wikipedia is very often the first place people around world go to start their information searching. In addition to this Google

[10] http://www.slideshare.net/DigitalPreservationEurope/trm-02-10-07vilnius-presentation

searches usually return Wikipedia entries as the most relevant results. This is ensures that Wikipedia resources have a large impact on Internet users and are an excellent way of disseminating information.

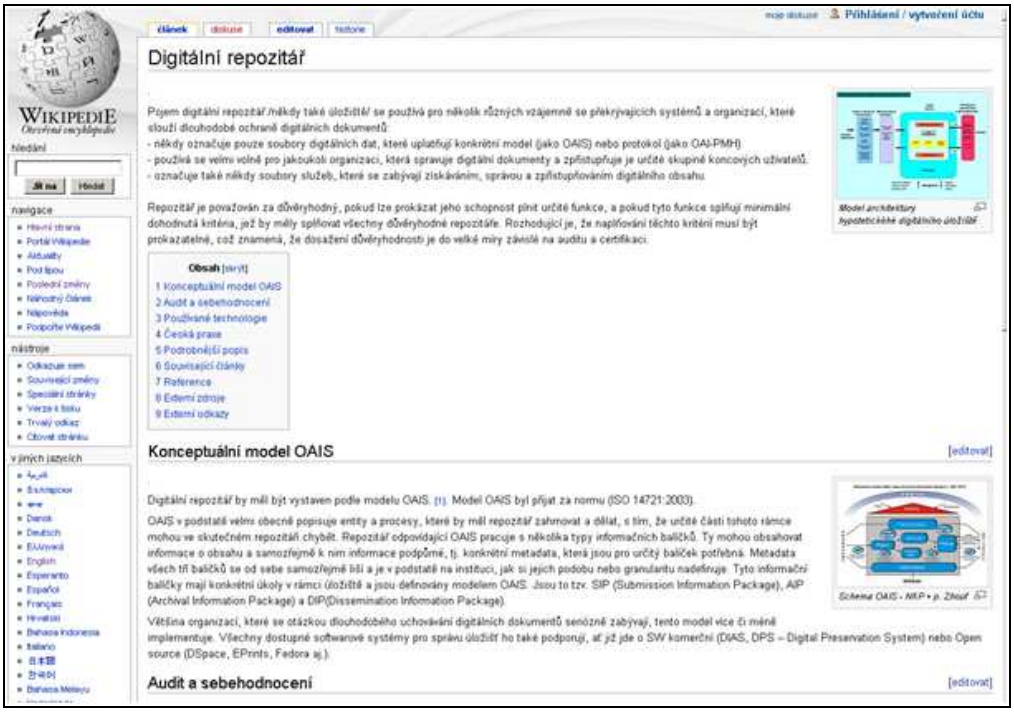


Figure 6: Wikipedia page for DPE in Czech

Google Docs http://docs.google.com/

Writely was one of the first online word processors. It has been taken over by Google and today it's branded and is a part of Google Documents. The philosophy is very simple, to provide an online word processor to write and edit from each computer connected to the Internet. One attractive feature is that you can share documents and edit them together online. It was never that easy to collaborate on text documents before. The Google Docs application enables you to keep track of the traffic on your documents and searching in older versions. Subsequently Google has added the possibility to upload, create, edit and share table documents and slide presentations.

How did DPE use Collaborative writing and authoring?

As to digital preservation initiative presence on Wikipedia, we must consider all above mentioned issues. Writing a new article about a particular digital preservation issue, correcting entries with false or unclear information, updating or adding some new information to existing articles or adding links to relevant information for example to a DPE briefing paper. All these actions can be considered as highly effective and a serious means of raising awareness of digital preservation issues among other colleagues, specialists from related areas or any interested individual. We have been experimenting with ways of using Wikipedia for spreading basic information about digital preservation for beginners or casual users as well as deeper knowledge for specialists. We have searched Wikipedia content to find which entries or topics that are not already covered or need updated with information about digital preservation, particularly about digital preservation issues challenged by DPE project. We have identified the following points:

1. adding information to Wikipedia about a project is sometimes considered to be spam or vandalism by editors.

2. the best way to disseminate information using these tools is, following the example of DPE, informing, not advertising
3. it is possible for Internet users to cut and paste articles from a Wikipedia entry elsewhere on the internet. This can result in the Wikipedia entry being deleted, with Wiki editors wrongly attributing original authorship to the Internet user using cut and paste.
4. resolving issues and communication with Wikipedia editors can be very difficult

In DPE we use Wiki software as a space where as a project team we can collaborate, share ideas, documents etc. It is based on MediaWiki and it has been in place from the beginning of the project.

In the DPE project we have used Google Docs to create collaboratively written reports, such as this one. In order to do this one person creates the initial document and then invites their co-workers. To start a collaborative writing process this tool is very useful. We have found that the disadvantage of this tool was the lack of functionality in design styles. In the case of longer documents, 20 pages or more, the whole layout and work becomes confusing, as it has no pages as for example in MS Word, but it looks like one never-ending sheet of paper. An unexpected benefit to using this tool was its role as a motivator, as it is possible for all to identify who is working on the report and who is not.

An important consideration is the lack of clarity over copyright ownership when using such tools. In addition to this Google is private company and they can cease any or all of their services, including Google Docs, whenever they choose and you would loose all your documents.

Conclusion

It is not only important for DPE, but for all geographically distributed projects, that people can write documents together without being in the same place. These tools allow this without the need for cumbersome versioned and commented copies of the document circulating.

2.4 VIDEO SHARING

Definition

"Video sharing refers to websites or software where users can distribute their video clips. Some services may charge, but the bulk of them offer free services. Many services have options for private sharing and other publication options. Video sharing services can be classified into several categories, among them: user generated video sharing websites, video sharing platform / white label providers and web based video editing" (Wik 08c).

YouTube

'YouTube is a video sharing website where users can upload, view and share video clips.'(Wik 0)

To display a wide variety of user-generated video content as movie clips, TV clips, and music videos, as well as amateur content such as video blogging and short original videos, YouTube uses Adobe Flash Video technology. YouTube can be used by everyone, as individuals, media corporations or as organisations. Users can watch the videos without being registered. Registered users are permitted to upload an unlimited number of videos. (Wik 0) YouTube could be very powerful channel to disseminate ideas as we have seen in U.S. President elections in 2008.

Other examples

Metacafe http://www.metacafe.com/

BBC iplayer

http://www.bbc.co.uk/iplayer/

Dailymotion
http://www.dailymotion.com

Tudou www.tudou.com

How did DPE use videosharing?

DPE has produced two animated videos to raise awareness about digital preservation issues among the general public. These animations will be made available on youtube. It is planned that additional materials will be made available via this youtube channel.

The other way of using videos for DPE purposes is to produce own videos and make them available on DPE website as we did with DPE training videos (for more information see section 3.2). This targeted activity, to people already interested in the Digital preservation problem, has proved very successful.

> *"Really good news. I have had a look at the training material on line and it is very impressive. It's just like being present at the course. All other online training will be very welcome, particularly for those in smaller, less well resourced repositories and the self-employed like me."*11

Conclusion

Video sharing has a great potential to attract people to an issue and motivate them. But it is extremely difficult to do so in case of YouTube or similar public services due to the millions of videos your video has to compete for attention with.

2.5 SOCIAL NETWORKING

Definition

"*A social network service focuses on building online communities of people who share interests and activities, or who are interested in exploring the interests and activities of others. Most social network services are web based and provide a variety of ways for users to interact, such as e-mail and instant messaging services*" (Wik 08d).

In addition to this most social network services provide features such as: inviting people to join your network and accept contact invitations; entering a status message on your profile (such as 'at a trade fair' or 'not in the office'); basic search: by first name, last name, city, industry or school etc. You can also organize and manage public events. The professional's social networks are more oriented to business contacts, address books, job/positions search etc.

"The main types of social networking services are those which contain directories of some categories (such as former classmates), means to connect with friends (usually with self-description pages), and recommender systems linked to trust" (Wik 08e).

The use of social networking services is growing quickly - last year by 25%. The extent of social networking within the Internet user community is enormous - 67% of all Internet users use social networking services. (see Table 2).

There are also a growing number of professionally oriented social networking sites, which mediate relations between experts in various fields, provide communication spaces and directories. The target market for such services are primarily business and other consultancy, but also academic or research contacts. The populations of these services are much smaller, and their traffic is lower compared to projects like Facebook or Hi5. Linkedin.com has some 25 million of user according to it official information.

In February 2009 Facebook was growing by more than 5 million users a week globally and more than one million a week in the United States alone[12].

[11] Email correspondance to E Nimmo, 05.03.09, in response to the release of the Vidoe training programme.

[12] http://www.allfacebook.com/2009/02/facebook-now-growing-by-over-700000-users-a-day/

Table 2: Growth of social networking services users[13]

Worldwide Growth among Selected Social Networking Sites **June 2008 vs. June 2007** **Total Worldwide Audience, Age 15+** **Home and Work Locations** **Source: comScore World Metrix**			
	Total Unique Visitors (000)		
	Jun-2007	**Jun-2008**	**% Change**
Total Internet : Total Audience	**778,310**	**860,514**	**11%**
Social Networking	**464,437**	**580,510**	**25%**
Facebook.com	52,167	132,105	153%
MySpace.com	114,147	117,582	3%
HI5.COM	28,174	56,367	100%
Friendster.com	24,675	37,080	50%
Orkut.com	24,120	34,028	41%
	Total Unique Visitors (000)		
	Jun-2007	**Jun-2008**	**% Change**
Skyrock Network	17,638	21,041	19%

Facebook

http://www.facebook.com/login.php

Social networking is big phenomenon today. It is used to keep in touch with other people you already know or to find new friends. Everybody can create a profile and be visible to chat with others, share photographs, news and much more.

How did DPE use the Facebook

http://www.facebook.com/pages/DigitalPreservationEurope-DPE/38843690994

In October 2008 DPE established a Facebook page (Figure 7). This is not an unusual practice, since institutions like UNESCO World Heritage Site Preservation, WWF (World Wildlife Fund), Greenpeace, UNICEF, Amnesty International, UNHCR – The UN Refugee Agency and many more also have profiles. The first aim in creating a DPE Facebook page was to gather people interested in the digital preservation topic, so that we could disseminate DPE content from the DPE website and point them to our website. In the Facebook Page basic information about DPE is presented: the aims and goals of DPE, a short description of the project, links and photos etc.

[13] source: http://www.comscore.com/press/release.asp?press=2396

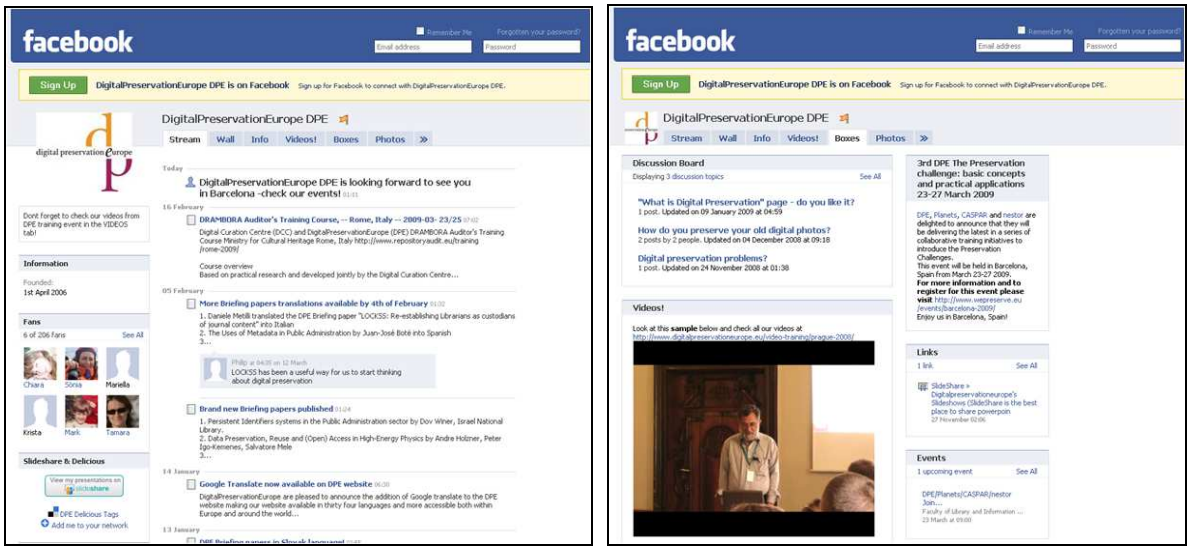


Figure 7: DPE Facebook Page

We have published videos, presentations, publications in various attractive ways using this service. People who were interested could become fans of the DPE Facebook page and could be a part of the community. When they are fans, it is very easy to stay in contact with them and provide more and more updates about project activities directly. One of our aims was also to develop the role of DPE and the DPE website as a meeting place for people interested in digital preservation. Obviously people who are fans of the DPE Facebook page are interested in the topic. The fan group for the DPE Facebook page totals more than 210 individuals, and consists of many different communities such as Universities, libraries, museums and the IT industry, but all of them belong to DPE target groups.

The Facebook Page more or less contains copies of the content from the normal DPE website, but it is far more interactive. Fans can get involved in discussions, see our photographs from several DPE events, upload their own photographs, videos etc. They can express their opinions on the "Wall". Fans can also set up the RSS channel to receive all the updates on the DPE Facebook Page, which another way to follow our activities and keep up to date.

DPE has used Facebook to post updates about what is newly available on the main DPE website, briefing papers, videos and the like, but in more dynamic interesting way, closer to users. It proved a very good channel to announce DPE events. The information disseminated here is very similar to the DPE website news page. This means that it is very quick and simple to maintain, as the same content can be used for both the DPE website and the Facebook Page.

Conclusion

We have found that the Facebook Page is a much more attractive way to reach the general public than a normal website, in particular the 'Facebook generation'. In a rather short time and with very little promotion the page attracted over 200 fans and the number is growing constantly. The success of this page really depends upon activity of the DPE staff, on how often news, interesting content, discussion topics get added. Without any updates, there would be no traffic and people (fans) will quickly stop using this resource. Regular content updates are necessary to maintain and generate new interest.

We have also found the facility to send a message to all DPE 'fans' to be an extremely useful tool. This not only allows us to contact the 'fans' and keep them informed about our actions, but such messages also appear on the personal profiles of each fan. Therefore this allows us to reach a much

wider and varied audience than is possible through our own website, through professional mailing lists, or other more traditional awareness raising channels.

Figure 8: Graphs of DPE Facebook Page views and fans getting involved (November 2008 – February 2009)

As you can see above, pages form the DPE website that were published or promoted through the Facebook Page when compared with other website pages and visitors attracted more users and users stayed for longer on each page. The Facebook Page proved to be a highly successful and efficient strategy. We would advise all similar projects to engage with their community in this way at the start of the project and embed this firmly within their wider marketing and dissemination plan.

Other possibilities to use social networks, beside using Facebook, would be to target the professional networking, searching the meeting places of our target population, and enter there with a sophisticated campaign, for example with LinkedIn (linkedin.com).

2.6 PROJECT MANAGEMENT COMMUNICATION TOOLS

Definition

Communication tools are software that allows two or more users to communicate in real-time using the Internet. There are a variety of tools in common use. These communication tools provide a variety of functionalities ranging from making telephone calls (with or without a video feed) or instant messaging (chat), or just sharing messages in forums. Instant messaging is a sub-category of communication tools. Instant messaging refers to real-time communication between two or more people based on typed text. The text is conveyed via computers connected over a network such as the Internet.

Communication tools are basically usable in two ways, internal and external. We in DPE were focused more on internal implementing.

Other examples

Google Talk

Voip Stunt

http://www.voipstunt.com

ICQ http://www.icq.com/

RSS

Podcast

Discussion forums

Bloglines http://www.bloglines.com/

Web feed formats: Atom, OPML

Skype

http://skype.com/

Skype is a widely used service providing free

communication functionalities over the Internet, including telephone calls, video feeds, instant messaging and more.

How DPE used Skype?

In geographically distributed projects such as DPE, Skype permits the project to arrange conference calls including all partners without incurring prohibitive charges. Skype also allows DPE staff members to be in contact with one another in real-time, which is very useful especially when working collaboratively. DPE has a regular Skype call every two weeks, to monitor the project activities and identify and resolve any issues which may arise. Minutes of each call are made available the following day and can be found on the DPE wiki.

RSS feeds

DPE website offer RSS feed channel to subscribe. People interested can get all updates and news into their RSS aggregators and follow all activities on the DPE web and in the project.

Conclusion

The communication tools mentioned above have been used mainly for internal purposes. These tools have facilitated a much greater level of cooperation, collaboration and collegiality within a geographically distributed project and have allowed us to maximise the potential of the European Commission funding by keeping costs to a minimum.

3 WEB 2.0 SERVICES INTEGRATED INTO THE DPE WEBSITE

The crucial importance of the DPE website for project dissemination was not stressed enough, in the project dissemination plan. The website was listed first in the list of DPE tools used for reaching our communities, but it was described (functionality etc.) only in the Appendix.

We think that future projects should recognise the importance of their website as a communication tool from the outset. User preferences are fickle, and if the website does not stimulate their interest upon the first visit, they are unlikely to return. Reasons can be as follows:

- lack of content
- no user-friendly design and features, features which do not match the users expectation
- no possibilities to interact

3.1 OVERVIEW OF THE DPE WEBSITE

The DPE website was launched shortly after the project's start, on April 28, 2006. The page was based on the previous Erpanet website. It shared Erpanet registries (ErpaPrints) and even initially the layout. As the web site was part of the DPE dissemination plan (external deliverable D7.1) time constraints didn't allow the inclusion of a Web 2.0 policy. Further in early 2006 the recognition of the importance of Web 2.0 in society was not as wide spread as it became during the life time of the project.

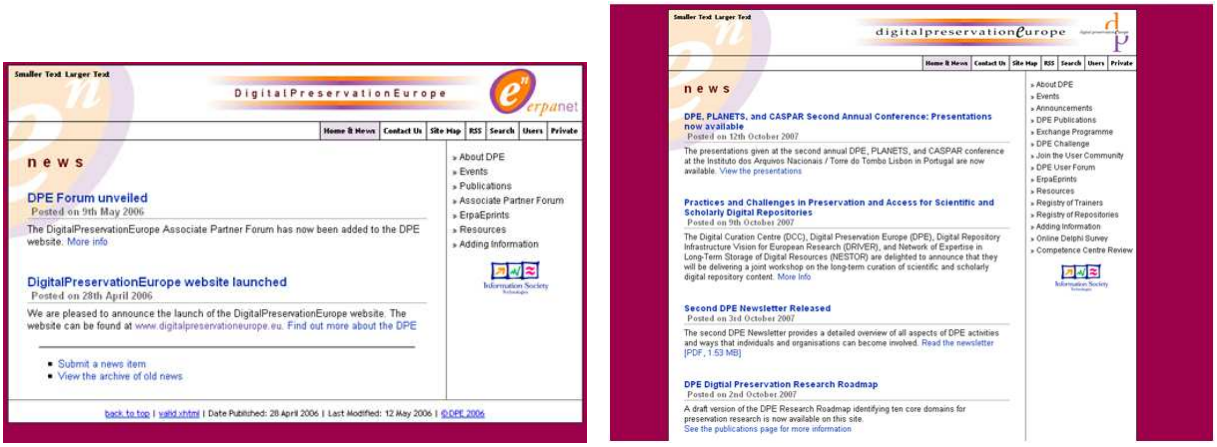


Figure 9: DPE Website in April 2006 (a) and in October 2007 (b)

It was recognised that the website would have to be updated and improved continuously throughout the DPE project. It quickly became apparent that there was a demand for change to the layout appeared very soon after launch. Moreover, official documents of the project were uniform in a design and but very different from the website It was clear that the project website, as the most important dissemination channel, had to comply with wider whole project visual identity and design.

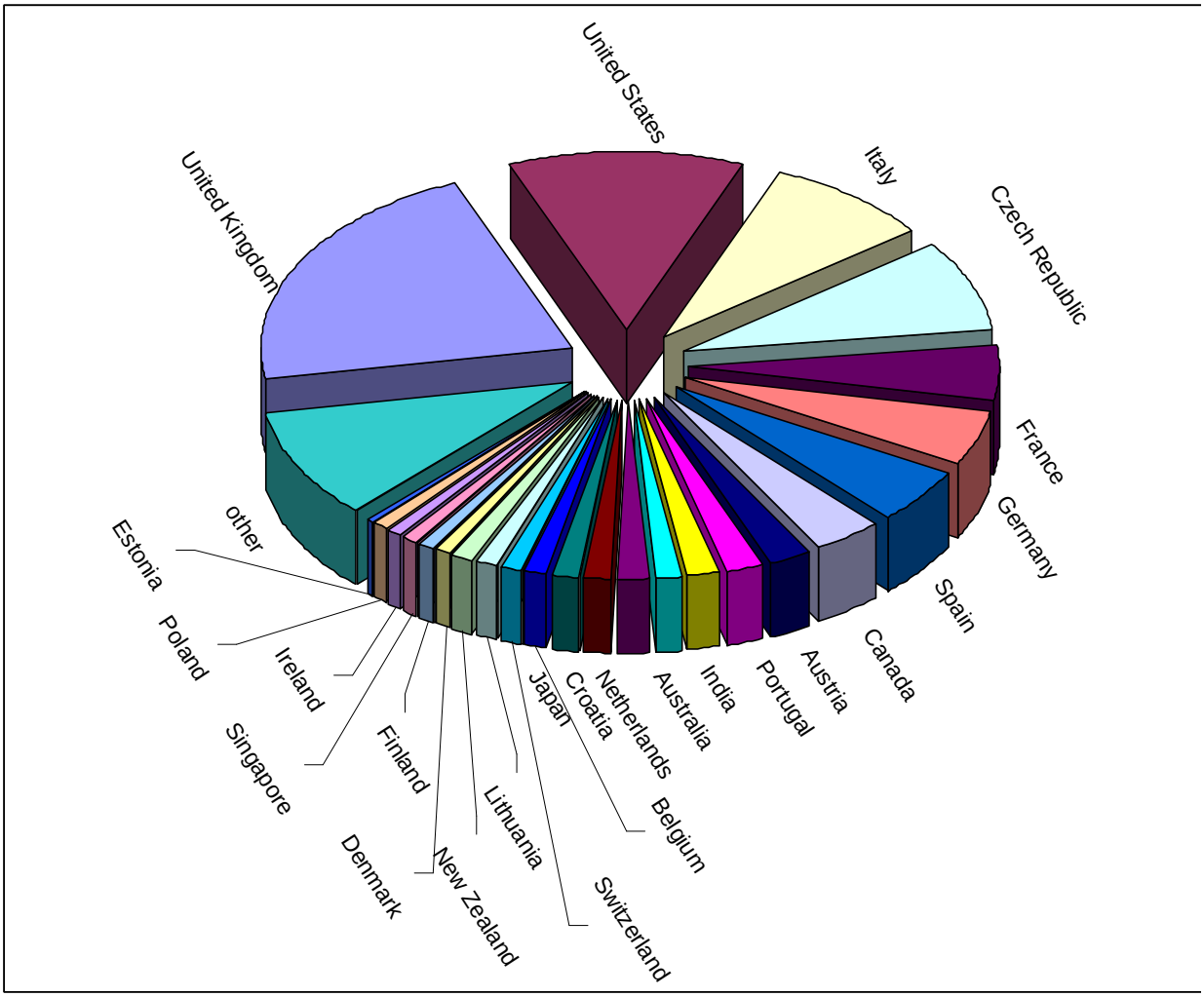
Content started to be added on regular basis from August 2006 and as this grew it became necessary to incorporate some minor changes to accommodate our developing needs and to allow visitors to the website to find our content more easily.

Figure 10: Examples of the DPE Website after the Relaunch in December 2007

As we can see above, a completely new layout was launched in the first week of December 2007 (Figure 10). This change was very important to the project providing a unified visual identity, a more intuitive structure and improved functionality for website users.

During 2008 more items have been added to the menu and we have continued to greatly improve the content and functionality, with particular focus on Web 2.0 services. Today our list of events on the topic of Digital Preservation is one of the most comprehensive lists on the Web. We have also created very rich information resources through the development of our Registries etc. (Figure 10). From this point the DPE website was much more attractive to users and we started to improve it even further with the addition of Web 2.0 features.

Last but very important change was creating the "What is the Digital Preservation?" page on the DPE website. We felt that very basic information on what digital preservation is and means was missing on our website. We also felt that many users may visit our website to learn about digital preservation for the first time so this information should be provided clearly and at a high level. For such people understanding what the project does, our aims and objectives would be secondary to understanding the problem. So we decided to create very simple informative webpage with easily understandable information and examples from the real life. So users now can go through very short topics as: Digital preservation definitions; What does 'long-term' mean?; Why do we care?; Real life examples; Some of the benefits; Further resources. Statistics from our website have shown this hypothesis to be correct, this page has generated large quantities of traffic to our DPE website and many visitors are interested mainly in this topic.



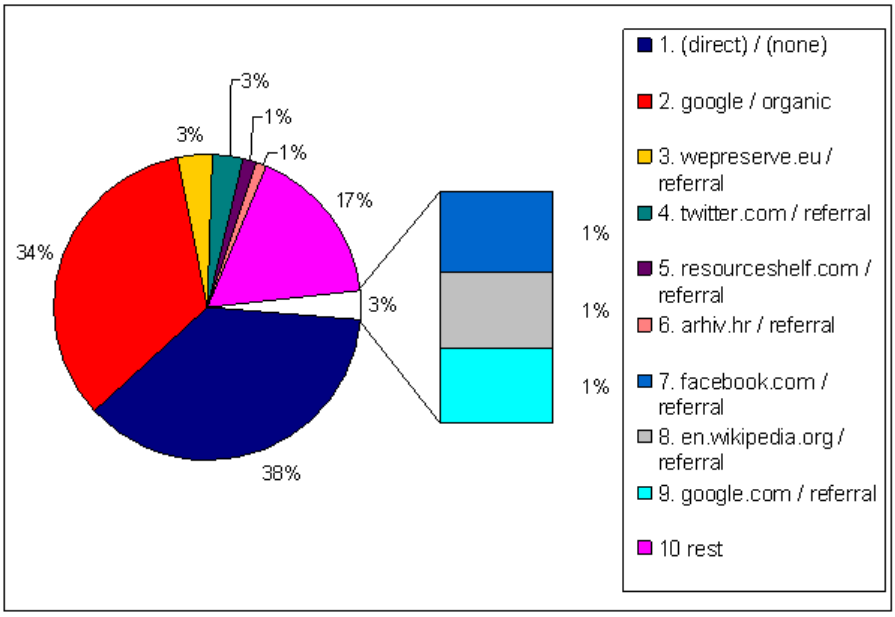


Figure 11: Example of DPE Website (www.digitalpreservationeurope.eu/index.php) traffic resources divided in countries and traffic resources and on the whole: 10.02.09-11.03.09

3.2 WEB 2.0 ELEMENTS INTEGRATED IN THE DPE WEBSITE

In the final year of the project we felt that there was still room for much improvement in the interactivity of the website. The pages we used to present the majority of our content didn't attract as much attention as we hoped it would. We realized the potential of Web 2.0 services not only to make the DPE website more appealing, but also to provide more visibility of DPE on the Internet outside the DPE website itself.

As the push towards Web 2.0 exploitation came in the last year of the project, we had a limited period in which to realise its potential. Prior to this the focus of the project had been in generating content rather than the optimum presentation for this content. We would propose that future projects funded by the European Commission give focus on the potential for Web 2.0 tools and services from their inception, incorporating and building upon the lessons learned by DPE through this experimental phase.

3.2.1 SlideShare

To show presentations on the DPE Website we first focused on Registries and made PowerPoint presentations viewable directly from the website without downloading them (Figure 12). We then used the same technology for DPE publications. It was very easy to embed presentations saved on Slideshare on the DPE website, allowing us to provide presentations in Flash without requiring us to spend our resources in the conversion process. Interested people could then see presentations directly on the website without downloading them to their computers. They also can embed the presentation to their own website.

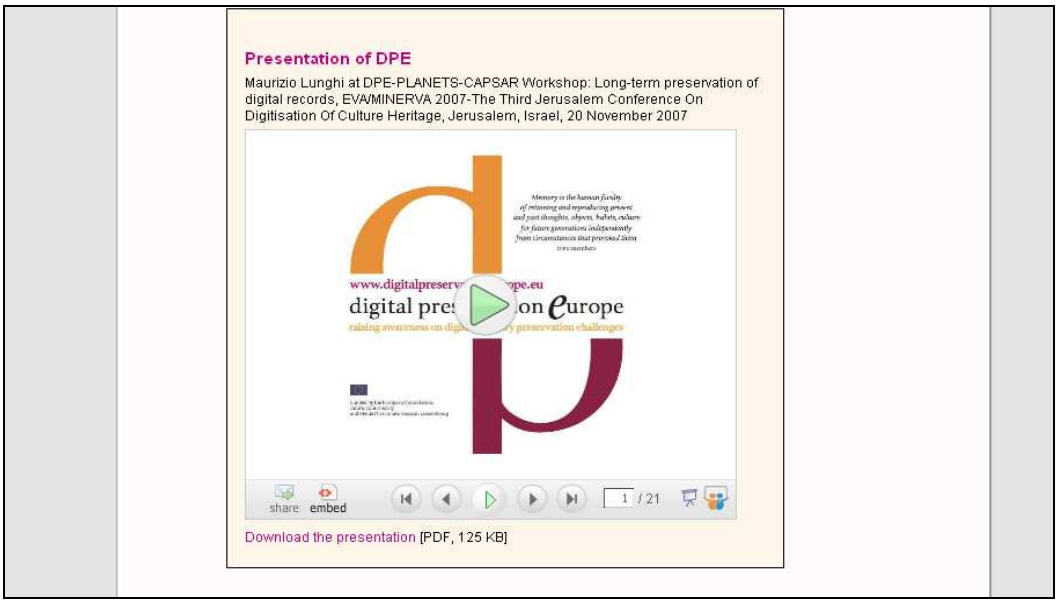


Figure 12: Slideshare presentation embedded on DPE website

3.2.2 Issuu.com and Yudu.com

For presenting the PLATTER-tool and our Briefing Papers we used a services that allows reading PDF files on the web (Issuu.com and Yudu.com) replicating the look and feel of a book (Figure 12).

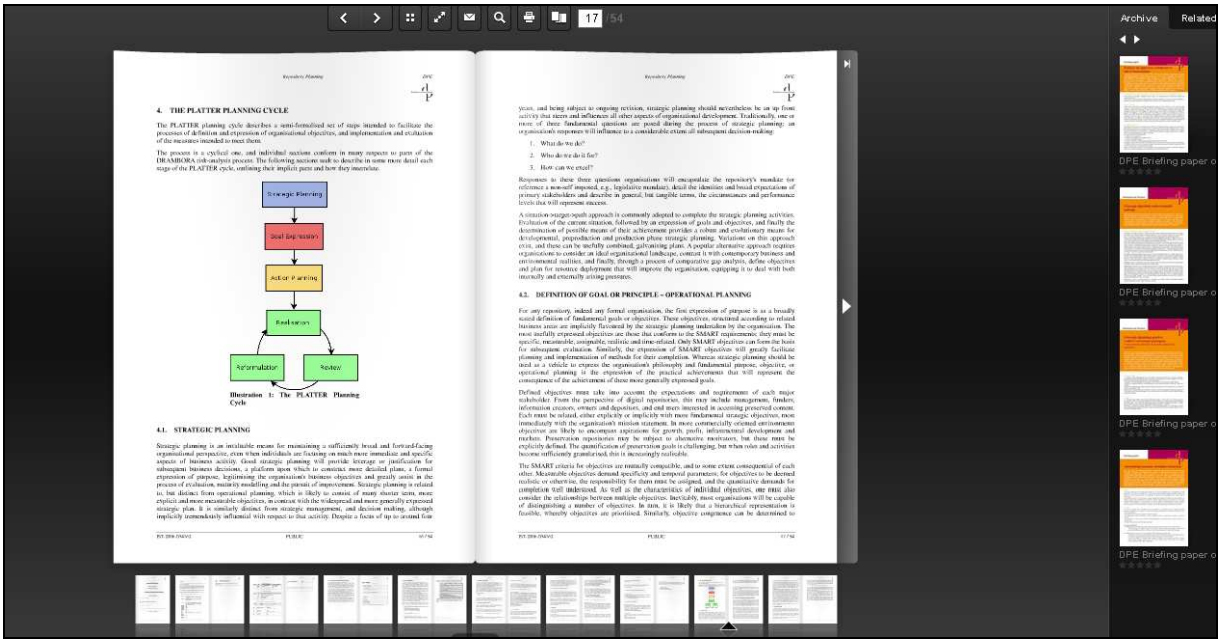


Figure 12: Issuu presentation of a DPE Report

Offering presentations through SlideShare and PDF files through Yudu and Issuu directly on our website proved important element making the DPE website more user friendly and interactive. Presentation sharing in this way has great potential among all the Web 2.0 services discussed here for projects such as DPE. These tools have allowed us to remove any barriers or disincentives to accessing our materials by facilitating online viewing of all presentations without the need to download or open them in any other software (see Figure 3).

3.2.3 Google Translator

A lot of new visitors on the DPE website, especially those who stayed longest and had high 'bounce rates', were visiting from non-English speaking or even non-European countries (as can be seen in Figure 13). Given the DPE commitment to providing the widest possible access to the resources we have developed, to break down existing barriers to accessing information on digital preservation and our commitment to raise awareness of digital preservation issues we considered it important to utilise the available automated translation services. We integrated Google Translator to give non-english-speaking audience better access to the site (Figure 13 shows the German translation of the website using the Google Translator service). DPE have also worked closely with our Associate Partner community to translate our briefing paper series into other European languages. Given the highly technical nature of language used to describe digital preservation issues we felt it necessary for native speakers with experience in digital preservation to undertake this work in addition to providing the more immediate and imperfect Google translate service.

Figure 13: German translation of the website using the Google Translator service

3.2.3. RRS feed reader

http://www.digitalpreservationeurope.eu/rss-reader/

DPE implemented RRS aggregation service to its website, to provide the users with more current information than just DPE events and news. The website uses Feed Informer service and 33 external resources about digital preservation and similar problems. This means that all the updates on the original resources will appear on our DPE RSS reader page, which gives our community the opportunity access all these updates on one place.

RSS activities did not bring much of new traffic to the DPE website nor was this page widely used by the website users. We would recommend that future projects add the opportunity to embed aggregated feeds and add resources to them as a means of increasing their use.

3.2.4 Bookmark buttons

We implemented bookmarks buttons into DPE website to provide the option, very common on websites now, to bookmark DPE content into various popular services, such as Delicious, Technorati, Furl, Facebook, Google Notes etc etc., blogs, twitter it, send it to friend by email, print and comment. All these possibilities are available thanks to following easy and open source applications – ShareThis and AddThis. ShareThis and AddThis are among the most popular services of this kind today (Figure 14).

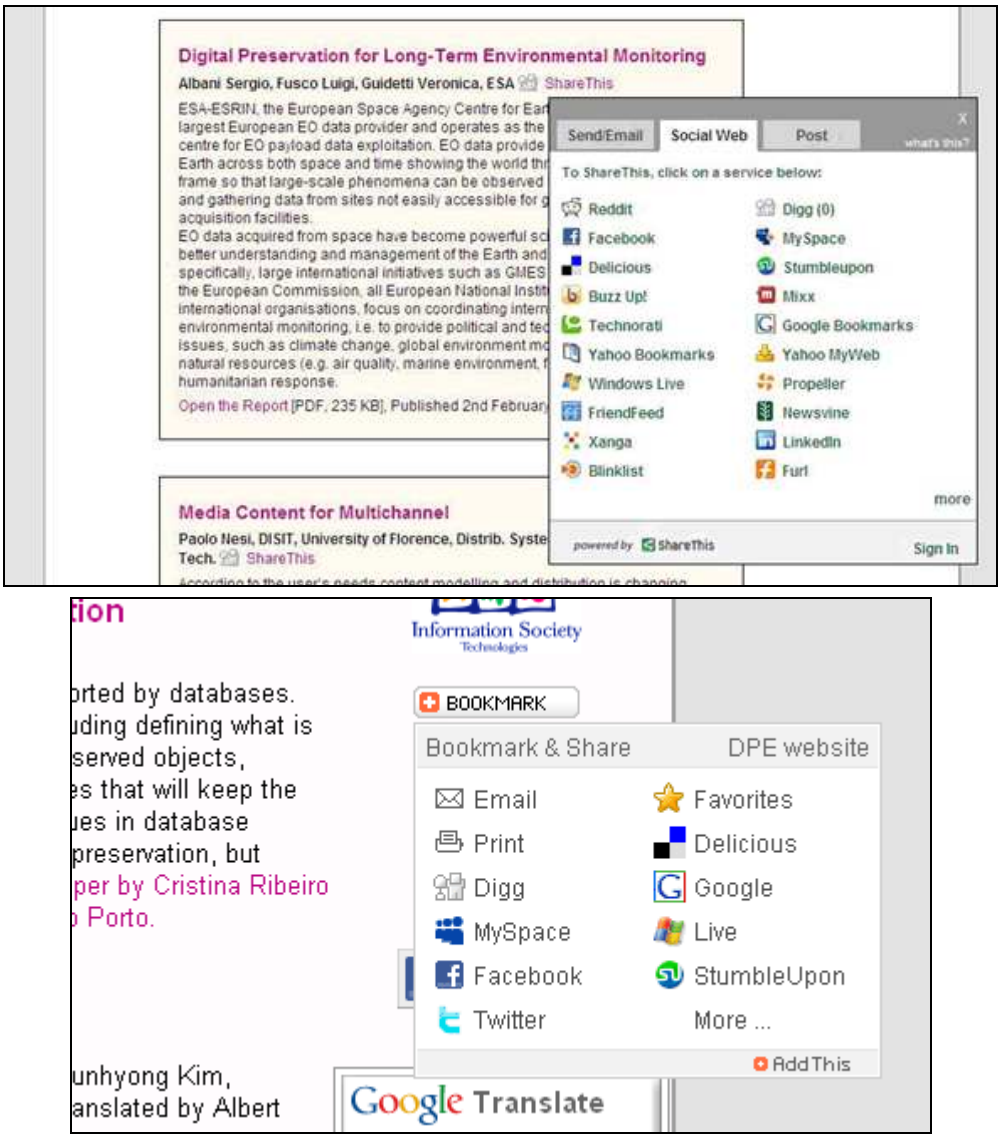


Figure 134: Bookmark buttons on the DPE Website, AddThis Bookmark

Bookmarks buttons are common features of most websites today, they are popular and widely used. By making use of this freely available service projects such as DPE facilitate viral marketing of the organisation tools and services by their user community, and in doing so realise the potential of Web2.0.

3.2.5 Videosharing as DPE website with DPE training videos

www.digitalpreservationeurope.eu/video-training/prague2008/

DPE is committed to providing the widest possible access to the resources we have developed, to break down existing barriers to accessing information on digital preservation and our commitment to raise awareness of digital preservation issues. We have been aware that the travel and time away form work represent barriers to some interested parties attending our training courses. Based on this and the findings of the JISC infoNET report 'exploring tangible benefits of e-learning: does investment yield interest?"[14] DPE decided to explore further e-learning possibilities within the training programme.

[14] http://www.jiscinfonet.ac.uk/publications/info/tangible-benefits-publication

It was decided to record all presentations from DPE/Planets/CASPAR/Nestor joint training event in Prague (Autumn 2008)[15] and make these available through the website. We decided to create completely new sub-site for the videos using the open source flash video player JW FLV Media Player from LongTail Video company, which is one of the most widely used of these tools and provided many possibilities of adjusting to our purposes.

The training video site contains 12 videos. Due to the duration of these presentations the majority of these presentations were divided into more manageable sections. DPE also recognised the importance of the rights of the presenters and in response to their wishes five presentations have been made available only as sound recordings.

Users can watch the videos directly on DPE website, or download them to their own computers or iPods, they can also download the PowerPoint presentation used in the recordings and they are provided with some additional background reading and resources to satisfy any desire for further information and learning. If they feel they would like to have the video on their own website, they are free to use our embed html code to paste it to their blog or website. The AddThis bookmark button is also there so users can bookmark the video website send the link to the friend etc.

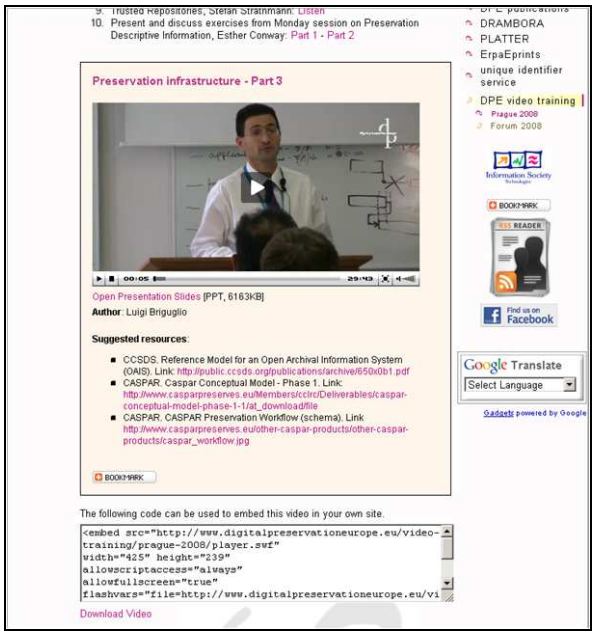
This resource has proven very popular as the following example of the positive feedback we have received illustrates:

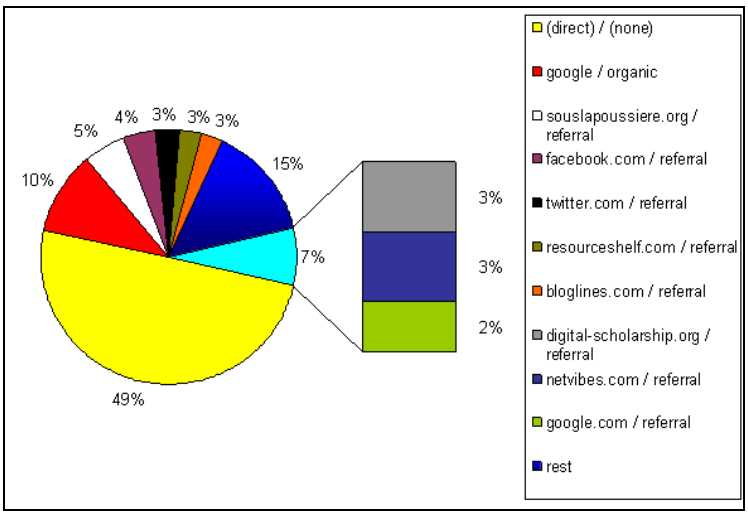
> *"Really good news. I have had a look at the training material on line and it is very impressive. It's just like being present at the course. All other online training will be very welcome, particularly for those in smaller, less well resourced repositories and the self-employed like me."*16

As we are using the Google Analytics tool for the video website, we can see that the popularity and site visit numbers were high after the announcement of its launch. Immediate traffic growth was rather steep, but brought in the first phase only users, who stayed on the video site only short time. Later we hope that the users will return, and will stay longer, watching or downloading the video. Full assessment of the impact of such pages is possible only in the longer term.

[15] http://www.wepreserve.eu/events/prague-2008/

[16] Email correspondance to E Nimmo, 05.03.09, in response to the release of the Vidoe training programme.





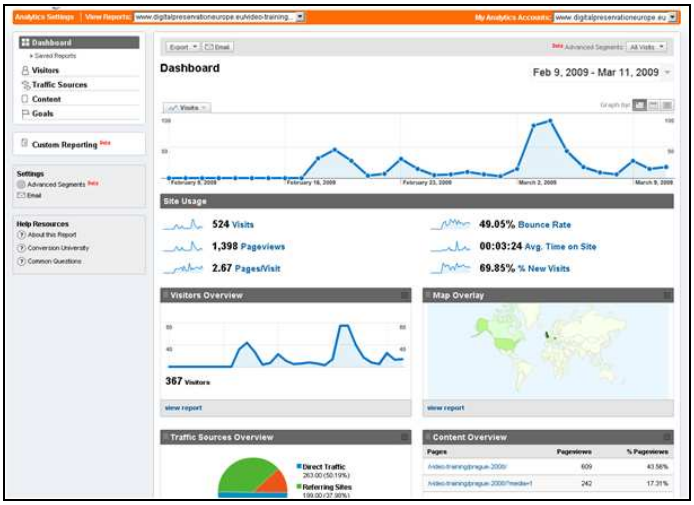


Figure 145: Video training page and its traffic resources: 10.2. – 11.3.2009[17].; Google analytics – Traffic on the video training page

[17] you can see the code ready for embedding the video to some other websites as well

3.2.6 Further possibilities to enrich the web content and make more “search engine friendly”

The search engine friendly sites usually have to fulfil some basic requirements:

- choosing best domain name /preferably short and self explanatory/ or registering more domains, to improve accessibility of the page
- use valid html and css codes
- use proper descriptions of the pages, correct headings, meta tags, naming,
- proper naming of attached files and images to support the content
- cleverly written content
- use machine understandable structures for the website, providing site map files
- submit the website to the search engines
- use understandable and readable URL
- validate links

This list is not intended to be comprehensive, rather to illustrate the basic requirements for a website to get indexed. For optimal performance some further advertising is usually needed. Use of Google AdWords may be one of the solutions available even to small businesses or non-commercial projects.
In addition to this analytical tools are needed to measure the user experience, sources of website traffic, and the conversion rate.

As we have already seen, from the beginning of the project, DPE focused on providing rich content with high added value. Thus it created registries of competence centres, repositories, experts, resources. Nevertheless these rich resources alone did not generate significant interest and heavy use within the digital preservation community. DPE has generated more search engine friendly content and improved the user experience within the website by focusing on the development of audio visual content. With the general Internet user in mind, visiting our website to learn about digital preservation for the first time, DPE has also developed a page titled "what is digital preservation". This page has proved to be highly successful and efficient. Without requiring a significant investment of resources to develop we have achieved website usage statistics comparable with services such as our registries which had gradually built up over two years. Naturally this does not mean that popularization of a website is of greater value than the rich content provided in the registries.

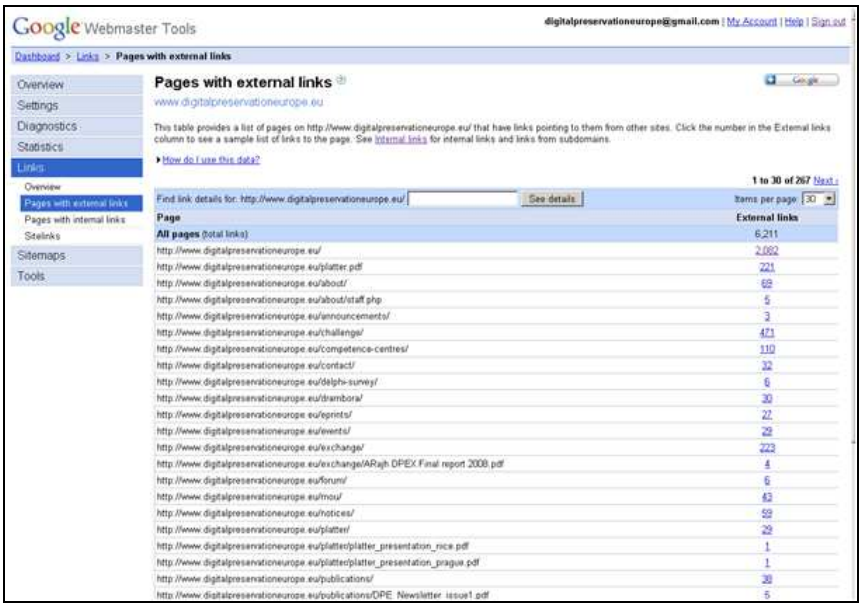
4 WHAT HAVE WE LEARNED FROM THE DPE WEB SOCIAL NETWORKING EXPERIMENTS?

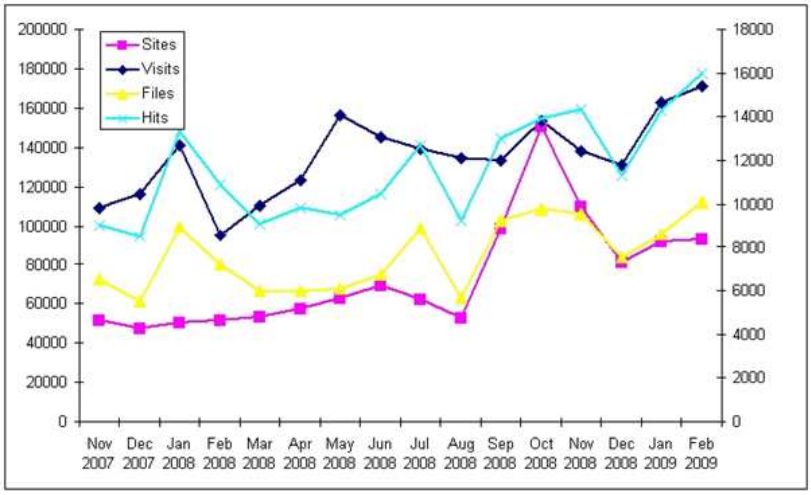
Internet users today are much more demanding: simple textual presentation is not attractive to them. They demand the opportunity to reuse your content, comment on it, and tag it. The experience and lessons we have presented here show effective ways to utilise Web 2.0 tools for the promotion and dissemination of the aims and objectives of other European Commission funded projects. Web 2.0 and social networking should be present in the marketing plan of projects from the very beginning. Responsibility for Internet social marketing and maintaining content should be clearly delineated and incorporated within the project management structure. Projects should openly encourage all project participants to use Web 2.0 and social networking tools and actively participate, using their own personal networking activities to spread the project message.

Projects should also set specific measurable goals in the area of social networking, and implement clever analytic and monitoring strategies. Projects should maintain communication with their user community, and respond to user expectations more dynamically, adjusting presentations, websites, marketing campaigns.

Where possible projects should utilise professional web marketing companies to produce presentation and marketing materials (logo, web, implementation plan, and other plans) with respect to Web 2.0 and social networking communication channels. The complexity of social networking and Web 2.0 tools is such that it requires expert knowledge for optimum performance.

In addition to this, social networking communication tools can also increase the efficiency and efficacy of communication within projects, enriching project management structures especially in geographically distributed projects. Voice-over-IP products (e.g. Skype) and internal project wikis can be used for daily communication and regular meetings, such tools proved crucial to the success of DPE .





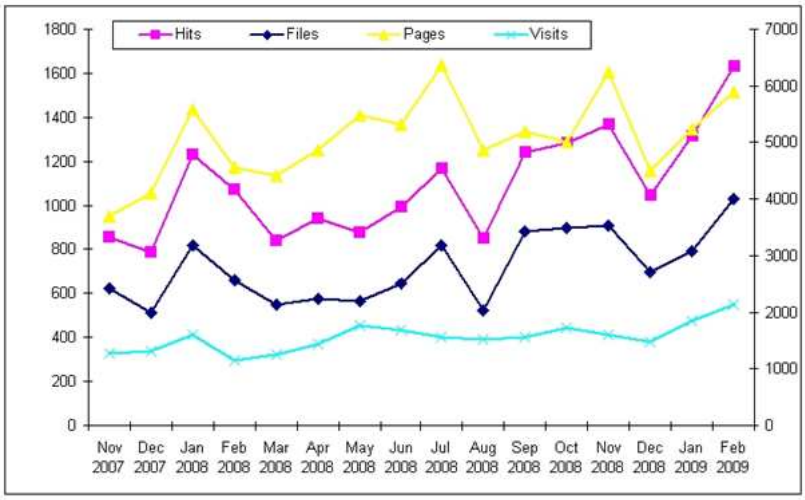


Figure 16: External link statistics of the DPE website in Google Webmaster Tools, DPE web traffic - monthly totals, DPE web traffic - daily average, from webalizer

Table 3 DPE website traffic during the last year of the project, by 12th of March 2009

Summary by Month										
Month	**Daily Avg**				**Monthly Totals**					
	Hits	**Files**	**Pages**	**Visits**	**Sites**	**KBytes**	**Visits**	**Pages**	**Files**	**Hits**
Mar 2009	6137	4109	1528	519	4196	72660614	5709	16811	45200	67515
Feb 2009	6334	4009	1513	549	8363	61397610	15387	42380	112262	177358
Jan 2009	5110	3084	1348	473	8271	29492584	14670	41809	95628	158410
Dec 2008	4056	2701	1156	379	7304	13715811	11763	35850	83759	125765
Nov 2008	5309	3530	1607	414	9871	8059090	12426	48232	105928	159275
Oct 2008	4990	3497	1286	445	13560	6730338	13800	39879	108427	154690
Sep 2008	4817	3423	1334	400	8865	4270685	12000	40025	102706	144533
Aug 2008	3309	2035	1251	390	4804	2065069	12114	38811	63100	102609
Jul 2008	4546	3172	1634	403	5619	3714496	12516	50676	98335	140943
Jun 2008	3869	2499	1366	435	6244	2892790	13068	41003	74993	116099
May 2008	3404	2187	1412	454	5675	2597926	14075	43780	67816	105547
Apr 2008	3646	2231	1249	369	5199	2193865	11093	37486	66945	109394
Totals						**209790878**	**148621**	**476742**	**1025099**	**1562138**

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Project information

Project acronym:	**DPE**
Project full title:	**DigitalPreservationEurope**
Proposal/Contract no.:	**IST-2006-034762**

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