DEBATE, COMMUNICATE, EDUCATE
New media channels at your service

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This article is based on a talk I gave at the Communicating European research 2005 conference in Brussels in November 2005.

Abstract:

Whoever who the target audience is- Colleagues, Big media or amateur science aficionados, whichever stage the research process is at. Whatever the author's purpose is: to debate, to declare, to rant or to educate -new media channels are ready for use, and there is so much that can be done with them.

Wikis, Blogs, Moblogs, Vlogs and Podcasts are all means for communicating by creating conversations between authors and their audience. They are tools for setting agendas and simultaneously informing, and being informed by the public. Theses tools turn the passive consumption of information to an active one, by creating communities of interest where dialogs emerge and discussions develop. These new communication channels support the curious and explorative nature of research. All is needed is a bit of imagination.

Keywords: Web 2.0, Blogs, Podcasts, Wiki, Science research, Grassroots research communication

The underlying question of "Science by SMS" session was "are the new technologies (such as web, mobiles, interactive TV) good or bad for disseminating science research?" The answer is complex, and is based on the ways in which researchers utilize these tools. In this talk, I would like to explore the opportunities the web channels present to researchers and take a user-centered approach: How can we use technology in favor of human needs. There is a tight inter-relationship between new technologies, people's needs and social change. Each factor both affects and is influenced by the other two. In the case of communicating research, the technology has already changed, and I will discuss some effects later. Right now, I would like to start from the people, their needs, and their motivations.

1.1   Actors and Motivations

1.1.1   Actors

Various actors play part in communicating research. They include researchers, research institutes, Journalists, publishers, conference organizers, science aficionados and funding institutions. These actors can be roughly divided into three groups:

The first group is the producers, which are the ones that research, the second group is the disseminators who distribute the outcome of the research, and the third group is the consumers who are being informed about the results when a research is over. That was the old paradigm. (figure 1)

Producers	Disseminators	Consumers
Researchers	Journalists	Colleagues
Research institutes	Conferences	Funding institutes
	Publishers	Students
		Science aficionados

Figure 1: the old paradigm of research communication

1.1.2   Motivations

The consumers are the ones whose interest is in the scientific research. What do the consumers want? Colleagues want to be informed about new research, as they need to keep up with the latest advances in their field. The financing organizations want to be convinced they gave the money to the right cause. Other motivations, which are mutual to all the actors in the consumers group, are to expand one's knowledge and understanding, to be stimulated and entertained, to discuss and to be involved.

Researchers are the producers of information, and what they want is acknowledgement of their scientific achievements. The acknowledgement enables them to gain a respected position in the scientific community (and sometimes in the public's eyes as well) and to receive further funding for their endeavors. They are also looking to find places where they can exchange ideas, debate and be updated about new research. To achieve those goals researchers must publish, attend conferences and network.

1.2   Technology

1.2.1   Past media

Various technologies, from Print to broadcast, have played an important role in the distribution of knowledge: journals, books, newspapers, radio programs and TV shows, to name but a few. These information channels were built on "one to many" distribution model.

In his book "We the media"[1], Dan Gilllmor refers to these technologies as Big Media. In Big media, news equals to a lecture; one source spreads the word to everyone else. There is a clear distinction between those who create news, those who report them and those who consume the reports. In the old system, consumers had very little influence, if any, on news reporting and had no connection at all to the newsmakers.
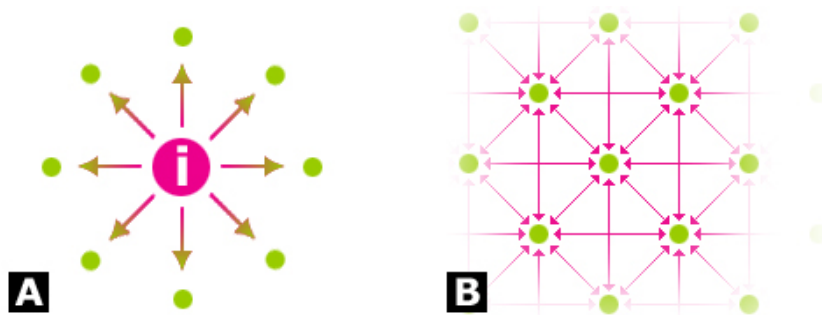
Figure 2: (A) News as a lecture, One to Many distribution model, (B) News as a conversation, Many to Many distribution model

1.2.2   New technologies

Before looking at the changes in the old paradigm, I would like to review briefly some of the influential and promising technologies that emerged recently. They all belong to what is commonly known as "WEB 2.0"[2]. The interesting aspect of Web 2.0 for us is that it transformed the World Wide Web into a platform for users to create, share and re-use content, in a decentralized way. Here are some examples:

Blogs
A Blog is a content management system that results in an online journal with entries displayed in a reverse chronological order. Anyone can set up a Blog by registering with a Blog provider. Blogs vary and can be personal or professional, an individual's Blog or a group's Blog. Some Blogs present their writers point of view, while others are aggregators for news around a certain topic. The power of blogs lies in several

features that make them a connected and reactive media: built-in feedback mechanism (comments), easy content dissemination (RSS and ATOM feeds) and community awareness features (Blog rolls, Trackbacks).

Blogs are easy to manage, which means anyone can write one if they are interested. Their content evolves with time and according to the author's additions and the readers' comments. The Blog's format encourages conversations between the author/publisher and the readers. Blogs are an accessible publishing medium. One can publish by writing a Blog and sharing the research process with the readers, or by letting other Blog writers know about the results of a research. Once one Blog has picked on the research, chances are the news will spread throughout the Blogosphere, and possibly make it to Big media as well.

Blogs also include built-in distribution mechanisms, called RSS[3] or ATOM[4] syndications. Users can subscribe to content through RSS or ATOM aware programs, and receive updates about any new additions and recent changes. This means that once someone has subscribed to a site, the researcher can be certain that the subscriber will receive all the research updates.

Blogs are interconnected - A feature called TrackBacks enables anyone to see who has referred to any specific entry in their Blogs. Clusters of like-minded Blogs are created thanks to Blog Rolls, which are lists of other Blogs that the author finds interesting. This is another subtle way of raising awareness to a Blog.

There are two subsets of Blogs that use slightly different media, but the same principals: Moblogs[5] contain content from mobile phones (pictures and messages) and Vlogs[6], which are video-based Blogs. Just shoot your experiment on video, and share it with the world.

Wikis

Wikis take the collaboration features of the Blog a step further and allow anyone to create and edit any page on a Wiki site. The content of the wiki is the accumulated result of many minds. An example for a wiki is the wikipedia[7] – the free encyclopedia, written and edited by anyone who has something to contribute. Wikis can be used as a democratic and open platform for ideas exchange among colleagues, a place for debate and stimulation.

Podcasts

Podcasts are sound files that users can download from the internet and listen to with a media player or on a PC, in their preferred time and location. Many Blogs, and Nature magazine[8] is just one example, offer podcasts of their content. An interesting and somewhat subversive project by ART MOBS[9], is offering user created, unofficial audio-guides to MOMA's[10] art collection, where anyone can add their comments about the works of art, download others' Podcasts and subscribe to receive the latest submissions.

1.2.3   Fast media

These new technologies have evolved journalism from "news as a lecture", to "news as a conversation"[11] paradigm. Fast media is all about accessibility, not only to content, but also to the content's creator. It supports diversity, debate and collaboration. It has become a "Many to Many" dissemination model. This shift will force the various communities of interest to adapt.

1.3   The Change

The technologies previously discussed in this talk, made the communication between researchers and their audience more open and more direct. The options that researchers have to communicate their work have widened, and the science community can and should use them to their own benefit. Blogs and Wikis are flexible media, which leave the control in the hand of the researcher to decide what they want to expose and in which format. Blogs enable researchers to start reporting about their work from the very early stages. Blogs can be a forum to consult and converse with colleagues, or rant about difficulties in the work progress. Research institutions should encourage their staff to write Blogs as an unofficial communication channel with the public.

Figure 3: The new paradigm: News as a conversation

New web technologies benefit the audience as well. It empowers them by giving the opportunity to stay updated in their subjects of interest, to react and to communicate directly with researchers, to be able to follow research process and progress, and experience science (almost) first hand.

There is another facet to using these technologies: Their strengths could be their weaknesses. If anyone can write whatever they want, how can readers distinguish between the facts and the fakes? IP issues arise when publishing confidential research and the need to draw

readers to one's Blog may result in superficiality. All these issues are challenges to overcome. Still, the power of these new media tools should be harnessed in favor of information and participation, and it is an additional distribution channel to the existing science communication system.

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[1]Gillmor, Dan, We the media: Grassroots Journalism by the People, for the People, (2004), O'reilly. http://www.oreilly.com/catalog/wemedia/book/index.csp

[2]   http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html

[3] http://www.xml.com/pub/a/2002/12/18/dive-into-xml.html

[4] http://www.atomenabled.org/

[5] http://en.wikipedia.org/wiki/Moblog

[6] http://en.wikipedia.org/wiki/Vlog

[7] http://en.wikipedia.org/wiki/Main_Page

[8] http://www.nature.com/nature/podcast/index.html

[9] http://mod.blogs.com/art_mobs/

[10] http://moma.org/

[11] Gillmor, Dan, We the media: Grassroots Journalism by the People, for the People, (2004), O'reilly. http://www.oreilly.com/catalog/wemedia/book/index.csp