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Change at hand: Web 2.0 for development

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Introduction

There are dozens of emerging interactive web services and applications, sometimes referred to as the 'participatory', 'social' or 'read-write' web, but more commonly known as Web 2.0. Together, they are radically changing the ways we create, share, collaborate on and publish digital information through the Internet.

The first generation of websites represented a mostly hierarchical approach to disseminating information. Most websites were static, with users unable to interact online with either the content or its producers. Interactivity resided mainly on email discussion lists and web-based message forums. In contrast, Web 2.0 tools herald a new, more informal approach to information-sharing, shifting from a top-down to a more participatory approach to online communication – using tools that are typically free or low-cost to use (see Box 1).¹ For Web 2.0 advocates, these applications are also more transparent and accountable, because users themselves participate in 'weaving a web of knowledge, information and perspectives' (**Christian Kreutz**, this issue).

Web 2.0 is a form of information communication technology (ICT) that was created for – and thrives on – the

participation of people and empowerment of users. This is not to say that Web 2.0 tools are somehow better or more appropriate than more traditional ICTs or any other form of communication. Yet as the title for this special issue suggests, Web 2.0 tools and approaches present us with new opportunities for change – as well as challenges – that we need to better understand and grasp in order to make considered and informed choices:

- the underlying processes involved in implementing and using Web 2.0 applications, giving consideration to issues of power in the process and the impact of participation;
- the quality of the methods and processes of participation used;
- how these are integrated with Web 2.0 applications;
- the practical outcomes of such approaches; and
- critical analysis of the lessons learnt, the challenges, and ways forward.

As development practitioners have begun to recognise the huge potential of Web 2.0 tools for promoting participatory development and to experiment with them in their work, a body of learning and experience has started to accumulate. In September 2007, the international conference on Participatory Web 2.0 for Development, or 'Web2forDev' was held at the Food and Agriculture Organisation (FAO)

¹ Throughout this special issue, we make reference to Web 2.0 'tools', which includes applications, platforms and services.

Guest editor and
conference organiser
Giacomo Rambaldi at the
Web2forDev Share Fair
participants' space.



Photo: Jon Corbett

headquarters in Rome, Italy.² The Web2forDev conference sought to bring practitioners together to further explore how we can exploit this potential. Most of the articles here are written by conference participants. All were developed especially for *Participatory Learning and Action*.

Structure of the special issue

This special issue is divided into five parts. Although the articles include some technical information about the Web 2.0 tools used, we have deliberately chosen to focus on how they have been integrated with development approaches. In Part I, we introduce both Web 2.0 tools and the concept of Web2forDev. In Part II, the articles examine some of the uses of specific Web 2.0 tools for development purposes. In

Part III, the articles focus on the integration of multiple Web 2.0 tools to address specific issues. The articles in Part IV discuss theory and reflections on practice, including lessons learnt from experience, challenges identified, and ways forward. In Part V Tips for trainers, we provide a collection of short introductions to Web 2.0 tools, which give more in-depth descriptions of how some of the most commonly-used tools work, including tips on getting started and links to further information. Also included here is a glossary of Web 2.0 terms.

For the guest editors, this special issue was an opportunity to help 'demystify' Web 2.0 and Web2forDev and share learning and reflections. We hope that it will help to bring Web2forDev to a wider audience of development practitioners and academics: inspiring you to give Web 2.0 tools a go and share your successes and challenges.

² For a full list of conference organisers, see Editorial, p.3 (this issue).

Box 1: What is Web 2.0?

Although the term 'Web 2.0' suggests a new version of the World Wide Web, it does not refer to an update to any technical specifications, but to changes in the ways software developers and end-users utilise the Web. Web 2.0 refers to web development and design that facilitates interactivity, communication, information-sharing, cooperation and collaboration on the World Wide Web. It includes web-based communities, hosted services, applications and platforms that support them, for example, social networking websites, video- and photo-sharing websites, social bookmarking websites, RSS, wikis, blogs and some VoIP services (Voice over Internet Protocols).³

According to Kabissa, successful Web 2.0 websites appear to share several key elements:

- They have a **clear purpose** and real utility;
- They create a **community** around that purpose;
- They are **free to use** or very affordable (usually tiered pricing with free lowest tier of service);
- They are **easy and fun** to join and use;
- They **connect** to or build on other Web 2.0 sites;
- They allow **anonymous** (or pseudonymous) use;
- Contributors **own and control** their content and identity.

Adapted from sources: Wikipedia and Kabissa Wiki

What is Web2forDev?

Participatory Web 2.0 for development – or Web2forDev for short – is a way of employing web services to intentionally improve information-sharing and collaborative production of content for development.⁴

The distinction between Web 2.0 tools and Web2forDev is that Web2forDev is about the active use of these tools in development. It is about how development actors can relate and connect to other stakeholders, produce and publish their own material, decide on levels of access to information and redistribute pieces of content released by others. Web2forDev is about integrating, combining, aggregating, generating, moderating and mediating development information, ideas and perspectives – and there are multiple examples of how this can be done. For more information on how these tools work and where to get started, see the glossary and Tips for trainers, this issue.

- Interconnected networks of bloggers who share common interests can improve the spread of ideas and discourse on particular development topics or themes.
- Online social networks help connect communities of practice, especially those that are dispersed, in order to share

“The distinction between Web 2.0 tools and Web2forDev is that Web2forDev is about the active use of these tools in development.”

relevant information and resources related to development in one place.

- Web 2.0 tools allow users to attribute their own tags or keywords to online content – and collectively create a system of bottom-up, collaborative social classification (also known as folksonomies). There are many collections of popular development tags used by others.
- Social bookmarking websites such as Delicious.com enable people to 'bookmark' web pages which they find interesting or of relevance in order to share with others. Increasingly development content is being bookmarked by practitioners.
- RSS feeds allow content to be automatically distributed between websites, platforms and devices such as mobile phones. RSS feeds allow users to easily keep track of news and new content from multiple websites because updates are delivered directly to them without the need to visit each of the websites in turn. Content can be aggregated into one place, or manipulated either using filters – to increase relevance – or through mash-ups – to combine sources of information, thereby adding value to the original content. Many development websites are utilising this powerful tool to improve their own websites, as well as share their work with others.
- There are tools which allow you to filter and manipulate content from RSS feeds, using keywords or search terms to find relevant information. Some development websites such as Global Voices use people – as well as software – to filter new online content as well as translating and adding context.
- The increasing use of RSS feeds and widgets is allowing users to create their own 'mash-ups' of online data from multiple sources. A mash-up is a web page or application that combines data from two or more external online sources.
- Mobile phones continue to develop as devices to receive and send information – both in terms of what the phones themselves can do, and new support structures and projects being built around them. More applications are being developed to support their use, increase their potential and integrate them with Web 2.0 platforms and services.

³ See glossary p.121.

⁴ The Web2forDev Development Gateway is a new initiative which aims to become the hub for Web 2.0 learning and sharing experience in the context of development work. See: www.web2fordev.net

Journalists Brenda Zulu, Ramata Soré, Gnona Afangbedji and Noel Kokou Tadégnon blogging during the Web2forDev conference.



Photo: Holly Ashley

The Web2forDev conference

Web2forDev was the first international event of its kind and brought together more than 300 people from over 40 countries in Africa, Europe and Latin America.⁵ The conference focused specifically on how Web 2.0 tools could be used to the advantage of Southern development actors, operating in the sectors of agriculture, rural development and natural resource management. The conference aimed to address issues such as:

- How can Web 2.0 applications be integrated with development approaches?
- How can they facilitate and contribute to people's participation and decision-making?
- What are the challenges and barriers to people's participation?
- How do we address factors such as access, equity, control, and oversight?
- Can Web 2.0 applications challenge fundamental social inequalities?

Prior to the event, the organisers adopted a host of Web 2.0 and other ICT tools to create online collaborative spaces. The organisers were able to jointly elaborate the structure and programme for the conference using tools such as wikis, VoIP applications such as Skype and online discussion groups (Anja Barth and Giacomo Rambaldi, this issue).

The conference itself was unlike any event held at FAO before. It had a vibrant and informal atmosphere. The combined use of plenary discussions, small group sessions

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and presentations allowed participants to share information, experiences and ideas. The day before the conference began, a ‘taster day’ allowed many participants to learn about and experiment with some Web 2.0 tools, such as wikis, mobile phones and a host of other applications. There were also busy participants’ spaces including a Share Fair. A democracy wall enabled participants to share their reflections with one another.⁶ These spaces were often occupied by a group of journalists and other bloggers – writing reports, interviewing other participants and sharing what they learnt almost immediately via the Web2forDev blog.⁷

There was a tangible sense of excitement about the potential for what people can do with these applications. Web 2.0 tools are more than just ways of communicating. They are highly social tools. They help foster new networks and build communities of practice. They can improve how we organise, structure and share information with one another. Above all, Web 2.0 is not just about laptops and broadband. A striking element of the conference was the repeated emphasis on the power of mobile phones. Mobile telephony is a global communications revolution that is bringing more and more inclusion to people from all over the world in ways previously unforeseen.

As Chris Addison (this issue) describes, the concept of Web2forDev can be visualised as an image of two hands.⁸ The left hand represents key Web 2.0 tools. The right hand represents the issues we need to address when using them, considering people, access, participation, content, and impact. Chris provides useful insights based on the participants’ own reflections, including issues such as access and

⁵ Participants included ICT specialists, information and communication experts, researchers, trainers, application and system providers, software developers, policy makers, enablers and others working in the agricultural, rural development and natural resource management sectors.

⁶ A democracy wall is a structured open space where people can post their ideas and opinions in a free, focused and concise manner. Participants write their observations on large sheets of paper. It generates a written, shared pool of reflections which can be used for further participatory analysis and provides on-the-spot feedback during an event, helping to rapidly adjust facilitation to emerging realities and changing circumstances. See PLA 58 ‘Democracy walls’ Tips for Trainers (Rambaldi, 2008). Read free online: <http://tinyurl.com/c8gkn3>

⁷ See: <http://blog.web2fordev.net>

⁸ Chris’s article summarises the final plenary session at the Web2forDev conference, which was based on comments and reflections made by the participants.

The cover image of this special issue represents the two hands of Web2forDev and some of the more widely-used keywords or 'tags' associated with it. The analogy, if you will, is that the power to use these tools appropriately for change is at hand.



Image: Regina Doyle and Andy Smith

connectivity, the 'scale of change' as tools develop – and how approaches to using Web 2.0 need to be interdisciplinary.

Web 2.0 tools are like any other set of tools – and their selection and use should be based on considerations of power in the process.

A key aim of the Web2forDev conference was to foster a new 'more committed, interlinked and dedicated community of practice' (Barth and Rambaldi, this issue). Two conference surveys, immediately after and one year after the event, have helped to assess what impact the conference has had on changing the ways of working of participants and helping to form and maintain a new Web2forDev community of practice.⁹ As one respondent wrote,

Attending the conference gave me the confidence and evidence to back up the recommendations I put forward [to my organisation] in investigating these new tools.

Beyond the digital divide: towards good practice

In many parts of the world, access to the technologies and the Internet is still very limited. As the articles in this collection demonstrate, despite the potential of Web2forDev,

fundamental issues remain. Access, connectivity, people's capacity to use the tools, the appropriateness of content for different audiences (both language and style) and creating targeted services are challenges we must collectively seek to address.¹⁰ Even with the use of e.g. audio and video blogs, without the literacy skills to access that information online in the first place, you are still excluded (see e.g. Deh, this issue). Other, more accessible forms of communications may be more appropriate – from email discussion lists to regular, face-to-face meetings. Zuckerman emphasises the use of 'simple tools for smart people' – selecting the most appropriate Web 2.0 tools for development purposes.

During the production of this special issue, one of the *PLA* Editorial Board members commented on the repeated references to 'people' and 'anyone' being able to participate in using Web 2.0 technologies. One could argue that because much information online is dominated by developed countries, Web 2.0 tools are increasing exclusion of Southern actors because of the digital divide. There is a sense that being able to participate in using Web 2.0 tools implies a level of privilege that many are denied. So we need to understand issues of usage and benefits: who is using ICTs/Web 2.0 tools, what are they using them for, and how is that improving their lives? As **Ethan Zuckerman** (this issue) points out, 'lots of the world is still suffering from basic infrastructure problems that make it very difficult to participate in many of the high bandwidth activities that we are talking about.' **Prince Deh** (this issue) also describes some of these inherent challenges in using Web 2.0 tools in countries such as Ghana, where Internet access is still mostly limited to urban areas.

In addition, the sheer volume of online content can leave users feeling overwhelmed. What is important? Whose voices do I want to hear? How can I find those voices? For users where access and connectivity is both limited and costly, this is a particularly important issue.

In fact, Web 2.0 tools can help to **reduce** the amount of time people need to be online – and **improve** access to information – offering us an 'opportunity for better use of limited connectivity' (Esterhuysen, this issue). This is happening in several key ways. Filtering online content for relevance, meaning and context is becoming increasingly important – and the emergence of trusted, expert online editors and aggregators will help users to manage the huge proliferation of content available online (Zuckerman, this issue). In the

⁹ Read the one-year post conference survey results online: <http://tinyurl.com/656qyn>

¹⁰ Targeted services are bundles of tools that are put together differently according to a 'needs assessment' with user groups. The needs assessment would ideally be done in a participatory way to give the user communities input into and ownership of the design process.

“These tools have helped to increase the spread of information and ideas – as well as shifting the balance of power between producers and consumers of information.”

same way, the use of social bookmarking websites is helping to create valuable repositories of information, where people bookmarking development content is helping to signpost relevant information for easier access and retrieval. RSS feeds allow users to more easily keep track of news and new content from multiple websites – and information is also no longer confined to its original source. These tools have helped to increase the spread of information and ideas – as well as shifting the balance of power between producers and consumers of information.

The mobile phone revolution

The rising popularity of mobile telephony is another growth area that is helping to bridge the digital divide. In developing countries, people are making innovative uses of mobile phones, enabling them to simultaneously bypass ‘the land-line, the laptop and the need to connect to the Internet’ (**Roxanna Samii**, this issue). Across the world, the mobile phone is becoming a more accessible, affordable and convenient means of communication than the Internet and computers. Expanding areas of service provision in telecommunications infrastructure is helping to reduce costs and improve access to both mobile phone services and the Internet (see also **Jon Corbett**, **Guy Singleton** and **Kado Muir**, this issue). Particularly in Africa, as the cost of services and handsets continues to reduce, mobile phones are increasingly becoming the preferred tool for accessing and sharing information.¹¹ As the impacts of this new ‘revolution’ are starting to be assessed, Samii argues that mobile phones have the potential to become the first universally accessible information communication technology.

One example is the way in which integrated online platforms can blend the use of the Internet and mobile phones to send and receive information (see **Ory Okolloh**, this issue). The rising popularity of the mobile phone also demonstrates how some Web 2.0 tools are more appropriate in some

Author Ednah Akiiki Karamagi exchanges contact details with another conference participant after her presentation on enhancing knowledge-sharing in rural communities using Web 2.0 tools.



Photo: Holly Ashley

settings than others. **Ednah Akiiki Karamagi** and **Mary Nakirya** describe the work of the Busoga Rural Open Source and Development Initiative (BROSDI) in Uganda. BROSDI works with a network of farmer organisations to generate, collect and share local information about effective agricultural practice. BROSDI integrates a range of Web 2.0 tools and more traditional approaches – from blogs, mobile phones and digital radio to regular Knowledge Sharing Forums and working with Village Knowledge Brokers.

People before technology

When using Web 2.0 tools and applications for development, it is important not to become sidetracked by a technology-driven hype, where excitement about the tools drives their usage, rather than what **people** can do with them. So it is important to reflect on some of the lessons learnt from previous experiences of using information communication technologies for development – and consider the strategies, issues and challenges related to integrating Web 2.0 technologies into development approaches.

For example, **Anriette Esterhuysen** explores the lessons learnt in the paradigm shift from information communication technologies for development (ICT4D) to Web2forDev. ICT4D helped to mainstream ICTs into development thinking and highlight the scale of the issues of access and connectivity in the developing world. Yet ultimately, ICT4D was driven by technology hype and a narrow approach to the appropriation of the tools, with ‘too much emphasis on new technologies, and too little on the need to integrate with other tools and skills, and with development theory and practice’. In contrast, Web 2.0 tools have enabled many people to explore these new technologies ‘on their own terms’ – mostly because these tools have a stronger focus on social and decentralised networking rather than on strategic imple-

¹¹ For example, through improved access to market information, they are helping to reduce transportation and transaction costs and introducing new forms of income-generation (Samii, this issue).

Maize farmer
Elizabeth Chikusu
sending an SMS
message.



Photo: Alex Price

mentation by organisations. Web 2.0 technologies have also experienced their fair share of technology-driven hype and arguably they, along with the ICT4D field in general, are learning from early mistakes and are becoming more people-focused and user-driven.

Many donor-funded projects have a history of focusing on technology supply without fostering demand. Clearly, key issues still remain: access, connectivity, capacity-building, literacy and language. Pilot projects often supply equipment and Internet access without building community outreach services that work in conjunction to build local capacity, content and acceptance. The success of a pilot project is often hard to replicate because it is based on simplistic indicators such as user numbers. Contextual factors such as translation of materials into local languages are not taken into account. 'To be sustainable, technologies need to factor in social realities' (Garside, 2009). Esterhuysen argues that we need to 'holistically appropriate, adapt and integrate these technologies for development in our work with people, information and technology.'

In development circles, there is also the risk of assuming that market forces will provide the basics for Web 2.0 tools to flourish – infrastructure, access and appropriate applications. We need to ensure that we begin to 'appropriate these platforms in the context of challenging fundamental social inequalities,' (Esterhuysen, this issue). The challenge is to factor in capacity building – adopting Web 2.0 tools involves learning what the technologies can do as well as understanding what they can offer. As Zuckerman writes, 'using the appropriate tools, for the right job at the right time, is something that we all have to understand.'

Web 2.0 tools for improving advocacy and governance

Proponents of Web2forDev point to the increased transparency and accountability that Web 2.0 tools can bring to online 'conversations'. For Kreutz, blogging represents a radical shift from a more traditional, top-down mode of communication to a more 'publicly open and transparent' one. A blog (short for 'web' and 'log') is a website like an online journal. It is an easy way to publish content for people with Internet access. Deh also reflects on the use of video blogging for information-sharing and advocacy purposes by the Ghana Information Network for Knowledge Sharing (GINKS). Similar to a blog, a video blog – or 'vlog' for short – contains short segments of video content, which you can watch online without having to download them. Usually in the form of interviews, these vlogs help members to share information about ongoing work and experiences. For Kreutz, 'this bottom-up approach to speaking out about social, economical or political issues has the potential to engage a broader public sphere in the development sector.' Yet while the use of blogging for development is beginning to gain popularity, there are relatively few of them.

In fact, most early adopters of Web 2.0 tools for development have been activists, either appropriating the tools for their own use or devising new tools to satisfy a need (Zuckerman, this issue). Web 2.0 tools – many created specifically for recreational purposes – can also be used for more innovative purposes. Zuckerman's view is that governments are reluctant to prevent people from using them because these tools have a 'social cost' to attempt to control or prohibit. One example is publishing photos with captions on photo-sharing websites that document human rights abuses that people might otherwise be unable to communicate to the global community. Social networks – such as MySpace and Facebook – were created so that people could network with friends and family online. Yet campaigning groups are also appropriating these tools to network with one another and to alert people to causes.

Web 2.0 tools and mobile phones are also helping to promote the spread of citizen journalism, particularly in political activism – helping to generate an overview of shared realities, experiences and perceptions, which can also be used to help hold governments and institutions to account (see e.g. Okolloh; Zuckerman; Kreutz, this issue). For example, before the widespread use of blogs, Indymedia, a volunteer-run international network of citizen journalism news websites, radically altered the way in which anyone – individuals, activists and campaign organisers – could publish their own

Jon Corbett and Tim Kulchyski on the panel of a plenary session at the Web2forDev conference.



Photo: Guy Singleton

news online and share information. By providing a news platform that allowed anyone with Internet access to instantly publish their reports and pictures without the need to register, they opened the doors to self-publishing. Then, as now, demonstrators were often demonised in the press and dissenting voices marginalised. Indymedia provided platforms where alternative voices could be heard, people could collaborate in publishing breaking news and protest reports, and space for political discussion and discourse. Volunteers made widespread use of wikis and online instant messaging to coordinate reporting and mobile phones and SMS for gathering and distributing news. This revolution in citizen journalism earned Indymedia UK the New Statesman New Media Award for Advocacy 2002.^{12 13}

Similarly, **Ory Okolloh** (this issue) describes how in Kenya an innovative website was developed for sharing information. During the election crisis in 2007, a media blackout meant that citizens were unable to access information about events unfolding on the ground. So a group of Kenyan

activists created the Ushahidi website. Ushahidi (meaning 'testimony' in Swahili) enabled citizens to send in news reports either via the Internet or mobile phones. This 'crowd-sourcing' helped to create an immediate overview of events, as well as a time-indexed repository of reports. Ushahidi has now been redeveloped to improve its potential for application in humanitarian crisis situations – an excellent example of a mash-up, which integrates a series of Web 2.0 applications including e.g. web-based interactive maps that allow users to track reports from specific locations to monitor hotspots of activity.

It should be remembered that a tool does not make a campaign. Web- and mobile-based advocacy, like any other advocacy campaign, requires people, planning, time and resource commitments, and capacity building. Arguably, Web 2.0 tools can also be used for propaganda and misinformation – by activists, corporations and the state alike. Particularly with mass participation, there are also issues of verifying data and creating trusted sources of information. Yet as Okolloh writes, 'Information in a crisis is a patchwork of sources. You can only hope to build up a full picture by having as many sources as possible.'

Increased transparency also presents its own challenges

¹² The New Statesman is an award-winning UK current affairs magazine. The New Media Awards celebrate UK new media projects that benefit society, government or democracy. See: www.newstatesman.com/nma

¹³ See: www.indymedia.org.uk

(Zuckerman, this issue). 'Letting everybody speak to a potentially global online audience is extremely threatening.' This applies equally to repressive states, organisations with vested interests, and the individuals or groups publishing information.

Developing and adapting appropriate Web 2.0 tools

Many Web 2.0 tools are free or low-cost 'off-the-shelf' and as Zuckerman argues, appropriating these tools for development can be more cost-effective than developing whole new applications, for example online photo-sharing platforms. Given the resources involved in software development, it is also often unrealistic to design completely new tools.

However, we may also need to consider adapting them and if necessary develop new tools for development purposes. And although many Web 2.0 tools have a participatory use there is also the issue of the design processes for these tools – which are often less participatory. Many can participate in using them, but mostly have no control in how they are designed, or what they are designed for.

The increasing use of open source software (OSS) has led in many cases to a much more open process around software development.¹⁴ Because OSS code is available in the public domain it has encouraged the development of common programming interfaces. These interfaces plus the non-commercial nature of the software allows other people to rapidly add to and adapt these tools and drives development forward: people make improvements to software and make them publicly available. Many Web 2.0 platforms have been developed using OSS.

In fact, Web 2.0 has helped to foster an increasing participatory culture in software development – with greater potential for user feedback and collaboration. While more progressive software developers have always solicited feedback from users through email and online discussion forums, it is now almost obligatory for developers to have their own blogs, informing users of planned developments, responding to problems and engaging in dialogue with users over the software development process.

Activists were often the first people to start playing with, hacking and combining tools to produce new services to fulfil an immediate need. This approach has now become a mainstream activity for software developers. Increasingly, publishers of tools, software, and platforms encourage the development of third party applications (plug-ins and add-ons) which enable new functionality to be easily added or integrated into the original product. In a similar way there

has been an explosion in 'widgets': mini portable applications which can be easily added to a website to provide additional functionality and dynamic content. Widgets can also be combined to create new functionalities.

Web 2.0 tools have also made content much more portable on the Internet, allowing users to create their own 'mash-ups' of data from multiple sources. At its simplest, a mash-up could be just creating a page that pulls in different content from multiple RSS feeds, be it text, pictures, or videos. Users can either do this themselves, or use a platform designed specifically for creating customisable personal start-pages, such as Pageflakes or iGoogle.¹⁵ A more advanced mash-up is one that actually combines data sources to produce a new set of data or service that was not provided (or necessarily intended) by the original publisher. A good example is how data about events can be combined with online maps (see e.g. Okolloh, this issue). In this way, users themselves are adding value to existing data and creating a new resource.

Learning to share: collaborative online spaces

One fundamental benefit of using Web 2.0 tools is the enhanced ability for people to collaborate and work together online. Applications like wikis can facilitate greater interaction e.g. on documents or developing collections of online resources and materials (see e.g. Rambaldi and Barth, this issue). Wikipedia is a phenomenon that clearly demonstrates the power of wikis. The content generated on the multiple different language versions of Wikipedia has been created by literally hundreds of thousands of people – and anyone who has an Internet connection and who is literate can edit and contribute to the project (Zuckerman, this issue).

Web 2.0 tools can also be particularly useful for projects aiming to revitalise culture and enhance community development. **Jon Corbett, Guy Singleton and Kado Muir** discuss how an innovative project sought to find ways to help bridge the generational divide between Aboriginal community elders and youth through the use of Web 2.0 and other digital tools. Particularly successful was a participatory digital video project, where the project team and community elders worked with a group of youths to produce a short video which was then published on video-sharing websites. The video subsequently went on to win international acclaim, demonstrating the power of the tools for advocacy purposes and to positively engage youth in such activities.

¹⁴ For more information on OSS see glossary, p. 122 (this issue).

¹⁵ See: www.pageflakes.com and www.google.co.uk/ig

Online social networking websites are another phenomenon that development practitioners are recognising as increasingly useful. Online social networks are a new generation of community platforms which are similar to websites but offer specific interactive features and tools. An online social network brings people together and enables them to find others who share common interests and/or activities and who are interested in learning more about each other and what they do. They can be used to target, create or enhance networks or communities of practice. For example, **Duncan Macqueen** describes the development of the Forest Connect online social networking website.¹⁶ Members of the international Forest Connect Alliance had expressed a strong demand for greater information-sharing about state-of-the-art practice in small and medium-sized forest enterprises. Since its creation, the online social network has attracted an increasing number of genuinely active members. In addition, the website utilises the power of social bookmarking and RSS feeds to enhance the ways in which people are able to categorise, find and share relevant information via the website itself.¹⁷

Because the tools are easy to use and accessible, Web 2.0 tools can quickly fulfil a need, e.g. in response to crises or an urgent or clear need for information. But however useful the tools, people still need to be motivated to participate in using them – whether they are donors, development agencies, community organisations or individuals. Simply making these tools available is not enough. We also need to create – and learn to value – a culture of information-sharing. The application of these tools needs to have a clear utility and purpose that is both appropriate and demand-driven. For example, the process of organising the Web2forDev conference has contributed to building a community of practice (Barth and Rambaldi, this issue). However, the organisers also faced challenges such as hesitancy to explore new tools, choosing from the many Web 2.0 applications available, and the steep learning curve involved in testing and adopting them.

Many Web 2.0 websites are established with the best of intentions, yet care needs to be taken that they are kept pertinent, resourced and moderated. Good intentions and the low cost of establishment are not sufficient in themselves to ensure the long-term upkeep and relevance of the services offered. As Kreutz emphasises in relation to blogging, 'Attention and visitors are not guaranteed. You need to persevere to find the audience or help the audience find you.' This is also echoed by Corbett and Kulchyski (this issue). In their

"Building and maintaining vibrant online communities for development requires capacity building, time and resources."

experience, allocating adequate resources to maintaining and updating information on blogging websites is crucial to ensuring the community's interest in using it. Likewise, Okolloh (this issue) compares the success of the Ushahidi platform in Kenya to its less successful deployment in the Democratic Republic of Congo. This may have been for a number of reasons: a lack of public motivation to participate; wariness of possible reprisals; or a reluctance of humanitarian agencies to share crisis information.

Building and maintaining vibrant online communities for development requires capacity building, time and resources – and these requirements are identified throughout the articles in this collection. One challenge is to understand and contribute to collaborative online spaces for development, to share and holistically generate relevant, timely and above all useful content. Yet there are other fundamental issues we also need to be aware of.

Intellectual property, privacy and security

As we have seen, Web 2.0 tools have the potential to enhance the ways we interact and share information online. However, a word of caution is required. Issues such as who has access to the information generated need careful consideration. It is also important to consider issues of safety in the process. Is the information being uploaded culturally sensitive? What are the implications of making this information available to a broader audience? Who may be put at risk by sharing this information? Who is using this information without your knowledge – and for what purposes?

Increasingly, commercial sectors are using these tools for social marketing and to promote brand images. Often, people concede their privacy and/or intellectual property rights over information to online service providers without realising it, for example when content is uploaded to websites like Facebook or YouTube or location-specific data is entered on Google Maps. **Jon Corbett** and **Tim Kulchyski** discuss the importance of intellectual property rights when using Web 2.0 tools for development. In this new era of 'social computing', information that is shared on the Internet is usually publicly accessible. The authors describe a project working with Hul'q'umi'num'-speaking communities

¹⁶ See www.forestconnect.ning.com.

¹⁷ See also our short introductions to social networking, social bookmarks and RSS feeds, Tips for trainers, this issue..

based in Canada to revitalise their language. The project used a range of approaches – including participatory video and Web 2.0 tools – to develop language learning materials. Here, the authors describe how the project participants strategically chose to retain much of their valuable cultural knowledge within their own communities. For example, only selected video segments were uploaded on public video-sharing websites. In addition, access to the community's blog was limited to registered users only. In this way, the project limited access to these important cultural resources for people outside of the Hul'q'umi'num' communities.

We need to be clear about who owns the information that we enter and upload on our social networking websites and as with anything on the Internet always be careful about uploading personal information. Always check the terms of service before joining an online network – some service providers retain the right to use your material without your permission. Find out what rights the service provider has in terms of using your data and what rights you have to recall/delete your data.¹⁸ There have also been some concerns expressed regarding the use of Facebook and many other social networks as a means of surveillance and data mining – people have been blacklisted, lost their jobs and even imprisoned as a result of information they have published. In addition, there have been instances where such services have shut the accounts of particular individuals or online groups without warning (see e.g. Lee, 2007; Mishra, 2009). Some states have also banned the use of Facebook in their countries for promoting criticism of authorities.¹⁹

There is also the issue of backing up your data. Best practice is that digital data should always be safely stored (or 'backed up') somewhere else offline – it is not advisable to trust that information you have uploaded online will remain there. In addition, when subscribing to third party applications and services, the service may alter, malfunction or disappear – in such instances, subscribers are not in control of what happens to their information. And while third party online social networking platforms can create a vibrant online community, you cannot 'back up' a social network. So if securing data is a major issue, using a more sophisticated content management system (CMS) that can be run on your own server space may be more appropriate than using third party platforms.²⁰

¹⁸ For example, Facebook and YouTube retain the rights to use any information uploaded by members. In addition, some websites such as Facebook retain a permanent archive of all material uploaded – even after deleted by the member from their own profile page. See also Social networking, this issue.

¹⁹ For more discussion, see http://en.wikipedia.org/wiki/Criticism_of_Facebook

²⁰ For more information about CMS see Social networking, p.112 (this issue).

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Evaluating effectiveness

Monitoring and evaluating the effectiveness and appropriateness of these tools is fundamental. Implementing these tools requires a careful consideration of who can or cannot participate – and who will benefit. Multidisciplinary approaches to integrating Web 2.0 tools into development projects and processes are key. How do we decide whether and what tools are appropriate in individual contexts?

One example of a people-focused, needs-based approach to adopting Web 2.0 tools within local communities is provided by the Arid Lands Information Network (ALIN) within East Africa. The ALIN approach builds community trust by involving existing traditional social networks and empowers communities to drive their own information needs. Local outreach volunteers – who both train and act as 'info-mediaries' – are available, along with a wide range of ICT-based and traditional tools, including community radio and drama, focal groups, participatory video, computers with Internet access, a cross-network online web portal, mobile text message services and newsletters. ALIN communities have a strong, sustained interest in ICTs and Web 2.0 technologies – importantly driven by them defining and owning the combinations of tools which are appropriate for them. This involves a strong element of local capacity building, a slow introduction to new technologies, and techniques put in place to monitor the 'success' of the tools.

In terms of evaluating 'success' of a particular tool or information resource, the important question here is what are we trying to monitor and evaluate – are we attempting to monitor outputs such as numbers of users? For this simple type of monitoring there are a range of website statistics tools (unique visitors, number of document downloads etc.) and third party website statistics providers such as Google Analytics.

A more nuanced definition of 'success' means looking at outcomes rather than just outputs – who has benefited from these tools and in what way? For example, what are

the outcomes of introducing new Web 2.0 market pricing tools in a local farming community? To understand this better it is useful to have knowledge of our existing (non-Web 2.0) social network membership as a baseline reference and applying a range of techniques to monitor change in outcomes (e.g. behavioural change) that then can be implicitly linked to development impacts.

One promising approach that has been used within local communities to understanding outcome changes is to use tools to analyse social network structures. These provide a proxy for a 'knowledge map' of information flows. Within communities and across business relationships, these social structures act as information distribution networks. They are a trusted source of new knowledge. Mapping them provides a guide for introducing Web 2.0 tools in a socio-culturally sensitive way, as well as a template to better measure who uses the technologies and whether development benefits arise from it.

Practical techniques to perform mapping have been pioneered by organisations such as the Consultative Group on International Agricultural Research (CGIAR). And there are a host of non-ICT workshop-based activities that can be used, such as the Net-map Toolbox (Schiffer, 2007). This makes social network mapping accessible to development practitioners. Once the local social networks have been mapped, we can better understand how changes to these social networks are effected when new Web 2.0 tools (such as SMS and web-based market pricing systems) are introduced.

When it comes to more anonymous and widely dispersed social networks with hundreds, possibly thousands of users, measuring outcomes is extremely challenging. However, evaluation needs to at the very least infer direct involvement (e.g. leaving comments) or else how the website content is repurposed, tagged, bookmarked, linked to, mashed-up and shared down the line. This helps to demonstrate how interesting and socially relevant a website and its information are to users of the network. A variety of approaches from user surveys, to harvesting information from user profile data, and webpage visitor patterns can be used to gain more information about the network users and their changing behaviours. Additionally, many Web 2.0 tools and platforms provide the ability to order and rank popularity, instances of use or the number of times items or pages are linked to.

The reality is that because Web 2.0 is relatively new and impact is difficult to infer from the mere existence of information networks, we have not developed mature formal mechanisms to monitor and evaluate the impacts of Web

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2.0 tools. In the broader field of ICT for development there are some useful frameworks emerging, particularly in measuring the effects of newly introduced ICTs on pilot communities.²¹ These frameworks are useful in approaches to assessing outcomes where there is direct physical access to communities using Web 2.0 tools on the ground. They are less useful where the tools are used by a network of geographically dispersed and often anonymous users – such as an NGO using an interactive website for advocacy purposes. Here the automated tracking, participatory activity monitoring, and survey tools mentioned are aids to inferring outcomes and development impacts.

Ways forward

The most successful approaches to implementing development programmes are those that become self-sustaining – shifting away from a reliance on donor funding to become demand-driven. This would apply equally to initiatives using Web 2.0 tools (Garside, 2009). As the articles in this collection demonstrate, this can happen if the services that these Web 2.0 applications and tools offer are perceived as relevant, that they offer important and up-to-date information in a way that builds on technologies that are low-cost and already in use (such as mobile phones), and if the impacts are monitored and evaluated for effectiveness.

We should also not assume that market forces will provide the basis for supporting the development and infrastructure for Web 2.0 for development. Privately-run Web 2.0 services may become profitable. But we cannot assume that these services will extend to wherever there is a need. So it is still vitally important for donors to continue to support the implementation of services beyond using simplistic indicators such as profitability.

In addition, many within the development community may

²¹ For example see 'Impact Assessment of ICT-for-Development Projects: A Compendium of Approaches' www.sed.manchester.ac.uk/idpm/research/publications/wp/di/di_wp36.htm

still need further convincing about the power of Web 2.0 tools to harness change. As Corbett, Singleton and Muir write, 'There is a gap between what community members consider valid evidence to support what they see as the impact of ICT and Web 2.0 usage within the community, and the comparative academic evaluation of such findings.' Further work is needed to demonstrate the benefits and identify both best and worst practice if these tools are to be better mainstreamed into development work. This means bringing together multidisciplinary groups of practitioners that include social scientists, economists, as well as computer scientists to develop better and more robust monitoring and evaluation techniques.

In fact, from our experience in working with authors to create this collection of articles, what has become apparent is that for many of them, their experiences of using Web 2.0 tools for development are still relatively new. As with any new and emerging community of practice, lessons are still being learnt. Some areas of experience are more mature than others. What is clear is that the use of Web 2.0 tools for development is not yet widespread within development circles – but we hope that this collection of articles will demonstrate both the wider potential as well as critical reflections on the challenges and ways forward.

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