PUTTING THE "E" INTO ADVOCATE WITH ONLINE CONTENT MANAGEMENT SYSTEMS

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Abstract

Sparked by a desire to upgrade its existing email-list system, Spokes Canterbury has embarked on a project to develop a new online website and content management system. Using a freely available "open source" web site framework called "Drupal," a new site has been created that allows a wider group of people to contribute cycling-relevant information, rather than the traditional "webmaster as gatekeeper" approach.

Spokes members will be able to submit information on coming events, public submissions, ride photos, useful weblinks, discussions on topical items and more. Spokes will also be able to better manage its 900-strong membership by controlling access to different levels of information and allowing members to update their own personal details. The work has attracted the interest of CAN who are looking at developing a nationwide updated website and online community.

As work has progressed, the exercise has raised awareness of other possible ways to use online systems such as this for advocacy, whether for cycling or other causes. For example, the technology allows for the use of maps to graphically indicate information such as problem locations. Issues requiring a response can be efficiently distributed to a wide audience and feedback collated. Information or submissions can be collaboratively compiled by a group of people through tools such as "wikis" or "blogs."

Contributed material can be categorised by different user-defined attributes, allowing for easy searching of similar relevant items. Group membership and organisational data can be maintained centrally online by a collection of widely-dispersed authorised administrators. The list of possible capabilities grows continuously as open source developers contribute new "modules" created to benefit specific online communities back to the greater Drupal community for all to use.

This presentation will summarise the work undertaken so far by Spokes and speculate on possible future initiatives in this brave new world of online advocacy.

Introduction

For most advocacy groups of any sort, keeping both the public and group members up to date with its various activities and issues is a constant challenge. It can be even harder to encourage people to get involved in these initiatives or contribute to any discussion.

Like many groups, Spokes Canterbury has maintained a website and email distribution system to provide much of the communication by the group. Sparked by a desire to upgrade its existing email-list system, Spokes Canterbury has embarked on a project to develop a new online website and content management system.

This paper summarises the work undertaken so far by Spokes and speculates on possible future initiatives in this brave new world of online advocacy.

Background

Profile of Spokes

Spokes Canterbury is the local cycling advocacy group for Christchurch and the surrounding region. It is a member organisation of CAN, the Cycling Advocates' network.

It was formed in 1998, out of the ashes of the former Canterbury Cyclists' Association (CCA), which had been operating since the 1970s. As of late 2007, Spokes had ~900 members on its books. For more details, see http://spokes.org.nz [2].

Since the beginning, Spokes' philosophy has been to simplify the administrative burden for its "core group" of members, as well as the operating costs to the group. Therefore it has relied heavily on electronic means to communicate among its members, supplemented by monthly in-person meetings of core group members.

This "thin admin" model enables Spokes to have free membership, as there are few physical costs other than members' time. This is a key to attracting a large number of interested people to the group. Members wishing to contribute financially are encouraged to join CAN, who help to support Spokes financially through a portion of local member subs received.

The existing Spokes system

Free (advertising supported) YahooGroups email lists have been used to manage Spokes members since May 2003. Initially only a mailing list for communication between "core group" members was set up, but in Jul 2004, a three-level system was implemented:

- **Spokes_chch** - Covering the large majority of members, this group typically receives only a monthly e-newsletter and the occasional special notice. No other contribution is required (or expected) on their part, unless there are any issues they want to get involved in or contribute to. Only an administrator can post to this group.

- **Spokes_discuss** - As well as receiving the above Spokes_chch emails, this group also receives other regular notices (perhaps weekly), including notification of coming projects and submissions, as well as opportunities to contribute to draft Spokes submissions. Only an administrator can post to this group.

- **Spokes_core** - This group comprises the members who, at least from time to time, come to monthly lunchtime meetings and are involved in group admin tasks. They receive all the e-mails that the other two groups receive as well as other messages between core group members. All core group members can post to this group.

In early 2004, a Spokes website was also set up by (then CAN webmaster) Glen Koorey, as a sub-directory of CAN's website. The site was largely coded as static webpages in simple HTML, that were updated as required by the group webmaster. Over time, the site grew to include:

- Contact details for key Spokes members

- Information on joining Spokes' email lists

- Copies of Spokes submissions

- Links to relevant local/cycling websites

- Copies of previous e-newsletters

- Photos and maps from Spokes recreational rides and other cycling events

- Spokes AGM documentation

The website was also a key focal point during the 2005 cycleway moratorium in Christchurch, with Spokes using it to maintain campaign information and media reports (see http://www.can.org.nz/old/spokes_chch/moratorium/index.htm [3]). An online petition form was also created that allowed interested people to automatically send a message to Council. Over 1300 responses were received using this method in under four weeks, demonstrating the potential power of online campaigns.

Constraints of existing system

Over time a number of different issues have been identified that were holding Spokes back from exploiting the full potential of their communication systems and the contributions from their members:

- Traditional websites require require above-average web skills (e.g. knowledge of HTML language) to make contributions, thus limiting the pool of potential contributors

- The "webmaster as gate-keeper" approach results in a bottleneck for updates to the website (especially when a volunteer webmaster has other more pressing commitments) and may result in early "burnout" of the webmaster.

- The lack of ease for raising new issues and providing instantaneous feedback limit the capability for timely contribution by a wider group of people.

- Ongoing maintenance of the website can require a lot of manual work to organise directory structures, edit webpages, check links, etc.

- YahooGroups provides limited membership management tools (e.g. migration, ability to perform analysis) and is relatively complex for individuals joining up (many give up). Conversely, an administrator signing up new members manually is time-consuming and limited to 10 per day - not easy when 600 new members joined during 4 weeks of the moratorium campaign.

- Because of the limitations of YahooGroups, a separate offline database was maintained by our membership administrator, resulting in two disparate, unlinked databases not easily accessed by a wider group of core group administrators.

Goals for new system

Based on the above issues, the following goals have been identified for the new system:

- delegate and simplify the process of adding and changing website content

- enhance membership management – allow additional information that members can provide, consolidate online and spreadsheet databases

- more control over mailing lists and online archives

- mechanisms allowing online collaboration (e.g. for developing submissions)

- ability to draw in and interest new or inactive members and wider cycling community

- coordinate Spokes membership and activities at different levels – core group, feedback group, general membership

- coordinate Spokes events – online event management

- allow advocates to provide ongoing commentary and exposition

Spokes is fortunate in currently having amongst its core group members two experienced web developers. In discussions among Spokes members about the issues raised above, it was decided to adopt a Content Management System (CMS) to replace the existing website and mailing lists. The open-source "Drupal" framework was selected as the basis for the new system.

Technical overview

Content Management Systems

A Content Management System, usually referred to as a CMS, is software that makes it easier for non-technical people to create and organise website content stored on a network connected computer. A basic CMS normally makes it easy for non-technical people with suitable logins and passwords to add and edit pages with text and images and incorporate them into website navigation - all within their standard web browser (e.g. Mozilla Firefox, Safari, Microsoft Internet Explorer, Opera, etc).

More advanced CMSs are actually dynamic website engines that efficiently pull data from a database to construct each page on the site when a site visitor requests it. Each page is tuned specifically to the person who is viewing it, taking into account the privileges their user has been given by the system's administrator. Advanced CMSs provide capabilities far beyond simply allowing administrators to alter web site content through their web browser, like:

- "blog" engines, allowing selected user to have their own personal web-log, essentially online diaries
- image galleries
- content tagging, allowing dynamic selection of pages based on common keyword tags
- comments, allowing users to leave comments on other posted content
- forums, where users can post questions and respond to other users
- event calendars, to keep track of coming relevant activities
- online surveys, enabling groups to seek feedback on topical issues
- newsletters, posted either online or via conventional email
- "wiki" pages, a collaborative website which can be directly edited by anyone with access to it, to maintain accuracy and currency. All changes are stored as "revisions" and any previous version of a wiki page can be viewed or restored.
- email alerts - users can request an email alerts if, for example, a page of interest is updated, or someone responds to forum post.
- RSS feeds - users or other websites can automatically "subscribe" to any content on the site, based on author or topic.
- aggregation - the site can subscribe to RSS feeds from other sites related to specific topics, pulling together information from many sources that is of interest to their audience.
- e-commerce - paid membership, donations, fund-raising or merchandise

The best CMSs, particularly those focused on collaboration, combine basic CMS and advanced framework functionality with an active developer community that is constantly developing new capabilities to exploit the seemingly endless stream of new technologies and emerging methods of collaboration. They also ensure that the underlying technology is robust, efficient, easy to use, secure, and maintain. Most importantly, a strong community of developers and users ensures that the technology has longevity.

Open source software

The internet is powered by open source software. Most email is sent, most websites are served, and every Google query is handled by open source software. Without open source software - and its adherence to open standard network protocols ensuring universal access - the virtual world would have been confined to proprietary "walled-gardens". The internet as we experience it today, where any systems meeting those well defined open standards can participate, would not have been possible.

But the internet isn't the only context in which open source software is having an impact - it is also slowly nibbling away at Microsoft's monopoly of the computing desktop. Some popular examples of open source software for the desktop are the Linux [4] operating system, OpenOffice.org [5] productivity software, Firefox [6] web browser and Thunderbird [7] e-mail application.

But what does it mean to be "open source"?

Just as the appearance and flavour of a cake are determined by the ingredients and methods used by its cook, the look and feel and behaviour of any software application is determined by the source code and processes employed by its developers. For most people, their computer runs the pre-installed software that was included in the price of their computer, or downloaded from a website, or purchased as a shrink wrapped box on a store shelf. In those cases, people don't actually own the software, but rather a license to use the software in a very specific way. Like the recipe for Coca Cola or the "Colonel's Secret Spices", those companies keep the source code for their software strictly under lock and key - only the vendor can make changes or improvements, and they do so with the single motive of maximising shareholder profit. For others to compete with these proprietary software products, they must build them more-or-less from scratch.

This model of software development has been quite successful for the past 20 years, but its limitations are fast becoming apparent, particularly with the advent of the internet. On the internet, software - like ideas - can be replicated and distributed for almost no cost. This changes the economics of software in a profound way.

Much open source software is written by enthusiasts, who lovingly craft their software the way a car enthusiast might restore a vintage automobile. They write it to "scratch an itch" - to address their own personal requirements - and are not usually motivated by financial gain. Open source software is similar to proprietary software in that people can install it on their computers and use it to "do stuff": to create documents, manipulate images, record music, and host web sites. It differs in that, although the original author retains copyright of his or her creation, he or she gives away the software's source code along with the software. It's "share and share alike" - others may use the software, free of charge, but they may also improve or fix it, or use it in ways never imagined by the original developer. In return, they must agree to make their improvements, should they choose to redistribute the result, available on similar terms, with the source code.

That way, software projects originally started by, say, a talented university student who, out of academic interest, combines the capabilities of several other open source software developers and then chooses to distribute his or her creation, can become a credible challenger to the products of multi-billion dollar corporate software vendors. Often, thanks to the easy communication and transfer of information made possible by the internet, groups of developers congregate around an open source software project, collaborating on improving it - and in many cases improving the internet technologies they use to foster that collaboration.

Open source software is the perfect fit for volunteer organisations like Spokes for whom funding is limited and better collaboration and results in the community - not profit - are the motivation. If a small faction of the

organisation combines their passion for cycling with a knowledge of internet technologies, they can use these open source technologies to build a platform that enables other less technical cycling enthusiasts to amplify their voices via the internet.

More importantly, that faction's efforts can be magnified: if the platform proves successful, other cycling organisations - and it need not be limited to cycling organisations - can adopt it with little cost and with no limits on use. In turn, these other organisations can invest available resources in improving the platform further or customising it to meet their specific requirements.

Rather than veils of secrecy and the competitive stance required by the proprietary software model, open source software is the product of collaboration, in which all of the participants can benefit equally, with little wasted effort.

Drupal

Drupal [8] is a superb website engine - an elegantly extensible software core incorporating CMS functionality with hundreds of additional capabilities in the form of "modules [9]" developed by a huge, energetic worldwide developer community. In addition to its technical credentials, Drupal is open source software - free to use, customise, and improve. It bills itself, in a somewhat understated fashion, as "community plumbing." Well over a hundred thousand Drupal sites have popped up on the internet. Some act as personal blog sites, others as e-commerce or business-focused sites, but most of them serve the needs of specific organisations and the communities supporting them. It enables organisations like political parties, Amnesty International, Greenpeace, and others to organise and mobilise their members, delegate responsibility, react quickly to external events, and learn from each other. We consider Drupal, on the whole, to be the best choice for a community focused open source CMS. With a system as inherently complicated as a community framework, however, familiarity is always a powerful influence when choosing a technology. Other outstanding open source CMSs/website engines include Plone [10], Joomla [11], and Silverstripe [12].

Spokes Requirements

A number of potential tools available in Drupal were identified by Spokes as key requirements in the new CMS:

- The built-in membership management system simplified administration tasks for Spokes core members, but also allowed people to easily sign themselves up, update their own details or change their level of involvement. The system is accessible to a number of administrators with suitable permissions and customisable so that relevant information can be obtained of each member. For example, at the most basic level, Spokes simply requires an email address (and preferably a name or ID) to be able to distribute its newsletter. For members more involved however, it is also useful that Spokes knows their general location (to target feedback for submissions for example) or their contact details (to enable core group members to meet).

- As with the existing YahooGroups system, a set of email lists will enable different hierarchies of members to be set up and managed. Members (or administrators on their behalf) will be able to select which groups they would like to be part of and also whether they receive emails from these groups directly or access the messages on the website. Spokes will be able to control the level of interaction in each group, from a strictly moderated "one-way" email newsletter to a completely un-moderated forum for discussing issues.

- A calendar of events allows members to see what relevant activities or deadlines are coming up and

also to be able to contribute other happenings. Documents can also be attached to certain events, e.g. minutes from a meeting, or draft submissions linked to a due date. Desktop calendar programs such as Apple's iCal can subscribe to the online calendar.

- The monthly Spokes newsletter is a key reason for many people signing up to the group, so it is important that this continues. Drupal's Simplenews tool has been chosen as the means to develop and distribute these in the new system. It is possible for a wider group to collaboratively contribute to each issue, which will help to ensure that important issues are not forgotten and that information is correctly provided. If a single editor is collating material "offline", it may be all too easy to believe that someone else will be providing certain information to them; an online draft empowers everyone in the core group to check that everything intended is present and correct.

- Spokes has run a number of recreational rides and supported other events like bike breakfasts. It is useful to maintain a historical record of these both for the interest of viewers and for holding similar events in the future. An experimental Ride content type has been created, so that details of each ride/event can be submitted online, together with other material such as photos from the day and route maps. A list of past rides can then be automatically viewed.

- Spokes has provided a large number of submission to various agencies over the years. An archive of these is useful both from an information point of view for outsiders, but also to assist with the development of similar future submissions. A Submission content-type allows all relevant details (description, due date, agency, etc.) to be entered in the CMS. For submissions related to specific locations, it may be that a map-based system (using GoogleMaps) can be used to allow people to see what issues have been raised in the past at particular sites. The ability to collaboratively develop new submissions online also provides a way for a wider range of people to share ideas and fine-tune their arguments.

Other Drupal content types and tools have also been created to add further useful features to the site. These include:

- the ability to contribute cycling-relevant articles or papers

- a repository for Spokes media releases

- the ability to add static content such as "about Spokes" information

- a mechanism to add and view relevant weblinks

History / Development

Initial discussions on this project started in early 2006. The first step was to ensure that everyone understood all the relevant factors, i.e.

- the structure and operation of the current website and email-lists,
- the issues with the existing system and desired improvements to it, and
- the possibilities offered by the Drupal CMS.

With this basic information understood, a plan for the proposed new Spokes CMS was then drawn up in mid 2006. By Nov 2006, a draft website had been produced (with access only by a small group of Spokes members). This site enabled the team to

- test the capabilities of different Drupal modules

- ensure that the aims of the project for Spokes were being met

- check the site's usability from the perspective of a general Spokes member or casual web surfer

The collaborative nature of the site allowed a variety of different people to test the site, add new or updated material to it, and provide feedback on issues needing resolving. This ensured that the project didn't languish too long if one particular person was busy with other commitments.

The draft website was demonstrated at the Spokes AGM in May 2007 and went live in August. Although reasonably functional at this point, there is still additional material that needs to be added, either transferred from the old site or content that was never previously made available online.

A new domain name spokes.org.nz [13] was also purchased in 2006 so that the group could brand itself independently of CAN. Initially, until the new website was live, the web address pointed to the existing web pages at CAN.

Implementation challenges

As the project has progressed, a number of important lessons have been learned:

- All the Drupal software is freely available on the internet. In a commercial environment, the only costs to pay are for software consultants if those skills are not available on a volunteer basis. Spokes is fortunate in having those skills within its core membership. There are no time savings to be made when first setting up the website; if anything, the system is more involved. It is the subsequent maintenance of the content that becomes easier, though, as the load can be shared across many members, and the basic content management update skills are easy to learn.

- The time frame for setting up a CMS website should not be underestimated when the work is undertaken by volunteers. It certainly came as a surprise to some project members that the project has gone on for an extended period of time.

- Transferring content from the old site to the new is a tedious job, but needs to be done to start off without losing the history of the group.

- The usability of the website by different operating system platforms (e.g. Microsoft Windows, Mac OS X, Linux) and browsers (e.g. Microsoft Internet Explorer, Mozilla Firefox, Safari, Opera) needs to be tested, and the site modified to provide data in the most digestible form for each combination to ensure that the site appears consistent to all users. It's worth noting that Microsoft's Internet Explorer browser, used by most computer users, is easily the *worst* for adhering to international web browsing standards.

- Site permissions need to be allocated to different people, administrators and user groups. These permissions range from anonymous read access (i.e. any visitor browsing the website can see content), to registered user read access (i.e. users logged in can read pages that anonymous users cannot see), to registered users with read / write permissions (i.e. permissions to change the content of web pages, or to add new pages), to registered users with site administration rights (i.e. permissions to change the set up of the website). Some thought needs to go into a workable and flexible structure to meet both the needs of the group and its members.

- Decisions need to be made whether contributions can be made freely by registered users, or whether these contributions are moderated. For example, some pages allow registered users to leave comments on articles already published. Should these comments be approved by an administrator before they go online? Similarly, should people be able to contribute useful web links or coming

events directly to the website or just submit them to an "editor"?

- The transfer of the membership database to the new system needs to be carefully planned, so that there is minimum pain and membership loss. The three-tiered Spokes system is of advantage, as the transfer of the Core group was undertaken first, which helps ironing out any teething problems with a group of committed members who don't mind things not going 100% smoothly. For the wider membership list, though, it is most important that all systems are in place. Testing with dummy member lists is critical to test the response of the website to data transfer. Spokes is just about to embark on the transfer of the "real" main membership database (some 900 members).

Other similar efforts

We should point out that the Spokes website is not the first dynamic online system to be set up for cycling. Among NZ cycle advocacy groups, that honour would go to Bike Taupo [14], who created their site using a CMS called Mambo back in 2003 and have since attracted over 1,200 online members. Another group using a Drupal CMS is Kapiti Cycling [15], although evidently it is still under some development and not being updated as often as would be desirable.

National cycling organisation BikeNZ [16] also uses a dynamic online system, which enables BikeNZ staff to login remotely and update organisational information, including published website material. This is actually a proprietary content management system, provided by Zeus-sport.

Another very popular NZ cycling website is Vorb [17], which since 2001 has provided a wide range of forums, event details, buy/sell opportunities, photos, etc. using the PHP-Nuke CMS.

The work of Spokes and other groups has attracted the interest of CAN who are developing a nationwide updated website and online community. A project has started in conjunction with Spokes, BikeTaupo, and Cycle Aware Wellington. For more details, see http://www.can.org.nz/dsblog/ [18].

Next steps - where to from here

Spokes

One of the key aims of this project is to get more Spokes members contributing to the group. The new website allows a wider group of members to contribute cycling-relevant information, rather than relying on a webmaster to update material. Spokes members will be able to submit information on coming events, public submissions, ride photos, useful weblinks, discussions on topical items, etc.

A key tool is the ability for collaboration on submissions and other issues requiring group feedback. For example a Spokes administrator could post an item detailing a coming major submission (with links to the relevant external website) and suggesting a few possible issues to raise. Other web viewers could then review these and either directly edit the draft submission online or post a comment to the page. A series of responses would provide an indication of the level of support for various suggestions. A submission coordinator could then review all of the responses and produce the final submission for sending in.

A future enhancement of the membership database is to add geocoding to the areas of the city that individual members have an interest in. If members indicate an interest in contributing to submissions in their neighbourhood and along their typical commuting routes, then this geocoding would allow an administrator to bring a draft submission to their attention when applicable. This would allow a rather targeted approach, on an "only if necessary" basis, minimising the number of e-mails sent out to individual members.

As an example of the collaborative ability of the new website, this paper was created on the Spokes website using a wiki. A special group was created containing the authors, allowing them access to a private page. All of the authors were then able to easily contribute to the paper and make any changes or comments for the others to see. Revision tracking and a graphical display of differences between versions are very powerful enablers of collaboration. The final paper is also available publicly on our website; see http://spokes.org.nz/articles [19].

Spokes will also be able to better manage its 900-strong membership by controlling access to different levels of information and allowing members to update their own personal details. As well as reducing the administrative workload for Spokes, it enables people to choose how involved they wish to become in Spokes and modify this as their circumstances change.

Cycling in general

Whether through inertia, distrust, other commitments, or whatever, some people with similar interests to Spokes will not always join such a group. Because the new Spokes website is publicly available, anyone with an interest in cycling issues can view the online material and comment on it (at the same time, certain material can still be controlled to be available only for members or certain sub-groups). This allows Spokes to represent a much wider audience than just those signed up to receive their newsletter (some of them may ultimately also choose to sign up for that). For example, a draft submission may be of interest to people living in a certain location; they can help contribute their perspective to it, or use it as a basis for sending their own submissions.

Having a flexibility to involve more people temporarily is particularly relevant for any short-term issues that may raise wide concerns. For example, during the 2005 Council cycling moratorium, over 200 people signing the Spokes petition indicated that they wished to be kept informed on progress on the moratorium but did not wish to receive the regular Spokes newsletter. This introduced something of a logistical exercise to maintain this list and distribute information to them. The new website would allow us to create a new short-term group for distributing information, as well as making the same information available for casual website viewers.

Other advocacy groups

As work has progressed, the exercise has raised awareness of other possible ways to use online systems such as this for advocacy, whether for cycling or other causes. For example, the technology allows for the use of maps (such as GoogleMaps) to graphically indicate information such as hazardous cycling locations or popular cycle routes. But it could equally be used to highlight (say) pedestrian access problems or areas with crime-related issues.

The same tools used by Spokes can allow for any issues requiring a response to be efficiently distributed to a wide audience and feedback collated. Information or submissions can be collaboratively compiled by a group of people through tools such as "wikis" or "blogs". Contributed material can be categorised by different user-defined attributes, allowing for easy searching of similar relevant items. Group membership and organisational data can be maintained centrally online by a collection of widely-dispersed authorised administrators. The possibilities continue to grow as new publicly available "modules" are created by developers, to meet the practical demands of existing online communities.

It is possible to make the Spokes website framework available for other advocacy groups at no cost - this is the real strength of open source. While other cycle advocacy groups are logical audiences, any group with some kind of passion that relies on ongoing group contributions is a candidate for using a similar CMS. An example of this locally is http://transport.org.nz/ [20], which is essentially an online blog that allows people to

contribute and discuss ideas on sustainable transport in NZ.

Conclusions

There is still much to do on the Spokes website; indeed, the nature of these systems is that they are forever organically evolving as new issues arise, different people get involved, and new CMS capabilities are developed or identified.

But already the new website is demonstrating the potential for a powerful system that enables a wide range of information to be presented to Spokes members and the public, while also encouraging contributions back.

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The authors would like to acknowledge the assistance by other Spokes core members to provide feedback on and contribute to the new website. They also acknowledge the efforts of Andre Cymbalista and CAN to develop the Digital Strategy for cycle advocacy groups nationwide.

Dedication

The authors would like to dedicate this paper to the memory of Graham Condon, a Christchurch City Councillor and a passionate champion for cycling among other worthy causes. We are grateful for his many contributions to our community. He will be greatly missed.

References

Various website references have been included throughout this paper. Readers are also encouraged to have a look at our website http://spokes.org.nz [21] to see it in action, and we welcome all feedback!

Source URL:
http://spokes.org.nz/wiki/nz_cycling_conference_2007_spokes_paper

Links:
[1] mailto:jonathan@egressive.com
[2] http://spokes.org.nz
[3] http://www.can.org.nz/old/spokes_chch/moratorium/index.htm
[4] http://linux.org
[5] http://openoffice.org
[6] http://mozilla.com/firefox
[7] http://mozilla.com/thunderbird
[8] http://drupal.org
[9] http://drupal.org/projects/Modules/name
[10] http://plone.org
[11] http://joomla.org
[12] http://silverstripe.com
[13] http://spokes.org.nz
[14] http://www.biketaupo.org.nz

[15] http://www.kapiticycling.org.nz

[16] http://www.bikenz.org.nz

[17] http://www.vorb.org.nz

[18] http://www.can.org.nz/dsblog/

[19] http://spokes.org.nz/articles

[20] http://transport.org.nz/

[21] http://spokes.org.nz