



QuickMark

**Market Assessment for CatBot Open Source
System (South West Regional Archives)**

For Fluffy Logic

January 2008

Basis for the Research

This report has been undertaken as part of the Knowledge West project, to encourage innovation and the transfer of knowledge between Universities and small to medium-sized enterprises (SME's) in the west of England. The Knowledge West project is sponsored by the Higher Education Funding Council for England. It is led by the University of the West of England, in collaboration with the Universities of Bristol, Bath, Bath Spa and Gloucestershire, the Royal Agricultural College and Business West.

The QuickMark assessment provides market assessment where normal research data is limited, and offers an initial analysis of business ideas. This report is published under Creative Commons Attribution 2.0 UK: England and Wales Licence.



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QuickMark Contents

1	EXECUTIVE SUMMARY	3
2	KEY FINDINGS	4
3	PROPOSITION DESCRIPTION AND BENEFITS	6
4	POTENTIAL APPLICATIONS.....	7
5	MARKET INTEREST.....	8
	5.1 ADDED VALUE CONSULTANCY.....	8
	5.2 FREE SERVICE ACCOMPANIED BY PREMIER SUBSCRIPTION MODEL.....	9
	5.3 ADVERTISING/REMUNERATION MODEL.....	12
	5.4 THE ADVERTISING MODEL.....	13
6	COMPETING TECHNOLOGIES, SOLUTIONS, AND COMPETITORS.....	15
	6.1 BITTORRENT	15
	6.2 YOUTUBE.....	15
7	PARTNER COMPANIES.....	16
8	POTENTIAL BARRIERS TO ENTRY	17
9	CONCLUSIONS	18
10	APPENDICES.....	19

1 Executive Summary

This work has been requested by Ana Kronschnabl, a Director of Fluffy Logic, of The Coach House, 2 Upper York Street, Bristol, BS2 8QN.

FluffyLogic is a digital media consultancy and development studio that offers expertise which spans the research of project ideas through to their production and completion. The company has developed user-friendly technology for websites, games and digital video for large companies such as Hewlett Packard and Sony Computer Entertainment Europe. They have also worked with non-profit and community projects such as Bristol Zoo Gardens and St. Michael on the Mount School.

Fluffy Logic has developed two distinct but related opportunities with the CatBot software, an open source system using peer to peer technology which facilitates the easy distribution and sharing of large media files such as videos and music.

The first is the South West Media Archive. The function of the South West Media Archive is to facilitate collaboration between partner universities in the South West and with the general public to exchange large media files. This is primarily a resource for academic research, and public access to that research and the associated creative endeavours of the Universities.

The second opportunity is that the core software of CatBot can be widely distributed under the open source philosophy to enable other groups or organisations to deploy. This opportunity takes CatBot beyond the South West and even the UK to a global market but built on the same open source and Creative Commons principles as the South West Media Archive. It is this wider sustainability that is the focus of this report.

In supporting the long term sustainability of CatBot, this research explores some of the different open-source business models that currently exist. There are specific questions regarding the copyright and Digital Rights Management (DRM) issues for content that individual clients and operators of CatBot software will need to address. The wider discussion on copyright and DRM is outside the scope of this report.

2 Key Findings

CatBot offers a unique platform to display past and present creative talent that exists in the universities the South West as well as throughout the general public. It's software enables creators with no technical training to upload and download large media files such as video and music, and facilitates distribution and sharing of files due to the open-source software underpinning the network.

Three key methods currently exist to generate revenue using open source software:

- Offering consultancy e.g. design, technical etc, to content creators and aggregators requiring specialist input in exchange for a fee. This would rely on the experience that Fluffy Logic has gained from the initial research phase of the project. The open source model for the software requires that the core software remain free, thus only the value added elements are chargeable. Each potential provider of services will need to innovate to maintain a differentiator with competing service consultants that may offer alternative and possibly cheaper options.
- Premier Subscription Plans - provision of basic free downloads/services accompanied by an invitation to users to pay a premium/subscription for enhanced service - network users can download/upload media files for free, but are given the option to pay for a number of premium services.
- Advertising/Sponsorship
 - Revenue to finance the website is generated solely through advertising.
 - A variation of the above includes linking adverts with specific media files (e.g. video) that share related themes. By using a tracking device to analyse user frequency, content etc, advertising revenue can be shared between content creators, web distributors and even network users.

Whichever of these basic models are adopted, there is a business development activity that still needs to be undertaken to drive sales (either of consultancy services, subscription plans or advertising space).

The most prevalent business model is advertising and here, size matters. Competition exists from established internet businesses which currently have a wide reach to millions of end users that are attractive to advertisers and which offer remuneration to content creators. Advertisers might give preference to sites offering the highest number of consumers (end-users).

The South West Media Archive is unique in that it provides a portal for the viewing of creative talent in the universities of the South West and among the general public. The CatBot software provides institutions with a mechanism for ensuring they retain control over their Intellectual Property and can monitor the quality of content before it is made available through their catalogue.

Other adopters of the CatBot software will need to consider their audience and the balance between content & quality. This research demonstrates that advertising revenue is dependent upon the quality of the material as well as the number of network users. Within the CatBot project, Death\$uker records represent a niche market that may find advertisers that wish to be highly targeted in their approach to the lifestyle that Death\$uker represent.

As a next step it might be useful to carry out research with individual content creators and consumers/potential consumers to ascertain:

- their preference to upload/download using CatBot versus an international open source internet distributor
- whether or not consumers might be willing to pay for enhanced downloading facilities
- whether or not they would be willing to purchase additional products as well as those provided free.

This might be achieved by distributing questionnaires to university students. Further research into the preferences of advertisers might also be beneficial.

3 Proposition Description and Benefits

The CatBot open source system is unique in that it will enable the easy and efficient exchange of large media files (such as film and music) between staff and students in partner universities in the South West as well as with the general public. It will, thus, provide a portal for the creative talent in the south west to showcase and distribute their work.

A key benefit of the South West Media Archive is the ability for institutions to maintain control over content and IP whilst benefiting from the scalability and reliability afforded by peer-to-peer systems. This control ensures quality and risk management issues are rendered acceptable for the host HEIs. Their adoption and use of the CatBot software may not require a revenue stream to be generated as part of the SWMA. The system will have the advantage that it allows published material to be exhibited and exchanged between staff, students and the general public, without putting a huge infrastructure cost on the Universities.

The CatBot system will be:

- Institution friendly/user friendly – easy to use with extensive help guides for people who are not IT trained.
- Secure – universities can set up and control the system easily and are not left with vulnerabilities in their networks. Universities will be able to set the upload and download bandwidth and set the ports through which CatBot operates.
- Have publishing controls – universities will be able to control who publishes material onto the system. While downloading will be free to all, uploading material will require prior permission.
- Safe – the system has built in security that limits the torrents available for download to sites where content is legal.
- Have multiple outputs – system will provide a series of wizards that will enable the conversion of media files into different formats allowing materials to be tailored to audience requirements e.g. iPod, mobile phone, DVD etc.

The CatBot system also has the potential to enable organisations within the network to generate revenue by incorporating a number of business models. See below for more details.

Material copyright will be protected using a Creative Commons Licence. Publishers will be able to choose the respective form of Creative Commons according to their requirements.

4 Potential Applications

Potential beneficiaries include:

- Universities
- Students
- Public
- Fluffy Logic
- Partner organisations e.g. Death\$ucker

Benefit to the universities include:

- Use as an educational resource by the universities through the storing of archives of material e.g. lectures, plays, performances, videos etc.
- Distribution of huge amounts of content by past and present students to a large audience.
- Recruitment of future students through showcasing of students' work.
- Peer review – easy distribution will facilitate peer review between institutions.
- Publishing of CD/DVD/journals by uploading material onto

Benefits to the students include:

- Showcasing of material to the public and to potential employers while retaining copyright.

Benefits to the public include:

- Ability to access the output of past and present students at universities in the South West
- Potential ability to upload material with permission from the university.

Benefits to Fluffy Logic/Partner Organisations

- Access to increased customer base through collaboration with universities and other organisations that join the CatBot network.
- Increased revenue through generation of income from users of the CatBot open source system.

5 Market Interest

Because of the Internet and digital technology, massive amounts of media content is available online, much of it accessible without a direct charge to the consumer. This is forcing a change to the business model for web publishers, content creators and providers to earn a living from their products. Unlike publications and other subscription-based models from the print and television industries, not all online consumers are happy to pay a monthly subscription fee for access to online content and entertainment.

This research shows that a number of different models exist that enable content creators, web publishers advertisers and even users to benefit from the use of open-source software. These are in addition to more traditional business, marketing and design consultancy services that could be offered to potential content providers or aggregators by specialist firms such as Fluffy Logic.

5.1 Added Value Consultancy

5.1.1 Automattic

Automattic provide the very popular open source blogging software Wordpress. This is freely available for download or people can utilise a free hosted service at www.wordpress.com. This encourages wide adoption of the software platform and lowers the barrier to people writing their own blogs (content creation).

Automattic provide specific consultancy services for large users of the Wordpress and other platforms developed by Automattic. As a private company there is no public information about their revenue or profitability but they have a small staff of around 18 and between 10m and 15m page views of Wordpress hosted blogs per day, this does not include other sites that are using the open source software but not hosted by Wordpress.com.

In October of 2007 it was rumoured that Automattic had been approached with an offer to buy them for \$200m. By offering the open source service, they have built an added value consultancy. There is nothing to stop anyone offering the same consultancy service, except the quality and pace of innovation from Automattic.

5.1.2 SugarCRM

At the Web2.0 Expo in June 2007, SugarCRM and MySQL discussed their professional open source business models. Both are built on a base platform that is open and free to install but have built considerable expertise and service solutions for their user base.

They have done this by creating what both panelists called an architecture of participation, which they built into their business strategies. SugarCRM covered six components to that 'architecture' that made participation straight forward:

- Extensible Project - [SugarForge](#): a site developers can go to and create their own complementary projects (currently over 8,000 developers have participated)
- Easy for anyone to participate (easy to download, share ideas, etc...)
- Others Can Profit - [Sugar Exchange](#): a site for people to create extensions to sell their wares
- Transparency: for example the support forums are completely public, whether you use the software or are just interested in it
- Access to the code (it is open source after all)

- Easy to purchase the [PRO edition](#)

SugarCRM has had 3 million downloads of their application and it has been translated into 50 different languages.

SugarCRM offers additional support packages based on your company needs. Purchasing Sugar Professional or Sugar Enterprise automatically includes the Standard Support level for technical issue resolution. Sugar Open Source customers can now purchase support services as part of [Sugar Network](#) (\$119/user/year).

Sugar Professional improves business performance by offering best-in-class campaign management, opportunity tracking, account management, sales forecasting and customer support capabilities while delivering advanced reporting and collaboration tools for \$275.00 per user per year. Sugar Enterprise offers enterprise-grade CRM capabilities and scalability for the most demanding business for \$449.00 per user per year.

5.1.3 MySQL

MySQL has an even larger audience receiving approximately 50,000 downloads a day of their application. Their closest (closed source) competitor has fifty-six thousand paid employees. This was equated with MySQL having fifty thousand enthusiastic new developers every day.

While this model certainly has led to some interesting distribution and keeps the cost of sales low, it is important to point out that both organizations have executives responsible for sales. In fact, MySQL has over 70 sales professionals. The difference is they are focused on selling consulting services and support, instead of proprietary software. While MySQL doesn't disclose their revenue, it is about equally divided between services, support and revenue from OEM partners.

Note: On 16 Jan 2008, Jonathan Schwartz (Chief Executive Officer and President, Sun Microsystems, Inc.) announced that they were buying MySQL for \$1bn¹.

5.2 Free Service Accompanied by Premier Subscription Model

Companies that use this model include:

5.2.1 BitTorrent (www.bittorrent.com).

Upon downloading the BitTorrent client software for free the site offers movies, TV shows, music tracks, PC games for downloading. A search of the site shows free content as well as items to rent or purchase. For more information see www.bittorrent.com/guides/bittorrent-download-guide. Viewers are offered the opportunity to see more details about the item they have chosen or to see a preview. Customers are encouraged to create an account to make renting or purchasing items easier and billing information is necessary only once. Search results include sponsored links displaying stockists and retailers of promotional material or related products e.g. search results for the Superman film provides a link to the website ShopperUK.com where purchases can be made of branded Superman products and another link to www.hmv.co.uk.

¹ http://blogs.sun.com/jonathan/entry/winds_of_change_are_blowing

5.2.2 LimeWire (www.limewire.com)

LimeWire – is described as a fast, easy-to-use file sharing programme that runs on the Gnutella Network. According to LimeWire, since 2005 it has consistently been ‘one of the most popular downloads on download.com, with downloads in the hundreds of millions.’ Limewire offers three packages:

- a Basic (Free) software
- LimeWire which provides optimized search results, faster downloads, free updates and personalized technical support for up to six months, costing \$21.95.
- LimeWire PRO Extended is also offered for \$34.95, which includes the above plus a full year of technical support and updates.

Limewire is supported exclusively by its sales of LimeWire PRO.

5.2.3 Brightcove.com

Internet TV service. Offers a range of Customer Support services, for example (see www.brightcove.com/services/customer-support.cfm):

- Basic Support – free for all Premium publishers. Provides unlimited email access to trained Customer Solutions Specialists and a guaranteed response time of one business day for critical issues.
- Silver Support – includes expedited response to urgent issues and free live Phone Support. Priority given over Basic inquiries.
- Gold Support – highest priority service offering near immediate response to urgent issues and live phone support.

Brightcove provides video services for 4000 commercial publishers, which in turn serves video clips to 120 million unique users per month².

Other services provided by Brightcove include:

- Publisher Launch Management Services
- Advertising Operations Jumpstart – to help content creators successfully generate advertising from videos.
- Creative Services – offering design, strategic and creative support.

Though Brightcove has received a lot of press, especially in the wake of its \$59.5 million series C funding round closed January 2006, it has generally been as a CDN-type service for major content publishers, and not as a consumer facing service³. It will stop allowing users to upload videos on December 17. It will focus on being a specialized media platform for media companies — including some of its funders, such as the The New York Times, Hearst, CBS, and others. This is likely because advertising revenue on the consumer generated platform were insufficient to support ongoing business.

5.2.4 Piolet (www.piolet.com) –

Piolet is a 3rd generation peer-to-peer file sharing client for online music. Offers a Basic Piolet free service as well as the Piolet Plus service for \$19.95. Table 3 compares both services:

² <http://www.beet.tv/2007/12/brightcove-hits.html>

³ http://www.readwriteweb.com/archives/brightcove_gives_up_on_consumer_video.php

Table 3 Piolet Free and Piolet Plus Services

	Piolet Plus	Piolet Free
Faster Downloads	Yes	Yes
No Spyware. No Adware	Yes	Yes
Fully Integrated Media Player	Yes	Yes
Fully Buddy List, Chat and Voice Chat	Yes	Yes
Buddy List, Chat and Voice Chat	Yes	Yes
High-Speed Downloads From Multiple Nodes	Yes	Yes
Smart New Interface	Yes	Yes
No Banners or Pop-Up Ads	Yes	No
Built in CD-Burner Plugin	Yes	No
Better Search Results (Deeper MP2P Lookup)	Yes	No
Supercharged Downloads (Unlimited Slots)	Yes	No
Price	£19.95	Free

5.2.5 4Shared (www.4shared.com)

4Shared - provides its users with free online file hosting and sharing services. Users can upload, store and download music, video, photo, documents, and any other types of files. The organisation earns income in two ways:

Subscription plans – ranges include the following:

- *Free subscription plan* offering 5KG storage space for 30 days with a maximum upload file size of 100MB.
- *Silver subscription plan* - \$48 per annum offering 5GB storage space with a maximum upload file size of 500 MB. Additional enhanced features including detailed file and download accelerators, resume interrupted transfers, direct download link or embedding a file on web page and account statistics.
- *Gold subscription plan* - £60 per annum offering 10 GB storage space with a maximum upload file size of 1GB. Additional enhanced features are the same as with Silver subscription plan as well as Zip Preview.

Advertising: advertisers are also invited to purchase advertising by choosing a variety of advertising formats e.g. banner, rectangular, skyscraper, leaderboards and vertical banners. This invites viewers to earn money by placing a special link at their web page/blog to received 20% for each purchase made by the link.

Further information about other subscription plans are in the Appendices and online at www.4shared.com/features.jsp.

5.3 Advertising/Remuneration Model

Companies that use this model include:

5.3.1 Zango (www.zango.com)

Zango is— 'an online media company providing consumers free access to a large catalogue of free, sought-after on-line utilities' such as videos, games, music. The content is funded by advertising and is therefore free to the consumer.

How Zango model works

Zango's solution to the dilemma posed by open-source systems is through what it calls its "Content Economy". Consumers can access and enjoy web content and entertainment for free, because when they search or browse online for products and services, they see ads from Zango advertisers. The Zango "Search Assistant" is included with the material that is downloaded by users. The "Search Assistant" locates products and services that are of interest to browsers by recognizing keywords from their Internet browser and displaying relevant advertisers' websites for matching products and services. The Search Assistant only displays advertisements that are specifically related to websites that users visit or keywords they search for. Removal of the Zango Search Assistant means that users will no longer be able to enjoy the free content that Zango sponsors. The Search Assistant toolbar is always present when users browse online or work in Outlook or Outlook Express. In this way advertisers engage with users when they send email or ecards, watch videos or play games, shop, browse, or surf online.

Zango delivers ads that are relevant at the time someone is shopping for that specific product. Advertisers purchase keyword search terms or URLs. Then, whenever the keyword or URL comes up on a user's screen, a separate browser window opens that delivers targeted consumers directly to the advertisers website or destination page. The user doesn't have to click on anything. Because of this unique method of "time-shifted" advertising, Zango advertisers earn industry-leading return on investment.

ZangoCash ZangoCash remunerates website owners for publishing Zango content. It provides website owners with free content for their website and offers remuneration through a variety of programs such as pay-per-install programs. For example, ZangoCash pays website owners for each new user who installs Zango through their website.

According to Zango they have 'millions of opt-in users and tens of thousands of new consumers opt-in every day to enjoy entertaining and useful online content'. Zango offers desktop advertising product lines under the brands [Zango](#), [Hotbar](#), [SmartShopper](#), [ShopperReports](#) and [Spam Blocker Utility](#).

Founded in 1999, the company has maintained a positive operating profit every quarter since the fourth quarter of 2001, is privately-held and based in Bellevue, Wash. Zango employs more than 200 people globally and in addition to its headquarters, has offices in New York, Las Vegas, Montreal, London and Tel Aviv.

5.3.2 YouTube

Original content creators will now have the chance to reap rewards from their work and receive the same promotional benefits afforded to YouTube's other professional content partners. YouTube are inviting YouTube users in the United States and Canada to join their expanded YouTube Partner Program which reward the most popular and prolific original content creators within the YouTube community by allowing them to earn money from their videos. Users eligible for the partner program

have built a significant audience on YouTube (as measured by video views, subscribers, etc. Partners decide which of their videos they would like to generate revenue on YouTube, and in turn, receive a portion of the revenue generated from ads that run next to those videos. We hope this program will inspire our users to continue to create compelling, engaging and viral content for the YouTube community.

5.3.3 Revver (<http://rever.com>)

'A video-sharing platform' that supports the 'free and unlimited sharing of media. Their unique technology tracks and monetizes videos as they spread across the web. Revver connects video makers and sharers with sponsors in a free and open markets so that everyone is rewarded.

How Revver works – Content creators upload their video onto the Revver network. The video is paired with a targeted advertisement. As the video is shared across the web and is seen by more and more people the more revenue is generated. Revver split the ad revenue with content creators 50/50. The performance of each video is tracked through a Revver account which states exactly how many times the video is watched and how much money people are earning.

Sharers of videos earn money too – by helping to share Revver videos they can earn 20% of the ad revenue. The remaining money is split 50/50 between the creator of the video and Revver.

5.4 The Advertising Model

5.4.1 Straightforward Advertising Model

Exemplified by Last.fm (<http://www.last.fm/advertise/>) advertisers are invited to advertise to get their brand on the 'world's largest social music platform' consisting of 20 million users. Advert formats include:

- MPUs,
- leaderboards and
- banners.

Targeted advertisements are used to ensure advertisers get their brand seen by the right people and real-time statistics are generated for advertisers to view at any time.

Separate rate cards are available for:

5.4.2 Labels and Artists.

Banner Campaigns have a target audience that is similar to the brand being promoted. Banner Campaigns are displayed on all artist, album and track pages of target artists.

Rates for Banner Campaigns are shown in Table 1.

Table 1: Last.fm Advertising Rates for Banner Campaigns

Impressions	Cost (cpm £9)
10,000	£90/\$90/€90
20,000	£180/\$180/ €180
40,000	£360/\$360/€360
60,000	£540/\$540/€540

Powerplay Campaigns uses music similarity targeting, a track will get a guaranteed amount of airtime of Last.fm radio to fans of that kind of music. The rates for Powerplay Campaigns are shown in Table 2 below.

Table 2: Last.fm Advertising Rates for Powerplay Campaigns

Number of plays	Cost
100	£11.5/\$20/€16.5
500	£57.7/£100/€82.5
1,000	£115/\$200/€165
2,000	£230/\$400/€330

5.4.3 Individual Advertisers.

Individual advertisers are invited to book an advertising campaign by completing a booking form giving details including company name, website, industry and allocated budget. Campaigns can be targeted to reach audiences of according to number of criteria e.g. country, gender, age group, artist, specific types of music genre (e.g. rock, pop etc.). Rate cards are not available on-line but are provided on request.

5.4.4 Slideshare.net (www.slideshare.net)

Described as the 'world's largest community for sharing presentations on the web' comprised of a 'small, tightly-knit' group of developers and designers based in USA and India. According to the company it gets in excess of 3 million unique visitors and 40 million page views every month hence they claim that return on investment on advertising is high. Their website reports that they have recently started talking to a few potential investors for their 'first round of funding', however the company also encourages advertising and is a member of Google's advertising program Adwords which uses keyword targeting. Slideshare offers to advertisers a number of different types of adverts that can be linked with slides on its website. Examples include Top Banners on Slideshow page, Right Square on SlideShow page, Top Baner on List pages (i.e. list of slideshows). For more information see www.slideshare.net/about/advertise

5.4.5 Google Adsense / Adwords

Possibly the largest online advertising and revenue share system currently available.

Adwords allows clients to specify an advertising budget, keywords and even specific sites they wish to target. Google then serve these adverts to Adsense partners based upon the keyword match and balancing their budget with what other advertisers have said they'd pay for similar sites. When someone clicks on an ad Google bills the Adwords client and shares the revenue with the Adsense site that hosted it.

Because of the algorithms that Google uses, more popular sites attract higher proportions of advertising spend and greater revenue. Less popular sites do less well. For the Adsense partner it is very hard to predict income in advance until some indication of page views, click-through rates and similar metrics are known. Although web-metrics should provide an indication of the page views, other measurables (such as click through) are harder to predict.

There is no fee for being an Adsense partner.

6 Competing Technologies, Solutions, and Competitors

CatBot is unique as an open source software system providing a portal for the viewing and distribution of creative talent in the universities of the South West and among the general public. Although there is no direct competitor in this area, a number of competitors do exist and may provide a threat since they are more established and perhaps offer a larger number audience to young film and music makers. Two of these are outlined below:

6.1 BitTorrent

BitTorrent is an established organisation with a large customer base offering invitation only free and easy uploading of video and audio media files. They offer a simple drag and drop publishing interface. BitTorrent enables filmmakers, musicians or comedians to publish their own content to a worldwide audience. BitTorrent editors will review work for listing alongside major motion pictures and studio releases. This enables content creators to gain exposure to an audience of over 150 million BitTorrent users.

6.2 YouTube

Not the first, but certainly the largest hosted video site, this provides a worldwide audience. Currently, selected content creators in Canada and USA can earn revenue from videos. This may be expanded to content creators in other countries in the future. YouTube is not a Peer-to-Peer solution, relying on main servers to host the video and manage the conversion from original file formats into the Flash format that the browser displays.

Most recently High Definition support is available through Flash which is the content streaming software that YouTube use. Although there is limited HD content on YouTube this is expected to grow significantly in the near future. This further highlights the potential limitations of YouTube and similar services in that they have to develop conversion platforms for every format and grow their hosting & bandwidth to cope with new HD formats.

7 Partner companies

Consideration could be given to partnering organisations that could meet the needs of the different stakeholders in the CatBot network and complement the activities of the various users. For example, Brightcove TV Internet Service has the following partner types:

Interactive Agencies – design firms and advanced interactive groups that help users create custom players and enriches more interactive internet TV experiences.

Post-Production – Advanced encoding and post-production service firms to help users manage high-quality encoding of digital content.

Technology Partners to help users overcome any technological problems that may arise.

Distribution partners – to create opportunities to reach new audiences and drive traffic.

The company BitTorrent (www.bittorrent.com) which enables users to download movies, TV shows, music videos and games has the following types of partnerships:

- Venture Capital Partners, DCM and ACCEL
- Content Licensing Partners e.g. 20th Century Fox, G4, MTV Networks
- Technology Partners e.g. Opera software, Telewest ntl:
- Hardware Licensing Partners e.g. Asus, IAdea, Qnap

8 Potential Barriers to Entry

As identified above, there are many online hosting and media distribution sites available with varying business models. With all of them the balances are between:

- Content (quantity and quality as perceived by the target audience)
- Cost (direct through subscription, irritation from adverts)
- Time (to search and find content, before you can view on streaming or download)

8.1 *South West Media Archive*

For the South West Media Archive, the benefit of having a solution with low running-costs for distributing media may outweigh the challenges in making that particular service financially sustainable. The historic archive from the University of Bristol is a high quality back catalogue that may attract specific advertisers / partners to contribute long term finance but it is probably of limited mass-market appeal. The benefit to the University may be in attracting higher calibre students, publicising its work to the public and the wider dissemination of archive media.

8.2 *Fluffy Logic*

The CatBot software is open source and thus available for any party to install and contribute towards. Individual instances of the software may seek to be self-sustaining and they will need to compete with existing providers as described above. For a financially sustainable archive the challenges will be:

- to archive sufficient quantity/quality of creative talent across the region;
- clear identification of target audience;
- to aim for the largest possible audience;
- to maximise revenue;
- consider how it might be feasible to blend these options;
- consider scaling beyond the South West to become a global archive of creative talent.

In offering premium services, consideration would need to be given as to the extent that additional human and financial resources are required e.g. technical support, administration of premium accounts etc. This will determine the investment required to provide those services and their perceived value to the target audience. While many online sites provide free downloads, there is evidence that online media can be provided for financial return but these business models are still in development so definitive examples are not yet established.

In offering consultancy or added value services to content providers (such as the University) or aggregators (such as Death\$uker Records) companies will need to rely on expertise, flexibility and familiarity with the software and markets. Making the CatBot software widely available and adopted will be critical to ensure a large market of potential clients for added value services.

Conclusions

CatBot offers a unique platform to display past and present creative talent that exists in the universities the South West as well as throughout the general public. It's software enables creators with no technical training to upload and download large media files such as video and music, and facilitates distribution and sharing of files due to the open-source software underpinning the network. The partnership with Death\$ucker Records and its on-line distribution company dSWAT provides an opportunity to pilot how revenue might be generated using open-source software. This research demonstrates that the key method of income generation for on-line music and video distributors appears to be via the use of:

- the offer of premium software services or products for hire/purchase in addition to content that is provided free.
- Consultancy services (possibly in partnership with other media agencies) for content creators who might require additional skills/knowledge.
- website advertising,
- the sharing of advertising revenue between content creators, website hosts and even end-users

An opportunity exists for Fluffy Logic and Death\$ucker/dSWAT to consider how these business models can be applied to its particular genre of music. All of these appear to be feasible as single options or as a blend of options.

It appears that successful advertising is closely correlated to the type of content as well as the size of the market or number of viewers. How the CatBot network is promoted would need to be considered in order to give advertisers a good return on investment. Content creators might prefer to upload their music on established networks with an international audience base.

However, it is possible that this may be less of an issue in niche markets such as the music distributed by dSWAT. It had not been possible to determine with this research whether or not specialist/niche markets might be attractive to advertisers (due to their specialist content) or unattractive (due to their limited audience).

As a next step it might be useful to carry out research with individual content creators and consumers/potential consumers to ascertain:

- their preference to upload/download using CatBot versus an international open source internet distributor
- whether or not consumers might be willing to pay for enhanced downloading facilities
- whether or not they would be willing to purchase additional products as well as those provided free.

This might be achieved by distributing questionnaires to university students. Further research into the preferences of advertisers might also be beneficial.

9 Appendices

Appendix 1 – A Better Way Forward: Voluntary Collective Licensing of Music File Sharing, April 2004 'Let the music play' white paper

Appendix 2 – A Guide to Lower Database TCO: How the Open Source Database MySQL[®] Reduces Costs by as Much as 90%