

Presentation Notes

What Is P2P?

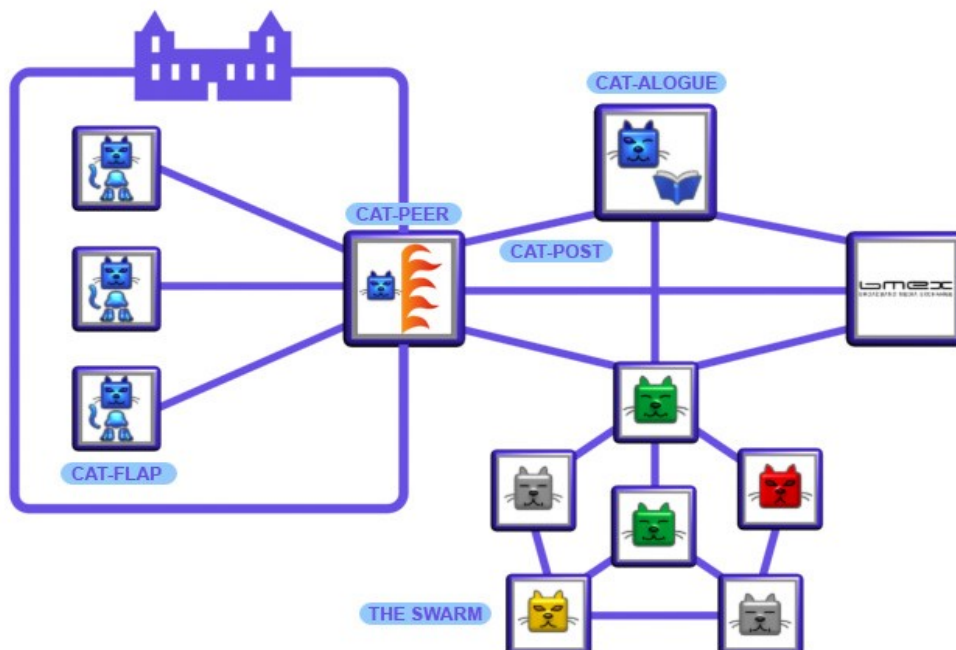
“A peer-to-peer (or P2P) computer network relies primarily on the computing power and bandwidth of the participants in the network rather than concentrating it in a relatively low number of servers. P2P networks are typically used for connecting nodes via largely ad hoc connections. Such networks are useful for many purposes. Sharing content files (see file sharing¹) containing audio, video, data or anything in digital format is very common, and realtime data, such as telephony traffic, is also passed using P2P technology.”²

Why is CatBot needed?

*“Robert X Cringely [pen name author of **Accidental Empires: How the Boys of Silicon Valley Make Their Millions, Battle Foreign Competition and Still Can't Get a Date**] is postulating today that as bandwidth applications grow, the data centers will never be ready to serve 30 million concurrent streams of data. Akamai, with its tens of thousands of servers spread in an intelligent topology, still can't serve more than 150,000 concurrent streams, which is never going to impress the TV network exec used to audiences in the millions. Cringely choruses that secure P2P is the solution to delivering not only high quality video but also to audiences that scale in the millions...”³*

How CatBot works – the system consists of the following components;

- *cat-ologue – the website listing all the content.*
- *cat-peer – the mini-server in the university*
- *cat-flap – control interface for cat-peer*
- *cat-post – system to publish files onto the cat-peer and cat-ologue!*
- *'the swarm' – the public users of the p2p systems*



¹http://en.wikipedia.org/wiki/File_sharing

²<http://en.wikipedia.org/wiki/Peer-to-peer>

³<http://slashdot.org/article.pl?sid=06/02/25/2115218>

Jane Foley, Contracts Legal Adviser at UWE has suggested we deal with copyright using the Creative Commons;

- **Creative Commons:** *If the Internet teaches us anything, it is that great value comes from leaving core resources in a commons, where they're free for people to build upon as they see fit.* Lawrence Lessig, creator of Creative Commons and author of Code 2.0⁴

Examples of how P2P is being used:

- **P2P TV – Joost**

*The term P2PTV refers to peer-to-peer software applications designed to redistribute video streams on a p2p network, typically TV stations across the world. The draw to these applications is significant because they have the potential to make every TV channel in the world global. The benefit of using peer-to-peer technology is similar to that of standard peer-to-peer software. Each user, while downloading, is also uploading, thus contributing to the overall available bandwidth. The video quality of the channels typically depend on how many users are watching; the video quality is better if there are more users.*⁵

*Joost (pronounced 'juiced') is an interactive software for distributing TV shows and other forms of video over the Web using peer-to-peer tv technology, created by Niklas Zennström and Janus Friis (founders of Skype and Kazaa).*⁶

- **P2P projects – Warner Bros. to Sell Movies Over BitTorrent**⁷

How Will CatBot be used?

“The content people have no clue. I mean, no clue. The cost of bandwidth is going down to nothing. And the size of hard drives is getting so big, and they're so cheap, that pretty soon you'll have every song you own on one hard drive. The content distribution industry is going to evaporate.”

Bram Cohen (creator of BitTorrent and originator of the torrent protocol)

In some senses we don't know all the possible applications of such a system – what we do know is that if you need to move large amounts of data – CatBot may be the answer.

Here are some of the possible uses:

- **General Distribution** – all media institutions produce huge amounts of content and it is unfeasible (as discussed) to distribute this, unless you use peer-to-peer systems. For example, Bristol University has a number of distinguished past students such as Matt Lucas (of Little Britain) and Michael Winterbottom (director of films such as In this World, 9 Songs and the Road to Guantanamo). There would be a large amount of people eager to see the early works of such alumni.
- **Potential Students** – What better way to recruit new students to an institution than to enable them to see the work it produces? This system is a great way to provide an easy method via which potential students can see large amounts of work as well as access them in a variety

⁴ See http://catbot.fluffylogic.net/docs/Creative_Commons_licenses%20info-1.pdf and http://catbot.fluffylogic.net/docs/creative_commons_factsheet.pdf

⁵<http://en.wikipedia.org/wiki/P2PTV>

⁶<http://en.wikipedia.org/wiki/Joost>

⁷<http://slashdot.org/articles/06/05/09/1218209.shtml>

of formats for ease of use/viewing, be it at a recruitment event in Glasgow or an email from a friend.

- **Peer Review/Marking** – If you need works peer-reviewing or marking by external people, with the simple addition of a security protocol, the CatBot system can allow the work to be easily distributed to any number of people.
- **CD/DVD/Journals** – If any institution wishes to publish a periodical, CD-ROM or DVD, it can simply upload it to the system as an image ready to burn with instructions allowing the users to make their own copies at the other end!
- **Educational Resource** – If you have archives of lectures, plays, performances, videos and a need to share them with the world – this is a cost-effective method that will enable you to do exactly that! You will also be able to use the system to access other people's downloads as new institutions join in and contribute their archives and resources.

What CatBot Does

Catbot is an open source system built on existing technologies and ideas, it is designed however to offer an extensive range of features currently not available:

- **Institution Friendly** – It is easy to use and will come with extensive help guides ie it takes the 'techy' bit out of peer-to-peer!
- **Publish Controls** – Only people from the institutions can publish material onto the system so anything on the cat-alogue will be authentic!
- **Secure** – The system has been designed through extensive consultation with university IT support depts. so what needs implementing to get it working is done in ways they have requested. Universities can set up and control the system easily so they are not left with vulnerabilities in their networks
- **Safe** – The system has built in security that limits the torrents available for download to a list of safe sites where content is legal. This means it can be used in schools etc. without worry.
- **Multiple Outputs** – The system will provide a series of wizards that will enable the conversion of media files into different formats so that materials can be tailored to your audience requirements eg iPod, PSP, Mobile Phone, DVD, VCD and so on in ways they have requested
- **Network Security** - Universities can control the system easily – this includes being able to set the upload and download bandwidth and being able to set the ports though which CatBot operates – all essential features to ensuring that it does not compromise the high standards of network security that institutions require.

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