



## Future of FLOSSE: Interview with Stephen Downes - Part 1

Monday 28 February 2005 - Teemu Arina

*"On controlled metadata taxonomies: My copy of Schopenhauer is at one point of time a resource used in my philosophy class and sometimes a thing that works as my door opener. Both are perfect examples of use of Schopenhauer. How do I classify that, is it a book or is it furniture?"*

Listen 1st part (MP3) - 29min - 13Mb

The first interview I conducted for the future of FLOSS in education was with no other than Stephen Downes himself. It was my first experiment with Skype recording. The connection had some problems and recording peaked at times, so I'm sorry for lesser quality of the sound but the content is excellent.

There was a lot of good stuff so I decided to cut the interview into two separate pieces, 30min each. This is the first part, the second part will be available later (it's even better than the first).

Stephen Downes works for the NRC (National Research Council of Canada) in Moncton, New Brunswick. He is part of the e-Learning research group which is attached to the Atlantic initiative of Institute for Information Technology.

As Senior Research Officer he is given a fairly free hand to pursue a research agenda in the field of e-Learning and is the author of OLDaily, a newsletter of issues related to educational technology. Previously he specialized in learning objects and in what manner learning objects are organized, arranged, syndicated, distributed and displayed to potential learners typically using a LMS (Learning Management System) and the technology underlying that.

I asked him about learning objects and DLORN (Distributed Learning Object Repository Network). It's a good start to be the basis of an open content learning object repository which could support shared construction of learning objects.

In comparison to that federated searches and controlled metadata are discussed. He is very critical about closed learning object repositories that are not visible to Google or any other search engine. He brings up the scalability problem of federated searches and the problems associated with describing learning objects.

As an alternative method he suggests third party metadata, which generally allows people to describe how a certain object is used instead of what it is. This kind of third party review lacks in federated searches.

Then we discuss the future of his Edu\_RSS service. Downes brings up a very interesting idea of combining content production with social networking. This is achieved from the use of FOAF (Friend-of-a-Friend) in association with personalized and shared resource feeds. People could see what their friends are reading and writing. This could potentially help people to find others interested in the same topic in the field of education to work with.

Some questions asked in the interview:

- Who are you?
- Learning objects?
- DLORN?
- Are we going to see distributed learning object repositories?
- Metadata?
- Folksonomies?
- Federated search?
- Is RSS a potential base for the semantic web?
- Edu\_RSS?

The second part of the interview [follows].

*"If you sit down to get started and look at tagging a million objects, you're looking at a major investment. Only large companies can afford to do this but most of the world is not made of large companies"*

*"Read more" to see the extracted future events and analysis.*

## **Future events**

Here is a list of fictional future events extracted from the interview with Stephen Downes. If you want to comment or have additional future events to present based on the interview, please do so.

*Disclaimer: The future events were constructed from the ideas presented in the interview and do not represent the ideas of the interviewee. No crystal ball or time machines were used in the construction of these events. Bear in mind, it's the future and everything is possible.*

## **Year 2005**

### **Metadata based search still not useful**

The LOM (Learning Object Metadata) exists in order to make learning objects discoverable so that people can execute a search. Yet this still doesn't work in practice as institutions don't have the resources to describe every single object they create. The keyword and title fields are the ones people fill the most. The other properties provided by metadata searches are next to useless.

## **Year 2006**

## **Amateur audio and video enters learning**

Cheaper and more accessible tools for recording audio and video have enabled teachers and students to produce learning results and teaching materials with new kind of low-end tools they already possess. For example mobile phones include cheap and low quality but functional features for sharing their experiences and ideas in audio and video form.

## **Folksonomies used as a basis for new ways of content classification**

Researchers approach the problem of controlled vocabularies through folksonomies, where people can describe any content with words and keywords that come to their mind. Researchers use a large amount of users to conduct these experiments. Based on their free-form organic tagging behaviour they try to come up with insight on how to build better information classification systems.

## **Year 2007**

### **Learning objects more like software**

Previously learning objects were mainly static combinations of text, images and illustrations. This was because of the lack of sophistication in various authoring tools. As authoring tools gained more functionality, learning objects started to look more like interactive software pieces.

### **Learning object repositories based on crawlers appear**

In spirit of Google and Technorati, new LO repositories appear. These new repositories are less controlled and provide a different business model than their predecessors. Their functionality is the same of the web, based on bots that crawl various resources for learning objects and automatically extract metadata out of them. A teacher simply just releases the LO on a website and bots will aggregate the content. A second layer is built on the search engine to support reviewing and third party metadata.

### **Teachers protest against controlled metadata**

When people search, they want metadata results from multiple sources, not from a single provider. Yet user contributed commentary and review capabilities of commercial learning object repositories are lacking. Providers refuse to change the policy because it's against their business plan to control the search and the metadata. Extended metadata capabilities are provided only to paying third party providers.

### **Content tagging businesses appear**

Anyone who has tried to encode learning object metadata knows what a pain it is. This is a major investment as only large companies and institutions are able to afford tagging with metadata every object they create. New businesses have appeared to serve these organizations with professional tagging services. The cheapest providers are located in india and other low-cost labor countries.

## **Year 2008**

### **FOAF combined with search results**

Services have appeared that combine Friend-of-a-Friend (FOAF) information with content being searched. This approach is combining social networking with content production. Developers have learned from the previous failed attempts like Friendster that social networking alone is not enough. These new kind of systems enable users to follow what their friends read and write. Content based social networking applications lower the bar to find other people to create open content with.

### **Constructivism talked even more**

Because of Wikipedia and other similar systems where knowledge is co-created successfully, the educational philosophy of constructivism has once again gained a lot of debate and discussion in education. Even companies look at constructivist approaches to carry out on-job learning, although they use different terms to describe it.

### **Communities build their own content repositories**

Many online communities and courses have built their own searchable resource repositories for very specific and focused areas of interest based on the needs of their community. Software tools to create such resources are available to everyone. The interesting thing is that these repositories often carry out live information crawled from the web. Managers/teachers pick and screen the sources of information they want. Users/students are able to personalize the resulting feeds of information to fit their needs.

### **Federated search faces scalability problems**

The dominant model to setup a network of learning object repositories has faced problems in growth. Only the most resourceful organizations have been able to enter the network as each one of them has to be able to carry out every single federated search on the network. The larger and more popular the network has become, the more there are propagated searches and bigger server requirements. Distributed open content repositories based on more economical approaches have grown faster in popularity.

## **Year 2009**

### **Open content repositories surpass commercial repositories**

Open content based repositories surpass commercial repositories in popularity, contributions and offering. Commercial providers talk about lack of quality but they are losing. Educators do not need pretty looks, they need something that gets the job done. Open content is easier to publish because of decentralized nature, availability of certain authoring tools with CC built-in and the fact that federated repositories require you to setup your own repository which takes a lot of resources to build.

### **Structure of metadata still argued**

Experts have not yet come into agreement of general purpose taxonomies for tagging content resources with metadata. This is because the way you describe an object and the way you classify an object, changes from person to person and from time to time. Even in very focused communities there is controversy of how to seamlessly tag the resources they create. The most successful examples come from cases where the rules are open ended.

## **Year 2010**

### **Use considered as the most important property of a resource**

Previously learning objects were described with metadata that described what the learning object is. As the availability of content for various purposes have increased, the information of what a resource contains is less relevant to teachers. Teachers want to know how and for what purpose a resource is useful. This is achieved through purposeful combination of third party recommendations, comments and use scenarios with objects.

### **Source of reliable news changes**

When the commercial media started to quote Wikipedia in their articles, the reliability issue was finally solved. Knowledge of Wikinews's power spread to the general public. Anywhere and anytime when something relevant happens, people who are so into the case have a vast amount of time and combined effort to write the news. Enthusiasts and experts do the job better together. Some media companies changed their business plan to use independent reporters as a vehicle.

Posted in Interviews at 02:45 on Monday 28 February by Inf

## Future of FLOSSE: Interview with Stephen Downes - Part 2

Wednesday 02 March - Teemu Arina

*"The greatest non-technical issue is the mindset. We have to view information as a flow rather than as a thing. Online learning is a flow. It's like electricity or water. It's there, it's available and it flows. It's not stuff you collect. I don't see myself sitting in my home collecting jars of water. I use the water as it comes. If you think the internet as an environment that is moving and shaping all around you, then you will have a better attitude to be able to handle the flood of information that is coming at you"*

Listen 2nd part (MP3) - 29min - 13,4Mb

This is the second part of the interview with Stephen Downes. It continues right from where the first part ended. You might want to start from there [see above]. This time Stephen brings us great insight in the importance of open content and Open Source in education.

Stephen talks about communities and what is actually a community and what kinds of communities people belong to. The internet allows people to pick very specific communities by topic out there. Communities are not anymore tied to a place but are more like networks, clusters and clouds.

Downes masterly compares the decline of traditional local news paper business to educational publishers and how educational institutions could turn their wave from buying content to creating content by taking a couple of radical steps. First of all they should make their resources freely available and secondly, stop paying for publishers of journals, books and online course packages. The resources freed by these actions could be channeled to teachers to help them create the same content and release their stuff freely.

He argues that with FLOSS, the main benefit is not cost but customization and gives a couple of examples why. Customization could enable shared knowledge construction among students. The educational institutions should choose a simple Open Source core of content or software and start customizing it to their needs. Open Source is what makes it possible for a student to change the parameters of her/his own education.

The general concepts that will rule are things that are distributed, decentralized, open and serve the individual need.

Some questions asked in the interview:

- Is community the primary unit of learning?
- Open content?
- Problems with adoption of open content?
- What problems we have to overcome in open content in education?
- Open source in education?
- Winners and losers?
- Non-technical issues to solve?

*"We have this picture of a community that's comes from people like Edgian Wenger, John Hagel III and Arthur G. Armstrong, that community is some sort of discreet entity, like a pre-Wittgensteinian definition where you have clear boundaries and you know whether or not you are in a community. But the concept of community that evolves out the capacity to exercise choice in joining or not joining a community now becomes fuzzy, it becomes something like a family resemblance. A community just becomes a vaguely defined cloud of clustered interactions that emerge from the center of individual actions. We have folksonomies, so we'll have folksmunities"*

*"Read more" to see the extracted future events and analysis.*

## **Future events**

Here is a list of fictional future events extracted from the interview with Stephen Downes. If you want to comment or have additional future events to present based on the interview, please do so.

*Disclaimer: The future events were constructed from the ideas presented in the interview and do not represent the ideas of the interviewee. No crystal ball or time machines were used in the construction of these events. Bear in mind, it's the future and everything is possible.*

## **Year 2005**

### **People reach far for communities of interest**

New kinds of communities form around rare topics of interest. This is possible because the internet enables fragmented groups of individuals to find each other online. More socially oriented people find each other in chat rooms, dating services and social networking applications.

### **Circulation rates for news papers are in free fall**

The circulation rate is dropping dramatically in the 18-30 reader group. This is because the same information is available online in more polished and complete form through services like WikiNews. News papers are losing significant revenues in advertisement due to services like Greg's list and Google's long tail targeted advertisement business.

### **Collaborative filtering and social reputation systems spread**

Online communities that utilize community data improve business. For example, collaborative filtering based on user recommendations enables people to find products and information they might be interested in based on their purchasing and community habits. Many of these products reside in the so called Long Tail as users discover the Long Tail. Social reputation systems are used to create a sense of trust between users.

## **Year 2006**

### **Communities based on networks form**

Traditionally a community was a place just like a neighbourhood or an internet website. After the introduction of open architectures and standards, people start to form communities that are evenly distributed all around the world. The blogosphere is only one example of various network based communities already out there.

### **Large university releases freely available educational content**

Following the example of MIT OpenCourseWare, certain larger universities has opened up their treasure chests. A couple of new repositories of free educational material increase the availability of free resources to educators. The release is also done as a marketing act, resulting in buzz in the media who view these acts mainly as positive.

### **Open content publishing gets harder**

There are a lot of open content resources for educators available. The problem is that most educational institutions require a certain book when a course starts. The teachers based on old practices still require something in printed form. Publishers of course refuse to publish your open content unless they own it and in that case, they want a different license. Only a couple of publishers of open content exist, not enough to satisfy the demand.

### **Software customization reason for the switch to FLOSS**

It's not a question of cost but a question of what you can do with it. Educators are tired of using LMS systems that do not provide everything they want. Now they have realized that it's impossible to find a software that does everything out-of-the-box. Because of FLOSS like Firefox they have noticed that there is only need for a simple core that could be extended with small modules or software pieces. Students and teachers can even program new features to satisfy their needs on need basis.

### **Customer communities emerge**

A recent research article noticed that services like eBay and Amazon thrive because they enable customer communities. In these communities the product is not what is important but what people have to say about them. Reviews and comments are considered by 80% as the reason for their purchase of a certain item. Social reputation is built into these system and customers are even sometimes integrated in the value chain in role of service providers.

## **Year 2007**

### **RIAA sues people who listen to free music**

RIAA (Recording Industry Association of America) has gone after people who listen to free music. They try to create an example that also open content based music is bad. They lack proof and mainly refer to use of commercial samples. This is a bloody mess, looking like the former case about SCO accusing Linux for containing their unlicensed source code.



## **Divine between an open and a closed society fundamentally important**

The advocates of open society rises as a result of FLOSS and open content communities. Those who favour a more closed society where only a few privileged people can say what they want clashes with the new culture. The distribution varies from country to country. The problem is hardest in countries like Iran, where people fight for their freedom of speech with anonymous blogs and other tools.

## **Cost associated in publishing open content too high**

It is really hard to publish a free resource. The cost associated with publishing open content is high because publishers want to own the copyright before they publish. Online learning object repositories which are tightly connected to proprietary LMS systems also provide a cost in releasing a free resource. The bar is set too high and as a result teachers do not bother to develop open content.

## **Customer satisfaction linked to collaborative toolsets**

as a key factor to their success several businesses have picked customer facing collaborative toolsets, customer support and improved interaction of their services. Those who have invested most in such services have the largest user base, directly linked to more sales and better customer satisfaction.

## **Year 2008**

### **Publishers talk about piracy**

Many publishers talk about piracy and how teachers are stealing their content. Some teachers have releasing mixed versions of commercial content under open content licenses and presenting the content as their own. These are only a few cases but this scares off some of the teachers and some try to avoid open content as suspicious.

### **Publishers fight open content and educators face no alternative**

Institutions are having difficult time being able to afford things like journal articles, course text books, online learning packages because publishers are increasingly selling these in bundles or subscription packages. The mechanism they use is to make it so difficult for an individual to publish that the only selection that a college or university has is from the commercial offerings of these publishers.

### **Customization companies and communities emerge**

Previously customization information was only available from the software vendors as sparse technical documentation. Now when we have open interfaces, web services and multi purpose modules, people have started companies and formed new kind of communities which exchange ideas and show off their customized environments. Sites dedicated to open LMS integration and customization have also emerged.

## **Year 2009**

## **Smaller institutions stop paying for publishers**

Some smaller and quicker educational institutions have been able to switch from buying content to creating content. By cancelling journal, book and online course package purchases, these institutions have freed up a lot of money in their budget. This money is used to pay teachers to create and publish open content. They now have the same amount of material at the cost of a fraction.

## **FLOSS covers most platform implementations**

FLOSS has been highly successful especially in platform technologies. Several vendors have opened their core platforms and create commercial value-added services on top of them. Platforms like Plone get better and better, because more and more businesses and people rely on the capabilities that enable them to skip the platform stack in software development completely.

## **Year 2010**

### **Publishers' fortunes decline**

The tipping point has been crossed as the capacity to produce and distribute educational resources by individuals has increased. Some publishers of educational content have gone bankrupt after open content and less content-intensive teaching methods like collaborative learning did the same for their business as what blogging and online content did to local news papers.

### **Role of professional journalism changes**

Professional journalists are not anymore the unique sole producers of the information. Their role has changed. Those who have been able to keep their job have become more like simulators, editors and organizers who put this openly available information in context and evaluates it, waves it and helps the general public to participate in.

### **Decentralization the key for business**

Skype, blogosphere, Flickr, wikisphere and others have shown that decentralization is key to scalable business and information systems. Those that have taken a more decentralized approach where content is not available only from a single place and those who benefit from open P2P application networks have generally win over competitors with more centralized approaches.

Posted in Interviews at 05:11 on Wednesday 02 March by Inf