

The Free Radio Vienna:

Orange 94.0

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webcasting

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1. Terminology

As this handbook is designed for use within *non-commercial radio projects*, it will address specific structures that have developed during the last 30 years. These developments have varied slightly from one European country to another, mainly due to differing frameworks in regard to media law and funding. On the other hand, the structures of non-commercial radio projects also show a vast number of similarities all over Europe. A unified terminology has, however, not yet been established. Therefore it is necessary to define certain terms suitable for describing these structures both in their similarities and their diversity.

Community Radio: Coming from North America, the concept of community radio reached Europe in the late sixties/early seventies. The first community radio project in Europe to broadcast on a regular basis was Radio Student in Ljubljana/Slovenia, which started in 1969 and is still broadcasting today. The main idea of a community radio is that the broadcasting is done by the local community for the local community. This concept always included a criticism of mass media and an impetus toward democratising media production.

Free Radio: Nowadays, the terms community radio and free radio are often used synonymously. Starting in the seventies, however, the notion of democratising media production was elaborated quite differently in various national settings due to differing national circumstances. In general, the term free radio denotes firstly, independence from market mechanisms, whose influence on the mass media is quite obvious (instead of adjusting programme content to attract an audience significant in number for advertising efficiency, free radio intends to empower groups that are underrepresented in mass media); secondly, the term indicates independence from state authorities; and thirdly, it posits a distinction between itself and projects with more specific aims like students' radio, radio within urban development projects or similar radio projects, which would usually be included in the notion of community radio.

Radio maker: This term refers to a person producing radio programmes on the basis of voluntary work. Usually the lion's share of programming at a community radio is produced by these persons. Whereas radio makers do not gain any financial benefits from their activities, they are granted an editorial freedom that would be unthinkable at a commercial radio station. Thus the variety of programmes often achieved at a non-commercial radio project speaks for itself.

Staff: Above a certain size, a community radio will require personnel to maintain its infrastructure, both in a technical sense as well as in terms of coordination of activities. In this handbook, the group of people carrying out this task on the basis of paid work is referred to as staff.

2. Introduction

Audio on the internet has become increasingly important for many community radios and radio activists over the past few years. Alongside its role as a compensatory way of broadcasting when a FM license isn't available, international programme exchange via internet has advanced significantly in recent years. In summer 2002, for example, the African section of the World Association of Community Radios (AMARC Africa) set up a live-stream during the UN summit for sustainable development in Johannesburg: On a daily basis, from Johannesburg, radio makers were producing live programmes in English, French, Spanish and Portuguese, which were broadcasted by community radios around the globe.

The new technology, however, not only presents possibilities: it also creates new processes of exclusion. Some radio makers might be internet "freaks" and use all the facilities the radio station has to offer, while others would need training in order to take advantage of these facilities at all. The approach of the community radio movement has always included a democratic perspective on media production. Therefore, a community radio should be prepared to offer training to its radio makers.

3. Objectives

- a) This handbook presents two ways of using "audio on the internet":
 - programme exchange among radio stations via archives
 - live-streaming
- b) The handbook discusses the usability of these techniques within the context of community radio.
- c) The handbook also offers outlines for workshops that enable radio makers to participate in these methods.
- d) Finally, the handbook presents examples and evaluations of specific activities that took place within the project *Digital Dialogues at Orange*, the Free Radio Vienna.

4. Settings and Strategies

Depending on the aims, size and form of organisation of a community radio, it may employ the internet in different ways. It is important to analyse specific needs carefully, to define specific aims within the community radio, and then to implement the new technology according to these aims rather than just

“for the possibilities’ sake”. Information Technology (IT) has been accompanied by naive enthusiasm embodied in phrases like “democratising information”. In fact, IT not only creates opportunities, it also consumes resources in terms of work, energy, money, time, personnel and so forth.

4.1 Taking content from the internet

Meanwhile, on the internet, there is a vast number of audio archives available for public download that are administered by radio activists, community radios, and various networks. Many of them are especially designed to enable national and international exchange of community audio productions. (Below, a list of archives will be categorized according to topics, language and usability.)

The most elemental way to participate in this exchange is to download audio productions from these archives. Basically there are two categories of productions:

- material to be integrated into programmes; like interviews, jingles etc. (for instance: short interviews on global topics recorded in Africa, Asia or South America)
- radio programmes to be re-broadcasted as a whole.

Both categories can be used by radio makers who are familiar with digital editing.

The second category is also worth overall discussion at the radio stations. Re-broadcasting community radio programmes from other radios in national or international exchange might be considered an interesting aim in many respects, e.g. programme exchange seen as part of broader alliances between radios on an international level. In addition: both the work and technical skills required are minimal.

Note: A re-broadcast usually needs to be placed within a certain framework. The programme may address the audience directly as inhabitants of a certain city in Uganda, referring to well-known local events or something that happened two years ago. In archives, usually every audio file is accompanied by a script giving information on content, authors, name of radio, date and place of broadcast. The person putting the re-broadcast on air will probably use this script to announce the show.

In addition, the audio quality of the broadcasts uploaded into archives will differ greatly; so in general, one should at least listen to parts of the show before deciding to re-broadcast it.

For legal reasons it may be necessary that the re-broadcaster make sure the programme conforms to national law. In case of doubt, it is necessary to listen to the entire programme before re-broadcasting.

The third possibility of taking content from the internet is to “tap” an internet live-stream set up by community broadcasters surrounding a certain event, putting in on air locally. These occasions may deal with topics like globalisation, International Women’s Day, sustainable development summit 2002 in Johannesburg, and so on. This possibility doesn’t require significantly better technical skills or equipment than the other two. It does, however, require more work, including external networking with the broadcasters who are setting up the stream and an internal shift of programmes due to the live broadcast (re-scheduling).

4.2 Organisational and technical pre-requisites

a) Organisation

While taking content from the internet is relatively simple, presenting content for exchange on the internet on a regular basis is a lot more intensive in terms of time and work.

In general, it needs to be considered that, above a certain volume, activities can hardly be carried out by voluntary workers alone. It’s a crucial question for community radios how to organise the work internally. (Self)Exploitation, burn-out and so on are common experiences. One should be aware that presenting content on the internet regularly and/or live-streaming will mean significantly more work at the radio station.

At most community radios, there’s a division of labour into volunteer work on one hand and paid work on the other. At Orange, for instance, there are about 450 radio makers producing content on a voluntary basis. In addition, there is an employed staff of 8 - 10 people who administer the infra-structure. Usually the number of employees is an indication of the quantity of activities. In any case, the organisation of work has significant implications for broadcasting, and it’s important to develop an approach which is both practicable and consistent with the radio’s aims. Two illustrative examples:

1) Radiofabrik (“Radio factory”)

The *Radiofabrik* is a free radio in Salzburg/Austria and has about 200 radio makers. It’s quite common among free radios that certain topics considered important aren’t covered sufficiently by the station’s own output. At *Radiofabrik* this is the case with women’s issues and globalisation. Therefore, it’s one of the tasks of a paid employee to fill this gap with programmes from the internet, if the local content production isn’t sufficient to fill the scheduled broadcasting space. It would be very hard to motivate a volunteer to take on such a task. Two of the things which make work in free radio attractive are editorial freedom and room for creativity. Just re-broadcasting someone else’s programme week after week is quite boring. On the other hand, for the employee it involves very little work.

II) *The Cultural Broadcasting Archive (CBA)*

<http://cba.fro.at>, is a project run by the national Association of Free Radios in Austria. The content on this archive is uploaded by radio makers from the various member stations. Radio makers at Orange also take part in uploading material to the archive, usually with current productions directly after broadcasting on Orange in Vienna. Available on the archive is a vast variety of current shows on all kinds of topics, which are quite representative of the production of the free radios in Austria in general. Some radio makers at Orange have made arrangements with other free radios in Austria to re-broadcast their shows in those other cities on a regular basis.

Even though the radio makers take on a lot of work (uploading of audio-files, networking with other radios), such an archive requires administration – not only in technical respects. In many ways, programme exchange depends on infrastructures within the radios, which are maintained at least partly by paid work. The realisation of the CBA is based on an alliance of paid and voluntary work: the staff gives support when required. Obviously, this takes a significant amount of time and energy. In addition, the project can only fulfil its horizontal aim of enabling broad access if radio makers are given the chance to use this facility – which includes internal communication and schooling. Given the case of approximately 450 radio makers with an extremely high fluctuation rate, the limits of voluntary work become apparent.

b) Automation

Connected to the question of organisation of work is the question of automation within a radio station. Quite often radio stations will automate certain processes in order to save time/money. Automating can be very useful. However, it does not necessarily match up with all the goals a radio station has set up for itself.

When up- and downloads from the internet are accomplished by the staff, automating the upload can be very useful. Many radio stations have automated their access to certain archives in such a way that particular programmes are automatically uploaded onto the internet during broadcasting.

If a radio station chooses a more horizontal approach aimed at spreading the use of internet widely among radio makers, it needs to motivate and teach its volunteers the skill of uploading an audio file onto archives “by hand”:

Automation involves institutionalising structures, which may not correspond to the voluntary nature of the radio makers' activities. These may be a lot more spontaneous and oriented to short-term goals than automation would allow.

Automation will also produce certain side effects: For instance, the programming needs to be planned “down to the minute”. One could say that “clockwork” will have to be introduced into the everyday life of a radio station.

c) Equipment

I) *Internet connectivity*

As soon as content is taken from the internet and put directly on air, which necessarily is the case with live-streams and which is convenient with some archives, a sampling rate of at least 64kb/sec is recommended. Otherwise, the audio quality will be unsatisfactory and/or it will be difficult or impossible (depending on the upload/stream) to make it function at all.

As for re-broadcasting from archives, one doesn't necessarily need internet in the studio if audio files are downloaded onto CDs before broadcasting. Depending on the archive, sometimes files must be downloaded before broadcasting in any case.

II) *Hardware*

A radio station which uses internet for broadcasting or automation in general for parts of its programme will probably put its most reliable computer into the studio.

The computers used for webcasting should have following capacities (minimum):

5 gB ... hard disc
64 mB ... RAM
300 mHz ... processor
sound card
network card

These specifications are nothing exceptional. In general, computers not older than 5 years will do, with room to spare.

III) *Software*

For taking content from the internet and putting it on air, it is necessary to have a player installed in the studio computer which converts the file into an audio signal. There are different kinds of players available as freeware. Note that different kinds of audio files need different kinds of players. *RealAudio* and *MP3* are the two most common file formats on the internet. Therefore it's sufficient, for instance, to install both a *WinampPlayer* for *MP3*-files and a *RealPlayer* for *RealAudio*- (*rm*-) files. Those players are available for free download at www.winamp.com and www.real.com.

For uploading onto archives, often FTP-software is required.

IV) *Internet provider*

For setting up a live-stream, you need an internet provider that offers live audio streaming capacity. Depending on this capacity, your stream might become unstable and break off, for instance if too many users listen at one time. If you decide to put up a live-stream as a regular webcast in addition to (or in compensation for lacking) terrestrial broadcasting capacities, you should refer to a commercial provider.

4.3 Presenting content on the internet (Archives)

d) Audio files on websites

One way to present content on the internet is to include audio files in the radio's website. Examples of radios putting parts of the programme on their websites would be Connemara Community Radio / Ireland

(<http://www.connemarafm.com/audiopage.html>) or rádio fala mulher, a feminist women's radio in Rio de Janeiro.

(<http://www.radiofalamulher.com/categorias.asp?categoria=1#>). In order to post files on a website, one needs to be acquainted with html, which is a basic skill of web design. Detailed instructions on how to include audio files in websites can be found in Modules IV and VII under <http://www.amarc.org/wol/English/modules-en.htm>.

e) Archives and networks

Several national and international networks have set up archives. For a community broadcaster, it's usually easy to find a suitable network and become a member. The members receive a login and password, and with these they can contribute via upload to the archive. (To look for a suitable network, see 4.5 List of Archives.)

The horizontal approach to an interactive exchange, which characterises these projects, requires a lot of support for radio makers.

4.4 Motivating radio makers to participate in programme exchange

At Orange, in many cases radio makers have initiated programme exchange themselves as a branch of the political or social networking they are already involved in.

The accessibility of the method has, however, only become significantly broader through involvement in concrete international projects which were able to motivate radio makers to attend workshops. These projects are facilitated by the radio, which means that the external networking and the internal coordination are carried out on the basis of paid work. Once radio makers are acquainted with the technology, however, in many cases they stick with the method and use it creatively in their own ways.

f) Workshops

Usually, at a community radio there are people who are totally involved in internet and "digital lifestyle", so to speak, whereas others don't have a computer at home. If a community radio aims at including as many radio makers as possible into exchange activities or even views itself as a realm of informal education, it could be a fitting strategy to institutionalise a system of

workshops. Radio makers who attend a workshop might also get an idea of the opportunities presented by other training modules. Such a series of workshops could be:

- I) Radiomaking basics: recording on mini-disc, interviewing, editorial and journalistic questions, editing on mini-disc
- II) Digital editing: using various programmes like: “audiolab” or “cool edit”
- III) Audio archives: FTP, up- and download from audio archives
- IV) Live-streaming

Outlines for III and IV (see below)

Nevertheless, digital editing skills, for instance, will be required only to a very limited extent for archives and live-streaming. Therefore, it's recommended to use the modules on a flexible basis. Most important: the previous knowledge of the group assigned for training needs to be identified and the workshop adjusted to this level.

g) Editorial groups

A greater barrier for radio makers (more problematic than individual skills that may be lacking) could be a weak computer background in general, or even apathy towards computers. In such cases, it's been a very successful strategy at Orange to organise programme exchange in groups. These editorial groups tend to develop an efficient division of labour – one or two persons being responsible for digital technology, others for internal and external networking, or a similar arrangement. Thus, people with a weak computer background interested in gaining computer skills are granted a sufficient amount of time to get acquainted with the technology. Knowledge of IT is then passed on effectively by informal learning within the editorial group.

h) Goal-oriented projects

Simply uploading an audio file, and not knowing who is going to listen or even to re-broadcast the show, seems to many community radio makers to be a vague and abstract enterprise. It is a lot more attractive if the programme exchange occurs within a particular national or international project with specific aims.

Examples:

I) InterKonneXiones (IKX)

IKX is a network of feminist media activists, worldwide in principle, but mainly including Europe, Latin America and the Caribbean.

In 2003 Orange 94.0 hosted the annual conference of this network in Vienna. The conference included workshops on live-streaming and the use of internet for programme exchange via archives. Obviously, the conference was not held merely to pass on skills. One of the motivations for hosting the

conference was to initiate personal linkage among radio makers at Orange and others in Europe and Latin America. The personal networking encouraged by the conference centred on the feminist content of the programmes created by those attending. The conference was characterised by great enthusiasm. From this meeting there emerged a variety of international exchange activities cultivated by radio makers who creatively managed to adapt the methods of “audio in the internet” to their special programme ideas and aims (see also 6. Interview/Evaluation).

II) zipFM

zipFM is an initiative of the German free radio scene, and Orange also participates. Several experiences at free radios have shown that it is very difficult or almost impossible to produce quality journalism at a professional quantity and pace on the basis of voluntary work. Radio makers at Orange had tried repeatedly to set up some kind of weekly or even daily political coverage – unsuccessfully, due to lack of resources. Now, zipFM has created a pool in which various stations contribute material that is then exchanged at <http://www.freie-radios.net>. Each station chooses the clips it would like to broadcast. At Orange this has resulted in a daily (Tue-Fri) show with political topics and news carried out by a editorial group founded specifically for zipFM.

It's quite clear that the main motivation of the radio makers for participating is based on the content of their production rather than on enthusiasm about IT. In general, a concrete project makes the exchange via internet more meaningful.

4.5 List of archives

Obviously, it's impossible for such a list to be complete. Often, archives are created in connection with a particular event. An example to illustrate this would be an archive set up by an Iranian exile/oppositional group, which contains sounds from the student riots in late spring 2003 in Teheran:

<http://www.iran-daneshjoo.org/audiovideo>

If one goes through the link lists of the websites below, one will find even more archives, and there are several international projects in development right now that aim at setting up archives as well.

Examples of radios that put parts of their programmes on their websites:

<http://www.connemarafm.com/audiopage.html>

Connemara Community Radio, Ireland. Language: English.

<http://www.radiofalamulher.com/categorias.asp?categoria=1#>

rádio fala mulher, a feminist women's radio in Rio de Janeiro. Language: Portuguese.

national and international exchange-archives:

<http://www.radio4all.net>

Civil rights movement and various political "grassroots" movements mainly within the USA. Language: mostly English.

http://moebius.amarc.org/planeta_radio

Archive of community radios world-wide, in principle, but so far uploads in fact mainly from Latin America and the Caribbean. Languages: Spanish, Portuguese, English, French.

<http://radio.indymedia.org>

Audio files and live-streams. Mainly political features, interviews and news. The indy-media movement holds up avant-garde values towards the democratisation of media production (including: criticism on concepts like authorship or copyrights). Global upload, emphasis on Europe and both Americas. It could also be convenient to look for audios on national indy-media sites. Various languages.

<http://www.freie-radios.net>

Exchange archive used by Free Radios in Austria, Germany and Switzerland. Language: mostly German, including shows with migrant background in mother tongues.

<http://cba.fro.at>

Exchange archive used by Free Radios in Austria. Language: mostly German, including shows with migrant background in mother tongues.

archives with a more specific editorial approach:

<http://www.wpkn.org/betweenthelines>

Alternative (left-of-centre) news agency. Radio-news. International topics. Language: mostly English.

<http://www.amisnet.org>

Alternative news agency. Radio news and features. International topics. Language: Italian.

<http://www.babelingo.net>

Archive for the promotion of multilingual broadcasts. Jingles and spots for the beginning, end and for in-between on radio shows in various languages.

<http://radio.oneworld.net/index.php>

Features, interviews and shows on a vast variety of topics centred around the north/south-conflict. Language: mostly English (including productions from "north" and "south").

[http://www.interworldradio.org/.](http://www.interworldradio.org/)

Interviews, features and shows on a vast variety of topics centred around the north/south-conflict, mainly produced by radio journalists in the „south“, many languages.

<http://www.npla.de/onda/index.php>

Interviews, features and shows on political and social topics produced by radio journalists from Latin America, translated into German, e.g. radio shows with over-voice in German.

<http://www.noso.at>

Radio shows on developmental politics, international economy, NGOs and cultural exchange produced by free radios in Austria and Germany, including Afro-Austrian shows. Languages: mainly German, partly English and African languages.

<http://www.fire.or.cr>

Internet radio on the basis of archives. Interviews, features and shows on women's issues. Global upload, emphasis on Latin America and the Caribbean. Languages: Spanish and English.

<http://www.radionumerocritico.cl>

Internet radio and archives. A platform of social and political movements in Chile. Language: Spanish.

<http://streamonthefly.org>

Stream on the fly (SOTF) is an internet radio on the basis of archives which are uploaded by various community radios across Europe. At present the network is in the process of being established. Several radios have gone through a testing phase of uploading. SOTF also includes several automation tools for community radios, e.g. uploading of radio shows synchronized with the broadcast on air.

4.6 Presenting live content on the internet (Live-streaming)

- a) Live-streaming as an additional or compensatory means of broadcasting, alongside FM: It's extremely hard to estimate the size or structure of the audience reached by internet radio. In general, internet radios are able to raise a significant audience internationally if they address specific "scenes" or circles of listeners.
A constant live-stream requires technical administration. If the stream is to be stable enough for as many listeners as possible, it is recommended to pay for the service of a commercial provider (see: 4.2.c.IV). For short-term live-stream activities as described in b) and c) that would not be necessary.
- b) Short-term live-streaming can be used as a method of live broadcasting on air from somewhere other than the studio. (See Appendix 1 in the handbook on live broadcasting which can be accessed via <http://www.digital-dialogues.de>, describing the use of „shoutcast“, and 5.2 of this handbook on using *dyne:bolic*. Both services are offered for free.)
- c) Webcasting also is part of "grassroots" media activism on the internet. A live-stream can be set up with very little equipment and an extremely low budget, e.g. for two weeks, even without any connection to a community broadcaster. In general, this form of activism is directed toward a clearly defined sub-sector of the public.

Examples:

- I) Radio activists from feminist "scenes" in Europe and Latin America have managed to establish a "tradition" of webcasting, for instance from conferences or on the 8th of March.
- II) As a slightly newer development, the indy-media movement (which on a broader scale could probably be associated with the so-called anti-globalisation movement) has taken up the practice of setting up live-streams from certain events like anti-summits, large rallies, political gatherings and such.
- III) At present the concept of this low budget short-term media is spreading outward from various kinds of settings (cultural festivals, campus radios, urban development projects and so on).

5. Training Modules

5.1 Archives

a) Participants

At Orange these workshops are usually organised for editorial groups taking part in explicit exchange projects. In spite of the division of labour, which these groups usually have taken on, it makes sense for the entire group to attend a workshop. This way, all members of the group at least have an idea of what is possible (and what isn't), how the exchange via internet works, and so on. This makes it much more probable that working through internet portals will be successful.

In any case, it's essential to identify the average "level" a group is at. It might be convenient to offer coaching prior to and after a workshop. It's necessary for participants to be familiar with importing audio signals into the computer and converting audio files into different formats. Radio makers who haven't any experience with digital editing would need coaching in these two requirements previous to the workshop.

b) Technical pre-requisites

Obviously, there should be a sufficient number of computers available, depending on the number of participants (e.g. one computer for two trainees); each computer should have two (or at least one) FTP-programmes installed as well as (suggestions:) RealPlayer and WinampPlayer. The sampling rate of the internet connection should be 64 kb/sec, otherwise it will be rather frustrating for trainees.

c) Outline

<u>content</u>	<u>goal of particular work phase</u>	<u>detailed instructions and didactical suggestions</u> (The outline refers to a group with the maximum size of 8)	<u>approximate time</u>
I) <i>Archives</i>	gaining understanding of international structures of community radios, concept of programme exchange and an overview of existing archives	Radio makers will probably be interested in background facts, the trainer therefore should be familiar with the networks behind the archives. Three or four archives could be presented briefly. The trainees should then get an opportunity to surf through the List of Archives (handout) according to their interests. It could be an assignment for trainees to go through links and then present an archive (one not included in the "List of Archives") to the rest of the group.	depends greatly on the interests of the group: 20-50 min.
II) <i>Download</i>	understanding the usability of downloads versus streams, estimating the audio-quality of uploads	Depending on the archive, files are offered for download or direct listening or for both. Files for download can be included into pre-produced shows. Downloading for re-broadcast can be more reliable (unstable internet in the studio, acquaintance with computer). Broadcasting directly, on the other hand, can save time. If possible, the trainer could re-broadcast something from the studio for presentation. Otherwise it should suffice to indicate where the audio signal from the computer lies on the mixing table. For re-broadcast, one needs to click on the file in the archive and open the channel on the mixer. Usually, a file transcript in the archive includes information on the size of the file. The size of the file depends on the quality chosen for encoding, e.g. into mp3. The larger	10-20 Min.

		<p>the file per length, the better the audio-quality. For mp3-files, 58MB/10 minutes of programming signifies extremely good quality. For RealAudio files (rm-files) to achieve the same quality, the size needs to be slightly larger. Given this information, the trainees should get a chance to try out the quality of files of differing sizes. In order to do that, the trainer should prepare appropriate examples of good and bad quality.</p> <p>(example: see illustration 1: transcript on the CBA)</p>	
<p>III) FTP <i>(File Transfer Protocol)</i></p>	<p>identifying basic commands / functions of FTP in various programmes</p>	<p>Detailed Instructions on FTP in general see: http://www.amarc.org/wol/English/modules-en.htm (Module V).</p> <p>An FTP programme is used to copy files from the computer to an internet server or vice-versa (up- and download). There's no FTP freeware but several FTP softwares free for trial use (limited time). The interfaces on FTP programmes differ slightly. It's recommended to present two different programmes and identify 5 basic commands/functions on both interfaces:</p> <ul style="list-style-type: none"> a) connect to server (host) b) queues on server and on computer c) direction of transfer (up- or download) d) load queue e) transfer queue <p>example and detailed description: see illustration 2 for LeapFTP.</p> <p>This phase can be rather brief, more importantly in the next phase the trainees should learn the method by practicing it.</p>	<p>10 Min.</p>

<p>IV) Upload</p>	<p>uploading audio files onto a an archive.</p>	<p>The trainees need to be registered at an archive beforehand, which means that login/password are granted and a specific space/account on the archive is reserved for them. If the radio has no standard access to archives, it's easy for the trainer to establish access for trainees on short notice at radio4all, moebius(amarc), freie-radios.net or indymedia. Trainees must bring their productions on a CD to the workshop. Different archives require different file-formats (mostly rm- and mp3-format). The productions must be formatted in the appropriate file depending on the archive, and this information needs to be communicated in advance, of course.</p> <p>Steps (see also illustration 2):</p> <ol style="list-style-type: none"> a) Enter name of host server, login and password. b) Connect to server. Once access is granted, all the files that are already uploaded onto your space on the server will appear. c) Queue up all the files that you want to upload in the designated space on the FTP-interface (by browsing your computer or by drag & drop). d) Clarify that the direction of copying is from your computer to the server. e) Transfer queue. <p>It's recommended that the trainer present the transfer once and then assist the trainees while they are practicing the transfer on both FTP-programmes. The prepared audio files should be small in order to prevent longer waits during the processing of the transfer. Secondly, the uploaded file needs to be edited in the archive. Most archives are programmed in such a way that the file needs to be accompanied by a script before the file is made accessible on the archive for public download. This editing is usually done via interfaces. Illustration 3 offers an example of such an interface at the CBA.</p>	<p>20-40 Min.</p>
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5.2 Live-streaming

a) Possible settings

Within community radios, this method will probably function as “insider” knowledge at the outset. Most of the time, it will be passed on to colleagues on a one-to-one basis. None the less, it seems possible to institutionalise a workshop on live-streaming. Such an attempt will encounter several difficulties. First of all, it requires an occasion, which means that offering a workshop on a regular basis demands a lot of coordination. Secondly, the stream is only set up once before the broadcast, yet trainees would need a chance to practice under supervision.

Suggestion (as an inspiration):

These difficulties could be solved if the workshop is hosted by a live show in the studio. The radio makers in the studio need to know how to put a live-stream on air (see 5.2.c Outline). The trainees set up a stream one by one and this way pop into the show – each participating for a few minutes. For three trainees, a one-hour show would do. This way, live-streaming can be promoted within the radio as well.

b) Technical pre-requisites

Most importantly, the internet connection must be stable at 64 kb/sec. In addition, the computer needs an ATAPI CD-ROM, which is in every standard PC, for booting from CD.

At the external location, the “streaming set” includes audio equipment, mixing board, and streaming software. This outline is written on the basis of [dyne:bolic] by PublicVoiceLab, an open source programme, available for free under <http://dynebolic.org>. (contact: <http://www.publicvoice.fm>).

c) Outline

<u>content</u>	<u>goal of particular work phase</u>	<u>detailed instructions and didactical suggestions</u>	<u>approximate time</u>
I) <i>Framework</i>	possible setting including organizational pre-requisites	The outline refers to groups with the average size of 3 participants at the external location and a host in the studio. The host takes on the streams set up by the participants and puts it on air. In round 1 the participants are shown how to set up a stream. Rounds 2-4 are the participants each setting up a stream under supervision of the trainer. Round 5 is the actual live-streaming accomplished by the participants themselves.	
II) <i>Starting dyne:bolic</i>	booting from CD acquaintance with BIOS	a) Choosing the CD as Boot-Device. With most computers one will have to enable "Boot from CD" in the BIOS. Some computers will boot from CD when one keeps the 'C' key pressed (computer's instructions might be helpful). b) Second step is to simply insert the [dyne:bolic] CD and reboot. c) NOTE: Many computers will give access to the BIOS by pressing (F8) or (Delete). Inexperienced users need to be careful not to change anything else in the BIOS but "boot devices". The dyne:bolic doesn't need to be installed on the hard-disc but runs directly from CD, needing only workspace on the computer.	Round 1-4: 3-10 min. each

<p>III) <i>Connecting onto the Internet</i></p>	<p>acquaintance with various possibilities of connecting onto the Internet with dyne:bolic</p> <p>detailed knowledge of one possibility of connecting onto the Internet with dyne:bolic</p>	<p>Recommended is ethernet connectivity and a dhcp server (for instance cable or ADSL external modems connected via ethernet cables). In this case one will be online as soon as the computer has finished booting.</p> <p>If that doesn't happen, one needs to click the right mouse button on the desktop and choose "Configuration" and then "Network" (see Illustration 4):</p> <ul style="list-style-type: none"> -DHCP (For a second try. That helps sometimes.) -STATIC IP (There one enters the data one has for the network one is on, that is: IP-address, network mask, and default gateway.) -MODEM (One has to enter the modem and dial-in parameters one has for one's normal internet connection.) 	<p>depending on internet-connectivity</p>
<p>IV) <i>Starting MuSE</i></p>	<p>Registration on PUBLICVOICE.fm</p> <p>Starting MuSE</p>	<ul style="list-style-type: none"> a) Right mouse button on the desktop initiates the development of a pattern similar to the windows-interface (see illustration 5). b) Registration on PUBLICVOICE.fm: Click on "Tell me more." The user will be taken to the registration page of PUBLICVOICE.fm. (could also be accessed directly from this browser window). There, one chooses a username and a password. Closing the browser and going through the login dialogue again will start MuSE right up. It's recommended to let each participant open his/her own account once in rounds 2-4. 	<p>round 1-4: 3-10 min. each</p>

		<p>c) In round 5 the participants will all use one registered account. This time click on "STREAM" then "LOGIN TO PUBLICVOICE.FM" then "I have an account". After entering username and password, dyne:bolic will connect to the server, and start MuSE with the right setting already in place.</p>	
V) Set up - Streaming	<p>Connecting the audio-equipment to the computer</p> <p>Adjusting audio-input</p> <p>Streaming</p>	<p>a) The sound-source (e.g. microphone or mixing desk) needs to be plugged into the MIC IN or LINE IN. Click on the Vumeters icon. The left dial is the audio input. If it's moving with the audio signal, it's set. If it's not moving, right mouse button on desktop and click on "STREAM" and "Set up audio volume levels". Here the settings of the soundcard levels need to be adjusted until the dial moves (see illustration 6).</p> <p>b) Click on the "Let's stream" icon, the plug up on the left. The connect dialogue opens and if one is logged in, all the right parameters are already there. Fill in description and click on the "Connect" Button. If the right dial of the Vumeter is moving, the connection is successfully accomplished. If not, one should take a close look at the network settings again.</p>	<p>round 1-4: 8-10 min. each</p>

<p>VI) <i>Production-Phase</i></p>	<p>Hosting a live-stream</p> <p>Repetition of all work steps</p>	<p>The host in the studio needs to go to http://publicvoice.fm. On the homepage, there's a list of all streams. The host needs to know the description of the stream set up at the external location. Usually it's necessary to keep up some kind of communication (e.g. telephone, chat-room) between the external location and the studio – for delays, technical problems and such.</p> <p>In round 5 the participants each set up a live-stream, one after another, and are put on air by the host. The content of the streaming needs to be prepared beforehand by the participants individually.</p>	<p>round 5: 60 min.</p>
		<p>Frequently asked questions and detailed manuals for dyne:bolic under http://www.dynebolic.org/index.php?show=docs.</p>	

6. Interview / Evaluation

During the project *Digital Dialogues* interviews with participating radio makers were carried out for evaluation purposes. The results of this evaluation process led to various adaptations during the course of the project itself. The results also fed into the discussion of this handbook.

Below there is an example of such an interview, painting a lively picture of the activities related to *Digital Dialogues* at Orange 94.0. It is also meant to raise awareness, again, for the innumerable settings and strategies possible in dealing with techniques of “audio in the internet” at a community radio.

Most importantly, a community radio needs to be in touch with the needs and interests of its radio makers in order to implement the techniques of “audio in the internet” according to the substance of its activities – the media production done by its radio makers.

Interviewer (I): Carla, you've participated in two live-streaming events within the network InterKonneXiones (IKX) and out of that experience you have created a frequent radio show at Orange 94.0 called “InterKonneXiones Feministas”, which is centred around programme exchange. Can you tell us about this?

Radio maker (RM): Yes, in February 2003 the annual IKX conference took place in Vienna. One workshop offered at that conference was on live-streaming. A woman from Radio Número Crítico (from Santiago de Chile) showed us how to do live-streaming, what kind of software to use, and how to prepare the event in a chat-room. It was then that the idea was born to do a live-streaming event between Radio Número Crítico and Radio Orange on the 8th of March, the international women's day coming up.

I: You mentioned “preparation in a chat-room”. Does that mean coordination during the event?

RM: Yes, we said that we would meet in the chat-room one hour before starting the live-stream to organise it and to exchange information on the programmes and reports we would be broadcasting; also to decide who would be live-streaming and who would be re-broadcasting at what time. So we agreed that after this or that song we would switch live-streams, and so on.

I: So both radios are actually live-streaming and you switched live-streams “so to speak”. At first Chile was re-broadcasting the stream from Vienna and then, from a certain point on, Vienna was re-broadcasting the stream from Chile, is this correct?

RM: On the 8th of March, at first Radio Número Crítico took over our programme, which consisted of reports and features from the demonstration in Vienna and which was translated into Spanish in the studio in Vienna, and then we switched to their live-stream to get the latest news of what is happening in the streets of Santiago de Chile, what events are taking place on March 8th, and so on.

I: And that was also translated into German for the Viennese audience?

RM: Yes, we took the stream and then we faded it down from time to time to do the translation – a sort of over-voice.

I: Considering the language problem, do you think this method was successful or practical? Were there any difficulties? If so, which difficulties do people who want to apply this method need to be aware of?

RM: The big asset of live-streaming is that you get current information on what's happening right from the place – e.g. Santiago de Chile - at the very moment it's going on. That's the great advantage of live-streaming. We did not use the method as presented at the workshop, because it was very difficult and we couldn't do it with the technical means we had. Therefore, we just used the live-streams of Orange and Radio Número Crítico that are on the internet anyway. This way we did not have any technical difficulties.

As for the language, it was very good as long as there was translation into both languages, later on we did not have the translator in Vienna anymore, and so it was only interesting for people who understand Spanish.

I: Considering that you knew the women from Chile from the IKX conference in Vienna – what importance, do you think, does it have to be familiar with the people and the context? Could you imagine doing a similar project without knowing the exchange partner?

RM: The conference in February – getting to know the women – how shall I put it? – There was so much enthusiasm about working together. Planning programme exchange for the future was only one part of it. Actually, through the conference we had the enthusiasm to work together, and the best method was live-streaming.

Later, on the 21st of March, the international day against racism, we organized another live-streaming event between Radio Orange/Vienna, Radio Número Crítico/Santiago de Chile and this time including Radio Lora/Zurich. At this occasion, I worked together with a woman from Radio Lora in Zurich/Switzerland, whom I did not know. So it can still work without knowing one another personally. I would suggest, though, clarifying the programmes in the chat-room or via e-mail, so that you know what's going on and what will be happening. For example, in the Swiss programme there was local news and I knew the people in Vienna wouldn't be so interested in listening to local news, so I knew that when it started I could do other programming.

I: In general, what role does the networking outside of the single event play?

RM: In general, I would say it's very important to get to know one another. Like in the annual IKX conference, to get together on a regular basis to be able to continue working on the idea and to develop new programme ideas. It's very important to meet one another, otherwise the idea gets lost.

I: Based on your experience with these two live-stream events, you developed a programme idea for a regular radio show centred around programme exchange.

RM: Well, the idea of the monthly programme “InterKonneXiones-Feministas” was to do bilingual programmes via live-stream. It was meant as a space for the women from the IKX network and for their programmes all over the world; well, not *all* over the world, but from Germany, Switzerland, Austria and Latin America. Sometimes, though, I just looked up archives, like the CBA or the FIRE website, to see whether I could find some interesting programmes.

So the main idea was to do live-streaming, but for that you need a translator. The women in Latin America didn't speak English, and my Spanish wasn't good enough to translate or even to ask the women specific questions; so for some time we exchanged live-streams between Santiago de Chile and Vienna without translation. Then I worked together with a woman in Zurich and we did programming together – that was in German. So the language turned out to be a major difficulty in working together. With Zurich, we also used the CBA for a specific exchange of programmes. We agreed that she would upload these specific programmes, and then I broadcasted it from the internet.

I: This whole procedure of programme exchange – how is it in terms of work? Is the fact that the radio show is not scheduled anymore due to too much work involved or due to other reasons?

RM: On the 8th of March it was 5 ½ hours of live-streaming between Santiago de Chile and Vienna. I think it took me one week of coordination; so it was a lot of work. Not for the women in Chile though, they just reported on the events happening on that day. But for me it was a lot of coordinating stuff to do, to get the translator, to check that the streams were working and so on. The same with the 21st of March, international day against racism, that was also 2 or 3 days of coordination. It was always up to me to do all the preparation and coordination.

I: Was the monthly programme less work, or was it just the same?

RM: Firstly, it was up to me to prepare a feature, e.g. ½ hour, about what's going on in Vienna – for that I had to do research and so on; secondly, again, I was trying to find a translator. I think I would have continued with the radio show if I had found another person to work with, but all on my own it was too much work. The women in Zurich, they had a radio show right at the same time. That was the show I re-broadcasted, taking the stream of Radio Lora on air in the studio in Vienna. So the women in Zurich did actually not have any additional work

I: Was it worth taking on all this work? Was it an enriching experience?

RM: Of course, it was worth it. I loved doing that. There was a lot of enthusiasm. It was a great feeling the first time we took over the live-stream from Chile; to hear that voice again two or three months after the conference. Before that, we met in the chat-room and asked her questions, and on air she was answering these questions. It was just like an interview via live-stream – a great form of communication.

Two other women from Orange went to Brazil and there they met the Brazilian participants of the conference in Vienna from Radio Fala Mulher/Rio de Janeiro. There they did a one-hour programme together, bilingual: Portuguese and German. Then they uploaded it onto the CBA and this way it was broadcasted in Vienna, one day after it had been broadcasted in Rio de Janeiro.

I: Obviously there was a lot of work for you personally. Would there be a chance to minimize this pressure if there were a radio group to take on responsibility or if the staff of the radio station gave more support to your project?

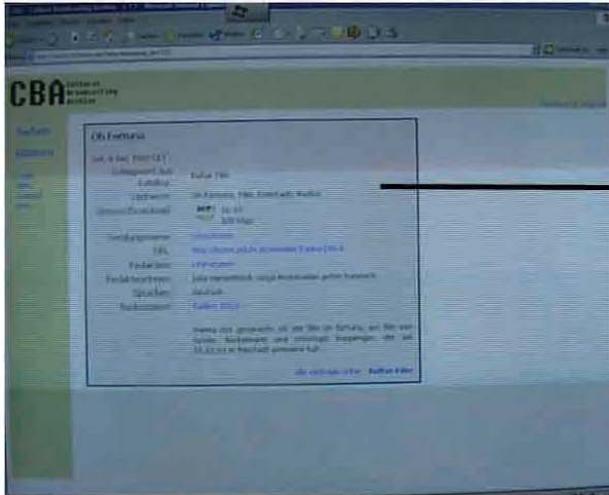
RM: I guess the big problem is that the women in the IKX network are doing so many things already that they do not have any resources left. I think it's going to take a while and some conferences to intensify the cooperation via live-streaming. I think the point is that you need a translation, either in Santiago de Chile, in Zurich or in Vienna. Then the networking will be easy and there won't be as much work. The crucial point, really, is that you need a translator.

I: Do you think live-streaming as a technique is still in coming?

RM: Yes, I think it's something that could grow in the IKX network. The women have the enthusiasm to work together. I think in the beginning it's a lot of work, but after a while it'll be up and running.

7. Illustrations

Illustration 1



Example of a script accompanying an audio file on the CBA, granting information on content, author, time and place of broadcast.

Illustration 2 (LeapFTP)

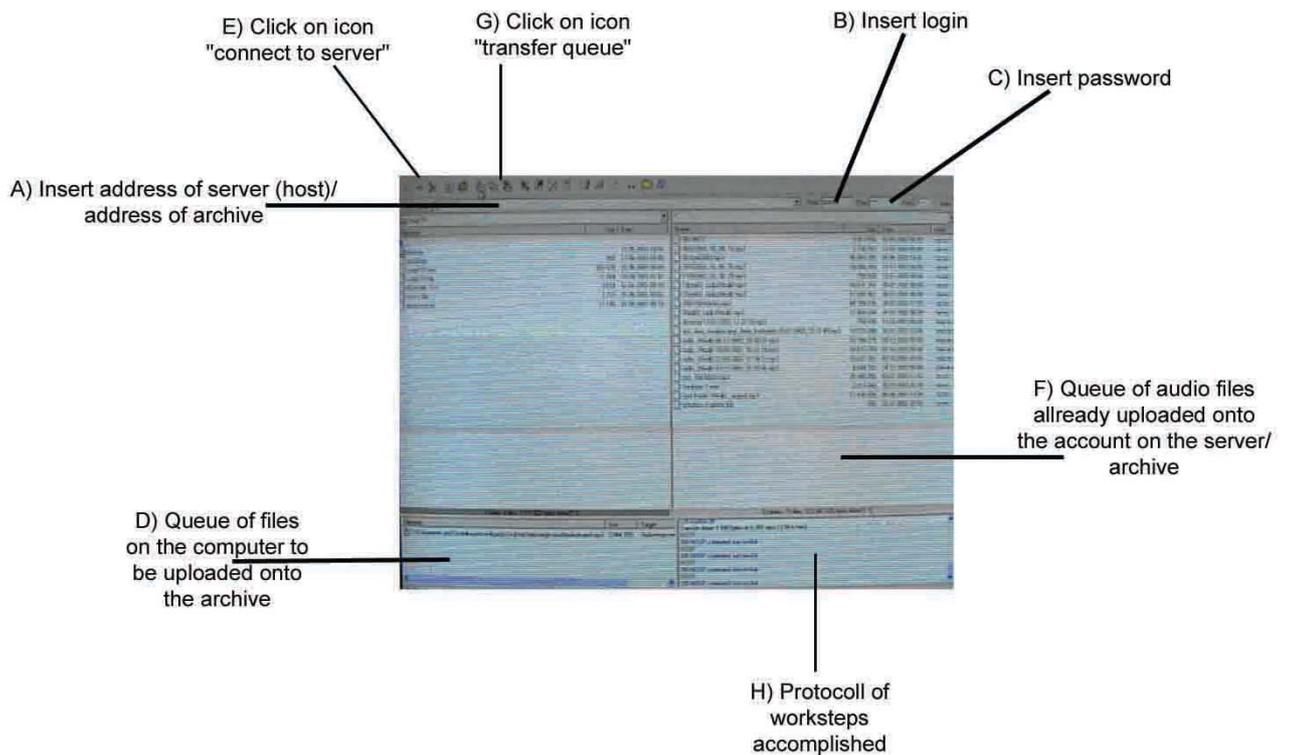
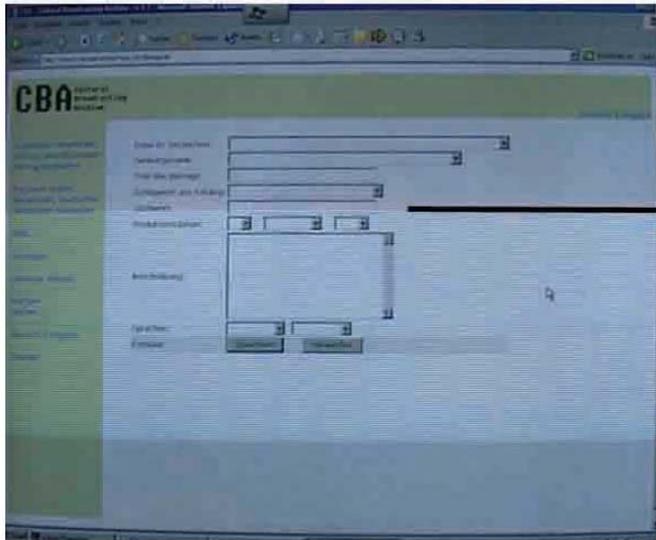


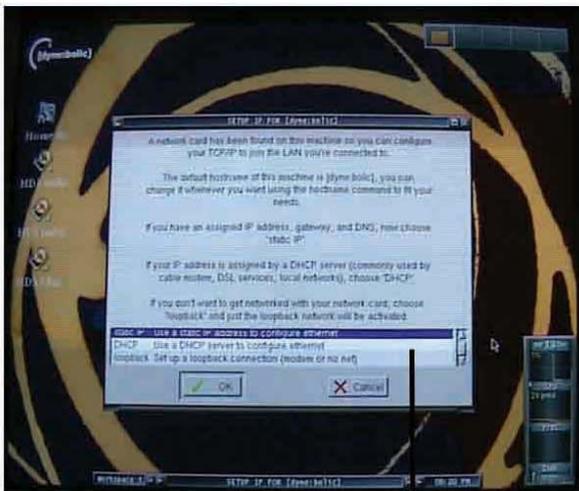
Illustration 3



At this interface one needs to fill in certain informations to be given with the script, accompanying the audio file.

Only after this the upload is completed and appears on the archive.

Illustration 4



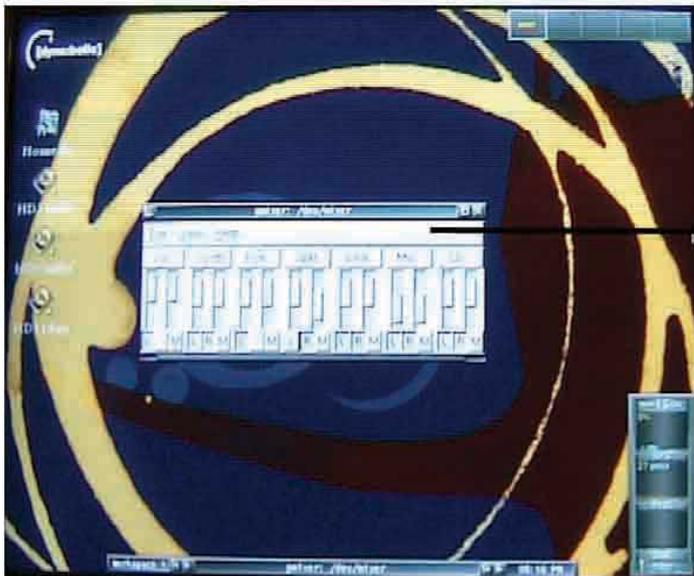
various possibilities of internet connectivity

Interface appearing upon click on right mousebutton



Illustration 5

Illustration 6



Here the settings of the soundcard levels need to be adjusted.