VIDEO CONFERENCING: FCRN MEMBER COMMENTS AND FEEDBACK

The use of video conferencing and associated technologies can help reduce the need for people to travel (particularly to fly) to conferences and other events. As such it can play a part in helping organisations and individuals reduce their greenhouse gas footprint. The technology is, however, not as widely used as it could be, for a complex variety of reasons. In a recent FCRN mailing, FCRN members were asked for their views on video conferencing – how and if they use the technology, what its benefits and drawbacks are, and where they feel there is a need for the technology to improve further. This informal documents captures some of the comments made about video conferencing by FCRN members and, it is hoped, raises awareness of the possibilities it can offer. The questions in the mailing were as follows:

a. What experiences (positive and negative) any of you have had of videoconferencing?

b. Whether any of your institutions (or others you know about) are turning increasingly to the technology for no-fly-policy reasons and what the pros and cons are

c. Whether there are any initiatives that you know of that are focused on improving the technology and in particular of enabling more of the talking-over-coffee benefits you get when you're actually physically present

d. if any one's done any assessment of the GHG impact of using video conferencing vs. flying

1. Rachel Muckle, Defra rachel.muckle@defra.gsi.gov.uk
I agree with you on the virtual conferencing and have also had a very positive experience of a 'webinar' run by Future Foundation. Essentially meant logging on to a specified website at an appointed time, and calling associated phone number to listen in on presentation while the slides scrolled up in front of me. On a linked page I (and others calling in) could type up questions and 'chat' to other callers. Very positive experience and the picking people to chat with almost fulfilled the meet over coffee bit. The slides were circulated after the webinar to all who signed in.

2. Anonymous
On video conferencing, I was exposed to it in 2004 and gave up. On a number of occasions groups of busy civil servants would gather in a video conferencing suit and squint at a screen looking at the others squinting back. The picture was continuously interrupted to the point that the participants were concentrating on the medium rather than the message. I used to simply use the loudspeaker telephone for such needs.

It seems things have moved on and your story is impressive, and I saw a case in Slovenia of a UK participant at conference delivering his paper from his dining room in Oxford after a plane

cancelation – it worked very well and everyone was happy. I think it is interesting to consider the role of the local authorities such as say libraries or councils in providing such facilities, or at least priming the market.

3. Kath Dalmeny, Sustain kath@sustainweb.org www.sustainweb.org
Like you, I am (successfully) avoiding flying and read your video conferencing information with interest. I have found video conferencing to be very expensive, and the technical challenge so unknown and likely to be incompatible at the two ends - so have not yet been able to use it so far. During 2008, I was approached by several international conference organisers to give talks - in Canada, Singapore and America - for which there is little reasonable alternative but to fly.

Concerningly, two of these conferences were about climate change, yet my refusal to fly was considered surprising and disagreeable to the organisers - they went to some effort to try and persuade me otherwise. I told the organisers that I would be willing to participate by video conference or other remote means, and for no fee, and do the research and extra technical work for them, but they were not willing to try this method.

However, I was asked to give a conference presentation at a US food poverty coalition conference at the end of 2008. This was a very positive experience. They could not afford video conferencing. So I was able to record (and edit on my computer with a marvellous shareware audio editing tool to get rid of silly repetitions and "errs" and "ums") an mp3 file of an audio recording of my presentation, sent by email along with a powerpoint presentation. While recording the presentation (just using the mic on my laptop, but standing up and moving hands to make it come out more lively), I made it very clear in the audio when to move on to the next slide so that the on-site organisers could show pictures and slides in unison with the sound (and the pictures I sent were much nicer than seeing a video of me!). I also included a slide at the end about how much carbon had been saved by avoiding the trip, and comparing the scale of the benefit to other actions to reduce GHG emissions. I'm told it got a round of applause! Overall, I feel that this was a satisfactory means of participating in the conference and bringing a UK perspective to US discussions.

As for talks over coffee, I find that these can be useful, but not always. On reflection, I think it was a shame that I couldn't do something "live" (e.g. Q&As) but the time difference was too great. And perhaps I need to make extra effort to compensate for what is lost by not flying, e.g. the effort to call people, or to make a more distinct commitment to go visit food organisations, giving it sufficient time for decent interaction and travelling time. If I'm honest, what we usually learn from travelling is how similar an approach everyone has to local and sustainable food systems, and how much commonality we all share in our challenges and solutions. I think a huge amount could be done to share the details of such insights via YouTube and other online means, if we engage creative people to make this exciting and visually interesting. I think it would be highly useful for some of the big thinkers in the FCRN network and other academia to consider having their core talks videoed for YouTube or other online presentation, with stats and graphs available for download.

4. Anonymous
I work for a global company with a main office in Norway. Norway is pretty far from most places, which means the largest part of the company's CO2 footprint is due to air travel. Starting this year all air travel will be registered so that CO2 can be recorded, and then possible ways of reducing the footprint will be evaluated. We are encouraged to use trains when practical - and always evaluate the need for travel.

Office Live Meeting program has been installed world-wide and this allows users to conduct net based meetings, internally and externally, and allows data sharing and free voice-communication. Video-conferencing is not yet available, but the possibility is on the horizon. Given that we sit in open landscapes in many of the offices, it is essential that infrastructure like good meeting rooms and wireless networks function properly. In the meantime the company is upgrading the video conference facilities with the goal of reducing air travel - particularly between offices. Our company set up video conferencing early, but the technology was not really good enough and the centres never really reached their potential.

My experience is that videoconferencing is fine if you 1. have a very clear information sharing agenda that does not entail a lot of "emotional" discussions 2. If you know the other people well 3. there are only 2 groups of participants. I don't think video conferencing will never be able to replace the "coffee talk" or the meeting of new people at conferences. Videoconferencing is always between invited parties, and you loose some group dynamics.

We have used Skype and telephone conferences for larger groups which is fine for defined activities. Personal experience is that telephone and video meetings with people you haven't met "live" tend to be very formal and not as productive as personal meetings when you don't know the person or you are starting up a project and need to discuss a large number of details. When projects are up and running with known partners then video and phone / Skype/ PC based conferences can replace person to person meetings.

The other software enabler has been SharePoint - which we use for projects. We have been able to write papers/ tweak presentation s / contract proposals together on-line both in real time and with time-zone challenges. We have offices in Houston and Shanghai. It's really hard to find a time within normal working hours for truly global video conferences. I think some of our travelling is just to get us in the same time zone.

We have not done any video conference vs flying calculations yet - but that's actually a good idea...

4. Paul Dickinson, Carbon Disclosure Project www.cdproject.net , www.eyenetwork.com and www.greeniii.com

a. What experiences (positive and negative) any of you have had of videoconferencing"
Videoconferencing requires in equal measure a dedicated computer and high bandwidth (broadband). A large amount of international videoconferencing is still in fact conducted over ISDN telephone lines, a technology dating back almost 20 years. Broadband helps considerably, but the world is still just beginning to catch up with the potential of more powerful computers and more broadband. For technical reasons it can be difficult to connect videoconferencing over the internet. More interest from people like you makes more pressure for technical people to solve these problems."

b. whether any of your institutions (or others you know about) are turning increasingly to the technology for no-fly-policy reasons and what the pros and cons are"
Where the technology is good enough, video is the perfect solution. But we are simply not talking about a single technology. Skype video can be done with a $50 camera. Cisco Telepresence is $250,000 per room, and $10,000 per month per location for bandwidth. There is a reason why one is better than the other. It costs more!

c. whether there are any initiatives that you know of that are focused on improving the technology and in particular of enabling more of the talking-over-coffee benefits you get when you're actually physically present

The telecommunications companies worldwide are lazy bungling idiots who have completely failed to rise to their historical role to reduce international travel. I have seen separately both the CEO and Chair of BT Group upbraid me in public for suggesting there is a great future for videoconferencing. What to do?!

d. if any one's done any assessment of the GHG impact of using video conferencing vs flying

I estimate that one hour flying equates to about three and a half years of solid 24/7 videoconferencing. So video is say about 25.000 times less damaging to the environment. For longer distances the figure could be in the millions of times more efficient.

e. Note that video conferencing (using a commercial provider) wasn't cheap – for three hours of video conferencing I could have flown there and back …one would hope that as / if its popularity increases, the costs come down. Or else that the price of plane ticket starts to reflect the true costs…

The idiotic and backward telecommunications companies lack the intelligence to invest in video. Prices could easily come down, increasing use, so volumes soared in a virtuous circle. Unfortunately progress in video is strangled by short term greed, strangling long term demand. The government should step in, and do something. It breaks my heart. In 1996 I purchased a top specification videoconference machine for €30,000. The same top range unit today costs €70,000. Go figure!

God help us out of this narrow minded madness. Incidentally I am a director of two companies operating in video who would welcome you as customers:

www.eyenetwork.com
www.greeniii.com

5. Chris Foster – Eugeos and Manchester University – speaking as an individual
www.eugeos.co.uk
I've used videoconferencing quite a bit, with mixed experience. Inevitably, the quality of the line (number of lines in an ISDN setup) has a strong effect on the overall outcome: I did a presentation to a multi-site audience using the high-tech suite in Manchester Computing once and it was great, although looking at the camera/screen rather than the (small) audience at my end was a bit odd.

The more familiar you are with the other parties, the easier it is to live with sub-optimal transmission. 3-or-more-site video-conferences over conventional (TV & ISDN) setups are a bit painful. The voices & pictures all end up out of sync: it has to work more or less like an old fashioned radio conversation, with people saying "over" at the end of their bit!

The latest technology is this "Telepresence" thing where you have identical rooms at either end, with what looks like a whole wall's worth of screens on one side of each and lots of transmission capacity. Apparently it's like being all together in one room, but I haven't tried and don't expect to: hardware is ££lots&lots - I would say investment banks only, but probably even beyond them

at the moment. Big accountancies & law firms maybe?

And as a final thought on that topic, I bet if I wanted to use a good quality videoconference facility from my position as a very small business in a medium-sized town I'd find the challenge so great that I'd get the plane to my next meeting! The Welsh development lot funded facilities that were supposed to help people overcome these (and other) barriers to remote working in the 1990s ("telecottaging"!) but I think broadband cut the ground from under them. In a world sensibly-organised for modern working, there'd be some kind of flexi-office facilities in every town/district centre. Each would contain little offices, videoconference facilities, printing facilities etc. like any corporate office and fancy broadband links to allow connection to corporate servers. Employers would rent space in these for the number of people working for them and living in that town. People would have the feeling of going to an office and access to better facilities than one has at home and we could do away with some of the stupid body-swapping that is current travel-to-work. Folk would no doubt tell me this would inhibit creation of team spirit....

6. Phil Metcalfe, ADAS
I use videoconferencing on my World Bank projects. I agree that hiring a facility that has video conferencing is pricey and not often close at hand

In my case I was going to have to go to Birmingham when my wife who works in the adjoining building for Defra informed me that there was a set 3 rooms away! This reduced costs immensely to just the connection charge for one hour although I did have to learn how to use the kit and got no opportunity to make the test connection.

Videoconferencing is used extensively between country offices in the World Bank group.

7. Howard Cambridge, Stockholm Environment Institute www.sei.se howard.cambridge@sei.se

We (at SEI) have tried and tested video-conferencing systems for a variety of purposes. Generally, they work successfully however can suffer from annoying problems - usually technical. It is part of our environmental policy to reduce our travel emissions by substituting VC although it is recognised that the kind of work we do there is a need to travel. Sometimes it is required by clients that we meet them face-to-face and many researchers enjoy the social activities at conferences as much as the presentations themselves! We are also trying to keep a record of our usage of the different VC systems available to us with a view that we can calculate our carbon emissions saved.

In summary, our use of VC in the Institute includes Skype - for a one-to-one conference (usual with colleagues in other centres across the globe). Easy to set up and cheap. The second is to use Marratech software (bought by google) which requires a host server (we use Stockholm University who we're affiliated with). The advantages are that many people can participate in the video-conference. The software enables presentations to be shared. It is a bit more complicated to install (requires software and java downloads) and users to register but we've have fairly good results with colleagues although the first 10 minutes of any meeting starts with audio problems ("can you hear me?"). Again, apart from hosting it is cheap as it can be used on a PC/laptop. The general protocol is that participants only switch on their microphones when they want to speak. Otherwise you find bandwidth is used to broadcast to all the other participants

when people cough/breathe.

The other systems we use are dedicated VC equipment which cost a few thousand pounds each. However we can use them as we are part of the University. These units (Tandbergs) have better cameras and audio than desktop variants - they are connected to twin plasma screens - one for you to see yourself/presentation and the other for you to see the other participants. We have used these to present at conferences and to the Swedish Government. These are generally easy to operate and generally all you require is the IP address of the other organisation (and that they have compatible equipment) to use them. When we have an important meeting we tend to test the connection, audio, room layout , lighting, camera position, pre-load presentations etc in advance. This system has worked very well. It means other staff have been able attend conference presentations when otherwise the budget would have precluded them from going.

Finally, we have a system which is a portable VC system - which we can plug into the internet socket in every office. This system called Vipr has a touch screen and enables us to switch on and hit a button to call up our colleagues in Stockholm. Ultimately we should be able to do this with anyone with compatible equipment. It has been used a lot due to its simplicity and very high quality audio/video.

On a more exciting note, we are conducting research to investigate how we can improve the user experience of communicating using VC technology. This type of system is called tele-presence and the idea is to create an environment for communication where participants interact naturally where they can make proper eye contact and appear life size (not constrained within a computer screen). The other important thing is that the participants are unaware of the technology enabling the communication. This requires fast internet connection and ideally Hi Def cameras and high quality sound (we use a sub-woofer for extra ooomph). It is basically done with mirrors and we are hoping to create a system in our meeting room. We collaborated with KTH in Sweden on this project and held a virtual bar at a conference last year. We created our "English Pub" in York and they had something similar in Stockholm. The idea was that we could talk to the conference participants as if we were actually there i.e. networking. It was fairly successful - although a lot of work went into the creation of the pub. I have attached a couple of photos although it is difficult to appreciate fully.

8. Oliver Hurrey, 2 degrees www.2degreesnetwork.com
OliverHurrey@2degreesnetwork.com
In terms of what we can offer – people can join 2degrees as a compliment or a replacement of physically attending conferences and we are finding that with both the current economic climate affecting the ability to get approval for hotel or travel, and a more strict emphasis being placed on reduction in travel carbon footprints – webinars and video conferences are becoming more popular.

We also provide private online networks for businesses or organisations looking to stakeholder engage on sustainability or climate change and they can use webinars or video conferencing to compliment the forums, resource library etc. that an online network or intranet can provide. Video conferencing will reduce cost and carbon footprint providing it is used as part of a more holistic communication strategy that allows you to get the same results as if you met face-to-face (i.e. enable on-going and spontaneous questions and answering, chat and document-sharing).

The keys/challenges to making online communication work in our experience are ensuring you have a good, proven technology relevant to your needs (problems can occur with technology that can't handle the numbers that are sometimes involved), you make sure you have good written instructions for everyone (as not everyone is as internet savvy as others) and that crucially you make sure that Q&A is facilitated afterwards either online or in a dedicated forum rather than just ending the presentation. I would also recommend including test-runs the day before for 5-10 minute initially so everyone can see how it works.

2degrees is free-of-charge for 3 months and individuals can join and use/create networks as they wish. We can help provide additional video-conferencing facilities to compliment this and help save cost and carbon.

For example, HSBC are helping around 100 of their commercial real estate guys globally understand sustainability by using webinars, video-conferencing and information-sharing online (on 2degrees) and are apparently saving thousands of pounds on the costs of travel and workshops etc.

9. Catherine Boyd, Clearwater CJBoyd@clearwater.ca www.clearwate.ca
Regarding video conferencing, I'm not sure if anyone has pointed out to you Ziff Davis Enterprises yet. They specialize in Information Technology information sessions so it stands to reason that they are well equipped to handle webinars. I sat at my computer and listened to presenters while their slideshows were flipped automatically on my monitor. Although there were no audio questions from the audience, participants were encouraged to type questions into an instant message-type application and they were addressed during the question period at the end of the panels. Best of all, the conference panels were spaced out across an regular work day in chunks, so I was able to participate in the conference during part of my work day, then make phone calls and respond to emails during the breaks in between.

I found the session excellent, with no technological glitches. It was also free, since the event was sponsored by technology companies that paid for advertising during the conference. This event wasn't organized this way in order to be environmentally sensitive, however, I signed up because the theme was "Greening IT" and focused on e-waste and energy efficiency. I think the company offers other webinars in the same fashion, on other themes related to the IT sector. I'm not sure if they offer up their services for web conferencing not related to IT issues.

The only draw-back was that now I'm constantly getting emails from this and other IT-related companies.

10. Jean Leston, WWF-UK JLeston@wwf.org.uk
WWF-UK is promoting the ability of videoconferencing to replace business flights in the One in Five Challenge. This new initiative, which begins shortly, is a guided programme and award scheme to get companies and government departments to cut 20% of their flying within five years and use lower carbon alternatives instead.

The Challenge is based on a research report, entitled *Travelling Light*, that WWF-UK conducted last year with FTSE 350 companies. This showed a keen appetite for change, with 89% of companies expecting to fly less within 10 years and 85% believing that videoconferencing has the potential to reduce their business flying.

Carbon emission comparisons for videoconferencing versus flying are hard to come by but one Japanese study (K. Takahashi et al, Estimation of Videoconference Performance, Proceedings

of the 2006 IEEE Symposium on Electronics and the Environment) estimated that videoconferencing had 2% of the carbon footprint of flying to a meeting.

For more information about the One in Five Challenge or to download a copy of *Travelling Light*, please see www.wwf.org.uk/oneinfive or phone Jean Leston, WWF-UK Transport Policy Officer on 01483 412599.

11. Sally Cairns, Transport Research Laboratory, scairns@trl.co.uk

Sally Cairns has recently submitted a paper to a journal for publication. The abstract is copied here – for more information, contact Sally directly (email above).

Can teleconferencing reduce business travel?
Cairns S1 Abstract: Teleconferencing could offer one option for reducing business travel. Previous studies have often been dismissive about its potential, arguing, instead, that it is likely to be complementary to existing activities or could even stimulate travel. In contrast, this paper argues that, in the right context, it could be used to achieve significant traffic reductions. In particular, it reviews the small body of available empirical evidence, and argues, for example, that companies introducing teleconferencing to help manage business travel have typically been able to realise travel reductions in the order of 10-30%. In terms of future potential, it argues that greater understanding is needed in relation to the types of activities for which teleconferencing is an appropriate substitute; the amount of business travel which is for intra-organisational purposes (which may provide an initial guide to its likely applicability); the nature of management support and training required for its successful implementation; and the way in which national policies can foster its take-up as a travel reduction strategy.