Video Conferencing at University of Copenhagen

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Executive Summary

Problem

1.1 CO2 is currently emitted in unnecessary air travel to meetings that could be replaced with video conferences

1.2 Video conferencing is not utilised to its full potential by staff as an alternative to travelling long distances to meetings

Summary of Recommendations

2.1 Ensuring the facilities are working and user-friendly at all campuses

2.1.1 In ensuring systems are user friendly, there must be:

- Experienced IT Support on hand for at least the first two conference calls
- A simple booking process

2.2 Ensuring information is clear and accessible via the university website

2.4 Ensuring guides are straight-forward and clear

2.5 Holding open days at video conferencing facilities

2.6 Creating a Business Travel Guide

2.7 Fostering communication between separate IT departments

2.8 Providing researchers with video conferencing training

2.9 Promoting video conferencing through posters, newsletters and incentive schemes
Summary of CO₂ Emissions from Air Travel

Currently, travel emissions account for 22% percent of the University’s total CO₂ emissions (see Figure 1). Of this, international flights account for the vast majority of emissions, at 93% of travel emissions, amounting to 20.46% of total emissions.

As the University has strived to become more international CO₂ emissions from air travel have increased since 2006. From 2006 to 2011, transport emissions rose from 14.9% of total CO₂ emissions to 22%.

Annual Air Travel Emissions

Figure 1: Breakdown of sources of University of Copenhagen’s CO₂ emissions (heating is degree day corrected)
Source:

Figure 2: Annual CO₂ Emissions from Flights at University of Copenhagen
Figure 2 shows the increase of CO2 emissions from flights since 2007.

Flying is by far the least efficient means of travel. In 2012, flights from the University emitted 13,648,287 kg of CO2, this figure represents nearly double the emissions from air travel in 2007. Air travel is a threat to the CO2 reduction targets that will be set for 2020.

**Breakdown of Emissions by Faculty**

Figure 3: 2012 CO2 emissions from flights by faculty

Since this information was collected, Faculty of Earth Science was merged into the Faculty of Science. This faculty alone is responsible for the majority of emissions from air travel at University of Copenhagen, meaning it should be the primary focus for reducing air travel.
Why Video Conferencing?

A video conference is a live video connection used to connect people in separate locations. Video conferencing can be point-to-point, where participants face a single image of another participant or group of participants, or multipoint where participants face multiple images of meeting attendees. Meeting participants may also share common graphics, such as presentations, images, documents and whiteboards.

University of Copenhagen has various facilities across campus for high definition video conferencing that can be used by staff to contact internal colleagues, as well as external colleagues located almost anywhere in the world.

The primary advantages of video conferencing for researches include:

- Time saving
- Cost saving
- Reduced CO2 emissions
- Ability to include widespread international audiences for lectures or attendees of meetings
- Potential for more time-efficient meetings

Video conferencing has the potential to significantly reduce CO2 emissions at the University of Copenhagen, while saving money and working hours. For example, at the University of Glasgow, efforts have been made to replace travel with video-conferencing. A target to increase video-conferencing by 10% by 2014 (based on 2008 data), has resulted in a reduction in annual business mileage by over one million miles, fuel cost savings of £122 000 and an extra 17 000 work hours being created.
Video Conferencing at University of Copenhagen

Available Software and Facilities

**Skype** - this is the simplest and most basic form of video conferencing, and is very user friendly. All that is required is a computer with a webcam and a microphone.

**Adobe Connect** - Staff members have free access to Adobe Connect at University of Copenhagen. It is a video conferencing program that can be used on desktops, and is compatible with most of the conference room and auditorium facilities. It is more feature-rich than Skype and can include more meeting attendees.

More information about Adobe Connect is available at: 

Screen shot from Adobe Connect video conference

**Scopia** - Scopia is a similar program to Adobe Connect and is good for small group meetings. Most of the high-definition video conferencing rooms at University of Copenhagen are compatible with Scopia technology. It is more feature-rich than Skype and can include more meeting attendees.
Screen shot from Scopia video conference

More information about Scopia is available at:

http://www.radvision.com/Products/Video-Conference-Systems/Desktop-Video-Communications/SCOPIA-Desktop-Video-Conferencing/

**Microsoft Lync** - Lync is being rolled out across University of Copenhagen, currently around 20% of University computers have Lync installed and the remaining 80% are likely to have the software installed in the next six months.

Lync is likely to be mostly used for phone calls rather than video calls as University of Copenhagen currently doesn’t have any conference rooms equipped with Lync.

More information about Lync is available at:


**Transportable System** - These systems are available at most faculties within University of Copenhagen and can be booked through the relevant IT team of most faculties.

**Conference Rooms** - These are high definition video conferencing rooms that can be booked through the relevant IT team of most faculties.

**Auditoriums** - Video conferencing auditoriums are available at most faculties, and are ideal for live streaming of lectures.
# An Overview of Facilities Available at University of Copenhagen

<table>
<thead>
<tr>
<th></th>
<th>Systems Used</th>
<th>Number of Conference Rooms with VC Capacity</th>
<th>Number of Transportable Systems</th>
<th>Number of Auditoriums with VC capacity</th>
<th>Frequency of VC Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Science Faculty</strong></td>
<td>● Scopia&lt;br&gt; ● Cisco hardware&lt;br&gt; ● Currently implementing Lync</td>
<td>2 - can host unlimited number of participants through DEIC Network</td>
<td>1</td>
<td>1</td>
<td>Conference Room: used around 4 times per week</td>
</tr>
<tr>
<td><strong>Centre for Social Sciences</strong></td>
<td>● Adobe Connect&lt;br&gt; ● Cisco hardware</td>
<td>None</td>
<td>1</td>
<td>3</td>
<td>Auditorium: used a little over once a month&lt;br&gt; Transportable system: around one a month</td>
</tr>
<tr>
<td><strong>Humanities Faculty</strong></td>
<td>● Skype: Job interviews&lt;br&gt; ● Scopia: Multipoint video conferencing&lt;br&gt; ● Cisco hardware</td>
<td>1 video conference meeting room&lt;br&gt; 37 livestream enabled classrooms (viewing only)</td>
<td>3</td>
<td>3</td>
<td>Meeting room: 1-5 interviews per day, over 30 per week</td>
</tr>
<tr>
<td><strong>Health and Medical Science Faculty</strong></td>
<td>● Scopia&lt;br&gt; ● Cisco hardware</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>Lecture hall: 6-8 times per year&lt;br&gt; Conference rooms: around once every two weeks&lt;br&gt; Transportable system: Once every two weeks</td>
</tr>
</tbody>
</table>

Figure 4: Video conferencing facilities at University of Copenhagen
Video Conferencing Contacts

Each faculty IT department has one person primarily responsible for video conferencing. Here are their respective contact details:

- Science Faculty (Frederiksberg): Walther Kraul wk@science.ku.dk or It-support@science.ku.dk
- Centre for Social Sciences (City Campus): Karin Madsen kem@sund.ku.dk
- Humanities Faculty (South Campus): Humanities Faculty (Amager): Steen Linke Larsen linke@hum.ku.dk
- Health and Medical Science Faculty (Nørre Campus): Jørgen Skieller josk@sund.ku.dk

Distinguishing Between Services - How to Choose The Right Video Conferencing Program

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Skype</th>
<th>Microsoft Lync, Adobe Connect, Scopia</th>
<th>Cisco VC Room/ Transportable system</th>
<th>Auditorium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number of attendees</td>
<td>Without purchase of premium account - 2</td>
<td>Lync - 20</td>
<td>Depends on system but ideal for conference of around up to 30 people</td>
<td>Room capacities are generally limited to around 200, however participants watching online is unlimited</td>
</tr>
<tr>
<td>Supported by IT services</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Sharing desktop control</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Only from presenter</td>
</tr>
<tr>
<td>Whiteboard functionality</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>Only from presenter</td>
</tr>
<tr>
<td>Record meeting</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Booking system</td>
<td>N/A</td>
<td>Lync - integrated Outlook Calendar booking</td>
<td>Email relevant IT department</td>
<td>Email relevant IT department</td>
</tr>
</tbody>
</table>

Figure 5: The difference between video conferencing facilities
Choosing Between Adobe Connect and Scopia

Both *Adobe Connect* and *Scopia* have many functionalities, including: document sharing, the whiteboard feature, and multi-point conferencing with many participants. From my research, I could not identify significant distinguishable features.

Given new software is difficult for staff to learn and multiple programs can create confusion, it would be ideal for the university to use either of the two programs, but not both. This would allow for information sharing between departments on video conferencing, and would simplify the process for staff to learn how to video conference. As most faculties (see figure 4) are currently using *Scopia*, it could be advantageous for CSS to also use this software. Given staff at CSS are already familiar with *Adobe Connect*, this may not be worthwhile pursuing in the immediate future, but instead is raised as something to consider.
Possible Avenues for Improvement

During my research, several immediate impediments became evident to the application successful
video conferencing at University of Copenhagen.

1. Improving the Equipment

Image: Bjørg from Centre for Social Sciences holding a sign she wrote during a vide conference to
researchers in Ghana, in which there was no audio for around an hour. Eventually, one meeting
attendee was required to be included in the meeting via telephone.

If the technology is unsatisfactory and unreliable for staff, most users will be deterred from using the
facilities.

Staff I spoke to sometimes described having to wait for over an hour to set up the conference, with
difficulty in maintaining a connection, and problems with visual and audio quality.

In my opinion, these problems will largely be overcome through perserverence with the technology
and global improvement in video conferencing technology.

To overcome technical challenges, University of Copenhagen should:
• Share technical information between faculties - in order to discover how each faculty copes with technical difficulties.
• Have IT staff on hand for at least the first two video conference meetings held by a researcher
• Continue practicing video conference to learn how to overcome technical challenges

Certain technological difficulties, such as slow internet connections at participants’ endpoints, are impossible to overcome by the university, and will only be improved with time through global technological improvements.

2. Improving Video Conferencing Facilities

If possible, it is advisable that each faculty have at least one meeting room setup for video conferencing. The CSS transportable system could be placed permanently in a newly established video conferencing room to accommodate this.

The ideal setup for a video conference room is:

3. Making Online Information Accessible and Clear

The experience of the staff I spoke to was that online information could at times be unclear and difficult to navigate. It may be useful to create a central point for information on University of Copenhagen’s home page, as well as the information currently available in the intranet.

In creating clear information, it may be worth following a similar layout to Stanford university, which provides a table to help distinguish which video conferencing system staff should use:

![Choose a video conferencing service](image-url)
ETH Zurich also provides a good example for how information can be displayed clearly to assist staff:

4. Simplifying the Booking Process

Some of the staff I spoke to found the booking process a significant deterrent to their adoption of video conferencing. Currently, the process requires sending multiple (often around five) emails to book facilities and the room, the attendees must know the ip addresses of both their endpoints, and often attendees must download software. It is likely that this process necessitates some complexity, however some of it could be simplified by downloading an extension to integrate video conferencing booking into Outlook.

Most IT Staff who I spoke with thought it would significantly improve the experience of users to purchase the Cisco TelePresence Management Suite Extension. Details of the extension are below.
Cisco TelePresence Management Suite Extension for Microsoft Exchange

(Cisco TMSXE) is an optional add-on to the Cisco TelePresence Management Suite (Cisco TMS) that allows you to fully integrate the scheduling functionality of Cisco TMS with your existing Microsoft Exchange deployment. It gives users the ability to schedule videoconferences and invite participants directly from their Microsoft Outlook clients while viewing availability information of resources regardless of where meetings are created.

In addition to simplifying the booking process, it was also recommended by Southern Danish University (SDU) spokesperson Torben Andresen that the university purchase the VCS Expressway. This would cost 84.182 kroners, this would allow video conferencing equipment to be used in all auditoriums and rooms with a network outlet, and would make the connection process simpler. If this were to be purchased, connecting between video conference rooms would be greatly simplified and would only require dialing a single number, making it as easy as calling a telephone!

For more information on this extension - contact Walther Kraul from Science Faculty, at wk@science.ku.dk.

5. Increasing Human Resources

A common problem many IT Staff articulated was the difficulty in improving video conferencing adoption was the limited human resources at IT Departments. In my opinion, if the University wishes to commit to increasing video conferencing usage this may be a serious impediment, and it may be necessary to employ new IT Staff with the ability to focus solely on video conferencing. In the absence of this, Green Campus may be able to assist the departments with running open days and publicising their facilities.
Lessons From International Universities

Oxford Survey

An IARU Intern at Oxford University conducted a survey of staff identified as frequent flyers in order to investigate their potential to reduce air travel through the increased adoption of video conferencing.

Key findings of the survey included:

• The top reasons for air travel are (1) attend conferences, (2) attend meetings, and (3) give lectures
• 71.2% of overseas meetings/conferences involved 10 or more people, 17.3% (the second highest answer) were one to one meetings
• The majority of respondents (67.2%) feel overseas business travel is a stressful experience
• The majority of respondents (63.9%) feel that lost productivity is a drawback from travel
• The majority of respondents (57.4%) feel that video conferencing can be a good alternative to business travel

From this, it was identified that meetings comprising of less than five people (25% of all meetings), in particular one-to-one meetings (17.3% of all meetings) are a good starting point for reducing air travel. While it would be impossible to identify reliable statistics for the number of people in overseas meetings from my research, it would be reasonable to assume that there is a similarly large number of staff who could replace some of their smaller meetings with video conferences. Staff I spoke to also expressed similar sentiments towards travel, saying that it took up large amounts of time that they would prefer to spend at home.

Key recommendations from the report included:

• Include video conferencing in a staff induction module so that new staff are aware such technologies exist and are readily available to them
• Educate current staff members on the existence and features of video conferencing. Some stated they did not use video conferencing because of its inability to display current presentations, even though Skype does offer “Screen Share.”
• In buildings where video conferencing facilities are not available, inform staff of which nearby buildings do have facilities.
The Sustainability Office at Oxford University created a *Business Travel Toolkit* in order to promote video conferencing as an alternative to air travel. The kit included information such as: why it is
important to reduce air travel CO2 emissions, how video conferencing can benefit researchers, and case studies highlighting best practices of video conferencing.

According to Ed Wigzell, who created the toolkit, the best avenues to distribute the toolkit to staff are:

1. Via the university purchasing department
   - This is where most referrals come from, and is the most successful place to distribute the toolkit
   - This involves advertising on the websites of the university’s preferred travel agencies
2. Via any university webpage with information on air travel
3. Through regular avenues such as email communication sent to departments.

Ed stated that the Business Travel Toolkit has been very successful in promoting video conferencing.

University of Copenhagen could follow this model, creating a document to publicise video conferencing, with the following additional information:

- Contact details for each IT Department
- Simple steps to prepare for a video conference
- Photographs of facilities available at University of Copenhagen

Sample Pages from Possible University of Copenhagen Business Travel Guide:
Additionally, University of Copenhagen could investigate the potential for a tool to be used that is similar to the Polycom calculator, which allows individuals to see how much time, CO2 and money they would save by replacing their air travel with a video conference. Below is a screen shot of the calculator.


Open Days

One measure that University of Copenhagen could use to promote video conferencing is to hold open days for the systems. University of Oxford holds individual events for their facilities multiple times per year, and reportedly has around 40 visitors, 10 signups to use the equipment, and 2-3 users who ultimately stay regularly using the equipment. While this may seem a small number of individuals, a few regular users would not only save air travel, but could also help spread knowledge of the facilities. It is also suggested by Polycom to have live demonstrations at open days, give examples of how video can help staff in their daily activities and have actual users talk about their experiences.¹ Most IT

Staff from University of Copenhagen who I discussed open days with were very receptive to the idea, though some expressed concerns regarding feasibility due to lack of human resources.

**Managerial Support**

Jeffrey Euben from Yale University emphasised the importance managerial support has had in making video conferencing successful at Yale. This includes regular use of video conferencing facilities by the Yale University President and Provost. The benefits of managerial support at Yale is threefold:

1. **Visibility**
   - Use of facilities by the President and Provost has meant that people in high levels of administration are aware of the facilities and have been more likely to use them. This has had a trickle-down impact on use within the university.
   - It has also helped present the image of facilities as reliable and a professional alternative to face-to-face meetings,

2. **University-wide funding**
   - Managerial support is extremely advantageous when seeking funding for video conferencing, as those making funding decisions personally understand its benefits.

3. **Internal IT allocation of funding**
   - When IT faculties make decisions regarding their internal allocations of funding, managerial use of video conferencing helps make it a priority. Jeffrey described how knowing university managers were using video conferencing facilities added pressure to maintain extremely reliable and high-quality facilities.

Jeffrey reported that, in part due to managerial support, video conferencing had increased steadily at Yale by around 5-10% annually over the past ten years.

A staff member of Cambridge University also commented that their video conferencing equipment is used to hold regular conferences with Bill Gates Senior and the Vice Chancellor of Cambridge University. This helped markedly with visibility of the facilities, and also meant that they were able to obtain comments from the Vice Chancellor stating that the technology was outdated, creating a push for improved video conferencing technology.
The Importance of a Centralised IT Department

Yale University recently moved to having a centralised IT Department, rather than separate departments for each faculty. This was described as advantageous as it prevented the duplication of resources. Given University of Copenhagen’s campus is spread across Copenhagen, this would not be beneficial to the university. However, there could be scope for improving communication between departments, in particular through using the Central IT Department (Søren Henning Dalgaard shd@adm.ku.dk) as a point of communication between the departments. In particular, this department could create resources, make decisions on which programs and software are best, and devise plans for initiatives to avoid the duplication of resources between faculties.

Training

Holding video conferencing training for staff is another avenue that could be useful to increase adoption rates. At Oxford, training is given to staff on multiple occasions annually. This could be an initiative for University of Oxford to consider, particularly integrating the training to department meetings.

Polycom has recommended that any training given should focus on “why” rather than “how” to use video conferencing systems. It is important that systems are conveyed as easy-to-use, and too much training on the operation of systems “can translate into apprehension”.2

Air Travel Reduction Targets

As part of the new carbon reduction targets, Green Campus could consider setting a travel reduction target. A survey conducted of UK Universities found some models for setting reduction targets, these included:

- Reduce the number of business air and car miles by 10% by 2020 based on 2012 data
- Reducing air travel by 4% within three years

• Reduce tonnes of CO2 equivalent emissions per year per equivalent person from 0.69 in 2008/09 to 0.552 in 2015/16

Rather than setting targets to reduce air travel, Glasgow University set a target to increase use of video conferencing by 10% by 2014 based on 2008 data. This is worth considering as a hard target, as targets for air travel reduction have proved very difficult for universities such as ETH Zurich and UC Berkeley.

**Cutting the Travel Budget**

ETH Zurich has been one of the leading universities in their adoption of video conferencing. As the table below demonstrates, in recent years thousands of meetings have been held via video conference.

Unfortunately, they have not identified any reduction in carbon emissions from air travel. Christopher Sauder from ETH recommended that unless video conferencing adoption is coordinated with a reduction in funding for the university travel budget, it may be unsuccessful in reducing the amount of air travel at university.

Table 3: Number of meetings conducted via video conference at ETH Zurich from 2010-2012

<table>
<thead>
<tr>
<th>Scopia Desktop Statistic</th>
<th>2012 (estimated for 12 month)</th>
<th>2011</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Meetings</td>
<td>3'261 (3'913)</td>
<td>4'071</td>
<td>1'542</td>
</tr>
<tr>
<td>Total Duration of Meetings</td>
<td>2'081 h (2'497)</td>
<td>2'358 h</td>
<td>744 h</td>
</tr>
<tr>
<td>Number of virtual rooms</td>
<td>110</td>
<td>102</td>
<td>ca. 50</td>
</tr>
<tr>
<td>Total amount of Calls</td>
<td>7'281 (8'737)</td>
<td>10'493</td>
<td>3'296</td>
</tr>
<tr>
<td>Total duration of all Calls</td>
<td>4'789 h (5'747)</td>
<td>5'991 h</td>
<td>1'779 h</td>
</tr>
</tbody>
</table>

Another possible mechanism to encourage greater uptake of video conferencing is for the University to place a limit on the travel budget of departments if staff cannot prove there was no alternative to air travel (such as video conferencing) for previous trips. This was suggested by a survey of UK universities as a possible way to reduce air travel.4

A Danish Government report similarly suggested that to encourage video conferences, a business may require staff to respond to a short checklist of questions to determine if video conferencing could replace air travel. It was suggested that if the response suggested they should replace travel with video conference, the staff member would then be required to justify why the travel was needed and describe whether similar future trips could be replaced with video conference.\(^5\)

This type of measure to encourage video conferencing is more coercive than the other recommendations, and for this reason it would be preferable to avoid. As discussed previously, it would be advantageous to focus on staff seeking to avoid travel so that it’s considered advantageous for staff as well as the planet.

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Case Studies

Several groups at University of Copenhagen and abroad are pioneering video conferencing technology. Here I have selected a few examples of where video conferencing is being, or has been, used successfully to improve research.

The MAGIC Project

The Magic Project was started in 2006 after it was found that Mathematics PhD students in the UK didn't have the same depth of knowledge as their European and American counterparts.

The group set up a consortium of 19 universities, and uses access grid technology to deliver lectures in a virtual room environment. Each year, the MAGIC Project delivers 500 hours of lectures to over 250 PhD students, in 30 different courses. The alternative to video conferences would be for students to travel across the UK to one central location, meaning the group saves large amounts of CO2 by reducing car travel.

CGIAR RESEARCH GROUP

The Consultative Group on International Agriculture Research (CGIAR) has moved towards a global network structure, with hundreds of projects across the world.

CGIAR holds regular meetings via video conference. Video conferencing has improved their productivity by allowing the group to meet frequently, have more widely dispersed staff, and save many hours in travel time.

A representative of CGIAR said IT Staff at University of Copenhagen had gone “far above and beyond their obligations” in providing video conferencing support. Thorkild from the faculty’s IT department always meets them half an hour before the meeting, provides some on hand support and is available on call. They are currently in the process of being trained to conduct the meetings without on hand technical support.

The group has experienced some technical difficulties with video conferencing, however these have not been prohibitive and are generally the result of poor internet connections. The group uses video
conferences to connect 20-30 people and without video conferencing, it is unlikely the group would function as well as it currently does.

Gothic Language Course at University of Copenhagen

At University of Copenhagen, the Humanities Faculty recently held a Gothic Language course via video conference. The course consisted of twelve students and one teacher. The course demonstrated the great potential of video conferencing, as students who participated online could actively participate in the course, through commenting and asking questions using a back channel. Students also presented some of the material of the course via video conference. One student took the oral exam through Skype. Bjarne referred to his as “an unconditioned success,” and said the student received the finest marks possible (12) for her efforts.

The TV studio also enabled students to see the teacher writing on the blackboard, which students commented made the teaching feel more vivid and relevant.

Image source: [http://www.cgiarfund.org/consortium.cgiar_centers](http://www.cgiarfund.org/consortium.cgiar_centers)

CGIAR Has 15 Research Centres spread across the globe. Video conferencing has enabled team leaders and project coordinators to meet regularly from these widely dispersed locations.
One of the noted strengths of the course was the ability for students to review information from the recorded live-streams if necessary.

Image: Lecturer at the podium (courtesy of Uwe Wollin)
The KOSMOS Conference

The KOSMOS Conference was on the verge of being cancelled in 2010 because of flight interruptions due to the Volcanic Eruption in Iceland. At the last minute, the conference was transformed from a physical to a virtual conference.

The Conference ultimately had 1,706 visitors on the live stream from 28 countries over four days (see map below).

Image: Google Hang-Out in Gothic question hour previous to exam 2012-06-13 (Also courtesy of Uwe Wollin)

Image: Sasha Mauel watches and listen from Köln
The organisers of the conference calculated some rough carbon savings that were achieved through holding the conference remotely. In total, the conference saved around 100.4 tonnes of carbon dioxide, including saved carbon emissions from 92 European participants (46 tonnes), 21 American participants (30 tonnes), 6 Australian participants (15.6 tonnes), 4 Canadian participants (7.6 tonnes) and one participant from UAE (1.2 tonnes).

Organisers of the conference noted that, despite the overwhelming success of the conference, it is important to note that video conferences cannot be a substitute for ordinary conventional international conferences. It was claimed that the success of a video conference rests on an already established research community who have known each other for many years. The conference did prove that ITMedia staff are incredibly capable of overcoming all sorts of challenges in video conferencing, and demonstrated the capacity for many more research groups to meet using video conferencing.
Video Conferencing Competition

Given video conferencing at University of Copenhagen is already free, discount offers (such as those provided at Oxford and Cambridge) cannot be used as an incentive to use video conferencing. Instead of providing monetary incentives for staff to use video conferencing, it may be worth considering holding a video conferencing competition, in order to reward the staff who replace travel with video conferencing.
Rules of the competition:

Participants voluntarily sign up to participate in competition.

Points allocated by mode of transport replaced (to roughly reflect CO2 reductions)

1 point for distance saved under 20km
2 points for distances between 20 and 100kms
3 points for distances between 100 and 300kms
4 points for distances between 300 and 500kms
5 points for distances between 500 and 1000kms
6 points for distances over 10000kms

At the end of the 3 months, the person with the most points from each faculty is awarded a prize. This could be a new bike, or a free dinner at a restaurant, or as simple as two movie tickets.

Possible Impediments to a Successful Competition

While a competition could be a good way to make video conferencing more visible and to get people talking about it as an alternative to air travel, there may be some difficulties in need of addressing if this initiative were introduced.

Gimmicks May be Ineffective for Researchers

Unless the incentive were very high, researchers may not be likely to replace meetings with video conferences. If video conferencing is perceived as a poor substitute for a face-to-face meeting, no researcher will choose to video conference simply to win movie tickets. For this reason, a competition would only be successful if significant efforts are also made to improve some of the video conferencing services currently available.

Given technical difficulties that can occur at endpoints exterior to University of Copenhagen, this may be a serious impediment to such a competition.
The Competition Favours Those Who Have More Frequent Meetings

The problem that the competition favours those whose work naturally requires them to attend more meetings seems unavoidable. In order to overcome this, if possible, it would be worth modifying the system to advantage those with the greatest proportional decrease in flights, rather than merely those who video conference most frequently.
Conclusion

**Major Barriers**

**Data Collection**

Many universities commented on the difficulty in obtaining hard data relating to video conferencing. In addition to the difficulty in monitoring video conferencing use, it is almost impossible to calculate exact carbon reductions from video conferencing. The university should ensure reliable data is collected on usage of video conferencing, and, if possible it would be ideal for the university to conduct an annual survey of video conferencing users to discover if they replaced any air travel trips with video conferences. While this would likely only produce estimated reductions, it would be a useful indicator of carbon reductions.

Improved tracking also makes it easier to identify and share best practice techniques at the university.

**Technophobia**

In any endeavour to promote video conferencing, it should be noted that a major barrier is fear of new technology. It is important that video conferencing is presented as user friendly, and to give staff as much technical support as is needed when learning the technology.

**People Enjoy Travel**

Travel for many is an invaluable and enjoyable experience. Video conferencing will never, and should not, completely replace air travel. Many staff I spoke with sought to emphasise this, and many reports comment on the benefits of face-to-face interaction. For this reason, it is important to begin with targeting frequent flyers as the best avenue to reduce air travel.
A Way Forward

Video conferencing is an exciting avenue for the university to reduce air travel. The primary areas for reductions include: doctoral defences (at ETH Zurich 80% of Computer Science doctoral defences are presented via video conference), panel discussions, research group meetings and job interviews.

Representatives of multiple universities in the UK listed a large number of barriers to the greater use of virtual meetings, the main ones being lack of knowledge amongst potential users (77%); preference for face to face interaction (64%); lack of trust in technology working (59%) and lack of incentive to use it (59%). To address these problems, respondents felt the 3 best means of encouraging greater uptake of virtual meetings were: senior managers setting an example by using it more (66%); simple technical guides to the various technologies (53%); and demonstration projects in pilot areas e.g. estates, IT (53%). In my opinion, these suggestions have great potential at University of Copenhagen to increase video conference usage.

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Further Reading

Polycom Guide to Increasing Video Conferencing Usage:
http://www.polycom.co.uk/content/dam/polycom/common/documents/guides/increasing-video-conferencing-usage-qrg-enus.pdf

Why HP People Do and Don't Use Videoconferencing Systems:

Cisco Video Conferencing Best Practices:

Survey of Travel Managers on the Use of Virtual Meetings at Universities and Colleges:
Appendix

IP Video Conferencing available here!

As easy as making a phone call!

Having a meeting? Think video

Video conferencing is ideal for team meetings

1) Search the Cisco Global Directory > Resource Search > Conference Room Advanced Search

2) Select Building and ‘Y’ for Video Conference to return a list of IT supported IPVC conference rooms.

3) Use a single Outlook Calendar meeting request to invite your guests and book IPVC conference rooms (as resources).

N.B. IPVC conference rooms are easily identified with (VC) in your Outlook Calendar Conference Room list!

Dial using 8 digit or multi participant video bridge number

Easy as making a phone call

Optimise your communications