

WEST DUNBARTONSHIRE COUNCIL

Report by Executive Director of Corporate Services

Corporate & Efficient Governance Committee: 27 January 2010

Subject: Feasibility of Video Conferencing Facilities within WDC

1. Purpose

- 1.1** The purpose of this report is to provide an update on the options under consideration regarding the feasibility and cost of creating two video conferencing suites within the Garshake Road and Rosebery Place offices.

2. Background

- 2.1** As the council has two main offices, staff often travel between these offices for meetings where the journey may last longer than the meeting itself. The impact of staff travelling back and forth along the A82 also contributes to the traffic problems and the council's carbon footprint.
- 2.2** As part of the revenue budget proposals 2009/2010 & 2010/2011 (An Improving Council – A Greener West Dunbartonshire point 40) the Council has agreed to examine the feasibility of creating two video conferencing suites, one at Garshake and one at Clydebank.
- 2.3** An initial report submitted to Corporate & Efficient Governance Committee in June 2009 agreed following actions
- 2.3.1** ICT will arrange supplier demonstrations of the different types of video conferencing solution
- 2.3.2** Officers and Elected Members will attend these product demonstrations which will provide a more comprehensive overview of each solution type and will give a better indication of the limitations and benefits of the systems
- 2.3.3** ICT will collate and solidify the Council's requirements to ensure that the Council receives the best value, fit for purpose solution that they require

3. Main Issues

- 3.1** Video Conferencing is separated into three distinct types each satisfying different requirements and providing different levels of functionality. Please see Appendix A for additional technical information and provisional cost estimates.
- 3.1.1** Desktop video (and audio only) conferencing. This form of video conferencing is designed for use by individuals, as a small screen on the desk is used. It is possible to display images for up to eight other conference participants, using high quality video, excellent voice communication and integrated document and application sharing.

- 3.1.2** Set-top video conferencing. These are compact video conferencing units. These units consist of a camera, which can pan, tilt and zoom, a microphone and are designed to sit on top of a monitor.
- 3.1.3** Integrated video conferencing. These are video conferencing systems that are generally built into larger rooms, such as board rooms and conference rooms. They are a highly professional communication facility and can provide a variety of presentation displays, depending upon the equipment used. Typically, they are used for groups of ten or more people. This type of solution is generally the most feature rich and expensive solution
- 3.2** It is also feasible to implement a combination of the above solutions to meet Council requirements.
- 3.3** ICT arranged video conferencing demonstration, hosted by the Scottish Parliament's Infrastructure Specialist at Scottish Parliament building in November 2009, and was attended by elected Members and Finance and ICT officers.
- 3.4** The demonstrated Tandberg 8000 VC system is in use at Scottish Parliament since 2004. This was an integrated system i.e. a dual screen system on a trolley which can be moved if required. The demonstration was operating on ISDN to ISDN at 512k. There were no obvious issues with the quality of this call i.e. any discernible delays with video or audio, but it was indicated that if we were using IP connections the quality would be enhanced.
- 3.5** The same WDC elected Members and Finance and ICT officers also attended a demonstration at British Telecomms offices at The Gyle in Edinburgh where Tandberg 8000 VC system is also in use.
- 3.6** This was a single screen version which could be moved from room to room as required. The demonstrated call operated on ISDN at 384k and connected to one of BT's offices in London. There were no obvious issues with the quality of this call i.e. any discernible delays with video or audio.
- 3.7** BT were also able to demonstrate the Tandberg T1 Telepresence system, and the call was via IP (Internet Protocol) and group observed the difference in the enhanced video/sound quality of the call between IP and ISDN.
- 3.8** The Telepresence system is the high end of the video conferencing market with full cost in the region of £100,000.
- 3.9** ICT officers also reviewed the current video conferencing equipment running over ISDN at the Municipal Buildings site in Dumbarton. This equipment is now over 10 years old and is used by Criminal Justice to connect to Scottish Prisons. The equipment is installed at one WDC site. This equipment is end of life and not suitable for upgrading.
- 3.10** ICT are currently liaising with our supplier regarding analysis of lines to assess any potential performance issues. Negotiations are underway as to whether network analysis is chargeable / non chargeable service.

- 3.11** Initial investigations into identifying efficiencies arising from reduced travel and, therefore, mileage claims have been undertaken. However, as not all officers and elected Members claim travel expenses and not all travel between buildings is related to attending meetings, more in-depth information gathering is required.
- 3.12** Using current mileage recording information, we are unable to confirm that Garshake and Rosebery Place are the key locations that staff travel between.
- 3.13** It is intended to benchmark a sample of meetings for the purposes of estimating efficiencies. It is further intended to analyse a sample of mileage claim forms to assess key Council locations.
- 3.14** There are a number of different solutions that provide video conferencing, each varying in complexity and cost.
- 3.15** The solution that appears to best meet WDC's requirements is set top video conferencing (see Appendix A for more detail). Set top video conferencing solution allows more flexibility for both rooms and buildings.
- 3.16** An example of set top video conferencing is TANDBERG Edge 95 HD VC system. This is a high definition system with a 40" HD LCD screen on a trolley stand which can be moved from room to room for use within all WDC departments. This system also has a Multisite (4-way) facility - Base plus up to 3 other WDC sites. The solution also includes the Tandberg NPP Natural Presenter Package which enables PC presentations to be shown on the Video Conference.
- 3.17** Quotation from supplier B estimates a cost of £18,890 for a system to be installed and configured at both site (Garshake and Rosebery Place) and this price includes training and 12 months support from the supplier.
- 3.18** It is expected that this system, installed and operated using WDC's current IP capability between Garshake and Rosebery Place would provide enhanced video/sound quality and no further costs would be associated with the installation and operation of ISDN lines.
- 3.19** It is important to note that the above solution is dependent on the satisfactory result of any bandwidth analysis carried out as mentioned in 3.10.
- 3.20** Subscribing to online web meetings is a service that is already available to WDC.

4. Personnel Issues

- 4.1** Resources from ICT, Procurement and Legal services would be required for the procurement and deployment of a video conferencing solution.
- 4.2** Once implemented, resources will be required for booking and set up per meeting. This is likely to involve current room booking and room set up resources.

5 Financial Implications

- 5.1** There is currently no budget allocated for video conferencing but an uncommitted capital bid has been submitted and will be considered by Council in February 2010.
- 5.2** Additional revenue will be required for annual support and maintenance costs on all units once the initial support and warranty period expires. This cost varies with different models and suppliers but can typically be estimated as between 20% – 25% of original purchase costs.
- 5.3** In addition to capital and revenue costs for the video conferencing units, there could be further ongoing costs, for example following network analysis results. See Appendix B – Additional Cost Considerations.

6. Risk Analysis

- 6.1** There is a risk that the expected financial and carbon savings may not be realised as often staff have several reasons for travelling between locations.
- 6.2** If the solution employed is to use the underlying WDC network architecture there is a potential that both the video conference session and general network users experience performance issues due to potential high utilisation of bandwidth. Any potential performance issues would manifest themselves at the links between sites (e.g. between Garshake offices and Rosebery place offices). ICT are liaising with our current supplier to carry out a network audit on the 100mb circuit between Garshake - Roseberry Place to provide statistical information. This analysis would clarify bandwidth availability for video conferencing use and allow confirmation of requirement for IP use rather than leasing ISDN lines.
- 6.3** There is a risk that bandwidth requirements to run true HD at 1080p at 30fps require 2310kbps (2.3mb) upwards, however, if this rate is not available we can still provide HD quality video resolution of w720p if we have 1019kbps (1mb) bandwidth available.

7. Conclusions and Officers' Recommendations

- 7.1** In conclusion, a video conferencing solution is completely feasible and may reduce the requirement to travel between WDC locations
- 7.2** It is recommended that, following allocation of required capital investment, a procurement exercise is undertaken to purchase set-top video conferencing units for WDC to be located at Garshake and Rosebery Place. Based on the supplier quotations received during the investigation stages, the procurement would not require a tender process.

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Appendices: None

Background: **An Improving Council
Corporate & Efficient Governance Committee June 09 – Video
Conferencing**

Ward Affected: None

Types of Video Conferencing Technologies

1 Desktop Video (and audio only) Conferencing

- 1.1** This form of video conferencing is designed for use by individuals, as a small screen on the desk is used. It is possible to display images for up to eight other conference participants, using high quality video, excellent voice communication and integrated document and application sharing.
- 1.2** This form of video conferencing is also available on laptops, thereby providing a mobile communication platform.
- 1.3** The limitations of this type of video conferencing platform are reduced number of participants possible, poorer video quality, reduced viewing angle of camera and solitary headsets are used. This type of system is not suitable for board room type video conferences where multiple people are present at each location.
- 1.4** This form of video conferencing can be achieved in various ways:
- 1.5** Personal Telepresence – This is a video conferencing system designed for offices which includes an integrated 20” LCD monitor. For example Tandberg T1700 MXP priced at approx £7,633 per unit.
- 1.6** Desktop Video Phones – Connect to video conferences using TANDBERG E20 SIP Video VoIP Phone. This is a fully integrated unit which includes a 10.6” LCD £1,330 per unit.
- 1.7** Video Conferencing Client Software installed on desktops/laptops to connect to video conferences. An example of this is Mirial SoftPhone which is a software-only client for professional quality videoconferencing in H.323 and SIP environments and can be used on any Windows desktop. This costs approx. £150 per licence.
- 1.8** Audio only conferencing – This is a widely used technique and is offered by many vendors, as an example, BT has a “MeetMe” service which can host up to 40 simultaneous calls in an audio meeting space. The meeting space is managed by a chairperson and has options for clients to join on full tariff or freephone numbers, call recording for minute taking and transcribing and optional web video conferencing provided the appropriate webcam technologies are in place. Indicative costs for this service are as follows;
 - 1.8.1** 6p per line per line per minute if clients are dialling in on full tariff number, chargeable to the client. NB: This service is already available for WDC
 - 1.8.2** 9.5p per line per minute for use of the freephone number, chargeable to meeting host (chairperson)
 - 1.8.3** If the meeting record option is selected, there is a flat charge of £6 per recording

1.8.4 If clients wished to use the web conferencing option, an additional charge of 13p per connection per minute would be included.

1.9 Online meetings - these are a practical, quick, and cost-effective way of holding “virtual” meetings. Online conference tools allow the user to spontaneously invite others to an ad hoc conference or to schedule meetings with participants in advance. .i.e. Citrix GoTo Meeting 4.0, Cisco WebEx Meeting Centre 8.5 and Microsoft Office Live Meeting 2007. These are generally hosted applications which only require internet access and the costs can vary depending on the number of people who will be required to host meetings. For example, Cisco WebEx Meeting costs £30 per named host per month; hosts can hold an unlimited number of meetings with up to 25 participants per meeting.

2 Set-top Video Conferencing

2.1 These are compact video conferencing units. These units consist of a camera, which can pan, tilt and zoom, a microphone and are designed to sit on top of a monitor.

2.2 For more flexible use in different locations within a building, they can also be used on a purpose built, roll about units. These units would give added flexibility in that they can be moved between offices turning them into video conferencing facilities.

2.3 If moving the roll about units between locations is employed then performance may be an issue as the performance of the system is dependent on the network infrastructure if not using an ISDN (Integrated Services Digital Network) solution.

2.4 If using a roll about unit and ISDN solution then an ISDN point would have to be available at each potential office destination.

2.5 Set-top systems are usually used for small groups of people.

2.6 They provide a high quality visual and audio meeting facility, which can be enhanced with the use of additional presentation equipment.

2.7 The majority of set-top systems do not have the complete functionality that the integrated systems have such as echo and background noise cancellation.

2.8 Examples of the costs of this type of video conferencing equipment can be seen from the quotes which have been received from various suppliers:-

2.8.1 Supplier A – TANDBERG C20 Precision HD system, 1080p 4 x cameras, Samsung 40” LCD, Unicol trolley stand, Training and Installation. Price includes installation of equipment at Garshake Road and Rosebery Place - £21,510.

2.8.2 Supplier B – TANDBERG Edge 95 HD VC system, MS Multisite (4-way) facility, Base + 3 x additional sites, 2 x 40" HD LCD screen, Unicol trolley stand, Install/configure/training/delivery of above items at Garshake and Rosebery Place - £18,890

- 2.8.3** Alternatively, TANDBERG C20 single endpoint HD system (no multisite), PC presentation facility, 40" HD LCD screen, Unicol trolley stand, Install/configure/train of above items at Garshake and Rosebery Place - £14,360
- 2.8.4** Supplier C – All these prices include installation and 3 years maintenance
- 2.8.4.1** Polycom HDX6004 Media Centre – unit price £12,981 (x2 = £25,962) or
- 2.8.4.2** HDX7002XL Media Centre – unit price £26,274 (x2 = £52,548) or
- 2.8.4.3** Tandberg Profile Single Screen – unit price £38,522 (x2 = £77,044)
- 2.8.5** Supplier D – Polycom VSX 7400s group videoconferencing set-top system to include a Polycom MediaCentre with dual 32" LCD display, Installation/Training Pack: Unit Price £12,038 (x2 = £24,076)

3 Integrated Video Conferencing

- 3.1** These are video conferencing systems that are generally built into larger rooms, such as board rooms and conference rooms. They are a highly professional communication facility and can provide a variety of presentation displays, depending upon the equipment used. Typically, they are used for groups of ten or more people. This type of solution is generally the most feature rich and expensive solution.
- 3.2** An example of the costs of this type of video conferencing equipment would be the Tandberg T1 Telepresence – unit price £56,072 including installation and 3 years maintenance.
- 3.3** Additional costs would include any internal building works (e.g. changing background wall colour to enhance the video aspects and making any alterations to enhance the acoustics)

4 Combined Integration of Video Conferencing Types

- 4.1** A combination of the three types of video conferencing solutions can be employed across multiple sites, for example, Garshake offices may have a requirement for an integrated video conferencing solution and Rosebery Place may only have a requirement for a set-top based solution. Each of the different types of video conferencing solutions have the facility to link to each other in some capacity.

Additional Cost Considerations

1. There could be further ongoing costs dependent on the underlying architecture that supports the solution, if for example, an ISDN (Integrated Services Digital Network) system is deployed then costs would be £750 circuit installation charge and then £450 per quarter for each ISDN 2 channel per site.
2. An ISDN solution would be employed to provide dedicated bandwidth so that the quality of transmission could be guaranteed.
3. ISDN based video utilises a combination of data channels each offering 64 kbps of bandwidth, therefore a standard business quality video call requires the use of 3 x ISDN 2 channels, to provide the necessary 384kbps bandwidth.
4. If the WDC network infrastructure was used as the underlying architecture then there would be no ongoing charges for ISDN.
5. The quality of a video conference depends heavily upon the bandwidth (data rate) of the connection.
6. If the Council's current network infrastructure was to be used as the underlying architecture then at the time of installation the feasibility of adding Quality of Service (QOS) to the network should be investigated.
7. This QOS can provide the dedicated bandwidth that the system would require as it can reserve a specified amount of bandwidth for the protocol (H.323 – International standard for multimedia over IP (Internet Protocol)).
8. IP networks typically offer more bandwidth than ISDN to each video system. Therefore, a standard IP video call will be placed at speeds of 512 kbps and higher, resulting in an enhanced level of audio and video quality if we use the current Garshake-Rosebery Place 100mb circuit.