

Collaborative Teaching and Meeting Technologies at UWS – Current and Planned

Purpose

This document plans to outline and give a brief description of the various collaborative teaching and meeting technologies currently in use at UWS.

Background

Mick Houlahan, Director, Information Technology, and Professor Stuart Campbell, Pro Vice-Chancellor, Learning and Teaching have both prepared tables of technologies that are currently in use, or planned for use, at UWS. Mick Houlahan also presented a PowerPoint presentation looking at how we can use technology to work across campuses (and the world) more effectively and efficiently. It was decided that the combining of these documents into one to provide a resource to staff would be beneficial.

Discussion

There are a number of options available for UWS staff to conduct an interactive technology-based meeting or lecture with colleagues or students at other campuses or at other places across the internet. The following is a brief description as to what is available, how to access the technology, and what option is the best one for the sort of conference you want to hold. This is not an exhaustive list as new technologies offering similar capabilities appear constantly.

The use of collaborative technologies has many benefits, including:

1. Minimise Costs
 - a. Savings in travel expense
 - b. More productive use of time
 - c. Efficiency – reduce “human latency”

2. Sustainability (Green) Agenda
 - a. Reduced travel means a reduction in greenhouse gas emissions

Recommendation

That this Briefing Paper is noted and distributed across UWS as appropriate.

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Director, Information Technology

Professor Stuart Campbell
Pro Vice-Chancellor, Learning and Teaching

Interactive Teaching and Meeting Technologies at UWS – Current and Planned

Description	Features	Best for	Availability	Comments	Audience Size	Operated by?	Off campus connectivity?	Room-based vs. PC-based	System owner/expert
Access Grid	Installations at Penrith (Kingswood), Campbelltown and Parramatta. A room incorporating Access Grid is being also being set up as part of the Climate Change and Energy Research Facility at Hawkesbury in L8. The access grid provides multi-screen views of conference participants. Support equipment at each room includes electronic white boards and document scanners which can be shared across a conference.	Multi-person conferences to other grid rooms either at UWS or to external sites.	Available UWS-wide. Contact the School of Computing and Mathematics for further information.	The rooms are set up and tested 1 hour before the session commences to iron out any issues with sound and to place the camera images on the screens. If a presentation is being used then this is also set up at that time. This requires 1 technical person in each room. At the beginning of the session the technical staff would stay in the rooms until everything is running smoothly. They can then go about their other jobs but need to be contactable while the session is running in case of problems.	Rooms at UWS are for 20 places.	Operator at master room.	Yes- to other Access Grid sites.	Room-based.	School of Computing and Mathematics.
Enterprise level video conferencing system	Installed in key meeting rooms across campuses; PC-based clients can also join in conferences.	Multi-person conferences typically from one meeting room to another or to external sites.	24X7 provided booking made through central system and building access arranged for out-of-hours.	Can be used for person-to-person conferences but this is overkill for this technology (see Skype).	Usually 10-20 on each site depending on the capacity of the venue.	Client operates having previously booked with ETS.	Yes, to other IP based video conference sites. PC-based clients can also join in conferences.	Room-based.	ITS
EVO	Web-based conferencing tool.	One or more remote conferences connecting via their web browser.	24X7 – an externally sourced service that is free.	Requires some effort to do initial virtual room set up but support available through ARCS (Australian Research Collaboration Service) who hold weekly test sessions that allow users to test all aspects of their EVO set-ups, with ARCS staff on hand to help and advise. Separate headset and microphone enhances the experience. Using PC/Laptop speakers may produce unwanted feedback.	Unlimited	User operated.	Yes.	PC-based.	Individual user.

Description	Features	Best for	Availability	Comments	Audience Size	Operated by?	Off campus connectivity?	Room-based vs. PC-based	System owner/expert
Skype	Workstation-based conferencing tool.	Person to person.	24X7 with any internet connection.	<p>Software can be downloaded from www.skype.com and is relatively easy to use. It provides video/audio connectivity through a wired internet connection. Also has other features including instant messaging and file transfer (FTP). Supports long distance (international) phone calls – requires Skype credits to be purchased.</p> <p>Skype images are to be built and pre-installed on UWS PC desktop builds from 2010.</p> <p>Now available through "Run Advertised Programs" on Control Panel.</p>	One per PC.	User operated.	Yes	PC-based.	Individual user.
Connected Classrooms	<p>Project to equip every NSW public school with an Interactive Classroom (interactive whiteboard, video conferencing facility and data collaboration).</p> <p>A UWS working party has been meeting to manage the installation of Connected Classrooms hardware in rooms at Kingswood and Bankstown.</p>	School students and teachers to interact with other Schools for shared lessons, expert advice etc.	All NSW Public Schools by 2011	<p>Will allow students to:</p> <ul style="list-style-type: none"> take virtual excursions around the world ask questions of experts in virtually any field share lessons with students across the state – or half way around the world <p>Initial focus for UWS will be for Education Students with rooms at Bankstown & Kingswood</p>	Smart board limits to 40.	Instructor operates.	Yes – to DET schools.	Room-based.	NSW DET.
Illuminate	<ul style="list-style-type: none"> Web conferencing tool Virtual learning environments in the cloud Video (web conferencing /audio/document sharing/ shared whiteboard and desktop) Potential for remote support 	One or more remote conferences connecting via their web browser.	<p>24X7</p> <p>UWS has a limited number of licences to use.</p>	Illuminate provides solutions that encompass web conferencing, teleconferencing, videoconferencing, and social networking products and services.	One per PC	Meeting convenor operates	Yes	PC	ITS

Description	Features	Best for	Availability	Comments	Audience Size	Operated by?	Off campus connectivity?	Room-based vs. PC-based	System owner/expert
vUWS communication tools	Offers a number of ways to enhance class participation and engage learners. Interaction can occur real time or anytime and anyplace. Integrates with Callista, Library e-resource, Lectures Online, Active Directory.	Teacher-student and student-student interaction. Multiple users can collaborate with one another and contribute to authorship of content.	24X7	Used for: <ul style="list-style-type: none"> • Announcements • E-mail • Discussion Board • Blogs • Learning journals • Wikis • Group Pages • Personal and Course Calendars • Personal and Course Task Lists • Digital Drop Box • Student Roster • Virtual Classroom/Chat • Student Homepages • Voice based discussions • Podcastings • Quizzes • Multimedia resources • Lecture recordings • Web links 	One per PC	Student/Staff	Yes, via MyUWS Account	PC /Mac / Some mobile devices	TDU
Telephone Systems Upgrades – IP-Tel	Broadly, IP telephone (IP-Tel) systems use the same methods and networks that computers use to communicate across the Internet.	Desktop audio conferencing (up to 32 parties).	24X7	ITS is replacing the University's ageing PABX telephone systems with an IP telephone system. The new system will take approximately 12 months to roll out, starting with Parramatta campus in late June 2009.	IP-Tel phone limits to 32.	User operated.	No	Phone/PC	ITS
Sharepoint	<ul style="list-style-type: none"> • access to University content via an internet browser • school/division or University specific announcements • school or division specific events calendar and contact lists • email notification of changes to the site if desired • use of message boards, blogs and wikis • a document share 	Document sharing	24X7	This technology is currently in pilot mode and will be available only to UWS staff involved in the small pilot testing phase.	Unlimited	User operated	Yes	PC-based	ITS

Description	Features	Best for	Availability	Comments	Audience Size	Operated by?	Off campus connectivity?	Room-based vs. PC-based	System owner/expert
Confluence	<p>Confluence is a collaborations website that allows staff and students to:</p> <ul style="list-style-type: none"> • create web based collaborative spaces • share information, documents, and other content • set up Blogs and/or Wikis • set up online discussions • set spaces with restricted access to named users and groups 	Online collaboration and sharing	24X7	Excellent for keeping documents and information together in one place and is consequently useful for research groups, project management, committee work and any application where groups of people need collaborative access to information, documents etc.	Unlimited	User operated	Yes	PC-based	ITS

Access Grid

The Access Grid is an integrated environment that supports group-to-group communication using high-speed networks over the Internet. It provides high-quality audio and real-time video that allow groups at multiple sites to interact simultaneously and share data and scientific instruments. Support equipment at each room includes electronic white boards and document scanners which can be shared across a conference

Meeting participants (both local and distant) appear in windows projected onto a large screen or wall. The current display resolution we use is 3840 x 1024 pixels. Additionally, data windows from participants' laptop computers can be integrated into the meeting (e.g. display images, movies, presentations, spreadsheets).

Access Grid at UWS was built by the School of Computing and Mathematics and there are nodes at Kingswood, Campbelltown and Parramatta. A room incorporating Access Grid is being also being set up as part of the Climate Change and Energy Research Facility at Hawkesbury in L8. Use of Access Grid usually requires technical assistance to set up and maintain the session.

People outside of SCM can book and use the rooms and there are currently no fees charged for this. There are no annual license fees. Access Grid software is free. The rooms are set up and tested one hour before the session commences to iron out any issues with sound and to place the camera images on the screens. If a presentation, such as PowerPoint, is being used then this is also set up at that time. This requires one technical person in each room. At the beginning of the session the technical staff would stay in the rooms until everything seems to be running smoothly. They can then go about their other jobs but need to be contactable while the session is running in case of problems.

The Access Grids are or have been used for:

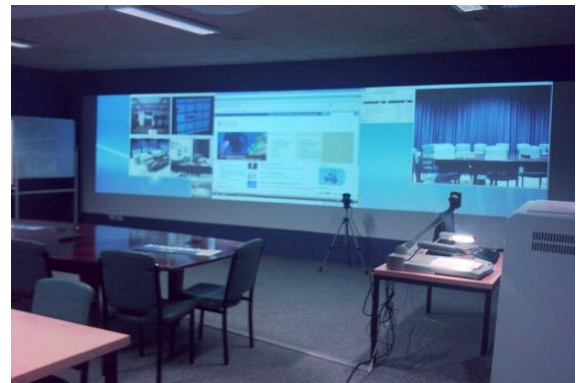
Within UWS

- Teaching undergrad Project course across campuses
- Mathematics Seminars
- Teaching small classes across campuses including Computing Projects, Mathematical Modelling and Introduction to Health Informatics
- Selection Committee Meetings
- School administration meetings
- Computer Project Client Meetings
- College Courses Management Meetings
- College Workload Meetings

Outside UWS

- Maths Honours teaching involving University of Wollongong, University of Sydney and University of Newcastle
- Graduate Certificate in Commercialisation Course being run out of Queensland University of Technology, involving postdocs from:
 - University of Western Sydney
 - University of South Australia
 - University of Technology, Sydney
 - Victorian Partnership for Advanced Computing
 - University of Western Australia
 - Griffith University
 - Wollongong University
- DEST Meetings (Department of Education, Science and Training) with Andrew Cheetham
- National Symposium on Mathematics Education for 21st Century Engineering Students organised by The Australian Mathematical Sciences Institute

Access Grid in Use



Worldwide and Australian Node Sites



Further Information

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Enterprise level video conferencing system

In 2010, UWS has had significant upgrades to our videoconferencing facility. A number of meeting rooms across the University are now equipped with the new Polycom camera equipment as well as flat panel widescreen receivers.

Features

- Easy to use
- Booked through casual room booking system
- Starts automatically
- Desktop (PC) users will be able to join in

Photos of the new equipment



The 2009 roll-out of the video conferencing infrastructure provided state-of-the-art video conferencing facilities in ten meeting rooms on five UWS campuses. The Polycom equipment combines high definition video conferencing with ease of use and reliability. The equipment is user friendly and enables data from a laptop to be transmitted simultaneously with high definition video.

The installations are primarily designed for meeting rooms with a bias towards use for administration. During the first two months of 2010 over 2,000kms of travel has been saved by UWS staff using the video conferencing infrastructure. It is anticipated that at least 15,000kms will be saved during 2010. Using video conferencing for inter-campus meetings is reducing stress caused by driving, saving the time taken to drive between campuses and reducing the OH&S risks of driving.

The 2009 roll-out also provided a new high definition video conferencing bridge, firewall traversal system and powerful administration tool. The administration tool allows video conferences to be booked by the Education Technology Services Team and enables the video conference units to automatically dial each other at the appropriate dates and times. This further enhances the user-friendly video conferencing environment enjoyed by the client.

The new back-end infrastructure enables point to point and multi point video conferences to take place. Virtual meeting rooms can be set up within the bridge to allow the connection of external sites to UWS sites. Virtual meeting rooms are particularly important when connecting to sites such as Area Health and NSW DET that have stringent firewalls.

2010 will see further developments to the UWS video conferencing infrastructure. It is expected that another five meeting rooms will be fitted with high definition video conferencing equipment. Ceiling microphones will be installed in new and in existing sites and control systems will be installed so that individual remote controls can be dispensed with.

A pilot roll-out of the Polycom desk top video conferencing solution will also begin in 2010.



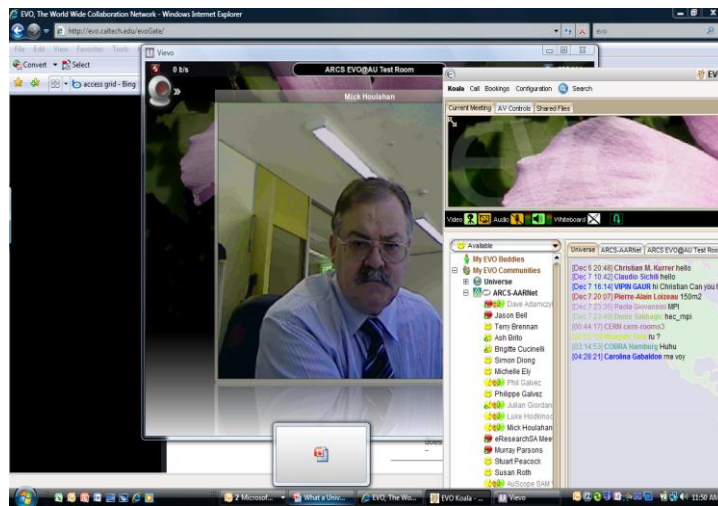
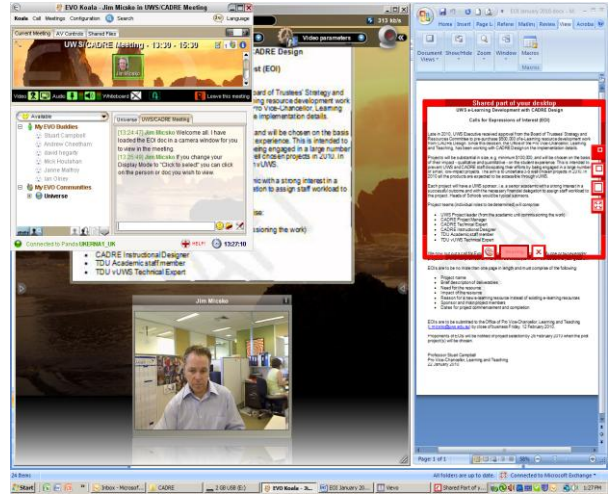
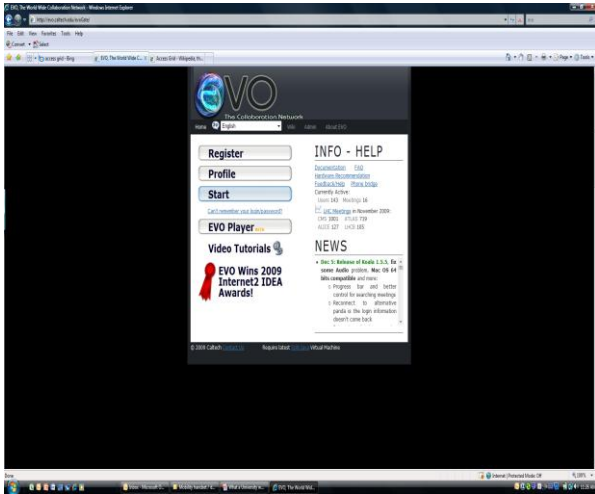
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EVO

EVO is an online communication tool that features audio, video, instant messenger, phone bridging, file exchange, and a whiteboard on which to draw, write or display images. Users can record meetings and hold private audio discussions inside of meetings.

EVO Screenshots



Some of EVO's features and functions are summarized below:

- Instant messaging functions and presence information (i.e. available, busy)
- Private or group chat during a meeting
- Meetings-by-invitation, ad-hoc meetings, booked meetings, and permanent meetings
- Playback and recording functions (of the entire session [video, audio, whiteboard, Instant Message, Chat])
- Shared files, high resolution sharing of any screen area, and whiteboard functions
- A integrated telephone gateway allows users to join an EVO meeting through the normal phone system

To register and start using EVO, go to EVO @ AU <http://evo.arcs.org.au/evoAU/>

Skype

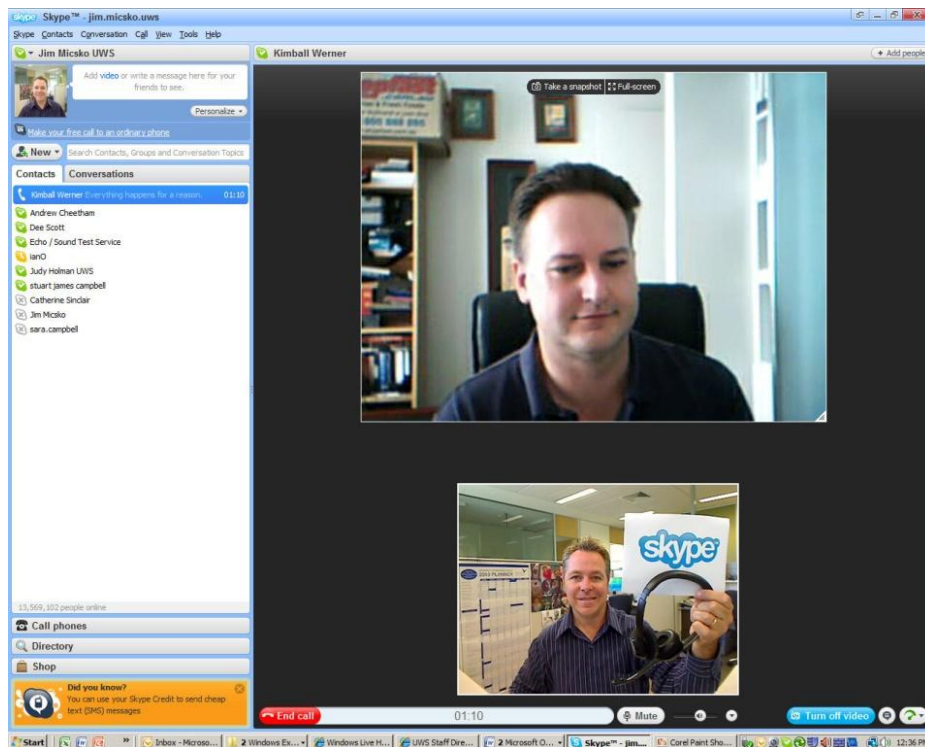
Skype is a software application that allows users to make voice calls over the Internet. Calls to other users of the service and, in some countries, to free-of-charge numbers, are free, while calls to other landlines and mobile phones can be made for a fee. Additional features include instant messaging, file transfer and video conferencing.

Skype for Windows supports "High Quality Video" with features including full-screen and screen-in-screen modes, similar to those of mid-range videoconferencing systems. Skype audio conferences currently support up to 25 people at a time, including the host.

Features

- Person to person video/audio conferencing
- Savings on long distance calls through Skype POPs
- Skype images to be built and pre-installed on UWS desktop builds from 2010

Skype Screenshots



PC desktop and laptop users can access Skype through "Run Advertised Programs" from your computer's Control Panel.

Mac users can download and establish a Skype connection, by going to www.skype.com.

Connected Classrooms

The Connected Classrooms Program is a NSW State Government initiative to provide Department of Education and Training (DET) staff and students with new opportunities to connect with each other across enhanced technology facilities for sharing resources and data collaboration.

The need for Connected Classrooms comes from the demands of today's students. The Program will facilitate wherever/whenever learning as students consume, remix and create knowledge. Through the Connected Classrooms Program, DET will deliver a set of tools to meet the needs of today's learners in their school environment that can also be accessed in other environments.

The initial focus of Connected Classrooms at UWS will involve Education students with rooms at Bankstown and Kingswood. The technology will be included in UWS Teaching Units course development to ensure that the Teachers of tomorrow, currently studying at UWS, have exposure to the technology currently out there in Schools. The partnership with DET is of mutual benefit as this also provides opportunities for Education students to use this technology prior to their professional experience.

A UWS working party consisting of staff members from the School of Education, ITS, PVC (L&T), Capital Works, and Dell Technicians has been meeting to manage the installation of Connected Classrooms hardware in rooms at Kingswood and Bankstown.

Connected Classrooms in action



Further Information

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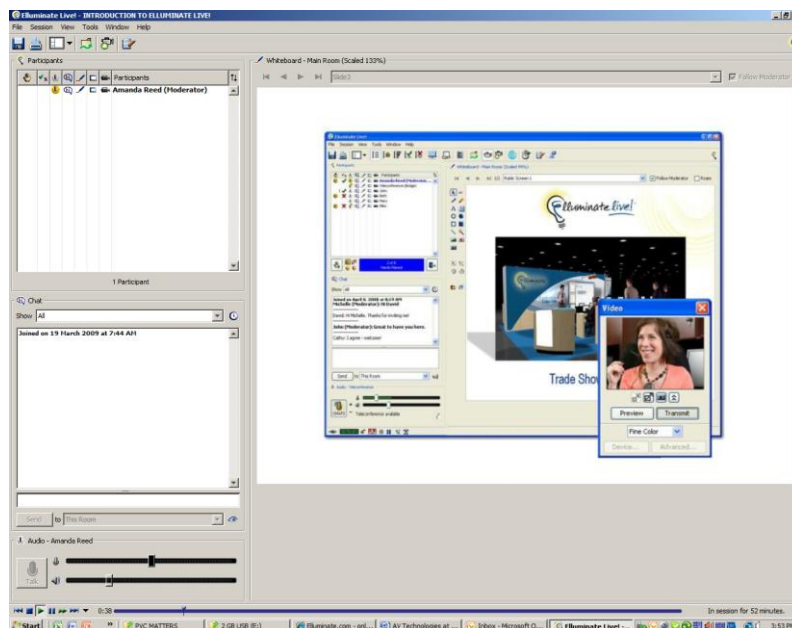
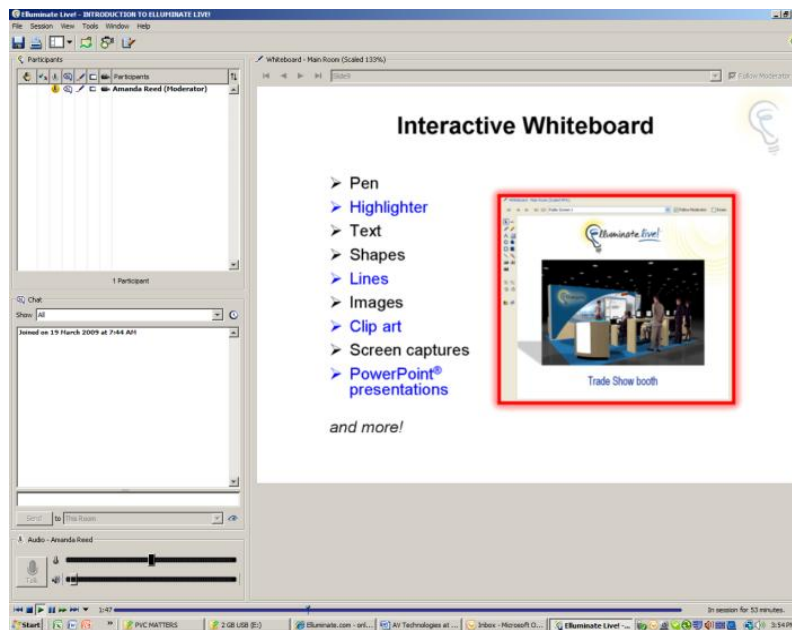
Illuminate

Illuminate provides solutions that encompass web conferencing, teleconferencing, videoconferencing, and social networking products and services.

UWS has 10 virtual rooms for use of Illuminate.

Features

- Web conferencing tool
- UWS has small licence
- Virtual learning environments in the cloud
- Video (web conferencing/audio/document sharing/ shared whiteboard and desktop)
- Potential for remote support
- <http://www.getvroom.com/> - free access copy (3 user max)



Further Information

<http://www.illuminate.com>

vUWS Communication Tools

The vUWS Learning Management System offers a number of ways to enhance class participation and engage learners using the various built-in communication tools. Interaction can occur real time or anytime and anyplace. These tools currently integrate with Callista, Library e-resource, Lectures Online, Active Directory and involve Teacher-Student and Student-Student interaction. Multiple users can collaborate with one another and contribute to authorship of content.

The vUWS communication tools can be accessed from PCs, Macs, and some mobile devices and is available off-campus through a user's MyUWS Account.

Used for:

- Announcements
- E-mail
- Discussion Board
- Blogs
- Learning journals
- Wikis
- Group Pages
- Personal and Course Calendars
- Personal and Course Task Lists
- Digital Drop Box
- Student Roster
- Virtual Classroom/Chat
- Student Homepages
- Voice based discussions
- Podcastings
- Quizzes
- Multimedia resources
- Lecture recordings
- Web links

The e-Learning team in the Teaching Development Unit has run a course (Designing for Communication in vUWS workshop) designed to enable staff to set up and effectively use vUWS communication tools. The course discusses strategies for using these tools and explore their educational benefits and technical features. The online component includes a Synchronous Session giving participants a chance to experience using the tools before learning how to set them up in the face to face session.

Further Information

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Telephone Systems Upgrades – IP-Tel

ITS is replacing the University's ageing PABX telephone systems with an IP (Internet Protocol) telephone system. The new system will take approximately 12 months to roll out, starting with Parramatta campus in late June 2009.

Broadly, IP telephone (IP-Tel) systems use the same methods and networks that computers use to communicate across the Internet. Historically, telephones used their own communication methods, requiring separate networks and technologies.

Benefits

- Improved audio conferencing capability – up to 32 parties
- Soft phone – use your computer as a telephone.
- Mobility – your extension number follows you when you “login” to any on-campus handset.
- Instant Messaging & Presence (2010/2011)
- Voicemail/Email integration (2010/2011)

The new IP handset



Further Information

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or visit the following ITS webpage:

http://www.uws.edu.au/campuses_structure/cas/services_facilities/it/telephones/ip_telephones#proposed

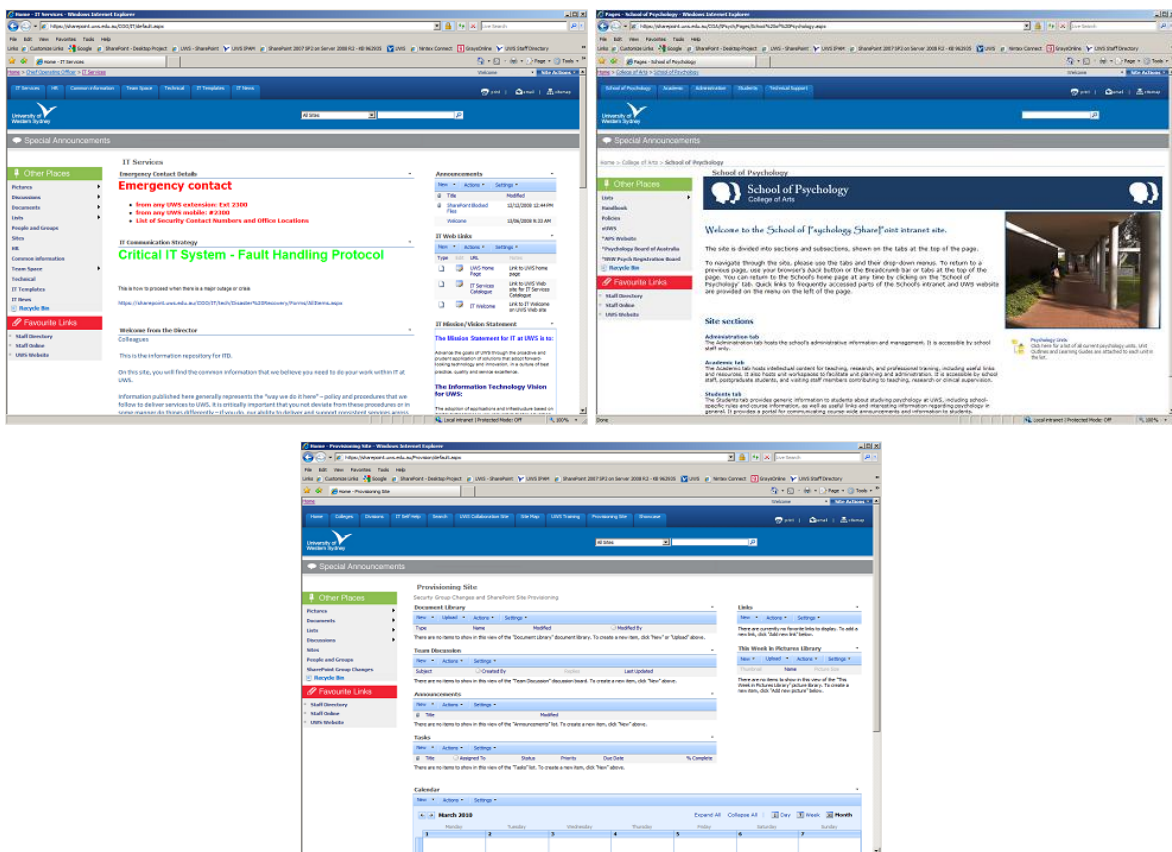
Sharepoint

SharePoint is a web based site that provides a collaborative working space and has been designed to be both dynamic and interactive, so that any member of a site can contribute their own content and ideas as well as comment or contribute to other peoples. Initially, when a user joins a SharePoint site they are introduced to the sites of the department that they are in.

Just a few of the features that are available in SharePoint include:

- access to University content via an internet browser
- school/division or University specific announcements
- school or division specific events calendar and contact lists
- email notification of changes to the site if desired
- use of message boards, blogs and wikis
- a document share
- a tight integration with the MS Office 2003-2007 suite, allowing access to documents on SharePoint as if it were on a user's hard drive
- access to the new 'UWS Self Help' site that will offer staff the ability to troubleshoot less technical issues and also provide in depth known issues.

There has been a strong groundswell of support from many areas and individuals within UWS for a computer-based collaboration tool for all UWS staff. Microsoft SharePoint is an obvious choice for UWS due to the tight integration with the existing desktop computing environment (Microsoft Windows, Office and Exchange). This technology is currently in pilot mode and will be available only to UWS staff involved in the small pilot testing phase.



Further Information

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Confluence

ITS has implemented a powerful web based collaborative tool, Confluence, for the use of staff and students at UWS.

Confluence is a collaborations website that allows staff and students to:

- create web based collaborative spaces
- share information, documents, and other content
- set up Blogs and/or Wikis
- set up online discussions
- set spaces with restricted access to named users and groups
- and much more...

This type of tool is excellent for keeping documents and information together in one place and is consequently useful for research groups, project management, committee work and any application where groups of people need collaborative access to information, documents etc.

Setting up the pages and uploading documents in Confluence is relatively simple using the built-in editor. There is comprehensive online documentation to help.

The screenshot shows the UWS Nexus Confluence dashboard in a Windows Internet Explorer browser window. The address bar shows the URL <https://nexus.uws.edu.au/dashboard.action>. The page header includes the UWS Nexus logo and the University of Western Sydney logo. The main content area is titled "Dashboard" and features a "Welcome to Confluence" message, a "Where do I start?" section, and a list of "Spaces" including Demonstration Space, Equity and Diversity - Stop Bullying, Information Technology Services, Sandra Hale, School of Psychology (Research), UWS Research, and VET project. A "Recently Updated" section lists various documents and their authors, such as "Re: Sandpit (UWS Research)" by Andrew Cheatham. The footer of the page mentions "Adaptivist Theme Builder" and "Powered by Atlassian Confluence 2.7.1, the Enterprise Wiki."

Further Information

<http://nexus.uws.edu.au/>