

MAIN MIND



Wheels for the

Griffith Artists Watching
Apple TV



A New Life
@ Google



Sun's Office
ALTERNATIVE



the new face of
CREATIVITY



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Getting virtual

Virtual computers let you run multiple operating systems without disturbing your normal working desktop. A new Mac OS X version of innotek's open-source and increasingly popular VirtualBox (already available for Windows and Linux machines) lets you install and run Windows XP, Vista, Linux, Sun Microsystems Solaris, and other Intel-based operating systems and applications – all inside a window on your desktop.

Shared files between virtual and real directories, support for USB devices, remote access to virtual machines using RDP, and a host of other features make this an easy (and free) introduction to the world of desktop virtualisation. Download it from www.virtualbox.org.



It'll Blu you away

Next-generation storage formats have been years in coming, but the release of standalone recorders confirms that the gear is ready for the big time. LaCie's \$1259 d2 Blu-ray drive lets you store up to 50GB of data, or 4 hours of HD video, on a single BD-ROM disk. It includes burning speeds of up to 9MB/sec, USB2 and FireWire connections, and also burns all flavours of DVD-R, RW and DL disks.

See www.lacie.com/au for more information.



Your photos' new home

If you're studying in visual arts – or just the kind of photographer who fills up one or two memory cards on a night out in the city – you'll do well to have an intermediate device to download and store your images and videos until you get back to your computer. The Epson P-5000 Multimedia Storage Viewer has a 4-inch 640x480 LCD screen, Adobe RGB and xvYCC colour space support, a four-colour filter system, CompactFlash and SD memory card slots, DivX support, and 80GB hard drive to store up to 4500 RAW images.

The P-5000 costs \$1099, while its 40GB little brother, the P-3000, costs \$799. See www.epson.com.au/products/multimedia.



Art au naturel

Photoshop, Illustrator and their kin may be great for producing complex graphical documents, but sometimes, well, you just want to paint something. If you're in one of those moods, look into Ambient Design's ArtRage 2, a freehand natural-media design tool that simulates the experience of using real art materials. Oils, pencils, airbrush, chalk, glitter, paint tube – they're all there. Use a range of canvas textures, trace over existing pictures, add metallic effects, and watch the colours blend and smudge as you paint one colour over another.

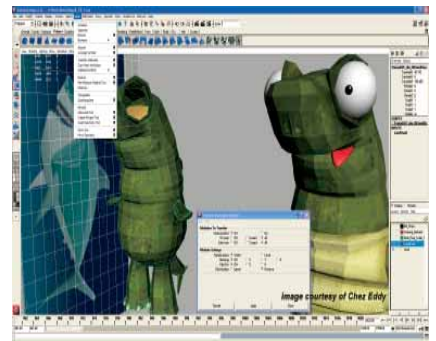
Download a free edition, or pay US\$20 for the full version (which includes layer support and more brushes) from www.ambientdesign.com/artrage.html.



Go Google yourself

Google's intelligent search technology has redefined the Web, and for years its Google Desktop content indexing app has done the same for Windows users. The recent release of a Mac version has been questioned by some as redundant given the capabilities of Spotlight, but there are enough other features built into this product – for example, searching of GMail messages and browsing history, automatic file versioning, easy application launching, and integration of desktop and Web searches – to make this one worth looking into.

Download for free from <http://desktop.google.com/mac/>.

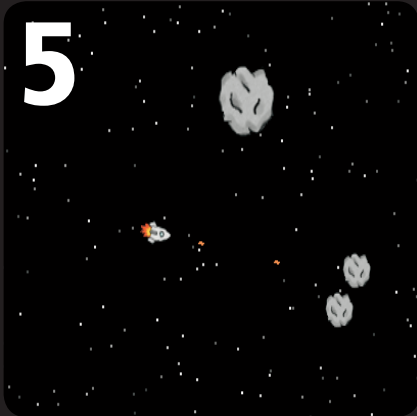


Maya gosh, it's free

You've seen its results in countless movies, and if you're in a visual arts course you've probably dabbled in it once or twice. Autodesk Maya is 3D graphics these days, but its high price means you really have to need it to justify buying it. No more: the new Maya Personal Learning Edition includes most of the features of the full-fledged Maya Complete 8.5, running on Mac OS X and Windows XP and including a broad range of tutorials to walk new users through its many features. Resulting images are watermarked and PLE is restricted to non-commercial use, but it's a great way into 3D animation for the curious and short of cash.

Download Maya PLE from www.autodesk.com/maya-trial.

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- Curtin University of Technology
- Deakin University
- Edith Cowan University
- Flinders University of SA
- Griffith University
- James Cook University
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EDITORIAL



With winter now upon us, the AUC is in the busy period of planning and offering the wide range of activities that are available to member universities. A calendar of major events can be found inside this edition where you will

discover the new DevWorld 07 conference, as well as CreateWorld 07 and the Academic & Developers Conference which will be held on the Gold Coast in September.

These events are part of a broad range of AUC initiatives which extend to national and international scholarships, training workshops, grants and equipment loans. Make sure you keep yourself updated by subscribing to the website at www.auc.edu.au for the latest information.

In the last edition we talked about the renaissance that seems to be evident in universities. Inside this edition you will read how Dr Ryan Daniel, of the School of Creative Arts at James Cook University, took the courageous step of 'dumping' the old curriculum for a completely new, exclusively digital one to develop a contemporary breed of graduates ready to work in the increasingly collaborative space that industry now reflects.

This is a good example of how universities – who have long standing and much success in collaboration, as evidenced by the recent award winning Deakin University-University of Kent success – are leading industry in this particular area. Individual talents and team-working are now regarded as equally important.

But, as they say, there's more. Read the fascinating account of how Susan Kerrigan at the University of Newcastle worked with her team to produce a highly graphical documentary on the invasion at Fort Scratchley in 1942. Learn how Daniel de Byl and his team developed a content management system which is winning fans by the day.

There is, of course, an update on the recent Leopard Tech Talks by Carrie Osborne, who highlights features which will soon be realised in beta version at WWDC2007. And if that wasn't enough, you can impress your friends with the recently coined word – 'structurANTion' – which Darren Lee Pullen uses to define his theory of recursive network-organisational dependency; read his definition on page 16.

This issue, we also step out of the educational environment for a little and talk to Laurie Wong of Sun Microsystems Australia to find out more about Sun's new StarOffice for Mac. We also bid farewell to Nigel Kersten as he embarks on a new adventure with Google in the US.

As always, contact me at any time to let me know what's happening in your university as 2007 has already proven itself to be a fascinating year and – with the imminent release of Leopard – looks set to become even more so.

Stephen Johnston
s.johnston@ecu.edu.au



AUC Update

It's conference year again

Mark your calendars: from 23 to 26 September, AUC members will be converging on the Gold Coast's Royal Pines Resort for four days of learning, sharing, and fun at the 2007 AUC Academic & Developers Conference.

Based around the theme 'contribute, communicate, collaborate', this year's conference will reflect the rich opportunities presented by Mac OS X in the evolving broadband environment. The call for papers closed June 1, and details on sessions will be available soon.

Registrations are open now. For more information on the conference content and registration, visit www.auc.edu.au.

WWDC or bust

With significant buzz about pre-Leopard announcements and the promised availability of pre-release code, this year's Worldwide Developers Conference (WWDC) is sure to be a corker. Nearly 70 students and staff from AUC member universities are there (see www.auc.edu.au/WWDC+Scholarships+Recipients to find out who), and we'll count on them to bring back all the details – and share them in the next issue of Wheels.

Bolder and wiser

From July 23 to 27, a number of staff and students from AUC member universities will join the throng at the annual SAGE-AU 2007 conference, to be held at the Sebel Parramatta Hotel in Sydney.

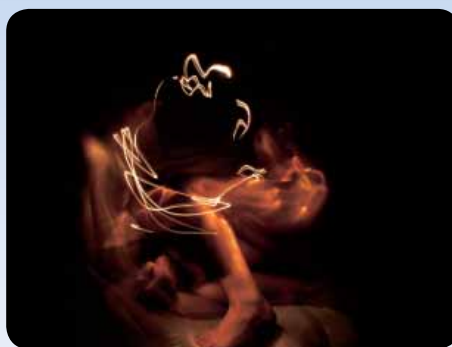
Supported by AUC scholarships, they'll pick up skills in areas related to system and network administration, including security, system administration, virtualisation, and more. The event will also be a great opportunity for attendees to build out their own (social) networks, helping them deliver more benefits to their educational environments.

The winners of the AUC SAGE-AU scholarships will be announced on June 29.

Visit www.auc.edu.au or www.sage-au.org.au for more information.

Share yourself online

Reflecting the growing involvement of students in the AUC, Apple Australia has launched a dedicated, peer-rated Student Gallery where students can post their own movies, pictures, songs and presentations for sharing with the world.



Located at www.apple.com/au/education/studentgallery/, the gallery will allow students to share their digital media projects, get new ideas, and promote their work to a worldwide audience. Drop by the site to upload your work, or just to get a look at some of the most innovative work coming out of Australia's universities today.

A real honour

Eight students at AUC member universities are \$4000 better off after receiving AUC Honours Scholarships to support their investigations into areas of particular interest.

Congratulations to all the winners; we look forward to following the progress of their work in future issues of Wheels. And those winners are:

- Australian National University: Ben Swift
- La Trobe University: Kavinda Jayasinghe
- University of Adelaide: Sam Pohlenz
- University of New South Wales: Jonathan Sokolowski
- University of New South Wales: Myung-Hee Kim
- University of Queensland: Alex Mellor
- University of Sydney: Sheryl Soo
- University of Sydney: Kimberley Upto

Funding innovation (again)

After strong interest in the first round of funding, the AUC will offer a second round of AUC development and seeding grants offered to students and staff at member universities.

The eventual recipients of that funding (watch www.auc.edu.au for application details) will join a long line of developers and investigators who have turned their natural curiosity into applications and information that benefit the higher education community.

Announced in May, the winners of the latest round of funding – ten Development Grants and one Seeding Grant – were:

- Charles Sturt University: James Bekkema
- Griffith University: Paul Draper
- Monash University: Ashley Buckl
- University of Adelaide: Luke Toop
- University of Canberra: George Bray
- University of Melbourne: Mohammad Tabbara
- University of Newcastle: Matthew Willis
- University of Queensland: Ian Duncan
- University of Queensland: Ariel Liebman
- University of Western Australia: Paul Bourk
- University of Wollongong: Phillip McKerrow

Congratulations to these recipients, and we look forward to sponsoring even more innovative projects when applications for the next of funding round open in July.

A bigger and better X-World

Building on the success of last year's event, X-World will be held at the University of Technology Sydney from 4 to 6 July.

Six subsidised places per AUC member university are available for the event, which will this year feature more presentation streams, more workshops, and more presenters than ever before.

Watch www.auc.edu.au for more information.

Something interesting happening within your university's computing environment? We want to hear about it! Drop us a line at s.johnston@ecu.edu.au and we'll include the most interesting tidbits in the next issue.

Green thinking nets Deakin Award



All smiles at Duke's Choice Awards are (left to right) Poul Henriksen and Ian Utting (University of Kent), James Gosling (Vice President and Sun Fellow, Sun Microsystems), Michael Kölling (Kent), Bruce Quig (Deakin University) and Cecilia Vargas (Kent).

Sometimes, a fresh approach can make all the difference.

For a development team at Deakin University in Geelong, a novel approach to teaching students how to program has proved so effective that it has netted the team – and co-collaborators at the University of Kent in the UK – recognition by winning the 'Java Technology in Education' award in this year's Duke's Choice Awards from Sun Microsystems.

The global awards, which recognise innovation in Java development, were handed out at Sun's JavaOne conference in May by Java creator James Gosling. Recognising the first time a Duke's Choice award has gone to an Australian organisation, the award for the Deakin team was given for Greenfoot (www.greenfoot.org), an innovative visual programming tool developed as a successor to the team's popular (and AUC funded) BlueJ (www.bluej.org) development environment.

Greenfoot was contrived to address the worsening crisis in programming within schools by giving secondary school students an easy introduction into the field of computer programming. Using object-oriented concepts, Greenfoot lets students build and play their own games – an approach that plays on their natural affinity for games to bring life to concepts that are often taught in dry, mundane ways.

"I've been concerned that we've had a huge dropoff in the number of students undertaking Computer Science courses, and even more concerned that many students come out of high schools thinking IT is a boring and not challenging career path," explains Professor John Rosenberg, deputy vice chancellor (academic) at Deakin, whose research interest gave birth to both BlueJ and Greenfoot.

"The problem is that we normally present object-oriented programming to students as code. [With BlueJ] we were convinced that visualisation was essential to teaching, and that a good user interface could make all the difference."

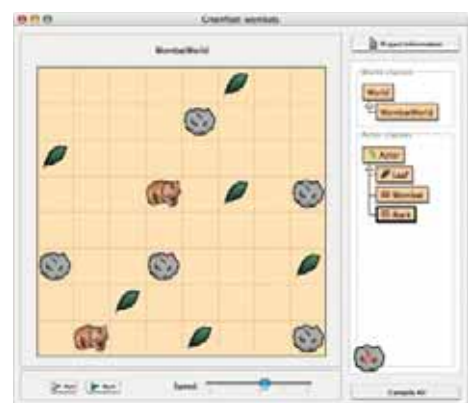
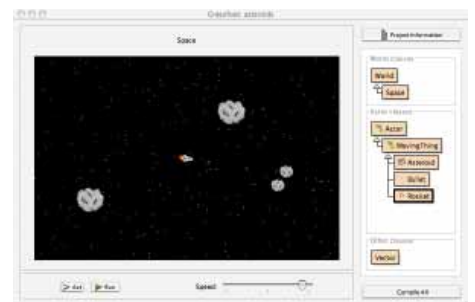
That theory proved correct: with more than 1000 universities using BlueJ as their primary programming teaching tool and up to 1 million downloads of that application per year, Rosenberg knew the team was on to something. Greenfoot, as BlueJ's successor, sought to bring the concept one step further.

"In that 12 to 15 year old age group, you've got to motivate the kids and make programming interesting," he explains. "The things they're interested in are typically games, with action and movement; Greenfoot provides a platform for building 2D games but hides the complexity of graphics and simulation of movement so students can concentrate on building the objects that make up the game."

Rosenberg, a Mac fan and user for over 20 years, worked with two Australian employees and a team of three developers – led by longtime associate Michael Kerling – at the University of Kent to build Greenfoot as a platform-independent application using Java.

And while Unix back-end servers played a big role, Rosenberg's entire team used Macs on their own desktops. "The way the Mac does installations of applications, you can do a really clean, simple package that will download nicely. And with the Macs, we can have a really nice front end."

Gosling agreed wholeheartedly: after Rosenberg's UK collaborators gave a demonstration of Greenfoot at the Sun Microsystems Centre



of Excellence in Object-Oriented Programming, he was excited enough about the application to nominate it for the Duke's Choice Awards himself.

By fostering interest in programming at an early stage, Rosenberg hopes projects like Greenfoot will go some way towards reinvigorating interest and innovation in application development. "I'm passionate about teaching kids to program," he says. "People think learning to program takes months and months, but most people already understand the world is made up of objects. If you present the concepts the right way, students can pick them up very quickly."

Reinventing Creative Arts at James Cook

It's not every day that a major arts school dumps its entire curriculum. At James Cook University's School of Creative Arts (SCA), however, that's exactly what happened as the school took the carefully considered step of introducing a completely new curriculum built exclusively around digital media.

Currently in its first year, the Bachelor of New Media Arts degree is built around the general idea of "the integration of image, text, light, graphics and sound," explains Dr Ryan Daniel, Planning Head of School within the SCA.

"It's primarily to respond to the rapidly developing and technology driven market in which graduates are going to be required to work. The goal is to create a new breed of graduate who has a knowledge base in the arts but can apply them in all sorts of exciting and innovative ways."

Supporting the new course is a flotilla of Apple technology, including new Macbook Pro laptops for the 15 SCA staff and around 75 iMacs, complete with 30" Cinema Displays, spread across three Mac labs. Five Mac Pro systems, with dual Intel Xeon processors, provide extra grunt for heavy video and film editing work.

The labs also incorporate a range of complementary technologies, including recording studios, photographic laboratories, professional printing capabilities, a multimedia display space, and a fully network audio/visual environment.

"The feedback we've had has been really positive," says Daniel. "It's like pigs in mud: the students just love the labs in terms of what they can offer them. In fact, some of our phased-out programs have students who are a bit peeved [they can't do a fully digital degree], but we have a transition plan in place and it's working."

In this, its initial year, the program includes around 80 students but is expected to expand to nearly 400 students – incorporating three undergraduate years, fourth-year honours and postgraduate students – over the next three years. This will also include an expansion of laboratory facilities, with the total number of installed Macs expected to pass 100 soon.

Macs and related technology were already popular within SCA, but Daniel says the inclusion of Intel processors took away the last reason for the college to retain Windows-only systems. "We've always been impressed and happy with their reliability," he says, "but in this new suite they're slick, they're quick, and they're doing everything we want."

Because the new program is so technology driven, Daniel envisions strong continued involvement with the AUC. Half a dozen SCA staff attended CreateWorld in Brisbane last December, and staff and students will be encouraged to be involved in other AUC-backed grants programs as well.

Ultimately, the goal of the program is to produce industry-ready creative arts students who are well-versed both in the technical aspects of their craft, and in the specifics of less definite areas like group collaboration.

"All the time, we're pushing students to think about where technology is heading," Daniel says, "and how that might drive the creative industries. We want to make sure they don't spend three years learning how to build Web sites; they need to spend those three years working in teams, where they've got image specialists, designers, sound experts, and others – in a creative team-based approach that's underpinned by the latest and greatest in technology."

*"they're slick,
they're quick, and they're
doing everything we want"*



Dr Ryan Daniel: driving the totally digital curriculum

Queensland Artists See the Other Side

When creating art in analogue media, most students would take a breather, step back, and look at the overall impression their creations are giving. Sitting a metre from the screen, however, it's easy to get so lost in the tools that you lose track of the overall impact your creations will have.

At the Griffith University based Queensland Conservatorium, this has all changed recently with the introduction of a pair of Apple TV units into the institution's main working and presentation areas.

Hooked up to a large projection unit, one Apple TV has been configured to subscribe to podcasts that are produced by the students, downloading them as they're published.

The results are projected in massive size for all to see – stimulating a process of peer review and giving artists the chance to see their digital creations from the user's perspective.

This perspective is something many students never get to consider fully, says Professor Paul Draper, the Griffith Foundation Chair in Digital Arts and Head of Music Technology at the Queensland Conservatorium.

"The Apple TV really turns the content upside down, and puts a very different perspective on what you've created and shipped," he explains. "We're all aware of the content, but we're used to seeing it through the production mechanisms, whether the Web page or iTunes or so on. But subscribing to it and downloading it puts a different wrapper on it, and much more clearly highlights the end user experience."



Professor Paul Draper: Apple TV provides new insight into student work

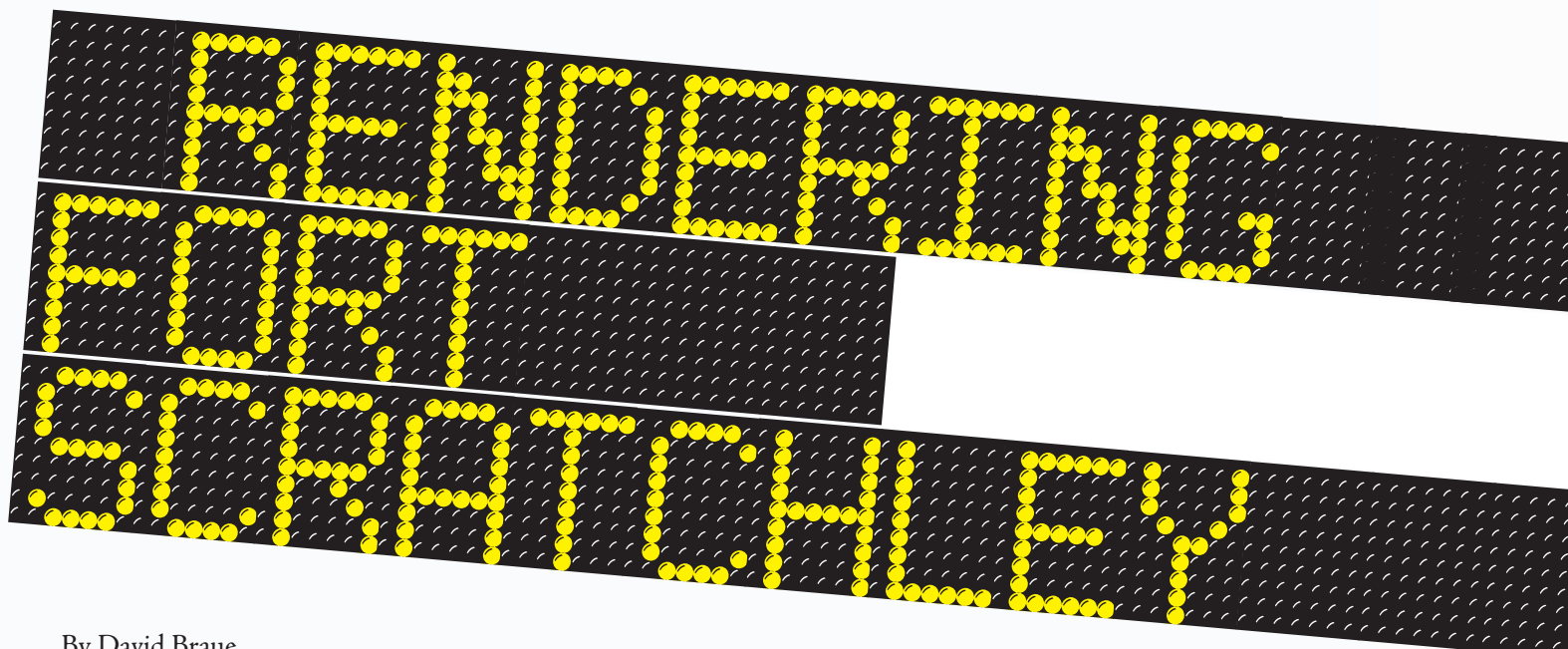
Because the work of all students in a class is projected through the single Apple TV unit, it has also become easier for the class to conduct major review sessions, and to spot minor inconsistencies between students' presentations that might otherwise go unnoticed. For example, some podcasts might have a photo missing, or have incomplete metadata.

In the longer term, Draper believes the ability to stream content onto large projection screens will enhance the appeal of the Queensland Conservatorium's performance spaces – potentially helping attract talent to its IMERSD recording studios. Draper is also trialling a second Apple TV unit on a 40-inch LCD TV, providing another complementary view of the students' work.

Having a single podcasting server and projection point also lets lecturers highlight student projects without forcing the other students to crowd around a single PC. This capability alone, says Draper, is worth the investment.

"One of the things that has always driven the course is the idea of exemplars," he explains. "They're very powerful in the media instruction, and the exemplars look much cooler and more engaging in that TV format. The Apple TV is like a giant iPod that's custom built to do a certain job, and it really bumps up that gee-whiz factor."





By David Braue



Waking up on June 8, 1942, the residents of Newcastle faced frightening news: during the night, troops stationed at Newcastle's Fort Scratchley had found themselves in live combat after a Japanese I-21 submarine attacked the city.

The fort, which sits on a coastal hill in the city of Newcastle, has a long history that traces back to the discovery of Newcastle's first coal deposits in 1797. After Australian gunners successfully fought off the I-21 on that fateful morning, the small battle became an important victory in Australia's homeland wartime experience and enshrined Fort Scratchley's importance to the ANZAC story. To this day, the fort is the only coastal defence battery to have ever returned fire on an enemy vessel.

Despite the custodianship of the Fort Scratchley Historical Society (www.fortscratchley.org.au) the fort has more recently fallen into disuse. It was closed in 2004 for a major restoration project that only began in earnest after the April announcement that the Australian government would increase the total funding it is providing, to \$10 million.

A major goal of this project is the establishment of Fort Scratchley as a higher-profile tourist and historical destination, which is why Newcastle City Council approached University of Newcastle creatives to help produce multimedia presentations about the various uses to which the site has been put in its more than 200 years of history.

Susan Kerrigan, associate lecturer in communication and a PhD student at the university, saw the exercise as a great subject for her doctoral research, which was focused on analysing the creative and collaborative process that drives production of low-budget documentaries. From the beginning, the entire project entitled *Using Fort Scratchley* was to be edited on Mac desktops running Final Cut Pro, DVD Studio Pro, and Motion.

Working with a team from the university, she conducted extensive interviews and on-site shoots to piece together sequences that were to be shown as short 2 to 3 minute video installations at the renovated Fort Scratchley. Yet as the story took shape, she says, it soon became clear that it deserved a more elaborate treatment.

"What holds the piece together is a series of oral history interviews with the different communities that have used the site," she explains. "We realised we had a story that could work for a national audience so it became a 50 minute documentary."

That's when plans to recreate the Japanese submarine attack began coming together. Conversations with two colleagues led firstly to a class assignment for third-year Bachelor of Information Technology students.

Kerrigan eventually selected an elaborate computer-generated wireframe of the port of Newcastle, created by student Matt Brown using the Cinema 4D visualisation tool. Brown's Cinema 4D backgrounds and models were later handed over to another IT student, Geoffrey Hookham, who was given the task of adding elaborate camera moves and creating more CGI sequences to help bring the oral history accounts to life.

RENDERING A DREAM

Just thirty six seconds long, the Japanese sub sequence begins underwater, tacking along the submarine's hull as it fires the first shell toward Newcastle. Breaking the surface of the water, the camera elevates into the air to reveal the I-21, shelling a well lit city while its residents sleep.

While it was conceptually spot-on, the sequence presented some technical problems that Hookham and Kerrigan hadn't initially envisioned: it was simply too complex to render on the dual-processor Mac G5 system available to them.

Kerrigan turned to design lecturer Roger Quinn to help her to understand the level of complexity involved in rendering these files, and assist in finding a way to complete the render.

"We had underestimated the amount of trickery in the animation," Quinn explains. "The thing that killed the G5 was that we were using, in animation terms, very complicated things like water, reflections, and multiple light sources. As soon as we started throwing those kinds of things at it, particularly at a reasonably high resolution, they were just clogging up the machine."

After spending more than 60 hours of attempting to turn these wire-frame imaginings into smooth texture-mapped CGI and getting nothing but half-finished projects and system crashes, Quinn drew on his experience in building complex animation models and proposed that the team use a render farm approach to provide the necessary computing power.

Working with Daniel Conway, technical advisor within the university's Faculty of Science and IT, the pair were eventually able to move the job of rendering the submarine sequence onto an ad hoc cluster set up across 25 iMacs installed in a university computing laboratory.

Under the direction of a central Cinema 4D job scheduling server, the task of rendering the sequence's 1567 frames came through with surprising ease and stimulated Kerrigan's imagination to further expand the documentary's visual sophistication. Another animated sequence shows Japanese shells exploding in a residential Newcastle neighbourhood.

"The day the render got going and the lab was churning it out, it was so exciting," Kerrigan recalls. "We were saying 'this is how they do it in Hollywood, and it's how we're doing it here too'."

"My background is in live action direction, and I had always thought I would have to go for dramatic reenactments to bring these oral history stories to life; in the beginning I never really thought it would be possible to get the quality of animation we got. It's empowering to know the technology exists to let you deliver on this vision."

POWERS OF PRODUCTION

With the high-quality animation process completed, Kerrigan worked with honours student Kathy Freeman, who edited the documentary, and a team of up to a dozen other creatives to finish the final product. Final Cut Pro, Motion and DVD Studio Pro were all tied into a production process through which both students and staff worked together to produce the final 50-minute production, which contained just over two minutes of CGI animation.

"We found it really easy with Final Cut Pro to work in an intuitive way, and Motion was incredibly flexible," she says. "The Apple software bundles made it really easy for Roger and me to have a look, say this is what we wanted it to look like, and get the editors and animators to finesse it. [With accessible tools] you can draw on unskilled people who can very quickly become technically competent. Combine that with highly skilled content creation and editorial knowledge and it become possible to create a sophisticated visual product."

Reflecting the wealth of materials that Kerrigan uncovered, an extended, 70-minute version was also produced and will be sold separately on DVD.

Equally important for Kerrigan, however, was her PhD research into creative collaboration. Throughout the experience, she says the availability of the Mac based tools, and their ease of use by people with a range of expertise and skills, helped preserve momentum and see the project through to its successful conclusion.

"Susan's research has made short work [of these processes] for us, and we can start using those approaches in the teaching we're doing," says Quinn. "Now, we've gone through the troubleshooting to the point where this technology really is quite usable by undergraduates who haven't done much in the area before. The opportunities that exist using Apple technology in a higher education environment are limitless, as long as you know how to apply the materials and equipment and can find the stories to tell."



"The opportunities that exist using Apple technology in a higher education environment are limitless"

New Apple Tech



Final Cut Pro 6 improves video handling and smoothing

Final Cut and friends: better than ever

Proving there are always ways to make a good thing even better, Apple's Final Cut Studio 2 was rolled out in April as a major upgrade to its popular predecessor.

Targeted at creative types working in video and audio production, the \$1699 package includes a range of key Apple multimedia applications – all of them upgraded to incorporate new features. Bundled titles, functions and new features include:

- Final Cut Pro 6: includes Apple's ProRes 422 format, providing uncompressed HD quality videos in files the size of normal SD video. The new version also provides support for mixed video formats and frame rates in a single timeline, without transcoding – making it easy to collate video from video cameras, mobile phone cameras, digital cameras, and other sources into a single, consistent project. Also new is optical flow-based SmoothCam technology, for removing unwanted camera movement.
- Motion 3: moves existing tools into a new 3D environment, vector-based paint tools, brush creation tools, and new camera behaviours. Over 1500 new design elements are included, as are new audio behaviours that match animations with soundtrack volume and frequency. Tight integration with Final Cut Pro 6 allows for the ability to edit Motion templates with video drop zones and editable text fields, directly within Final Cut Pro.
- Soundtrack Pro 2: adds multitrack editing and recording tools, simultaneous stereo and 5.1 surround mixing, take management tools, a heads-up spotting display to align effects and dialogue with the picture, and a new Conform tool for matching changes between picture and sound editorial.
- Compressor 3: providing batch encoding and simplified workflows, this updated version includes drag-and-drop presets for delivery to broadcast television, iPod, Apple TV, DVD and mobile phones. Pre-processing filters support timecode overlays, audio/video fade in and out, and animated watermarks that can be applied directly from Motion projects.
- DVD Studio Pro 4.2: includes a range of capabilities for SD and HD DVD authoring

A new addition to Final Cut Studio 2 is the Color application. This tool offers task-based colour grading and finishing, with features such as gamma, lift and gain adjustments. Custom RGB and luma curves are supported, as is the ability to use soft-edged mattes and custom-shaped vignettes to isolate specific areas of an image. More than 20 signature looks can be used to provide particular moods for any project, while integration with Final Cut Pro 6 offers smooth roundtrip workflow for grading, finishing and rendering of Color projects.

See www.apple.com.au/finalcutstudio for more information.



The new Color tool provides task-based colour grading and finishing.



Serving your media

So, you've got hundreds of gigabytes of media files and it only looks like continuing to grow. Your class is starting to grumble about lost videos and musical scores, while time spent looking for 'that' image is compromising production efficiency.

If this sounds all too familiar, you may not even have to think once about snapping up Final Cut Server (FCS), the latest addition to Apple's full-featured range of editing applications.

Designed as a complete platform for managing all types of media, FCS seamlessly interacts with Final Cut Studio 2 to provide media asset management and workflow automation capabilities for workgroups of any size. Media is automatically catalogued and easily searchable, with assets tracked through every step of the production process.

A built-in, cross-platform client enables content browsing, review and approval of media on-network or online. Built-in templates facilitate management of work as typical in broadcast, post and education environments, including automatic alerts as projects pass key milestones.

Hassle-free media cataloguing sees FCS generating thumbnails and low resolution clip proxies, with metadata searches and access controls providing highly granular user permission controls by product or individual media asset. Online interfaces allow clients to view, annotate and approve content from anywhere.

Once the project is finished, FCS works with Compressor 3 to convert the completed work into a format suitable for broadcast TV, Web, iPod, Apple TV, DVD and mobile phone use. DCS will ship by midyear for \$1299. See www.apple.com.au/finalcutserver for more information.



A new Office alternative

Microsoft is reportedly readying a Universal Binary upgrade to its Office 2004 suite. By the time the update comes out next year, however, it will be squaring off against StarOffice for Mac, a completely new version of OpenOffice that is being written from the ground up to support the Aqua interface.

Also distinctive about this coming release of StarOffice is the price – free – and the fact that it is being developed inhouse at Sun Microsystems, the steward of OpenOffice. We caught up with Sun's local software guru to find out more about this fantastic project; see page 17 for his answers.

Faster, bigger, better

High-speed Airport Extreme 802.11n wireless networking, larger hard drives, faster processors and a full 1GB of memory across the MacBook line have all improved the value from Apple's revamped MacBook lineup, announced in mid-May.

The range of notebooks – popular with students and other general-use consumers – includes:

- White 2.0 GHz Intel Core 2 Duo processor, 13.3" 1280x800 display, 1GB RAM, DVD-ROM/CDRW drive, 80GB HD: \$1599
- White 2.16GHz Intel Core 2 Duo processor, 13.3" 1280x800 display, 1GB RAM, 8x SuperDrive, 120GB HD: \$1899
- Black 2.16GHz Intel Core Duo 2 processor, 13.3" 1280x800 display, 1GB RAM, 8x SuperDrive, 160GB HD: \$2199

Customisable options include 120GB, 160GB or 200GB drives, up to 2GB of RAM, and more.

Meanwhile, Apple's MacBook Pro range has been modernised with the addition of Intel Core 2 Duo processors, 2GB of memory expandable to 4GB, and the high-speed NVIDIA GeForce 8600M GT graphics card. Overall, the new systems are rated at around 50 percent faster than their Core Duo based predecessors.

The new MacBook Pro systems have an aluminium enclosure and come in three configurations:

- 2.2GHz Intel Core Duo 2 Processor, 15.4" 1440x900 display, 2GB RAM, 8x SuperDrive, 120GB HD: \$2899
- 2.4GHz Intel Core Duo 2 Processor, 15.4" 1440x900 display, 2GB RAM, 8x SuperDrive, 160GB HD: \$3599
- 2.4GHz Intel Core Duo 2 Processor, 17" 1680x1050 display, 2GB RAM, 8x SuperDrive, 160GB HD: \$3999

Configuration options include a 17" 1920x1200 high-resolution display and 160GB, 200GB or 250GB hard drives.

iTunes goes to uni

If you ever thought iPods were just for music, the launch of iTunes U will put that notion to rest. A dedicated area within the iTunes Music Store, iTunes U includes a range of free content created by top-ranked US universities including Stanford University, University of California at Berkeley, Duke University and MIT.

The content – which includes course lectures, speeches, language lessons, lab demonstrations as well as US-centric information such as campus tours and sports highlights – demonstrates the range of academic uses to which iPods can be put within an educational setting. Have a browse through the content and see what you can learn today.



Better music, no DRM

Audiophiles who criticised the quality of past digital music may finally have to bury the hatchet with the release of iTunes Plus, which provides music tracks encoded at 256Kbps – and having no digital rights management restrictions on them – for a slight premium to the original 128Kbps iTunes songs.

Each song on the service, which is originally limited to EMI artists like Pink Floyd, Norah Jones, Coldplay, and the Rolling Stones – will cost \$2.19 inc GST, and iTunes Plus offers an option to upgrade previously purchased tracks to the higher quality versions for \$0.50 per song. Fully half the four million songs on iTunes are expected to be offered as higher-quality downloads by year's end.

ICE getting thicker at USQ

Eighteen months after its development began, a University of Southern Queensland (USQ) content management system (CMS) developed from the ground up for academic publishing is steadily winning converts and simplifying the process of publishing courseware.

Initiated in late 2005 as a fully open source CMS, ICE (Integrated Content Environment <http://ice.usq.edu.au>) has been written on both Linux and Mac systems using the Python development language. It functions as a client-side application on Mac and Windows desktops, integrating with Microsoft Word or OpenOffice.org word processors to automatically translate content for use online or as a source for the university's printing services.

"The initial requirement was for course material for lecturers at USQ," says Daniel de Byl, a project officer within USQ's Division of Academic Information Services. "We wanted to give them the freedom to author in a familiar word processing environment and to reduce handling of the content when it goes to our [Electronic Publishing Service] publishing section."

The focus on ease of use led the ICE team – which includes de Byl, senior programmer Ron Ward, casual assistant Thea Russell and support officer/trainer Pamela Glossop, who work under the supervision of USQ senior research fellow Dr Peter Sefton – to develop the system with a number of novel features.

Images, for example, are easily resized to minimise download time, while integration of the SubVersion version control tool allows tracking of changes through various versions. The application works standalone and offline, making it ideal for use away from the university, and includes WYSIWYG previews to ensure that online versions match the original word processing content.

Version control facilitates collaborative content creation, and ICE developers are currently adding a document annotation service to save the need to circulate content drafts with sticky notes attached. Finalised documents can be outputted as an IMS manifest file for easy import to a range of learning management systems, while online copies are authored in OpenDocument format and automatically converted to XHTML; ICE styles are translated into HTML equivalents.

Although USQ already has an XML based courseware system, the increasing profile of ICE – which has become the repository of choice for newly published courses – has confirmed the appeal of the development team's ease-of-use approach.

Despite a lack of advertising within USQ, the initial pilot-test cohort of 40 at the end of last year has since grown to more than 70 active users producing everything from courseware to Web sites and management of intranet development. Around 45 courses have been published using ICE since late 2005, and another 50 are scheduled to be published this year and next.

ICE has been put forward by USQ as part of the recently formed multi-university Open Content Initiative, and the development team has also become involved in the collaborative RUBRIC publishing tools initiative (www.rubric.edu.au), for which Sefton is technical manager. It is also being used to produce the electronic journal e-JIST (www.usq.edu.au/e-JIST).

The popularity of the ICE platform is a great result for de Byl, who says the choice to develop the application on the Mac – as opposed to just writing it on Linux and porting it – was a major part of the quality of the final release.

"There are more than a few Mac users at USQ, so we needed to test on a Mac to have that cross-platform capability," he explains. "We developed on the Mac so we could come across all the Mac issues a lot easier and quicker than creating a separate build and testing the binaries. And development wise, we have had to pull a few tricks to automate OpenOffice, so we feed issues to do with automating OpenOffice back to the OpenOffice.org project."



de Byl (upper right) with (clockwise) Pamela Glossop, Thea Russell and Ron Ward are driving ICE's success

from COFA to Googleplex

By David Braue

He's been a regular fixture in Australia's academic computing circles for nearly a decade, but this month Nigel Kersten is embarking on a completely new adventure as he pulls up stumps and moves to a new position at Google headquarters in the United States.

There, Kersten will take up a position amongst the group of developers Google has dedicated to all things Mac. Officially dubbed a Macintosh Systems Administrator, he will be rubbing shoulders with the developers of Google's Mac OS X tools – including Google Earth, Google Desktop and others – to manage services for Google's Mac users and managing a number of Linux machines as well.

The move dates back to a year ago, when Kersten – who until now served as senior technical officer within the University of New South Wales' College of Fine Arts (COFA) – heard about an opening at Google and sent in an enquiry. Nearly five months later, he had all but given up on Google when the phone rang. Through a subsequent and increasingly difficult series of interviews, he was tested to the limits of his knowledge.

"I have never been asked such difficult technical questions," he recalls. "They were asking nuts and bolts about Unix file systems, virtual processes, memory and so on. The thing I worked out was they were just ramping up the questions to be harder and harder until the point where they asked questions I didn't know the answer to."

Clearly, his knowledge was sufficient, since he was eventually offered the position.

And while the move to the Bay Area is a big change from his established haunts in Sydney, Kersten – a longtime developer

and recipient of AUC funding – is looking forward to joining Google's legendary culture of innovation and collaborative development.

One requirement of working at Google, for example, is that employees are encouraged to pursue their own interests – and are expected to spend at least 20 percent of their working hours, or one day a week, developing it. "This was one of the things that attracted me to Google," he explains. "It feels like somewhere between a dot-com company and a research centre."

The 20 percent requirement was the source of now popular applications like Google Calendar and Google Mail, and Kersten is looking forward to exploring some Mac-focused ideas of his own.

He's already interested in exploring MacFUSE (<http://code.google.com/p/macfuse/>), a Mac-based implementation of the erstwhile FUSE (File system in USEr space) Linux project that basically mounts individual applications' data stores as file system extensions. Kersten is hoping the close proximity of Apple headquarters, just 16km away in nearby Cupertino, may also present some opportunities for collaboration.

Moving from academia to the commercial world is likely to introduce its own share of challenges, although Kersten is confident his years of experience will translate better than many people believe. "People in the corporate sector often seem to look down on experience in the education sector, but in many ways IT in education is a more complicated beast," he explains.

"You have many stakeholders – staff, executives, and international and domestic students – and all of them are very important to IT. Working in previous commercial positions, my experience has been that IT very much gets set to policy and has power to enforce it even if users aren't happy – but in education, we tend to have more complicated policy and our users do more complicated things. I always tell people not to be ashamed of experience in education; just talk to the strengths of the complex environments that you've had to work in."



Talking up the

It's swift. It's powerful. It's intelligent. It's Leopard. And as the release date grows closer (and farther), it is generating more and more interest.

Developers across the world are getting ready to make the most of the cool new tools and features that will be packed into the next version of OS X. To help, Apple engineers have taken some of this exciting new stuff on the road – and presented it in a series of Leopard Tech Talks. These events have definitely played an important role in the lead-up to the release of the much-anticipated OS X 10.5.

The Leopard Tech Talks are an international series of presentations and demonstrations offering insight into where Leopard is at currently, and where it is heading.

The Sydney instalment, the only one held in Australasia, was held in February and saw over 70 Apple University Consortium delegates in attendance. Free to all Apple Developer Connection members, this event was aimed at all varieties of Mac developers – including commercial, in-house, web and scripters.

Not only did developers get a chance to take an up-close look at the latest features and opportunities within Leopard, but they also had the opportunity to pick the brains of Apple experts at dedicated question and answer sessions. The event attracted heaps of developers from all over Australia, with every session fully booked.



Leopard

By Carrie Osborne,
Griffith University

Featuring features

Going from strength to strength, Apple has announced a swag of new features to be incorporated into Leopard that have excited Mac users and developers alike. Leopard users will quickly discover the value of features like Time Machine – a built-in automatic backup utility – and Spaces – the ability to separate work and play desktops – in addition to improved iChat, iCal and Mail applications.

Mac OS X is becoming more popular with developers, and Leopard has the potential to attract even more. From a developer's point of view, because OS X is built on a Unix foundation, its technologies have always been accessible, flexible and durable. This will be enhanced with new and improved tools for developing applications that will fully integrate with all aspects of the new operating system and its frameworks.

Naturally development oriented, many of the Leopard Tech Talks sessions discussed how to best integrate applications with Leopard's new features and frameworks – like Time Machine, Core Animation, Calendar, iChat, Spotlight and Cocoa. Other sessions looked at how to take advantage of better 3D rendering and image processing capabilities to achieve stunning visual effects and prepare for high-resolution hardware in the future.

Enhanced 64-bit support was covered too; Leopard will be released as one universal OS that provides 64-bit power to Intel and PowerPC Macs. In addition, some sessions were dedicated to new and improved development tools themselves, including Quartz Composer, Dashcode, Objective-C, X-Code, WebKit and Xray.

Attendees took away a stack of technological insights, ideas and answers to critical questions. Even those who attended last year's Worldwide Developers Conference (WWDC) found the event valuable, since it provided good insight into how things have changed since August last year.

"The Leopard Tech Talks were a great way to find out what Apple has been working on since WWDC," says Thomas Duggan, a tutor at Central Queensland University. "It was a great bridging event between last year's WWDC, and the upcoming WWDC."

On the other hand, for those who did not get to attend WWDC, it was a good opportunity to catch up with some new features that have not been made public. And while the new features are very impressive, some developers are more excited about the upgraded developer tools that will be released with Leopard. "These are things that Apple does particularly well in," says Geoffrey Ericksson of the University of Queensland.

Moving towards the Leopard

It will be interesting to see if many developers will still support older releases of OS X, or if they will encourage the user base to upgrade by making their applications available to Leopard users only.

Since the Leopard Tech Talks, some developers have started to experiment, whilst others are now waiting and planning. Greg Preston, a systems programmer at the University of Canberra, believes "we appear to be at the start of a paradigm shift" and envisages that we may see people doing very different things in computing when Leopard is introduced.

Desktop and lab support staff also benefited from the Leopard Tech Talks. Mohammad Moore, who maintains Mac labs and desktops at the University of Adelaide, gained from the event by learning a lot more about Apple technology – especially Leopard and its features. He now has a much better understanding of "how it will improve and facilitate our working environments".

Although they tried to keep the content up to date with the latest developments, the presentations were written last November, and their age became evident to some. However, some attendees were surprised to see that the presenters themselves were really in touch with the Leopard development process itself. "I was amazed that the people giving the Tech Talks were the same engineers you see at WWDC," says Thomas Duggan, who attended last year's WWDC. "Very impressive!"

Attendees also had the valuable chance to talk to Apple engineers – and receive answers to some very technical questions. According to Geoffrey Ericksson, these engineers were experienced and honest about where their knowledge started and stopped. It is clear that Apple has spent a lot of time and effort to come together with developers and provide them with the opportunity to meet not only Apple engineers, but fellow developers as well.

The delayed release of Leopard, which was previously scheduled for June but is now due in October, seems to have affected developers, users and desktop support groups in different ways.

For developers, this delay will remove some of the hype from this year's WWDC, where Leopard was originally going to be released. However, WWDC 2007 attendees will now probably receive a beta copy to take home, which will allow for final testing and more refined applications.

In the education environment, many lab managers were relieved to find that Leopard was delayed, amid concerns that they might be forced into deploying Leopard along with new hardware purchased at mid-year, with very little time for testing before the second semester begins. Many general Mac users seem to be a little disappointed that they will have to wait a bit longer to get their hands on a copy of this long anticipated operating system, but the overall consensus seems to be that people are prepared to wait for a quality product.

Mac users, developers and desktop support groups alike, appreciate that Apple products have a reputation for being refined into something very simple, powerful and elegant – and that this does take a lot of time and effort. The Leopard Tech Talks held in Sydney were of immense value to developers across Australia. Attendees came away with answers, direction and ideas, and it will be exciting to see all of their new applications emerge after Leopard is released later this year.

AUC delegates quoted in this article:

- Geoffrey Ericksson: Qld Brain Institute, University of Queensland
- Greg Preston: Systems Programmer, Desktop, Information and Communication Technology Services, University of Canberra
- Mohammad Moore: Systems Administrator, Information Technology Services, University of Adelaide
- Thomas Duggan: Tutor, Faculty of Informatics and Communication, Central Queensland University



Time Machine.



Mail.



iChat.



Spaces.



Dashboard.



Spotlight.



iCal.



Accessibility.



64-bit.



Core Animation.



A new model for tech acceptance

For years, accepted pedagogical wisdom has argued that introducing the right technology into a teaching environment will almost intrinsically drive teaching to a new level. But if that technology isn't considered within the broader context of social and support networks, it can actually backfire, a University of Tasmania lecturer has warned.

Working with six government, independent and fully private schools, Darren Lee Pullen, a lecturer within the Faculty of Education at the university, has been running extensive surveys on the adoption strategies used to incorporate new ICT into the curriculum.

One of the major determinants in the success or failure of the initiative lies in the teachers' willingness to use it – but Pullen was surprised to find that older teachers, not younger teachers as one might expect, have actually proven more willing to experiment with new learning technologies.

"Sometimes ICT doesn't work within a school because teachers are hesitant to use the technology," explains Pullen, who is writing up the research to submit as his doctorate later this year.

"My research is showing that older teachers are more comfortable in their teaching patterns and are willing to take a risk. Younger teachers, who are maybe five years out of uni, are not as comfortable with their craft and are focusing more on how to deliver those lessons out of the classroom."

Also noting that technology adoption is often driven by teachers who use technologies such as wikis and podcasts outside of the classroom; the spillover into the classroom comes when they are confident enough using the technology at home to apply it to their classroom learning.



Darren Lee Pullen believes his structurANTion theory reflects the complex factors involved in educational technology's success or failure



Theoretical underpinnings

With his data analysis complete, Pullen has wrapped his findings into a far-reaching theory that he calls structurANTion. This philosophical approach to understanding technology adoption combines the widely accepted actor-network theory (ANT) – which reflects the interrelated nature of social and technical networks – with the more depersonalised structuration theory, which focuses more on process.

Pullen believes structurANTion more closely reflects the type of process that institutions go through when new technology is introduced: "by combining the two theories together, I could look at how organisations operate through the network and how networks determine how organisations change," he explains.

And just how do they change? Given the broad range of approaches to technology, Pullen says one particularly effective change mechanism is the establishment of mentoring programs, which can help overcome intrinsic obstacles to technology adoption.

This includes an appreciation of the differences between the technology teachers use at home and at school: for example, a teacher accustomed to using Mac tools at home may not necessarily find it easy to adapt to different tools on the Windows environment at the school. "If they come to a school and the school isn't using the same forms of technology, they're restrained in their practices," says Pullen.

Conventional ANT philosophy would put the onus for success on teachers, while structuration would target the school's technology policies. StructurANTion, on the other hand, recognises the interplay between both sides.

"In the past, most people have had a weighted experience, whereas people have either had skills or no skills or it has been a problem of technology," says Pullen. "But I'm looking at humans and machines as being equal [in importance], and by looking at it all as a social network, it changes how we view the issues and problems with adoption."

This might, for example, mean that particular technologies are adapted to facilitate transfer of skills from one environment to another. Also important is that schools not only develop policy for technology adoption, but act upon it – extending the mentorship idea, for example, as far as the principal's office. Particularly important, Pullen adds, is that students be factored into the networks by which technology effects learning change; after all, in many environments the students know more than the teachers.

"It all goes back to having a proper mentoring program," he explains. "If you're new to technology, you have a mentor who has already demonstrated that technology in the classroom. And while many teachers fear their students know more [about technology] than they do, learning from students can be positive, and can show the students the value of lifelong learning."

Shining light on a new Office alternative

Interview by David Braue



Sun Microsystems is well known for its high-end application servers, which run a large number of the heavy-duty Web sites and businesses in the world. The company's base of skilled programmers, however, is also well known – particularly for their creation of the cross-platform Java programming language and Solaris operating system (both recently open sourced) and lesser-known initiatives tackling mobile phones and desktop computing.

It was thus of considerable interest when Sun recently announced that it would dedicate two programmers to the task of producing an optimised port of the open-source OpenOffice.org productivity suite. Sun, after all, has carried the unofficial role of corporate steward of OpenOffice, ever since it paid \$US73.5 million to purchase Hamburg, Germany based developer Star Division in 1999 and developed its own commercial implementation, StarOffice.

The Mac port of OpenOffice will be marketed as StarOffice for Mac when it's released later this year. To find out more about this significant effort, Wheels talked with Laurie Wong, software product business manager with Sun Microsystems Australia.

Wheels: What exactly is Sun doing with OpenOffice?

Wong: Technically, OpenOffice [on Mac OS X] relies on running an X11 Window server to deliver the application. We want to port OpenOffice to Mac OS X so that it will actually talk directly to the Mac's Aqua interface, will have native look and feel, and be very well integrated with the environment. We have had a lot of requests from users for this, and will put a couple of engineers onto the software porting effort.

Wheels: What is Sun's interest in making this happen?

Wong: Pretty much like what we did with Java. With Java, we wanted to create an open environment that would allow us to survive and build a business around it. And in terms of office productivity, we wanted to create a tool that was open, and freely available, so we could have tools for office productivity that didn't tie us to any proprietary standards. I don't think it's fair that governments or organisations create documents that you need a \$900 tool to actually read.

Wheels: There has already been a port of OpenOffice to the Mac, in the form of NeoOffice [www.neooffice.org]. How will this project be any different?

Wong: NeoOffice has developed its own interface, and I don't believe it's a total port to Aqua. We maintain a healthy relationship with them. I think this project really just provides more choice in the marketplace in terms of the Mac platform.

Wheels: Will there be any Australian developers in the project?

Wong: No. The code development will be done by these two to three engineers [in Hamburg and the US]. You really need to know the internals of his stuff to make it happen. However, there were a couple of software quality assurance contributors based up in Newcastle, and a couple in South Australia, that do testing for OpenOffice.org, and I assume these guys will be involved in the testing as well.

Wheels: StarOffice is a commercial product. Will you also be charging for the Mac port?

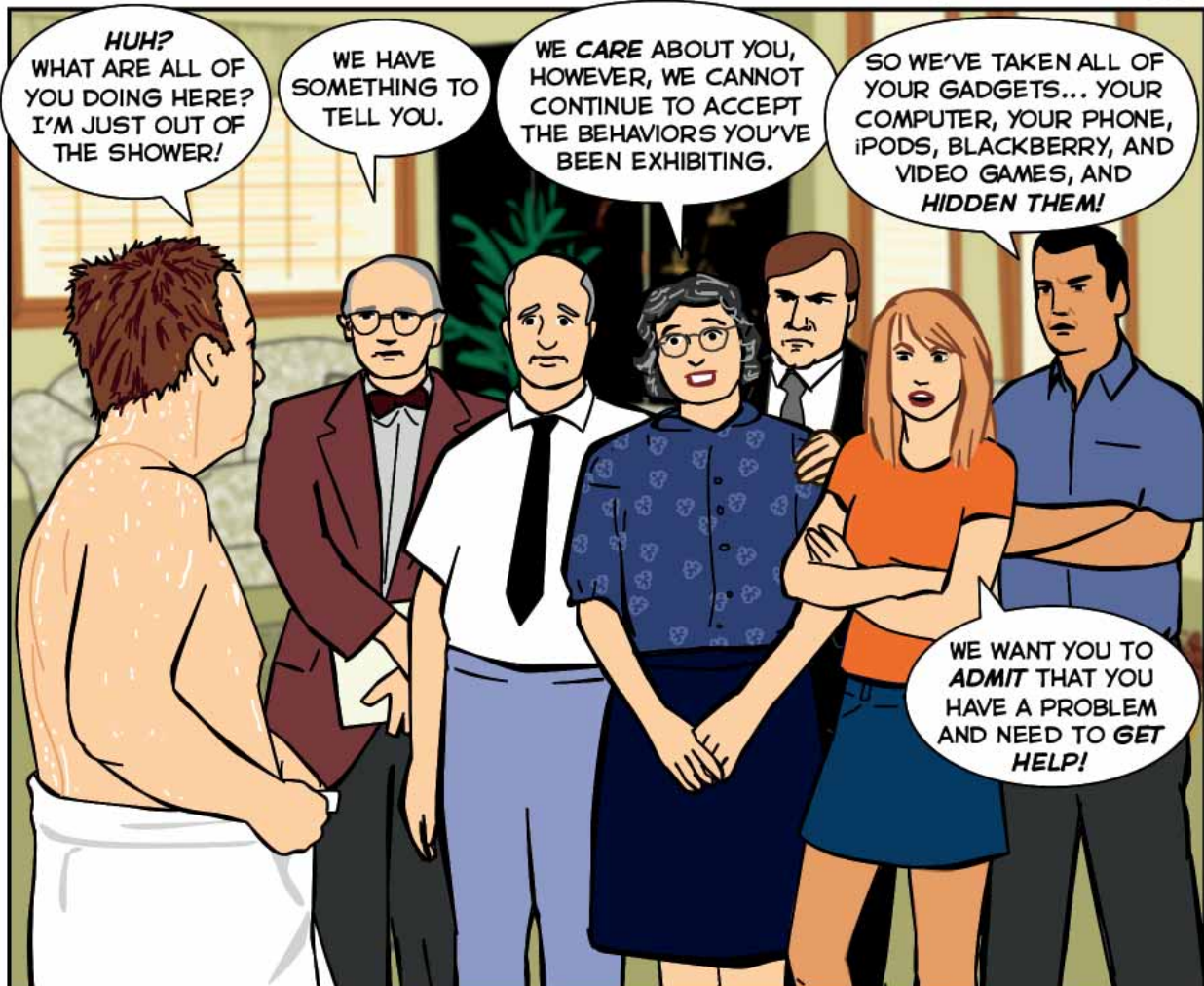
Wong: We commercially support both OpenOffice.org and StarOffice; the only difference is we stand behind StarOffice in terms of copyright and patent indemnity, and it has an industrial grade dictionary. The same thing will happen with StarOffice for Mac. Of course, Australian universities and their students are entitled to StarOffice for zero dollars anyhow.

Wheels: Are you involved with the Australian university community?

Wong: Several universities already give incoming students a free kit with StarOffice on it. We currently have a university campus program where campus ambassadors actually represent us with respect to Open Solaris, Java, and OpenOffice. They get involved in helping students, being part of user communities, assisting them in the adoption of our software, and providing feedback to us. Next year, we'll have a program specifically to take our open software to the universities.



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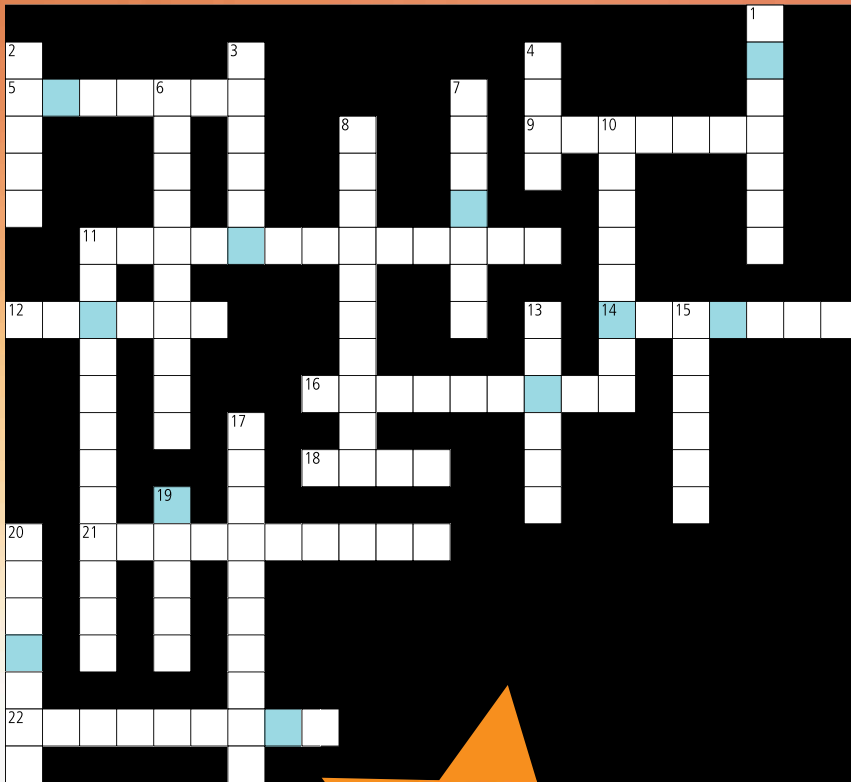


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Geek Intervention.

CrossWORD Competition



Across

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- 9 Kersten's research interest (p13)
- 11 Depersonalised theory of tech adoption (p16)
- 12 Separate work and play with this (p14)
- 14 Providing a new project view (p7)
- 16 Band you can now buy DRM-free (p11)
- 18 Student price for StarOffice for Mac (p17)
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- 22 The fun way to teach objects (p5)

Down

- 1 Nearly this many AUCers at WWDC (p4)
- 2 Number of Honours Scholarships awarded (p4)
- 3 Dovetails with this project (p12)
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- 8 Duggan's Tech Talk superlative (p15)
- 10 3D tool adds dimension (p8)
- 11 Original OpenOffice developers (p17)
- 13 Get a waterproof pouch to protect your gear here (p18)
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- 17 Get virtual with this (p2)
- 19 This student produced winning animation (p8)
- 20 Smudges like the real thing (p2)

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Send this to: crossword@auc.edu.au

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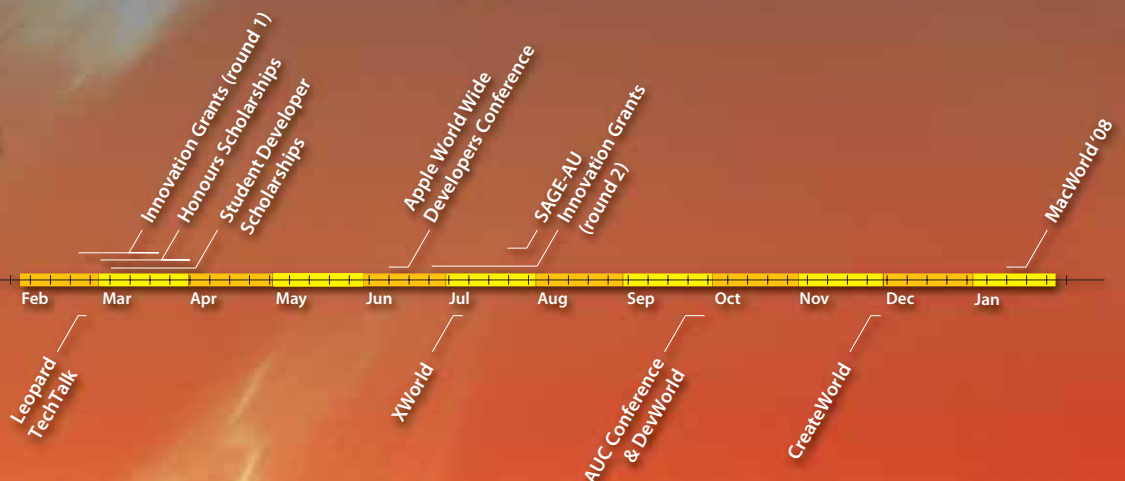
Apple University Consortium

Dates are indicative only, and are subject to change. Programs are only available to bona fide staff and students of AUC member Universities. Most events have long application lead times - see the web site for program details, application forms and updates.

www.auc.edu.au

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