

MIND



Wheels for the

**PRESERVING
MĀORI HERITAGE**



WWDC 2011

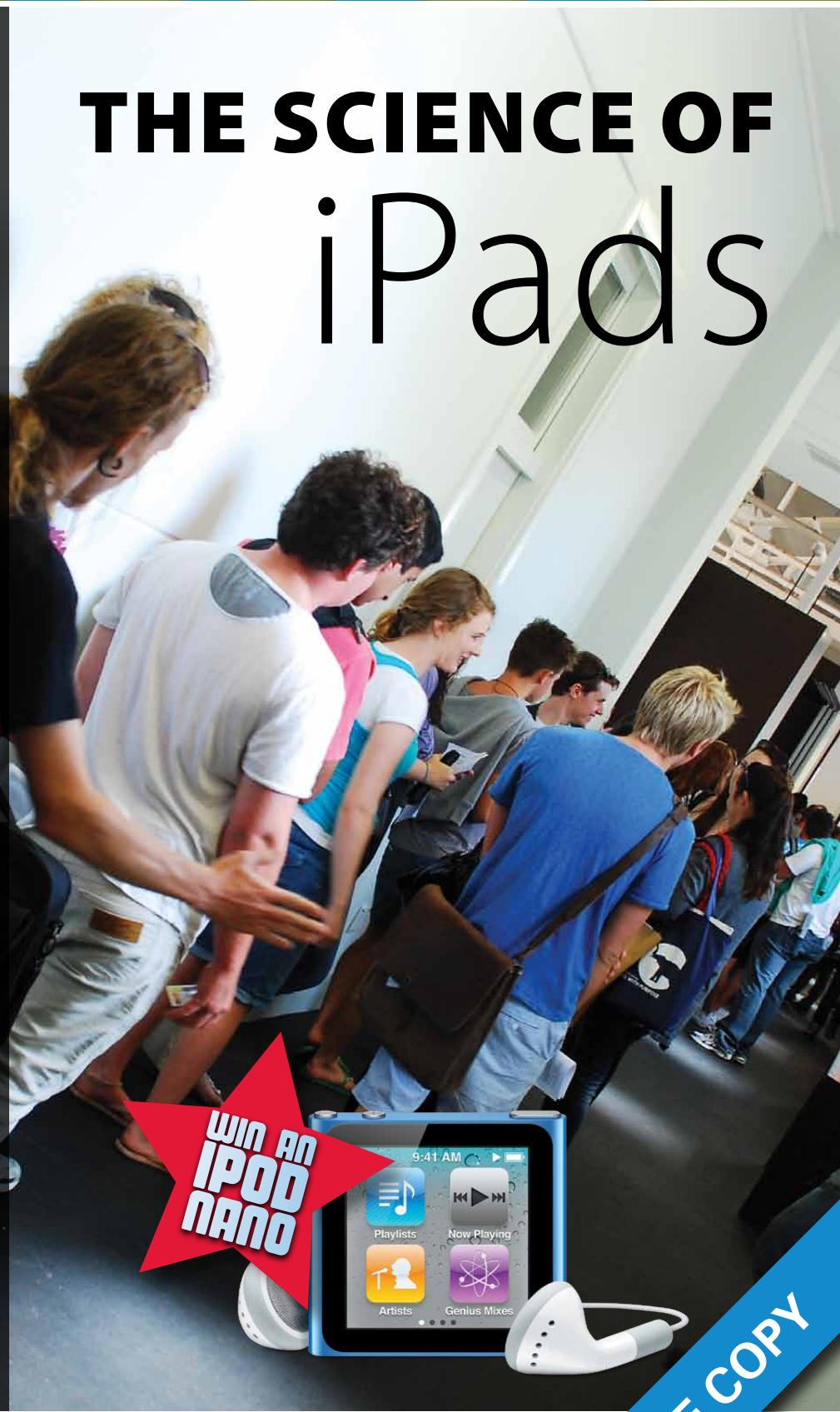


**MORE DEV
THAN EVER**

/dev/world/2011

An Apple Developers Conference
Down Under!

THE SCIENCE OF iPads



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PRODUCT ROUND-UP *WHAT'S NEW IN THE WORLD OF TECH*



Buffalo soldier

We don't normally recommend dropping or sitting on your hard drives as a matter of practice – but if it happens accidentally, you could do worse than to have your data stored on a Buffalo MiniStation shock-resistant portable hard drive. Available in 500GB (\$99) and 1TB (\$139) capacities, these bus-powered drives include fast USB 3.0 interfaces and come in red, silver, and black. Available at retail outlets or contact Uniden on 1300 366 895.

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iPad, meet instruments

If you're big into music on your iPad but haven't had a way to plug in your instruments for recording, you'll want to check out the Alesis iO Dock. This unit bundles MIDI In and Out, USB MIDI, headphone, stereo outputs, two guitar or microphone inputs, composite video out, and a footswitch port. Add your iPad, and you're ready to record whatever you need, right here in the garage. \$268 from www.globalsound.com.au or www.alesis.com/iodock for more info.



A newer Painter

Corel's Painter has been around for many years, but reviews suggest it just keeps getting better. With version 12, Corel has added a range of new features including Real Watercolor and Real Wet Oil paints, which mimic viscosity, blending and drying. You can control the way they dry and use the RealBristle option to control how the paintbrushes work, or tap into new tools like kaleidoscope painting, mirror painting and a new colour changing palette. \$429 for the full version or \$229 for an upgrade. www.corel.com.



Your Mac security guard

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TV anywhere (from anywhere)

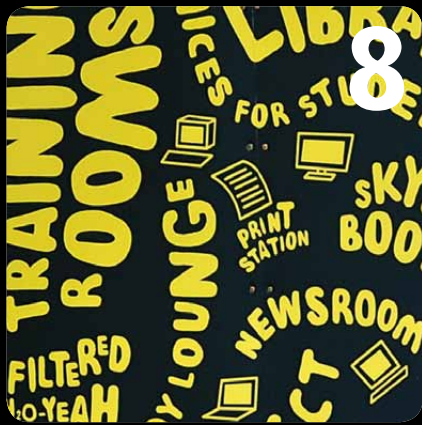
It sounds like something from a fast-food joint, but MirrorOp McTivia is an easy way to get whatever's on your computer – including video – onto your TV via its built-in wireless or wired network connections. This includes US-only services like Hulu and Netflix, access to which is provided through McTivia's tieup with VPN provider VPNSecure.me. Watch US-only shows and remote-control your Mac from your lounge room using an iPhone/iPod app, and you've just bridged the office-lounge room divide. \$299 from Harvey Norman or www.awindinc.com/mctivia/ for more information.



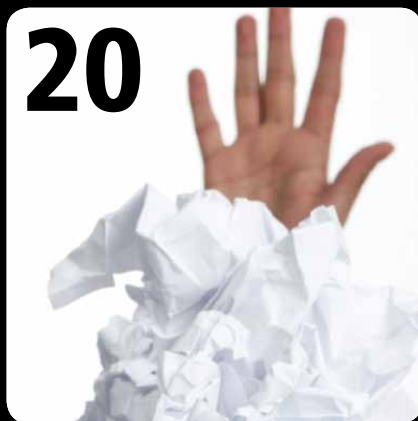
Another Bento box

Filemaker's organise-everything Bento database has been a big hit, and the latest version, Bento 4, adds a number of new features that may make your database work much easier. This version includes flexible label printing, form printing, template-driven data exporting, a new location data type for those doing work out in the field, better date searching, spreadsheet-like Simple Lists, and more. \$59 from store.apple.com or www.filemaker.com/products/bento for more information.

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EDITORIAL



Welcome, everyone, to the Winter issue of *Wheels for the Mind*. Once again, we bring to you lots of exciting stories of how our member institutions are using Apple technologies in new and innovative ways.

First off the bat, we catch up with several people who've attended WWDC this year through AUC sponsorship, and hear about their highs and lows of the event. We then re-visit Adelaide University and see how their first year iPad project has been faring. It's always exciting to see how a new piece of Apple technology can not only affect the way in which traditional teaching and learning occurs, but also add new and exciting dimensions to pedagogy and challenge the way traditional teaching happens.

We also take a look at how Australian universities are leveraging the power of mobile computing (and, in particular, iOS powered devices) for marketing. Our New Zealand colleagues in AUT are harnessing the power of Apple technology to help preserve Māori culture and make it more accessible to the masses.

There's a quick overview of Lion, Apple's new operating system, as well as Thunderbolt, the new display and high speed data transfer interface which is being built into nearly all of Apple's new desktop and notebook computers. We have a chat with Zachary Fitz-Walter from Queensland University of Technology and Nicholas Wittison from the University of Tasmania about their recent successes in being awarded AUC Student Developer Scholarships and see what they have in mind for their projects.

Our developers are still being strongly represented by AUC course offerings coming up throughout the remainder of the year and we also see how the University of Tasmania has incorporated Apple's iOS Developer University Program into their current curriculum, with great success I might add.

Of course we have our regular contributors Mark McMahon and Carrie Clarke as well as some wonderful humour from the guys at The Joy of Tech. Finally, we have a regular crossword competition rounding things out – so please take the time to enter and try to win a fantastic iPod Nano.

Sadly, this will be my last issue as Publications Editor. The position will be filled by someone new at the AUC AGM held in late September this year and I wish them great success for the future. I am so thrilled, honoured and humbled to have been a part of this incredible publication. I never cease to be amazed by the remarkable things our members have achieved using Apple technologies in teaching, learning, research and development, and I thank each and every contributor for continuing to make this a world class publication.

I wish you all the very best for the future and happy reading.

David Yammouni
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publications@auc.edu.au



AUC Update

Calling all developers



The AUC's annual /dev/world conference will once again return to Melbourne this September, with a new venue and an information-packed program that has made the event a huge success in its previous incarnations.

To be held 26-28 September at the Bell City Event Centre in Preston – just north-east of Melbourne's CBD – this year's /dev/world is targeted at developers who write for Mac OS X and iOS. It will include special talks, lecture presentations and networking events as well as a day of optional workshops.

Sessions will cover a range of topics including the iOS, SDK, Mac OS X Lion, and Xcode tools. It's recommended participants have experience in at least one programming language and are familiar with programming concepts such as object oriented programming.

In the leadup to the event, the AUC welcomes expressions of interest from staff and students of member universities who are eager to share their recent experiences developing for Apple's operating systems. With major new updates to both Mac OS X and iOS now in the wild, there's sure to be a broad range of topics to cover.

Presenters should be well-grounded in Mac OS X and iOS development, and be able to present information clearly and in a well-defined and constructive manner to an audience of their peers. The AUC will provide presenters with return airfares to Melbourne; up to three nights' accommodation; free conference registration and attendance at a special 'Presenters Dinner'.

www.auc.edu.au/DevWorld+2011

Get ready for CreateWorld

The AUC's annual conference for digital artisans, CreateWorld, will be back in its fourth incarnation from 28 to 30 November at Griffith University's South Bank Campus in Brisbane – and the AUC is eager for interested presenters to make themselves known.

As in the past, the event will feature a range of academic and technical presenters from the university and technical sectors, with keynotes, technical workshops, panel sessions and hypotheticals ensuring a full schedule.

The event is aimed at practitioners, academics, research teams, and technical staff across the digital arts, and is different than most conferences in that it promotes performance as well as traditional academic presentations. Presentations may range from spoken or performed presentations to installation, screenings, new media and audience engagement.

Those who are interested in proposing a presentation are encouraged to email createworld@auc.edu.au by Friday, 23 September. Final peer review papers must be submitted by Friday, 21 October.

www.auc.edu.au/Create+World+2011

The AUC AGM approaches



The AUC will be holding its Annual General Meeting and AUCDF coordinators meeting this year on September 29 & 30 at the Parkroyal Hotel Melbourne Airport. This is an extremely important event in the AUC calendar - it is the time where AUC delegates can voice their concerns, share their experiences, meet new colleagues and be involved in the overall running of the AUC.

This year's agenda will include the delivery of the new Strategic Perspectives Document for 2011 - 2015. This important document will help guide the actions, thinking and program delivery for the future of the AUC. There will also be the election of new Executive Committee members whose terms have expired plus regular items of business as well as an Apple update.

If you want to know more about what happens at the AGM, please feel free to contact your local AUC or AUCDF university representative or have a look at the AUC website www.auc.edu.au.

iPad 2s for loan



The release of the iPad 2 saw Apple's tablet get a range of new capabilities, not the least of which are its front and rear cameras, HDMI connectivity, and lighter, thinner design.

If you're interested in taking the new device for a spin, the AUC is now offering seeding equipment with which staff of Australian member universities can experiment (Customs restrictions prevent us from shipping the units overseas) on a short-term loan basis of up to two weeks.

Each kit includes a 16GB WiFi+3G iPad 2; an iPad 2 Smart Cover; a USB Dock Connector Cable; an iPad power adapter; an iPad AV HDMI Cable; an iPad Camera Connection Kit; and a range of demonstration media files including apps, movies, music, podcasts and books.

The AUC is also offering use of five original iPads, also equipped with WiFi+3G and shipping with related equipment; as with the iPad 2, you'll need to BYO micro SIM to access 3G capabilities.

And, last but not least, AUC members still have access to iPod touch kits containing 20 iPod touch 32GB models and three chargers and cables.

For full terms and conditions and to access loan agreement forms, visit bit.ly/dbMS5o.

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

WWDC 2011

As it does every year, the AUC sponsored a number of staff and students from member universities to attend Apple's Worldwide Developers Conference (WWDC, at developer.apple.com/wwdc) in June in San Francisco. Feedback, as usual, was positive; here's what several of the attendees thought:



Judit Klein

Studying: Bachelor of Creative Technologies, Auckland University of Technology

What attracted you to WWDC?

My degree combines elements of visual arts, communications, and computer science. For the first part of the degree I got interested in programming, which I had never done before, and immediately took to it and enjoyed it. When I heard AUT had joined the AUC and there were scholarships for WWDC, I was completely inspired to tap into the potential iOS offered, and said "that's my goal for next year."

What did you think of the event?

It has been one of the best experiences of my education, and it's something I wouldn't have been able to imagine going into the degree. There's no other way I would have been able to go without the support of the AUC. Being able to go to WWDC and having all these people I made connections with, even though I don't live in the same country, was great.

What was the highlight for you?

The highlight was queuing up for the keynote. Everyone thinks it's ridiculous, but meeting all sorts of people in the queue who were all there for the same reason, the spirit was great. Directly after the keynote, when everything went under NDA and the press left and they started talking about the developments in iOS 5 and Lion for developers, everyone was gasping and applauding and was genuinely very excited.

What did you take away from WWDC?

My practical project is based around iPhone development, looking at geotagged content and how the virtual and physical worlds are starting to overlap. I'm in the final semester of my degree and I really wanted to get the technical skills and go out with a bang, and WWDC helped me with that. I'm also doing some work within AUT looking at how iPads are being integrated into tertiary education, and this will help me there. At the end of the day, I just want to keep learning.



Nicholas Wittison

Studying: Bachelor of Computing (Honours), University of Tasmania

What attracted you to WWDC?

I went as part of my AUC Student Developer Scholarship

What did you think of the event?

It was really, really good: they've done a lot of cool stuff with iOS 5 and Lion.

What was the highlight for you?

One thing that stands out is storyboarding for iOS: it's brilliant. You can lay out digitally how your app is going to look, even before you touch very much code. This is awesome because it helps you visualise app development, and it's starting to remove the need for you to do it all in your head. This makes things faster and more efficient.

What did you take away from WWDC?

I'm developing a karaoke app for my scholarship, and Lion's whole new system for full-screen apps really stuck with me. The iPhone and iPad have

always had a setup where the app runs and becomes the device, and it will let the Mac become the karaoke machine with no other distractions. Apple are pushing the desktop and mobile platforms closer together in terms of design and the way they present stuff to people, which I think is good. If you know how to use one, you'll be able to figure out how to use the other one really easily.



Grant Baxter

Studying: Master of Design. I'm also a Web Application Developer and Systems Administrator for my department at the University of Otago, New Zealand

What attracted you to WWDC?

Pre-release information, knowledge transfer, and access to Apple engineers and staff.

What did you think of the event?

It's always nice to meet and talk with people grappling with the same issues in other institutions and environments. I noted there were no IT streams, and I'm disappointed to see the direction OS X Server is headed.

What was the highlight for you?

The iOS sessions, and the new storyboarding tools in xCode.

What did you take away from WWDC?

I've been administering Apple hardware and software for 14 years, and recently became interested in developing for iOS. The sessions on ARC and storyboarding have really helped me in experimenting with iOS 5. Not having to worry about memory management and being able to construct all of the GUI in a single space, via storyboarding, really speeds up development for me.





iPads reinvent Adelaide science

A measured but optimistic experiment with the use of iPads in university classrooms has fuelled a learning revolution at the University of Adelaide, where the devices have become students' constant companions and lecturers are embracing them as a core part of a science-curriculum reinvention.

The university's Faculty of Sciences made headlines last year, when it announced that it would be providing each incoming first-year student with an iPad and adapting classroom practice to address the interactive possibilities the devices offer. In the long term, the iPads are expected to replace textbooks and become primary access points to a new range of fully online science courses.

Such goals were still a long way off when the faculty began issuing iPads during this academic year, with 700 of the devices delivered to students so far. Those students have, says Executive Dean Bob Hill, embraced the possibilities of the iPads with gusto – and confirmed that they are both well-suited for the classroom and worth adding in ever greater numbers should the current one-year trial be extended.

"For the first time, we have all our students on a level playing field with technology," Hill explains, "and it's technology that is very effective. It's even changing the basic things: in the past, we couldn't rely on students being able to access email, electronic texts or Internet sites where we had course materials. With the iPads, we're now confident that everybody has the same access.

Feedback is that it has met our expectations in the first year."

One of the university's key concerns going into the trial was to ensure that the iPads were seen as learning tools rather than bribes. To ensure this was the case, the faculty took the opportunity to conduct a pedagogical shift – realigning its curriculum around ten 'big science questions' that form the backbone of the faculty's educational structure.

These questions (bit.ly/n4dTkC) include 'how did the Universe begin?', 'how does the Earth work?', 'what is life?', 'how did life evolve on Earth?', and others exploring topics such as causes of disease, climate change, feeding the world sustainably, reducing reliance on fossil fuels, conserving species diversity, and fuelling the nanoscience revolution.

Using these big questions as touchstones for the broader curriculum has not only forced the faculty to reconsider its educational delivery, but allowed it to position the iPads as core devices to access what is set to be a progressively adapted curriculum model.

"The iPads have been a catalyst to get people re-thinking about the way we do things," says Mike Seyfang, the faculty's social media consultant to the executive dean. "The iPad was a key part of our strategy to redesign our curriculum, give social relevance, and engender enthusiasm in teaching staff. The project has been an excellent lever for

change, and there has been an extraordinary amount of activity around the iPads."

Classroom interactivity.

As well as enabling students to consume content – for example, allowing them to quickly jump to online sources that lecturers see as relevant – the iPads have also engendered a greater degree of interactivity within the classroom.

In courses like Prof Simon Pyke's Science 1100 – Principles & Practices of Science – all students have an iPad and have readily engaged with tools such as interactive classroom polls or broader surveys, and have results displayed instantly onscreen. The iPads are used to access My Uni, the university's Blackboard-based learning management system, and are being used to post content in course-related wikis. Other exercises have seen the iPads used by students to produce collaboratively-developed word clouds, or increasing classroom participation using a 'roulette wheel' app filled with lecture-related materials.

"It sounds a bit gimmicky but we got a lot of extra engagement because of the tiny size of the app," says Seyfang. "It's actually very difficult to get students to read their materials before a lecture and prepare, but apps that make for new experiences are going to be more and more popular and I'm sure educators will find other really interesting uses for the technology."

While the iPad trial has proved overwhelmingly positive, some of the devices' shortcomings have



become apparent as initial curiosity matured into more-sophisticated and targeted feedback.

For example, the devices are proving to be “a little clumsy” for note taking, says Seyfang, and some students have opted to print out classroom notes rather than relying exclusively on onscreen versions. “There’s a lot of cognitive load to switch tasks, jump between journals, read journals, and go into online resources, and so on,” he explains.

Technology administrators are also still weighing up the proper level of control to be exerted over the student devices. This is going to be more of an issue moving forward as many students bring their own iPads and the university pushes harder into areas like electronic textbook delivery: “We’re not preconfiguring the devices now, and we wanted to allow the platform to be as organic and emergent as possible,” says Seyfang.

“It has really been a challenge trying to manage the software, the apps they need, the books they buy, and all the bits and pieces,” he continues. “It’s still early days with textbooks and publishers, and we were warned that there wouldn’t be much content online. But within days [of our initiative] the publishers were lining up to spruik their latest offerings.”

Learning devices.

While the faculty is still working through the right balance of apps, resources and curriculum changes, Seyfang says one thing has been evident from the beginning of the rollout: the

iPad is a class-leading device that is both easier to roll out, and more popular with students than laptop alternatives.

Out of 700 devices rolled out so far, he adds, exactly none were defective when unboxed. That’s an unbelievable result that’s orders of magnitude better than historical laptop failure rates, which have been a source of constant consternation for IT administrators.

“When I used to do laptop rollouts, we would go into rollouts expecting a 1 in 10 fail rate,” Seyfang says. “That’s how it was in the old days. But there were none in the first batch of iPads, and that’s reflected in the entire experience in general.”

Battery life, for example, has proved to be impressive and only once have students had to sit near a power point to keep their iPads charged during a lesson. Furthermore, students have proved quite eager to look after their iPads – keeping support costs low and facilitating greater use of the devices in the curriculum.

“I don’t think any device has had this effect,” says Seyfang. “The iPad is not the best content creation device, but it’s super good for consuming content. Students have been very clear that they will carry the iPads around with them and that they will use them, and we don’t get that response with any other option. The general makeup of what an iPad is, cannot be underestimated.”



Unis open new doors to the world

Vanity iPhone and iPad apps may have started out as intellectual curiosities for some universities, but growing awareness of increasingly sophisticated apps is giving them a key role at the front line of global marketing and outreach efforts.

The desire to build a stronger international marketing presence was the main driver behind the creation of an iPhone and iPad hybrid app (bit.ly/nuYjJI) for South Australia's Flinders University, which began exploring options for smartphone and tablet apps after realising the devices had become a primary way of reaching 'Generation Z' teenagers.

"We were looking at prospective students that have grown up with technology, want information, and want to be able to share it," explains Kate Silkstone, Communications Manager within the International Office at Flinders. "We recruit students through 400 agents around the globe, and sending out print prospectuses to all these agents can be quite expensive. We were looking for a low-cost alternative."

The university found it, working with UK-based university search firm i-studentgroup to build an app that would not only run on the iPhone, but became Australia's first university app to be written to take advantage of the iPad's increased screen real estate.

With a limited budget, the project team worked extensively to figure out what information would benefit students the most. This ultimately included maps of Adelaide – "unlike Sydney and Melbourne, people often don't know where Adelaide is," Silkstone laughs – and videos and images of the campus and surrounds. Rather than just pointing to online resources, the conscious decision was made to bundle as many of these resources into the main app as possible, so it would be available to students from countries without good wireless network access.

The app has, by all accounts, found its mark: since its release in January, it has been downloaded over 3000 times by people from more than 50 countries. This includes countries where Flinders has historically done little or no marketing of its own, like Italy. "We're hitting the target market," says Silkstone, "and reaching markets we haven't reached in the past."

Surveys of incoming students this year showed that many had downloaded the app before deciding to attend, which confirms its growing role in the decision-making process – and the need for universities to present themselves well through apps that are both appealing and useful. In May, an update to the app added course information and other details intended to make it even more useful for domestic students as well as international recruits.



Queensland's Griffith University has also seen strong success with its iPhone app, recording nearly 9000 downloads in the past six months from a globally diverse range of students and potential students. Downloads from China, the USA, Hong Kong, Germany, Taiwan, Singapore, Norway, Canada, Korea and other countries confirm the multicultural outreach that the app is enabling – but Steve Bishop, Associate Director for Enterprise Information Systems with Griffith, says that marketing is only half the story.

"Marketing was always a consideration, but it was justified as purely being an on-campus tool to provide students while they're here," Bishop explains. "We were watching the explosive growth of iPhones in the Australian marketplace, and thought 'that's a bandwagon we definitely want to be on'. The trend now is, for applications we're releasing, to almost design for a mobile device first and then consider what we might do for full computing devices later."

Unlike Flinders, Griffith built its app inhouse, calling on a pair of Computing & Information Technology students to join an Information Services representative in building the app. That project represented the students' final-year project, combining information like the academic calendar and a news feed with details of computer lab availability, mapping functionality, searchable phone book, access to iTunes U, email accounts, and more.

Maps and the staff phonebook have proved to be popular features of Griffith's iPhone app, but Bishop expects recently-added timetabling tools – delivered through back-end links to the university's administrative systems – to be highly popular as well. Growing diversity of on-campus smartphones and tablets is leading the university to consider ways to make the next iteration of the app cross-platform – which, Bishop says, in itself shows users' enthusiasm for the app.

"Students have gotten quite excited about the iPhone app, and probably the biggest feedback we've had is 'where are the others?'" Bishop says. "Whenever we look at applications now, we consider whether it's something that people are likely to do offsite, or on a small-factor device. The whole process has been a good learning experience for us, and everybody now has higher expectations."



PRESERVING MĀORI HERITAGE

New Zealand's Māori people have a long and storied past whose preservation has been a key goal of Auckland University of Technology's (AUT's) Te Ara Poutama, or Faculty of Māori Development. Now, thanks to the enterprising efforts of faculty staff and a range of Apple technologies, that goal has been furthered through a range of digitisation projects that are both preserving Māori culture and providing a model for preservation of other dying languages around the world.

The impetus for the faculty's efforts came from the work of Hohepa Spooner, a lecturer in multimedia who in 2006 began a pilot program to convert eight analogue audiocassette tape recordings of te reo Māori language lessons into digital files.

Those files were loaded onto the iPods of ten participating students, then used during class exercises to reinforce the language learning process. Made available through AUT's Blackboard-based learning management system (LMS), they significantly increased the reach and utility of the faculty's language teaching capabilities.

"In the past, students had to go to a language laboratory to use audio tapes and a set of headphones to do their work," Spooner recalls. "Once we had digitised the tapes, students could do their work wherever they were, and didn't have to be on campus. The ability for them to have the material on hand, and to be able to revise and play it back when they wanted to, was a significant benefit."

The benefits from that early pilot program were immediately apparent – and helped earn Spooner appointment as an Apple Distinguished Educator (ADE) given his use of Apple technologies to deliver strong learning outcomes. With the support of the university, in 2008 a formal digitisation program dramatically expanded the scope of the project, which was quickly resumed with the help of three postgraduate students and two professors who upped the volume of digitised tapes to 550.

These days, the program encompasses over 700 tapes, all available to Te Ara Poutama

students as digital files and heavily used to support a broad range of Māori studies. Content ranges from key phrases and vocabulary through to cultural assets like traditional songs and karakia, or formal ceremonial recitations.

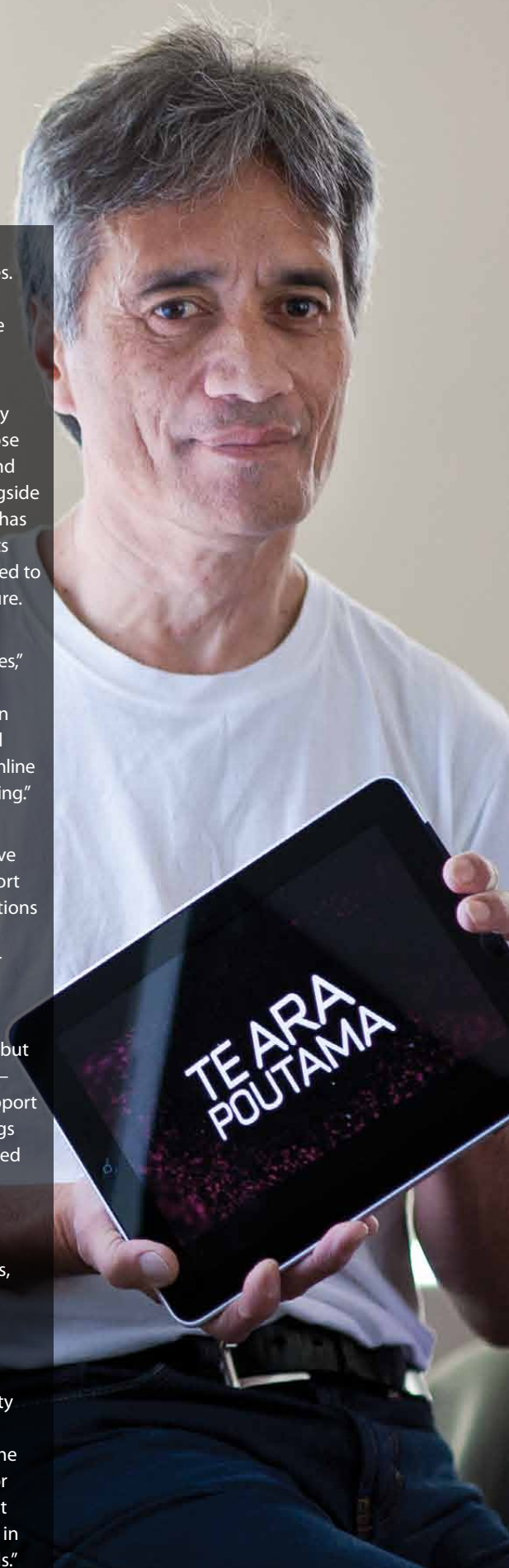
The content is a primary resource used by all incoming students to the faculty, whose lecturers interact with students online and mark their papers through the LMS alongside the media being delivered. But Spooner has set his sights much more broadly: after its success at AUT, the model has been moved to an external Web site and the LMS structure.

"This provides the benefit of having the same model for other indigenous languages," Spooner explains, "without concerns over intellectual property rights. If, say, American Indian groups want to use the same model they can just drop their content into this online LMS and use it for their teaching and learning."

Reflecting the academic world's growing interest in iPads, Te Ara Poutama staff have most recently become involved in an effort to create ePub-formatted digital publications that highlight important research and other work being conducted within their respective areas of interest.

Around 50 faculty staff have been set up with iPads and trained to manage them, but growing interest in the content creation – and in the regular use of the iPads to support teaching activity – suggests greater things ahead. Spooner envisions iPads being used to deliver classroom presentations, for example, as well as supporting everyday productivity activities.

"Staff can present material from the iPads, use it for Internet and email on the WiFi network, and use applications to share documents," says Spooner, who names the ReaddleDocs viewer as a particularly useful addition to the group's productivity suite. "What's useful about this is that we can connect with the service, and have the university create applications and files for teaching and learning. We're trying to get ourselves ready for when students come in with iPads, like they already do with iPods."



Apple Update



The Lion roars

Spearheading the latest lineup of Apple announcements is Mac OS X 10.7 'Lion', a dramatically improved version of the Mac operating system that incorporates over 250 new features and marks a major milestone in the platform's development.

Features such as Multi-Touch gestures, system-wide support for full-screen apps, and the new Mission Control and Launchpad features offer significant usability improvements, as does a completely redesigned Mail app that more closely emulates the user experience of Apple's iPad Mail application.

Lion isn't all about the user experience, however: under the cover, users will benefit from a range of new features including Resume, which restores apps to the exact state they're in when you shut them down; Auto Save, which

automatically and continuously saves your documents as you work; Versions, which records your document history and enables restoring of previous versions; and AirDrop, which facilitates the movement of files between nearby Macs using a peer-to-peer wireless connection.

Reviews already suggest Lion is a must-have upgrade, and it's available now as a \$31.99 download through the Mac App Store. If you're on a low broadband quota, you'll be able to buy it on a USB drive for \$75 at your local Apple Store. And if you prefer the Mac OS X Lion Server version, you'll need to get it for \$51.99 from the Mac App Store.

www.apple.com.au/macosex

Thunderbolt from the blue

Further expanding options for use of its dual-channel 10Gbps Thunderbolt I/O technology, Apple's new Apple Thunderbolt Display is designed specifically to work with new Thunderbolt-enabled Macs such as the updated MacBook Air and Mac mini.

The \$1199 display measures 27 inches diagonally and features full 16:9 design, built-in FaceTime HD video camera, 2.1 speaker system, ambient light sensor to adjust display brightness, and an integrated MagSafe charger to keep Mac notebooks charged. There are three USB 2.0 ports, one FireWire 800 port, a Gigabit Ethernet port and a Thunderbolt port that allows daisy-chaining up to five other Thunderbolt devices.

www.apple.com.au/displays





Keep it in the iCloud

One of Apple's biggest recent releases was the coming availability of iCloud, a comprehensive and expanded free 'cloud' service that replaces MobileMe with a broadly designed cloud storage service that allows users to store content in a single place and automatically, wirelessly deliver it to iPhone, iPad, iPod touch, Mac or PC systems as your needs dictate.

iCloud incorporates a range of subsidiary services including MobileMe's Contacts, Calendar and Mail functionality, rewritten in an iCloud-friendly architecture that allows calendars to be shared and email to be easily accessed across all devices. App Store and iBookstore purchases are stored in the cloud and allow all users of any device to automatically download content as it's purchased, or by choosing it from the purchase history.

The new iCloud service also includes storage capabilities like iCloud Backup, which automatically backs up your iPhone, iPad or iPod touch data – including the Camera Roll, purchased apps, music and books, device settings and app data to the cloud while it's being charged; data can be restored to another device using just your password. And iCloud Storage manages the flow of documents between devices, automatically saving new versions and updating them on all linked devices; up to 5GB of free storage supports mail, documents and backups, and can store data created in third-party apps that use the new iCloud Storage APIs.

There's also a photo management service, Photo Stream, which automatically uploads photos taken on iOS devices to your iCloud account and syncs them with your home Mac or PC. And the iTunes in the Cloud service lets you download previously purchased iTunes music to all of your iOS devices at no additional cost. Apple will also be offering US customers access to iTunes Match, which will scan your music library and link to 256Kbps AAC DRM-free versions of your songs, available straight from the iCloud service, for a flat annual fee.

iCloud beta and Cloud Storage APIs are available now for iOS and Mac Developer Program members at developer.apple.com. iCloud will be released publicly this Australian spring.

www.apple.com.au/icloud



Lighter, thinner, faster Macs

The release of Lion saw a refresh in Apple's lightweight computer products, with the MacBook Air and Mac mini getting performance and feature boosts to complement the capabilities of the new operating system.

The new MacBook Air comes in 11-inch and 13-inch models that are just 1.7cm thick at their widest point and weigh just 1.08kg and 1.35kg, respectively. Up to 4GB of 1333MHz RAM is supported, as are Intel HD Graphics 3000 graphics and Thunderbolt connectivity, which provides backwards compatibility with Gigabit Ethernet.

The updated Mac mini, by contrast, measures 19.7cm square and 3.6cm thin and incorporates a high-speed Thunderbolt port, Intel Core i5 or i7 CPUs, AMD Radeon HD 6630M discrete graphics, and comes in a quad-core Intel Core i7 server

configuration. The new unit has no optical drive but works with the MacBook Air SuperDrive and offers support for up to 8GB of RAM, a faster hard drive and 256GB of flash storage.

Pricing for the new MacBook Airs ranges from \$1099 for an 11-inch model with 1.6GHz CPU, 2GB RAM and 64GB of flash storage to \$1799 for the 1.7GHz CPU, 4GB RAM and 256GB of flash storage. www.apple.com.au/macbookair

The new Mac mini costs \$699 for a 2.3GHz Core i5-based unit with 2GB RAM and 500GB hard drive; \$899 for a 2.5GHz Core i5-based unit with 4GB RAM and 500GB hard drive; and \$1099 for the 2.0GHz quad-core server configuration with 4GB of RAM and dual 500GB hard drives. Upgrade options are available across the line.

www.apple.com.au/macmini

X marks the spot

In amongst all the excitement of Apple's major platform announcements came an upgrade that will have been of particular interest to video-using students and staff everywhere: the release of Final Cut Pro X.

This latest iteration of Apple's pro-level video editing suite was important not only because it's a long-awaited update of a seminal video tool, but because it incorporates a major interface and functionality overhaul that introduces a dramatically different editing paradigm and a fresh new look to applications like Motion and Compressor.

Headlining the new version is the new Magnetic Timeline, which allows you to arrange clips any way you like. Use Clip Connections to connect primary story clips with elements like titles and sound effects, which stay in exactly the right place even when you move bits and pieces around. Combine a number of video elements into a Compound Clip that can be edited as a single clip, and use the Auditions feature to compare results using

a number of different takes until you get the one you like best. There are also built-in tools for scanning and tagging content into Smart Collections based on the type of shot, number of people in the shot and more.

Motion 5 and Compressor 4 have both had interface overhauls to bring them in line with Apple's newer usage paradigms and provide tight integration with FCPX. The main package is available through the Mac App Store for \$319.99, while Motion and Compressor each cost \$51.99.

www.apple.com.au/finalcutpro



AUC Scholarships: Gamifying the world

Examining the boundaries between work and play have been a popular topic in research circles for years, but 2011 AUC Student Developer Scholarship recipient Zachary Fitz-Walter is taking a different view on the issue as he delves deeper into his PhD research at Queensland University of Technology (QUT), which is looking into the increasingly popular concept of 'gamification'.

Defined loosely as adding gaming elements to existing activities, gamification has become most widely seen in the addition of competitive elements to social-networking sites such as FourSquare, which ranks users based on the frequency of their visits to particular locations and rewards them with advancement along a scale of progressively most impressive titles and rewards.

Gamification adds new angles to what might otherwise be unremarkable information services, and Fitz-Walter's research is exploring the areas where it can be most effectively applied to improve user engagement and relevance. He's also interested in exploring how far users will go to manipulate the system to win rewards in arbitrary, contrived gaming environments – for example, creating fictitious locations in FourSquare.

"I'm really looking at the mix between utility and play, work and fun," Fitz-Walter explains. "I want to see whether adding game elements to the interaction affects the user base, and changes the user to be a player or a user, and what kind of experience it delivers. It's interesting to look into how this trend affects things."

More recently, he has been considering how university-developed iPhone and iPad apps might be gamified to encourage incoming uni students to better explore and engage with their new surroundings. Such applications could also encourage social interaction, serving as ice-breakers that organise students into task-focused groups that set about reaching game-like goals.

With the support of an AUC Student Developer Scholarship, Fitz-Walter will explore and apply the concepts around gamification to this and other problems facing young Australians. He has, for instance, picked driver log books – which every learner driver must complete to register what is up to 120 hours of mandatory practice time – as another area ripe for gamification.

Incomplete log books are a persistent problem for learner drivers, with many completed books rejected by road authorities and student frustration widely reported. Fitz-Walter knows first-hand how many student drivers hate the logbook process – his younger brother is currently going through the process – and believes moving it to the iPhone – and gamifying the process – could be effectively applied to reduce the drudgery of logbook recording and increase overall accuracy.

Not only would a mobile app make it easier for learner drivers to stay disciplined in their logbook recording, but it would allow for game elements such as linking to other learner drivers and tracking their relative progress towards the legislated minimum hours.

"I've spoke with so many people that have had grief with the log book," Fitz-Walter says. "It makes sense to move it across to a mobile platform, and further down the track I could explore how game elements could be integrated with that. The first step is to automate the process, then there's the potential of seeing your progress in a game-like way."

It's an apt challenge for Fitz-Walter's scholarship work: as a student developer he has done iPhone development in the past, and has completed a number of logging, timetable and conference-schedule type apps. Ironically, he didn't know about the AUC during his undergraduate years but has found it to be a significant boon – both through /dev/world attendance last year, and his attendance at this year's Apple Worldwide Developers Conference (WWDC), courtesy of his scholarship award.

Those events – (he is looking forward to this year's /dev/world event) – proved to be a catalyst for his development plans, and he's been a regular participant in AUC development forums. "The AUC is one of the best programs I've seen out there for students," he says. "I only found about it now in my postgraduate years, but I wish I had known about it in my undergraduate years."

AUC Scholarships: Singing the iOS tune



Nicholas Wittison is big into mobile applications, and he's big into karaoke – so it was hardly a surprise that his AUC Student Developer Scholarship-winning project would combine the two.

A Bachelor of Computing student currently completing his Honours year at the University of Tasmania, Wittison got into iOS development a few years ago. He's currently working alongside the university's human-computer interaction (HCI) specialists, and working as a software engineer with the UTas-linked mobile development concern Secret Labs.

"I've always been fascinated with technology, and mobile technology is the next iteration of what we're using as a desktop," he says. "I've always been excited about mobile phones, and as soon as they became small computers it became even better."

In scoping out topics for his scholarship project, Wittison quickly realised he wanted to apply his love of iPhones and iPads to a distinctly social experience: karaoke. His project involves reimagining the karaoke experience – currently a single-person endeavour – in a social environment that's built around a host Mac or iPad serving karaoke content to one or more nearby iPhones or iPod touches.

Using the devices' built-in microphones and screens not only means there's no need for additional hardware, but means it should be easy to be able to set up an impromptu karaoke session amongst a group of friends.

"If they're having some sort of get-together, they can set up karaoke quite easily by downloading apps to their devices," Wittison explains. "As long as they're connected to a Wi-Fi network they'll be able to do those things easily. Because each device has its own screen, they can look at the karaoke content easily."

The idea came during an annual social gathering with Wittison and his friends, many of whom are developers as well, where a beer-fuelled karaoke singalong often plays a big part. Recognising the fun everyone was having, he began wondering whether there wasn't a better way to handle the karaoke part of the gathering – and his idea was born.

Although the app will leverage iPhones and iPod touches, Wittison is still deciding whether a Mac or an iPad will be better as a central node. The former option is looking particularly promising thanks to the ability to smoothly mix audio on a Mac using Core Audio, about which he was able to learn a considerable amount when his scholarship brought him to Apple's Worldwide Developers Conference (WWDC) this year.

That experience proved to be hugely educational for Wittison, who enjoyed learning more about the new features in Mac OS X 10.7 'Lion' and is excited about evolving app design tools that facilitate the creation of apps for iOS 5. He's also looking forward to attending the AUC's /dev/world conference in September, where he anticipates extensive sharing and learning in a community of like-minded developers.

"Just getting the chance to network with developers, and make contacts that I can catch up with later, is great," he says. "I'll have a lot to discuss: I'm always looking at code for my job so whenever I find bits that are relevant to my scholarship project, I put them to one side and add them to my have-to-look-at-this-later pile. There are a lot of people at /dev/world that not only do interface development, but Web development as well – and no doubt that will be helpful."

DEVELOPERS' CORNER

DEVELOPERS ON THE TRAIN

The AUC's program of development courses continues to grow, with strong support both from the AUC and from the developer community throughout member universities.

Already this year, the AUC has run a range of workshops covering topics such as Cocoa, iOS, the Unity game development environment and Ruby.

Strong attendance figures and enthusiastic feedback have confirmed the value of the workshops to the developer community. For example, the iOS Workshop, delivered by Zac Cohan and Nik Youdale in March and April, attracted a full roster of 120 attendees from around Australia.

Feedback from the workshop was overwhelmingly positive: "brilliant, there really isn't any other way to describe it," one attendee said.

"The structure and content of the course was excellent and I was easily able to learn the new concepts being taught," said another.

The Unity workshops, which provide in-depth tuition on development for the popular cross-platform gaming environment, were also well received. 60 people attended the events, which ran in May and June, and there was a strong spirit of sharing and community throughout.

"Probably just as good as the training was getting to meet interesting

people," one attendee wrote.

"The small group made it easy to chat together over the numerous breaks to hear about different exciting things everyone's been involved with, and to share ideas and ask questions."

The AUC's developer-focused program is continuing throughout the rest of the year, with around 40 people signing up for Ruby workshops run in July; more iOS SDK workshops in September and October, with a focus on the new iOS 5; and workshops covering the Corona development environment, to be delivered for the first time by Jayant Varma to around 30 attendees.

AUC members will also get a chance to bring together their own interests with those of over 100 others at the /dev/world/2011 conference, slated to be held in Melbourne at the end of September.

"We have been rapt with the reception to our growing program of developer-focused workshops," says University of Wollongong AUC representative and executive council member Daniel Saffioti. "Based on this strong response we have a bumper year of training planned for 2012 as well. We're likely to see a focus on Cocoa, iOS, Xcode, and Web app development – and we look forward to seeing all interested AUC members drop in."

www.auc.edu.au/Developer+Training



FORMALISING UNI iOS DEVELOPMENT

Students at over two dozen Australian universities are poised to benefit from the extensive iOS resources provided through Apple's iOS Developer University Program, the company's structured methodology for teaching iOS development skills in a tertiary environment.

Designed to stimulate iOS development for iPhones, iPads and iPod touches by businesses, hobbyists and school environments, the program offers a range of relevant resources through the iOS Dev Center – ensuring that participating students will have everything they need to learn how to build, test, and debug apps for devices running the mobile operating system.

Limited to degree-granting higher education institutions, the free university program is organised around a team motif, with academic groups organised into teams of up to 200 students. Those students get access to Apple developer forums, the ability to test apps, access to general-release versions of the iOS SDK, and the ability to share applications between students and lecturers within the same team.

The University of Tasmania is among the institutions starting to make use of the resources available through the program, with third-year students in its Mobile and Ubiquitous Computing unit finding them a strong complement to their work.

"The course is all about how mobile devices are increasingly being used for all aspects of our lives, and not just traditional computing-related stuff," says Tony Gray, Technical Services Manager within the university's School of Computing and Information Systems.

"The unit has been much more popular than we anticipated it would be: we expected 50 to 60 students and have 95 enrolled. I don't know whether that's because they're generally interested in mobile and ubiquitous computing, or because they knew there was an iOS component."

Either way, the course has proved so popular that it's likely to be tweaked and expanded in 2012, particularly for less-technical students that have flocked to the mobile course but don't come equipped with same programming skills as their computer-science peers.

A range of other Australasian universities are firming up their plans to introduce the program locally, whether adopting it as part of the existing curriculum or using it as the basis for new content; contact your university AUC representative to learn more.

developer.apple.com/programs/ios/university

Get involved!

Education and training is not only essential for developers to boost their skills, but it gives them an invaluable chance to be part of the broader development community. Meeting and keeping up relationships with like-minded peers is essential for continued personal development, while open sharing of skills and lessons learned benefits everybody involved.

In this spirit, if you have been working on a particularly interesting project, have developed expertise that you think you could share effectively with others, or just have a burning passion to help – why not get involved with the AUC's ongoing series of developer programs?

Offering your skills for the AUC's developer programs, and to the broader AUC, is one of the organisation's primary goals – but it only happens when people put up their hands to help out. So if you can help, why not get involved? Contact your local AUC representative and they'll be more than happy to talk about how you can contribute to the AUC community.

Ani for the

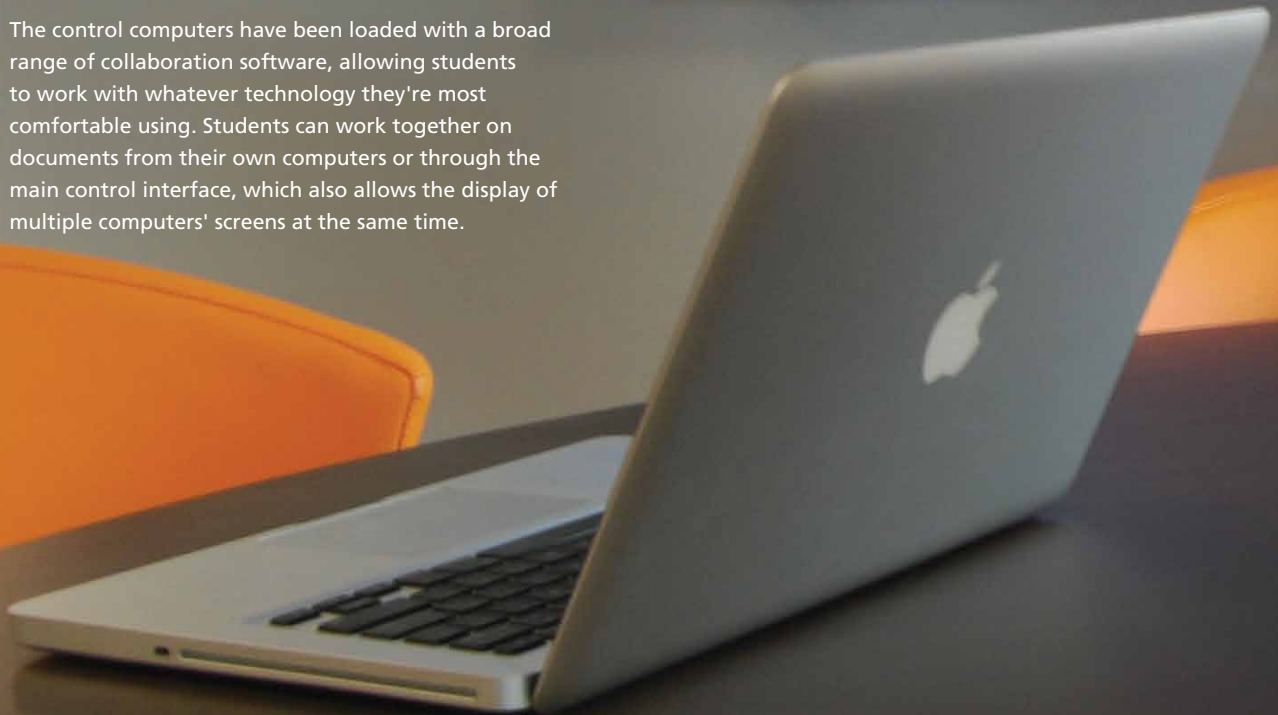


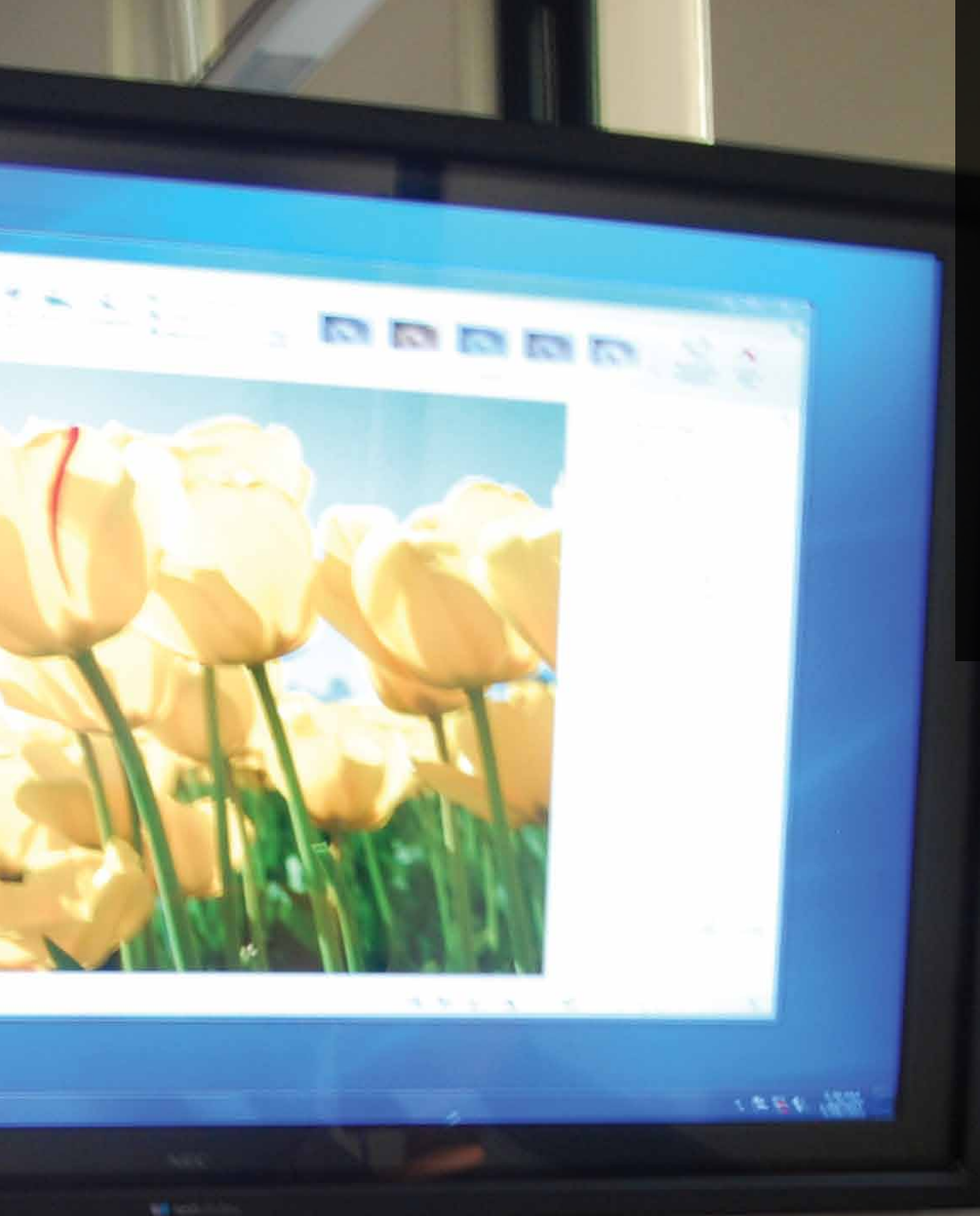
The design and outfitting of new learning spaces is always a point of contention, since there are so many differing perspectives about what works, what doesn't, what's relevant and what's not so much.

That said, students at the University of Sydney-affiliated Sydney Hospital and Sydney Eye Hospital look set to benefit from carefully designed learning and teaching spaces that have been installed at the site – and feature an innovative control application based on iPod touches.

Student pods are designed as collaborative spaces and built like café booths, with a number of students able to get together and work on projects using the built-in interactive display. Each display is linked to a computer that coordinates the switching of various input sources: for example, the computer's own display can be overridden by student laptops, which can be plugged in to utilise the pod's large display for student collaboration.

The control computers have been loaded with a broad range of collaboration software, allowing students to work with whatever technology they're most comfortable using. Students can work together on documents from their own computers or through the main control interface, which also allows the display of multiple computers' screens at the same time.





Tying the interfaces together is a custom application written by Advanced Control and Acoustics (ACA), a specialist audio-video integrator that worked with Sydney University staff to help deliver the technological vision supporting the learning pods.

Designed as a server-side HTML5 application, the control utility feeds iPod touches that have been built into a specialised housing installed as part of the learning pods. Students interact with the control solution using the iPod touches – which, says ACA director Jonathan McFarlane, offer a superior user experience than proprietary audio/visual controllers at a fraction of the price.

"Traditional control panels for A/V systems are in the thousands of dollars," he explains. "The iPod touch is around \$300, has better

graphics than traditional touch devices in that form factor, and supports HTML 5. The Web browser becomes the control screen. And because it's flexible, we can add as many displays to one system as we want: you could have one on the wall, one that you use wirelessly while roaming around the room."

That's a great deal of flexibility, driven by the shift in control systems from being proprietary, closed environments to becoming online, IP network-connected systems. There are even IP to infrared controllers that can be used to send signals to nearly any device with a remote control. Taken together, this means the equipment is easily manageable using conventional server techniques that have allowed ACA to easily control the devices using defined application programming interfaces (APIs).

Because it uses industry-standard communications protocols, the hosted server can run locally or even as a cloud computing-delivered service that integrates other types of online services and scales to support large-scale deployments. This also allows an improvement in redundancy compared with running the system from a single control computer.

Since the HTML5 front end can be used on iPod touches, iPads and any other device with a contemporary Web browser – and because the devices support Web sockets that allow for more online interactivity – this new form of control software has proved to be both flexible and capable. The devices run in 'kiosk mode', which prevents users from reconfiguring them or running other applications.

Although the current pilot deployment is small, McFarlane envisions a broad scope for further deployments that will let universities tap into the smooth graphics and well-understood iPod touch form factor – allowing them to build student-directed learning spaces that put control of in-room systems directly within students' reach.

"We've tried to make these pods as flexible as possible," says McFarlane, "so that they could be used by anyone in a university. Many A/V projects will be an academic presenting, but in this case the end user is not a lecturer; undergraduate students have different expectations of technology, and the way you interact with it. With Apple's iPod touch and other devices driving an interactive element, students will come into the pods and intuitively collaborate."



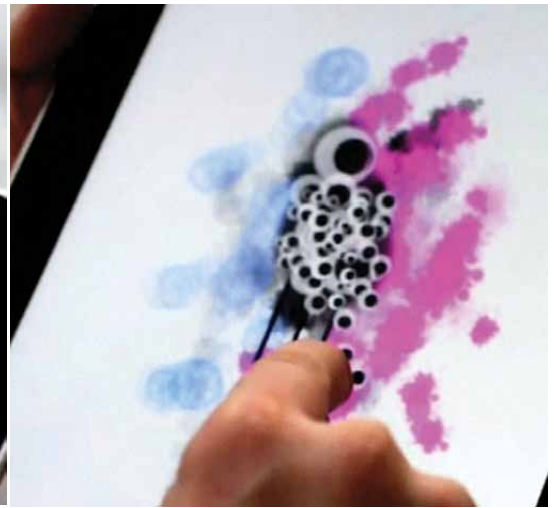
RIDING A NEW WAVE OF CREATIVITY

BY MARK MCMAHON

Creativity is one of those qualities that defines us as human beings. It is a commonplace word for a complex concept. We know it when we see it. Most of us would acknowledge some capacity for it within ourselves. But to try and explain it, let alone nurture it, is a real challenge.



New technologies spawn new forms of creative expression



‘If you work in digital media, your creative capacity is always going to be limited by the capabilities of the technology. The trick is to see these as opportunities rather than restrictions.’

I am responsible for Creative Industries at my university – a typically politicised term to describe those emergent industries that add value to the world by creating or representing experiences that engage us emotionally and intellectually. One of the core units of this degree is specifically devoted to untangling this notion.

Every year, bright-eyed novice designers, artists, performers, videographers and photographers are all challenged to define themselves creatively as it applies to their discipline. It is not an easy process and I don’t expect a semester course will have them fully able to do so.

For most, it is the first step of a journey of personal and professional discovery that will continue long after they graduate.

To describe it in such elevated terms, you might think that Creativity is purely the domain of the Arts but it manifests itself in a range of guises – often hidden, for example, under the veil of ‘Innovation’.

Engineers and entrepreneurs love ‘Innovation’. The word has the lustre of invention and utility that is a world away from the galleries, performance spaces, and oh-so-trendy coffee shops of the Creative Arts.

Yet it’s basically the same thing. The two defining characteristics are originality and fitness for purpose. Whether that purpose is to design a building or to simply allow us to see the world in a new way, Creativity is essentially useful. This is why we need to develop it.

Creativity is also subject to constraints. Samuel Johnson is attributed with commenting on one piece of work as ‘both good and original, but the part that is good is not original and the part that is original is not good.’ Creativity can be mediated by the expectations of an audience, the requirements of design or the technology used to implement it.

The problem with unconstrained creativity is that there are no boundaries. While this can be liberating in one sense it can also be disorienting. How can you make creative decisions when there are infinite decisions to be made?

When an artist undertakes a painting, the final work will evolve from factors such as the subject to be painted, the size and shape of the canvas, the paints and brushes to be used and the aesthetic and style of the painters themselves.

Many of these affordances and constraints relate to the technology. Acrylic paints typically have different characteristics to oils, such as the colours that can be used. Fluorescent colours were not really available until the advent of acrylics. Similarly, acrylic paints have difficulty rendering colours such as Prussian Blue. Also, the slower drying oils allow you to work with the medium for longer on the canvas.

So what does this mean for users of digital technologies? If you work in digital media, your creative capacity is always going to be limited by the capabilities of the technology. The trick is to see these as opportunities rather than restrictions.

The smaller screen of the smartphone, for example, has promoted the development of innovative modes and styles of interaction to make the best use of the smaller screen area and touch capabilities of the device.

Creative approaches to design have enhanced experiences for end users of a range of media such as books, music, video and games. If you have tried to play a first person shooter on an iPhone you might have found the experience frustrating. Yet games like Angry Birds thrive on the touch screens of mobile devices.

Products like the iPhone and iPad have revolutionised the casual game market not only in terms of game design, but also in terms of distribution. What is particularly exciting, though,

is how creativity has not just changed the way we consume media – but has provided incredible opportunities for creation.

It’s fair to say that the lack of precision of the iPad touch screen can be problematic for fine control but this constraint has also provided creative opportunities. I have rediscovered the joys of fingerpainting through apps like Sketchbook Pro. Similarly, my professional work practices have changed by using a range of concept-mapping and collaborative tools that tablet devices implement so well.

Music is another fascinating area of innovation both in terms of software design and use. Take a look at Garage Band on both the desktop and the iPad and you will see that there are distinct similarities and differences, with a range of tactile tools integrated into the iPad version that leverage off the creative affordances of the screen and built-in accelerometers.

An even more extreme example is the app Reactable. This allows users to make music without any real reference to traditional instruments or notation at all. While disorienting for a classically trained musician, the iPad replicates the Reactable ‘table’ allowing you to create sounds and rhythms using virtual cubes.

Manipulating these cubes through their orientation, rotation and proximity to others provides an organic experience, which while abstract in terms of traditional music forces the user to rethink how sounds can be made and combined.

All technologies have limitations – but to see these limitations as a problem is unnecessarily negative. Far better to see them as creative constraints that require you to rethink the way you work in your discipline and providing new affordances that produce genuinely original creative products.

Getting Organised

By Carrie Clarke

Every day, our computers become more loaded with stuff as we create and add more content. Some people are exceptionally organised with their data (and maybe even a little OCD) while others have so many icons on their desktop that you cannot see the wallpaper anymore; it may look chaotic but, strangely, they often know exactly where everything is.

We all work differently and organise our data in different ways. Most of the time it doesn't matter too much: with an instant Spotlight search you can usually find what you're looking for without too much trouble. Unless you are collaborating with others – when it becomes more important to keep files organised with appropriate naming and versioning to avoid confusion, frustration or breakdowns.

Thanks to iTunes and iPhoto, a simple tick box is all it takes to keep all of your media organised; in the past, some people used to spend hours doing this manually. If only it were so easy to do this with everything on your computer!

When you've accumulated a fair bit of data – from various computers, projects, courses or jobs – things can become a little messy. Thankfully, there are a few apps out there that can help you organise your existing files by finding duplicates or comparing, merging and sorting files and folders. Once you get organised, you can stay organised with other apps that autosave and version your files in the background (this handy feature is built into Mac OS X 10.7). If you love saving to the

desktop, you could make a folder on the desktop that you use only for current work, then file it away when it's done. Ultimately it comes down to whatever works for you, but if you are well organised then you will be in a better position to manage your data in new ways as everything becomes more mobile and cloud based.

Backing up

What would happen if you lost all the data on your computer today? Unfortunately it can and does happen. Hard drives can fail; sometimes you have a little warning (like a clicking sound) and sometimes you have none. In the end, you could be left with nothing or quite an expensive recovery cost.

Other than that, your files could become corrupt or accidentally deleted or your computer itself could be lost, stolen or damaged. If the data on your computer is important to you, it is imperative that you have backups.

There are many easy and affordable solutions out there, and a few different levels of backup. The simplest is an external hard drive or Time Capsule: all you have to do is connect it, enable Time Machine on your Mac and it will take care of the rest. Time Machine works in the background and makes very clever use of the space on your external drive – it will keep lots of backups of the work you're currently doing and fewer backups of files that you haven't touched for a while. These incremental backups allow you to go back in time to retrieve copies of the file

from the past. When your disk becomes full, it will start to remove the oldest backups to make way for your current work – but will still retain a full copy of everything on your computer. It is built into your Mac and very easy to use.

If something terrible happens to your computer and you lose your data, restoring it from Time Machine is very easy too. With all of your data backed up, migrating to a new Mac (or a Mac that has been re-installed with OS X) is a breeze. When you are setting up your new Mac, it can connect to your Time Machine backup and copy across all of your user accounts, files, apps, preferences, everything – it does it all for you. Or if you want to do this at a later stage, you can use Migration Assistant (in the Applications > Utilities folder) at anytime.

However, this is really just one backup and often your external drive is in the same location as your computer. If something really awful happened and both were destroyed at the same time, you could still lose everything. For this reason, it is best to have multiple copies of your important files in other locations (called off-site or remote backups).

For your important files at university, you may have a network drive that you can store them on. This will likely have a good backup procedure in place with off-site copies that can be used in the event of a disaster. These systems can be costly to maintain so space is often limited on these drives, and you can't put everything on them. They're great for your important university files – but what about your personal photos or documents?



Apple's iCloud offers another level of defence for your precious data.



A simple way to backup your personal files off-site is to save an archive of your important files to another external hard drive (you can use Disk Utility or Carbon Copy Cloner to do this), and keep this somewhere else safe – maybe with a close friend or relative. This at least gives you a backup of everything to date, but it can be time consuming to keep on top of updates after your initial backup.

Cloud based backups

Over the last few years, more cloud-based services have appeared. These are a great option for keeping off-site backups of your important personal data.

MobileMe allows you to save files to your iDisk or use the included Backup app (in the Software folder of your iDisk) to create scheduled backups. The new (free) iCloud service may offer similar capabilities for backing up your files in addition to synchronised storage for all the music, apps, books, photos, documents and more on your iOS devices.

Other file storage services like SugarSync and Dropbox are also becoming very popular. All of these services allow you to save copies of your data off-site as well as lots of other features. They all offer a free trial so you can try them out to see how they work for you. Of course, the more data you want to back up, the more it will cost you – but if your data is important then it is worth it.

One of the best advantages of cloud-based backups is that they allow you to easily access

your data from anywhere. You can view (and sometimes edit) your files from just about any computer, iPhone or iPad, you can sync files and folders between different computers to keep them all up to date, and you can easily share selected files with others.

For this reason, cloud based services are proving to be very popular with students using computer labs. You can continue working on files between home and uni without having to worry about USB sticks, which can be unreliable. When working in a computer lab, it is best to copy your file to the computer itself and then save incremental versions to your USB or cloud storage as you work - to keep all your bases covered.

Data recovery

What happens if it's too late? If your files have accidentally been deleted, don't use your computer: anything you do could write over the deleted data, making it difficult to recover. It is best to take it to someone who

can mount the drive, then try run some data recovery software on it. This software may be able to recover certain file types and often has positive results. If the unthinkable happens and your hard drive fails to the point where it cannot be read, a forensic data recovery specialist may be able to recover your files – but this doesn't come cheap.

Future

As computing becomes more mobile and cloud based, we are going to rely less on physical media and more on off-site services to manage our data. As we transition to this, it's good to get a handle on what data is important to backup and to keep it organised, then you'll be in a good position to make the most of the great features these services have to offer.

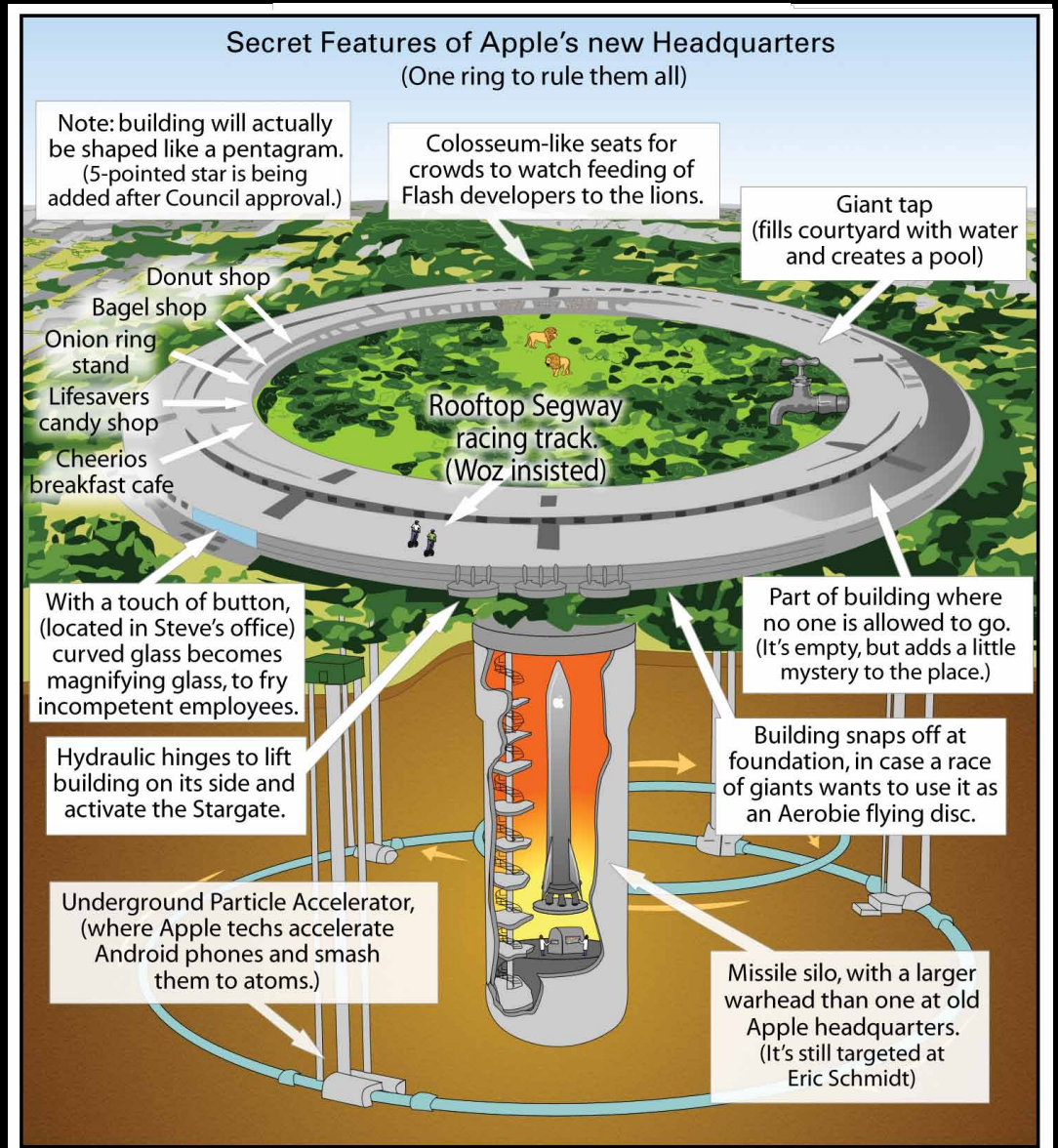
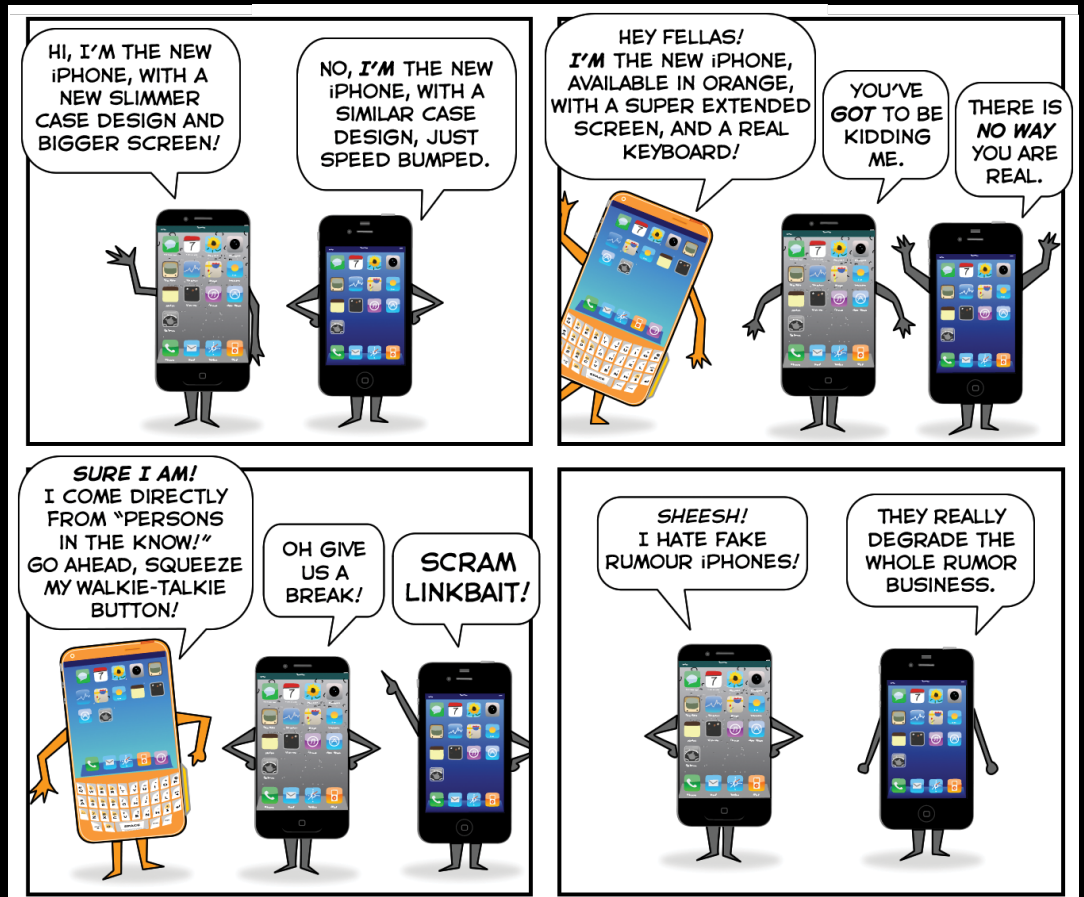


Is your data safe if the unthinkable happens?.
Photo credit: John, CC BY-SA 2.0

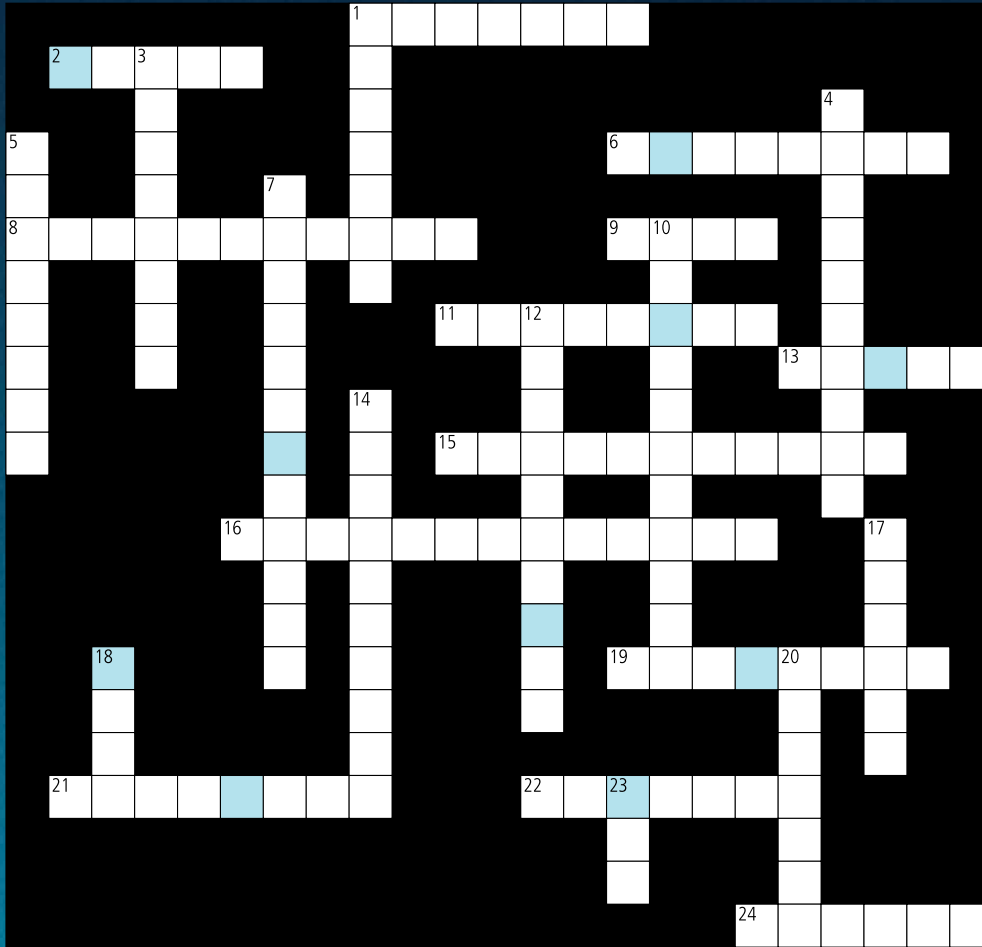
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CrossWORD Competition



Across

1. Judit Klein's favourite WWDC feature (p5)
2. Hundreds of iPads delivered so far (p6)
6. What the iPhone calls the impostor (p22)
8. Buffalo's drive is shock-resistant (p2)
9. Number of defective iPads in Adelaide rollout (p7)
11. University targeting Gen-Z students (p8)
13. Game engine taught in AUC course (p14)
15. Photo uploading service in iOS 5 (p11)
16. Nicholas Wittison's favourite WWDC feature (p5)
19. Sound that indicates hard drive problems ahead (p20)
21. Type of drivers targeted with gaming work (p12)
22. This box supports VPNSecure.me (p2)
24. Rooftop racing track for these (p22)

Down

1. Maori word for formal ceremonial recitations (p9)
3. Lion feature that records a document's history (p10)
4. Name in Indian AUC affiliate (p3)
5. Type of FCP clip combining many elements (p11)
7. Subject of Zac's PhD research (p12)
10. Sydney site where new pods rolled out (p16)
12. Creativity often hidden under this veil (p19)
14. Thrives on touch screens of mobile devices (p19)
17. Carbon Copy _____: backup tool (p21)
18. Number of original iPads available on loan (p4)
20. Subject of Nic's scholarship project (p13)
23. Hundreds of students that can participate in Dev program (p15)



For your chance to win an iPod nano, complete the above crossword (you'll find the answers throughout the articles) and take the letters from the blue boxes then re-arrange them to form a word or phrase.

Send this to: crossword@auc.edu.au

Competition closes at 5pm on Friday, 14th October 2011.

CONGRATULATIONS

Congratulations to David Howse for winning an iPod nano by correctly completing last issue's crossword to reveal the answer:

HIGH FLYER

An iPod nano is on its way!





AUC

Apple University Consortium Membership Benefits

<p>Conference Scholarships</p> <p>Development Fund Grants</p>		<p>Equipment Seeding Program</p> <p>Wheels for the Mind Magazine</p>
	<p>Providing technology support and networking for better educational outcomes</p>	
<p>Educational Pricing</p> <p>Professional Networking</p>		<p>Technical & Developer Training</p> <p>Seminars & Presentations</p>

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