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Editor's rant

Welcome to the third edition of Innovation News...

A while back I came across this definition of innovation from Apple Computers now defunct Advanced Technologies Group, and it must have appealed to the inner bean-counter in me because of its clarity...

An innovative product is one that makes a leap in the benefits-to-costs ratio in some area of endeavor.

In other words an innovation lowers the costs and/or increases the benefits of a task. A very successful innovation increases the benefits-to-costs ratio to such

an extent that it enables you to do something it seemed you couldn't do at all before, or didn't even know you wanted to do. Think of the following examples in these terms:

speech, writing, the printing press, the camera, the telephone, the car, the airplane, television, the computer, Federal Express, email, fax, the Web, etc.

The costs of innovation can be measured in terms of money, difficulty, required skill-level, physical pain, harm or risk thereof, inconvenience, embarrassment, boredom, pollution, etc.

The benefits can come in terms of effectiveness, safety, speed, pleasure, health, coolness, fun, and so on...

Of course, the lessening of any cost can sometimes feel like a benefit, because less difficulty often feels like greater ease, and greater speed requires less time.

It is also interesting to note how each innovation brings forth a paradigm shift which enables other innovations that were unthinkable in the previous paradigm.

Unfortunately, some innovations occur before there is a sufficient infrastructure of other innovations to make them practical. This has traditionally been the space inhabited by advanced research departments and universities. An example of this might be the original GO pen-based computer which, back in 1989, was a very nice little innovation, but the inadequate handwriting recognition software available at the time became a show-stopper.

Innovating involves risking capital. If you undertake a project without sufficient supporting infrastructure or funding, there is a high risk that you don't know how long it will take, how much it will cost, how much market demand there will be, or how soon market demand will occur. Your project might also be primarily infrastructure for other innovations, and you don't know how long it will be before those other innovations pay for your project, if indeed there can be a payback model for your innovation at all.

The trick is to be innovative and profitable...

We look forward to your contributions and suggestions towards this newsletter and wish you the best of success in all your creative endeavors.

Any contributions you wish to make to this newsletter can be e-mailed to olaf.diegel@aut.ac.nz.

Centre for Rapid Product Development Finalist in PWC Hi-Tech Awards



The 2007 PricewaterhouseCoopers New Zealand Hi-Tech Awards celebrate New Zealand's most successful and innovative high tech companies and honour outstanding individual achievements.

Now in its 14th year, the Hi-Tech Awards recognise Kiwi companies and individuals behind the growth and promotion of the New Zealand high tech industry, which comprises the software, electronics, biotechnology, telecommunications and creative technology sectors. It is one of the most prestigious accolades in the New Zealand business community, putting local talent well and truly in the spotlight.



The AUT Centre for Rapid Product Development was a finalist in the Enatel Innovator Award category for the Spengler Cardiovascular lab. The Cardiovascular lab is an innovative cardiovascular monitoring technology developed by staff at the AUT University Centre for Rapid Product Development in Auckland. It is a USB-driven cardiovascular monitoring system that measures blood pressure, as well as systolic pressure index, ankle brachial index, pulse pressure, mean arterial pressure, cardiac output and stroke volume. It gives a clear and comprehensive picture of cardiovascular health. This technology makes it possible to take a precise, reliable and quick measurement of all these parameters in less than 3 minutes.

TDL helps furniture designer to Bronze Award

Auckland based furniture designer, Phil Cuttance, achieved a Bronze Award at the recent Best Design Awards organised by the Designers Institute of New Zealand. The fabric for Phil's "fantasy chair" was digitally printed on the Textile & Design Lab's Shima SIP 160F digital textile printer.

PMC member, Isabella Rasch, finalist in Martin Hughes Contemporary Pacific Art Awards

Isabella Rasch, from the Pacific Media Centre, made it to the finals of the Martin Hughes Contemporary Art Awards in the multimedia category. Now in its tenth year, the award is showcasing the work of all the finalists in an exhibition running for three weeks until 6 December at the Martin Hughes Gallery in Parnell.

Established in 1997, the award's previous winners include Andy Leleisi'uao, Nikki Hastings McFall, Sheyne Tuffery, Ross T Smith, Tui Hobson, Zarahn Southon and Lorene Taurerewa.

CIRI Director makes it to the finals of the NBR Bayer Innovators Awards

Professor Olaf Diegel was a finalist in the Design and Engineering category of the National Business Review Bayer Innovators Awards. AUT performed extremely well in these awards with 3 finalists including Prof Steve Henry in the Research & Development category, and Prof Nik Kasabov, a finalist and **winner** in the Science category. The competition was tough, with the likes of Richard Taylor of Weta, who won the Academy awards for the Lord of the Rings animation.

Bayer Innovators Awards 2007



Pacific Media Centre Launch

Pacific Island Affairs Minister Luamanuvao Winnie Laban has challenged New Zealand media and educational institutions to boost investment in research and coverage.

Speaking at the launch of the Pacific Media Centre, she said the occasion was "tangible proof" that AUT University had stepped up to the plate and was demonstrating sector leadership.

“This centre demonstrates that commitment to our cultural diversity, but also to critical thinking and the pursuit of excellence,” she said.



Minister Luamanuvao Winnie Laban and PMC director David Robie — unveiling the new PMC logo plaque. Photo: Alan Koon

Laban said Maori and Pacific issues needed to have a far greater representation in academic research, mirroring the growing participation of Pacific and Maori peoples in broader society.

She said AUT more than held its own in terms of providing “meaningful access” to Pacific students. Last year, 11 percent of the university’s student body was made up of Pacific students – “well up on the national average of around 6 percent”.

“In providing this centre as part of your strategic planning, AUT is making a significant contribution to New Zealand’s academic growth,” she said.

“This centre, and dedicated resources like it, can only lift and enhance the quality of research being undertaken, and I have no doubt that this will be the case.”

Laban also made a personal tribute to the centre director, associate professor David Robie.

“Thank you for your work in the Asia-Pacific region and thank you for being a strong advocate for high-quality journalism, accountability and a free press in the Pacific,” she said.

Co-Lab Bluetooth Environment up and running

October/November 2007 saw the first demonstrations of Co-Lab’s new Bluetooth environment, which has been developed by Seth Hall and Andrew Ensor. This system has been developed with the support of Co-Lab and provides infrastructure for creative and educational Bluetooth applications.

James Charlton presented one such application – a participatory, real-time, photographic artwork, at

the BCT launch in November. Viewers within range of the artwork could take photographs on their mobile phones and have them automatically integrated into the artwork.

The system is now available for research into a variety of Bluetooth communication projects and will be implemented into a live Bluetooth environment at MICs Galatos venue.

Centre for Performance Research Open Day

The purpose of the Centre for Performance Research is to promote research into the field of performance, understanding this term to cover a manifold of practices that rest on the interaction between human and humanlike agents and modes of practice within the performing arts.

The Centre encourages multidisciplinary and trans-disciplinary research and creates strategic alliances between academic and industry stakeholders in the areas of creative organisations, art practices and new media theory and practice.

The Centre will hold an open day early in the New Year for all those interested in what the Centre does and wanting to get involved.

Textile & Design Lab / Zephyr Technologies Collaboration

In November a 'Transform' grant from Textiles New Zealand was secured by Zephyr Technology in association with the TDL to assist with the further development of the textile component of their BioHarness™ wearable body monitoring technologies using smart yarns and Whole Garment knit design. This grant will provide about \$30,000 research income to the TDL in 2008.



The BioHarness™ integrates patented Smart Fabric sensor technology into a garment that is comfortable and unobtrusive. It captures comprehensive physiological data on the wearer, eliminating the need for multiple devices. The robust BioHarness™ enables genuine real world monitoring of human performance and condition – giving you a vital advantage. It has multiple applications – particularly in the sports, defense, health and wellness and academic and research sectors.

ISAT Exchange Program

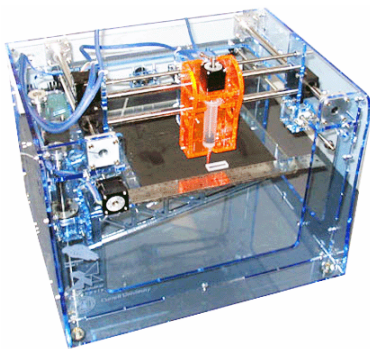
Prof. Asimava Roy Chowdhury of the Indian Institute of Technology, Kharagpur, India will be visiting the Centre for Rapid Product Development between 10-25 December, 2007, under an ISAT grant. He will be collaborating with the Centre on research into the software development for a curved layer deposition process the Centre is working on. Some seminars are being planned for while Prof. Chowdhury is here.

New Toys on the way

Direct Metal Casting Facility: The AUT Rapid Prototyping Lab will soon have its direct metal casting facility available. This will allow the Lab to print out fine sand-casting molds into which non-ferrous metals can be cast. Applications for this facility are numerous and range from casting aluminium engineering parts to bronze artworks. The kit that will allow us to retrofit out existing 3D printer for this process is due to arrive early in the New Year.

Fab@Home 3D printer: The Centre for Rapid Product Development has just ordered a Fab@Home 3D printer. This machine allows the printing of 3D models in any material that can fit in a syringe. Think of the possibilities: silicone, chocolate, peanut butter, epoxy, etc.

The machine will allow the centre to investigate several new areas of rapid prototyping, but the machine is open to other applications... 3D printing of silicone artwork on clothing and textiles???



Shima CAD Systems: The Textile & Design Lab has recently received another two Shima SDS One knitwear design and programming CAD systems. An order has also been placed for a wide width electric tunnel dryer, which will be used to cure pigment inks and to dry fabrics and garments between processing stages. Varying humidity in fabrics and garments prior to printing can have an adverse effect on dye uptake, which can affect colour intensity, consistency and overall print

quality. The dryer will help to resolve these issues as well as speed up the entire digital printing process.

But wait! There's more...

Electroplating facility: AUT will soon have a small electroplating facility that will allow small parts to be nickel plated, chrome plated or copper plated. The system should be able to plate both metal and plastic parts, and even textiles (after coating them in a conductive paint). The Centre for Rapid Product Development will be doing some research on the possibility of electroplating rapid prototyped parts and using them as electrodes for electrical Discharge Machining (EDM). The facility should be up and running in the New Year.

Upcoming Seminars & Discussion Forums

Body Measuring and Modeling Technologies for Fashion forum

The Textile & Design Laboratory in conjunction with the AUT's Creative Industries Research Institute and Auckland University's Bioengineering Institute have started a collaboration to investigate the link between sizing, fit, customisable human models and the clothing industry. 'Where we fit' is the title of a forum that will be held in early December to address the issues of sizing standards and apparel testing in New Zealand and in relation to current global developments.

Centre for Performance Research Public Lecture

Professor Barry King, director of the Centre for Performance Research will host a public lecture in February on the findings of the research into the acting labour market in New Zealand and the UK.

Contributing to Innovation News

This newsletter is yours. Any items of interest you wish to contribute can be sent to olaf.diegel@aut.ac.nz.

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CIRI also has a website at www.ciri.org.nz which contains a wide range of resources and information.

