

Start-ups START HERE

For start-up technology entrepreneurs, innovation with technology is not an option – it's often their whole business. **Brad Howarth** explains how they generate innovation and make it relevant to customers.

IT'S A RARE BUSINESS THAT WILL deny technology has a role in their operations. Whether it is managing accounts, keeping track of customers, or simply staying in touch through the web and e-mail, technology is embedded in the fabric of business.

But despite its promise of helping a business, IT is often one of the greatest bugbears, and seldom behaves exactly as a company wants it to.

For one group of businesses, however, having a strong grasp of the intricacies of technology – and how to drive the most from it – simply goes with the territory. For Australia's technology start-ups, having a fundamental grasp of technology is not only vital to the operation of their business, but also to the development of the products and services they offer and their ability to find the funding that makes their dreams of innovation possible.

The innovation that occurs within technology companies is highly varied in nature. Broadly speaking, technology innovators fall into two groups – those that work with existing technology to create new applications, and those that engage in deeper research and development. Either path can lead to the creation of highly successful innovative products and services.

According to Luceille Outhred, chief executive officer of the Adelaide-based company DigiSlide, ultimately however the success of innovation in a technology company – as with all innovative companies – is in the personal relationships that drive it.

"The most successful start-up technology companies will grow out

of a synergistic relationship between two or more creative and innovative people," Outhred says. "There is a very real catalyst effect that takes place when clever minds collide."

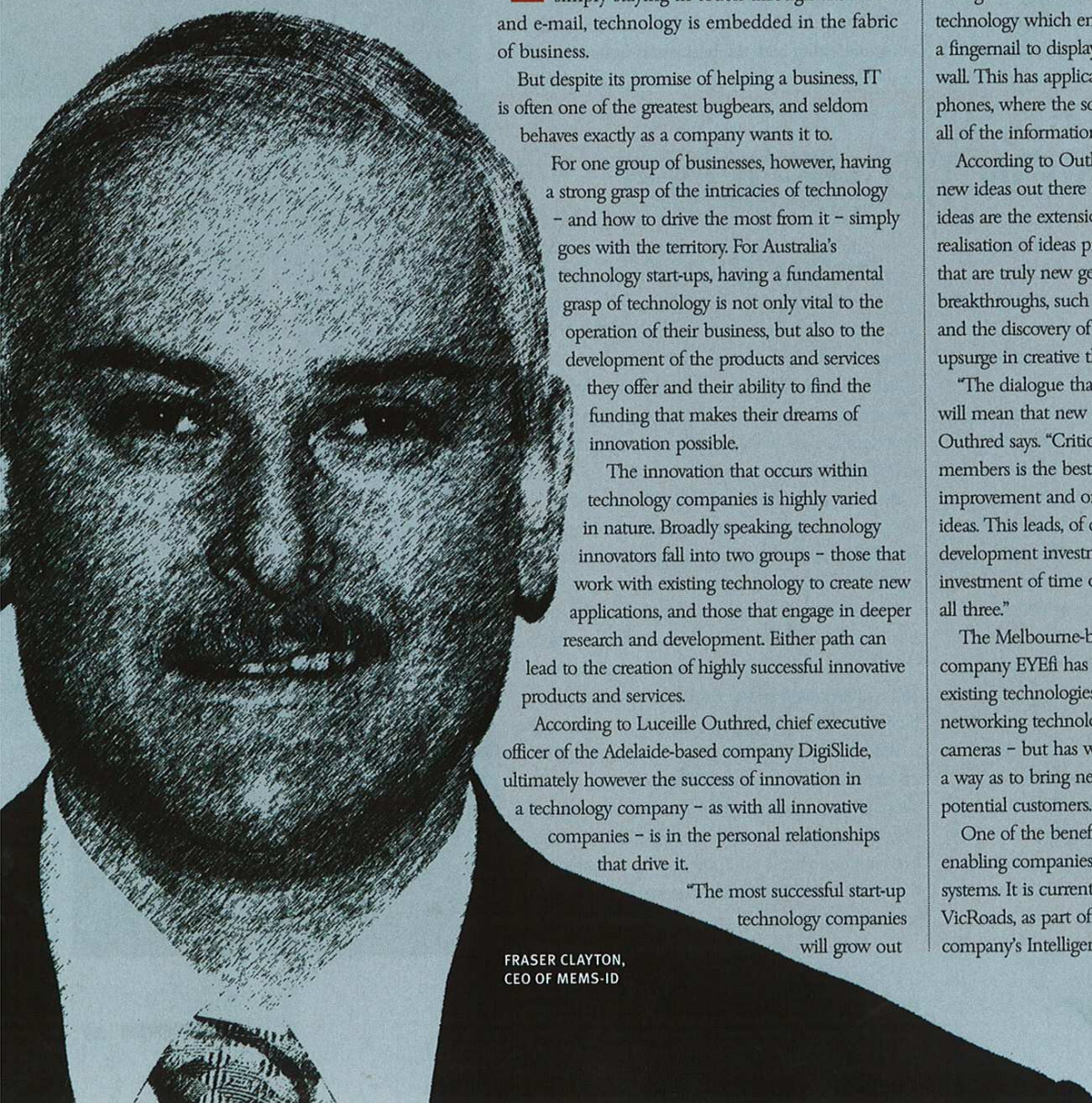
DigiSlide is developing micro-projection technology which enables a projector the size of a fingernail to display a metre-wide image on a wall. This has application in devices such as mobile phones, where the screen is often too small to display all of the information that a user wants to see.

According to Outhred, there are very few genuinely new ideas out there in the technology realm. Most ideas are the extension of existing ones, or the realisation of ideas previously discussed. Those ideas that are truly new generally stem from significant breakthroughs, such as the creation of the silicon chip and the discovery of DNA, which then spawn an upsurge in creative thinking.

"The dialogue that happens in the creative teams will mean that new ideas trigger further new ideas," Outhred says. "Critical reflection amongst team members is the best tool for ensuring the continuous improvement and ongoing creation of further ideas. This leads, of course, to massive research and development investment – which may be massive investment of time or money or emotion, and usually all three."

The Melbourne-based start-up technology company EYEfi has built its proposition around existing technologies – in this case wireless networking technology and computer-based video cameras – but has worked to combine them in such a way as to bring new and distinct advantages to potential customers.

One of the benefits of EYEfi's technology is in enabling companies to quickly deploy surveillance systems. It is currently trialling its technology with VicRoads, as part of a project to modernise that company's Intelligent Transport Systems (a collection



FRASER CLAYTON,
CEO OF MEMS-ID

of applications and devices that enable VicRoads to control and manage Victoria's road assets).

"We focus more of our inventiveness around the software elements and 'smarts' - things that we can eventually patent and attract investors with," says Simon Langdon, founder of EYEfi. "Our level of inventiveness has evolved over time. Because we could get the first version out the door through innovation and integration of existing technology, only some underlying bits were ours. But we chose the elements we knew would be key to the solution, and made those ours from day one."

Hence the next generations of the technology will include more of EYEfi's own inventiveness. And because the company was lucky to land a large trial customer early in its development, it can take what it learns and pump it straight back into its research and development pipeline.

According to Jonathon Wolfe, many start-up technology companies are almost afraid of talking to the customers, and would rather spend their lives in research and development than in commercialisation. Wolfe, who is the chief executive of the video software compression developer Enikos, stresses the importance of getting reference customers early that are also paying you money.

"Tech innovators will find a whole lot of reasons why they can't go talk to customers, but in my experience it's not until you talk to them that you actually learn something real," Wolfe says.

"Most theories often break down in reality, so it is always better to find out quickly. I am involved in early stage venture financing and we follow the simple steps - write a plan, secure the intellectual property, test the value proposition with customers, and then iterate. The faster you iterate, the better."

Wolfe says another of the greatest challenges in tech start-ups is in preventing the inventors from inventing everything for themselves. He says the trick is to keep them focused only on those things that they are supposed to be inventing.

"Guys who haven't been involved in commercial software development often reinvent things," Wolfe says. "It's better to have an 80 percent solution to

market faster, rather than to keep it under wraps because you are having to debug software which you could have bought off the shelf."

For E-magine International, innovating with technology stems from a lot of time spent dealing with a very non-technical constituency - its customers. E-magine makes software that helps companies retain their clients, by defining the value of each customer and what it is worth to the company to keep them. It is currently up to version 6.0 of its E-magine closed-loop marketing suite.

E-magine's chief executive, David Peters, says the best advice given to him was to get the product into the market as soon as possible. He rates Geoffrey Archer's book *Crossing the Chasm* as the bible for this sort of activity.

Peters says E-magine's product development starts with asking customers very open-ended questions about what they might want in a perfect-world scenario. Peters says E-magine will take new features into the product quickly and apply them to its customer base, to gather feedback as rapidly as possible.

"I guess in this respect the 'r' bit of R&D is very limited, but we are pretty good at commercialisation," Peters says. "We also don't focus so much on product features, but the 'whole product' concept including how to leverage partners, the commercial model, and most importantly, the customer experience."

Whereas Enikos, E-magine and eye-FI have innovated around existing technology, for Melbourne-based MEMS-ID, innovation has involved a deeper involvement in research to apply a new technology to an old problem. MEMS-ID has designed a new type of microchip that can be embedded into any item and identified using a radio-frequency emitter.

Commonly known as RFID (radio frequency identification), this technology has already been used extensively in the logistics industry to track goods. What sets MEMS-ID apart however is its use of a technology called microelectromechanical systems (MEMS) to create its chips. This means the chips have the unique characteristics of measuring just half a millimetre in length, while being strong enough to

be inserted into devices such as surgical implements. The chips are also capable of retaining information such as whether they are cooled or heated to certain temperatures.

Hence they can be used to determine how often items such as surgical equipment have been heat-sterilised, and MEMS-ID is now trialling its products in the global orthopaedics industry. The idea of using MEMS technology for RFID applications actually began as a project to create a low-cost temperature sensor/thaw indicator for frozen chickens.

The chief executive officer of MEMS-ID, Fraser Clayton, says that while the market for standard RFID chips is well established, being an industry outsider means his company brings a new perspective and a new technology platform into a very homogeneous space

"All other players, except one, are quite undifferentiated with their 'me too' electronic tags," Clayton says. "Their innovation is incremental - focused on manufacturing, applications and cost. Not surprisingly, most players are not profitable in that business."

The frozen chicken idea was never used, but the potential soon became clear for applications ranging from supply chain, retail, healthcare, security, and casino chips. The company was formed in 2003 with patents filed, but it still took a year before it decided to focus on tracking medical devices.

The MEMS technology is not in itself unique to MEMS-ID, but Clayton says the innovation comes from bringing that technology to an otherwise untested market.

"Not being limited by existing 'wisdom' in an industry allows a much more open approach, challenging norms and introducing features and capabilities not previously available to that market," Fraser says. "From an industry perspective it is disruptive, but technically more incremental."

"Having said that, some of our new methods and materials are indeed new ideas, enabling new features and new methods of manufacturing, and cost reductions. All are invisible to the customer, but necessary to produce the device at an acceptable cost." ❀