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## NEWSFLASH! THE NEXT GAME-CHANGERS ARE HERE!

Since the introduction of the iPad just four years ago, tablets have made their way into nearly every aspect of business and society and a multitude of industries. That is the nature of disruptive technologies: advances in technology that transform how we live, conduct business and interact with the world.

In this postcard we examine two emerging technologies, which we believe have the capacity to reshape our lives: the drone and 3D printing.

### Drones

Known as unmanned aerial vehicles (UAVs), drones were once regarded only as military and surveillance tools. More recently, however, they have been used for more practical and commercial purposes.

In agriculture, for example, small drones are being used for scouting, mapping and aerial spraying. In Africa, the World Wildlife Fund uses drones to track poachers and the wildlife they are pursuing. Increasingly, Hollywood and sports channels are using drones to capture dynamic video, taking viewers straight to the heart of the action, seen from perspectives that would otherwise be prohibitively expensive or simply impossible.

But the real commercial game-changer is parcel delivery. A number of retail companies, such as Amazon, Domino's Pizza and Deutsche Post, are trialling the use of drones to deliver their products directly to consumers' homes. These companies are investing in the technology because they see the potential for fast, efficient delivery and huge cost savings. (Watch an Amazon drone delivery [here](#).)

The final link in the supply chain – getting a product from the warehouse to the consumer, known as the 'last mile' – is the most expensive, often representing 30 per cent of a company's logistics costs. This is where drones could make a huge difference. Australian textbook company Flirtey made headlines last year with its plans to start commercial drone deliveries to customers this March. Flirtey estimates that drone deliveries will cost about \$3 per flight, compared to \$30 for same-day delivery via regular post.

Drone technology will need to overcome significant obstacles before it becomes commonplace. In the United States, the commercial use of drones is strictly prohibited, while some European countries have imposed altitude limits. Here in Australia, restrictions on the use of small drones are minimal; users only need to register and have their vehicles approved, although this process can take time.

Commercial drone users will need to address public safety and privacy



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concerns. There are also practical considerations: octo-copter drones typically have a range of about 3 kilometres and can carry no more than 3 kilograms.

But these challenges are not insurmountable. Given the scale of the benefits on offer, big players like Amazon founder Jeff Bezos will be relentless in their lobbying efforts. We believe drone technology represents our generation's Model-T Ford and that eventually drones will be flying through our neighbourhoods and landing on our doorsteps, rewriting the rules of retail in much the same way the internet did.

### 3D printing

Imagine this: after weeks of searching for a Christmas present for your child, you finally find the perfect doll / model car online, download a file and send it to your 3D printer, which prints the new toy in minutes. This is the type of thing we expect will be entirely possible in the next few years.

A modern-day relative of your traditional ink jet printer, 3D printers use substances ranging from plastic resin and steel, to living cells and biopolymers, in order to print three-dimensional objects, building them up in thin layers to create anything from a pair of stilettos to an aircraft wing or a human ear.

The technology of 3D printers has been in use in commercial settings for some time. Known as additive manufacturing, this process is being used by General Electric, which operates more than three hundred 3D printers to make fuel nozzles for aircraft engines and has plans to invest \$3.5 billion in the technology over the next five years. (Watch a video on GE's additive manufacturing [here](#).) In the medical arena, 3D printers are creating bionic limbs, and the University of Wollongong hopes one day to create functioning organs made of human tissue. In China, 3D printers are creating low cost housing.

From the consumer's perspective, 3D printing will enable us to buy product designs or specifications online, download the details and then print them in our own homes. Consumers will be able to customise products and even create their own. This won't happen overnight: design software is still highly complex and needs to be simplified before it is truly consumer friendly.

Again, there are some constraints on the early-generation technology. Consumer-level printers currently retailing at around \$1000 do not print with the same quality as the million-dollar machines being used by GE. And certain products – particularly those made of many different materials – do not lend themselves to 3D printing.

But once 3D printers are widely accepted, the way we access and consume products will change dramatically. With no need for the physical delivery of goods, online shopping will become an instantaneous experience.

### Our view

Bill Gates said: 'We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten. Don't let yourself be lulled into inaction'.

We believe that businesses in manufacturing, retail and transport cannot afford to ignore what these new technologies will mean for their operations, whose potential effects on our social and commercial infrastructure are massive.

At Ferrier Hodgson and Azurium we have the skills and expertise to help you plan for change. For over 40 years we have worked with businesses undergoing transformation. Every industry and every participant will need its own plan of action to rise to today's and tomorrow's challenges.

If you would like to talk to one of our industry specialists or business process engineers at Azurium, please do not hesitate to contact us.

Regards

Brendan Richards



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