



FUTURE OF BUSINESS REPORT

New Zealand
2040

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Love your work





Citizens of a global economy

by Tim Longhurst

I don't think New Zealanders who go into business today see themselves as citizens of the global economy. But, despite our physical isolation, we live in a society that's interconnected with the world.



We are competing in global markets now. And there are huge opportunities ahead of us – not just in terms of financial success, but in the way we work to make a difference to our future.

My job as a futurist doesn't involve predicting the future. What we do is build scenarios. Doing this sort of planning is important, because if we can't imagine something happening, as a society it is difficult for us to pursue it.

Contemplating what the future might bring allows us to think about what kind of future are we building; what kind of future do we want for ourselves, and our kids? What I like to think about is our preferred future: what are we doing today – what architecture, what technologies and what systems – are standing in the way or creating a pathway for us to live a life that is consistent with our deepest held values?

There are many companies today that say 'we don't exist just to generate money'. They say that's not what we are about.

Over the next 25 years there will be many more companies around the world – including many in New Zealand – which will have a philosophy of bringing values to business and finding new ways of doing things.

With New Zealand's size, compared to a rapidly expanding global population, we are always going to be a niche player. But niche players can be important – particularly when they influence some of the biggest consumers, and when they can provide an example of the best ways of getting things done.

We are going to live in a future where technology will dominate. Big data, personal technology and powerful algorithms will be able to tell us, and others, more about ourselves than ever before. At the same time, we will face massive challenges, such as climate change, which will have an influence that is so powerful that it is hard to imagine living the same way we do today – with unfettered travel and access to resources.

At the moment, we are wired for novelty. And we are driven to seek it all around the world. One of the big opportunities over the next 25 years for local businesses and all of us, is to recognise there are more opportunities, more work, more fun and more life, that can be had within a 5km radius of where we live that we would know what to do with.

Working to surprise and delight our customers, finding ways to live well – and love what we are doing – that's where the real opportunity of the next 25 years and beyond. MYOB's core philosophy is about 'loving your work'. Finding better ways to do this in 2040 will be as important – if not more important – as it is today.

As one of Australasia's leading futurists, Tim Longhurst identifies trends and helps organisations adapt to a changing world. As a futurist, Tim is an energetic and passionate advocate for innovation.

New Zealand in 2040

On 6th February 2040, New Zealand will celebrate the second centenary of the signing of the Treaty of Waitangi. The occasion will be an opportunity to reflect on the development of New Zealand as a nation, the progress of the partnership between Maori and European citizens, the cultural developments and influences of the country as a Pacific nation on the edge of Asia, and the achievements of New Zealanders across a range of fields, from science and technology, to sports and the arts.





For New Zealand business, it will also be an opportunity to review the achievements made during the early part of the Century, and look forward to a new era of technological development, global trade and national entrepreneurialism.

By 2040, New Zealand will be home to around 5.5 million people¹. The country's citizens will be older, with the median age over 40 and close to a quarter of the population aged over 64. The average Kiwi will also be living longer, with life expectancy predicted to reach into the 90s.

Around us, the world will have changed. While fossil fuel is still predicted to power around 80% of the world's energy consumption², significant shifts in energy technology are likely to be a priority as the international community grapples with the growing effects of a changing climate.

The countries considered 'emerging economies' at the turn of the Century will have become global economic power-houses, with China and possibly India vying for the USA's top spot as the world's largest economy. With a global population of close to 9 billion³, and a growing international middle class produced from a massive rise in urbanisation, feeding the world will be a major issue.

For New Zealand, many of these changes are likely to have a positive impact. As a world leader in agri-business and food technology, meeting the world's increasing food demands is likely to continue to support a dynamic and more diverse primary industry sector. New Zealand's high-tech industries, which began to make their mark early in the Century, will have the opportunity to exploit many new and rapidly evolving technologies. The growing international middle class is also likely to support our tourism industry, though fuel costs, global instability and wider environmental concerns may have an impact on travel.

As the globalisation of world trade continues through the middle of the Century, made more advanced and streamlined by technology, international trends will have a major impact on the local economy. Although most New Zealand businesses will remain small – particularly by international standards – new opportunities to succeed, not only locally but also on the world stage will emerge.

The key to success for New Zealand business in 2040 will be to be responsive and willing to adapt to an increasingly fast paced economic environment.

¹ Statistics New Zealand, National Population Projections 2011

² US Energy Information Administration, International Energy Outlook 2013

³ UN Population Division of the Department of Economics and Social Affairs

JETPACKS

In another example of Kiwi ingenuity, the jet-pack has moved from science fiction to reality with the commercial development of jet-pack technology by the Martin Aircraft Company. The Martin Jetpack was developed by entrepreneur Glenn Martin in Christchurch in 1981. Over 30 years later, the company has developed a jetpack capable of flying for over 30 minutes at altitudes of up to 800 feet. The jetpack is currently designed as a first responder vehicle or as an unmanned transport vehicle. For fans of science fiction from the '60s and '70s, a number of flying cars have also been developed recently, though few have reached further than the prototype stage.





The business environment of the future will be fundamentally different. Within three decades, technology will have completely changed the way businesses operate, the work we do, and the way we live.

Work styles and spaces will be more dynamic and decentralised, with personal technology enabling increased mobility and accessibility.

This will have real implications for local and national economies, as well as key industries such as transportation and energy. With many internal and external factors shaping the future of business, the key will be getting future-ready.



2040 and the impact of technology

by Simon Raik-Allen

By 2040, we will have experienced a major shift in the way we work. Transactionally every business interaction will be formalised, automated and digitised, but the biggest impact will be on what we currently call 'the workplace'.

The changes will be enabled by technology, but they will be driven by the rising cost of energy and transport, which will dictate that our social interactions are localised to keep the impact on the environment to a minimum.

Live locally, work globally

The focus of 2040 will be the 'suburban village'. You will live, work, eat and learn primarily within walking distance of your house. Communities will start to pool their resources and share. Councils will split into smaller enclaves. The suburban and community websites, involved with borrowing and trading goods, will be in full swing in 25 years. You'll be able to trade with your neighbours, list your skills on local noticeboards, and find local experts to fix an ailing solar panel. Drones will deliver packages between communities or even a coffee and a bagel to your current location.

Rather than the office, or even the remote workspace, localised centres will emerge as the home of business – giant warehouses, which are used by employees from many different companies, spread around the globe. These will be based around suburbs or communities, as a response to the growing expense of constructing traditional inner-city office buildings.

These lightweight, inter-suburban work centres will house the technology that makes the interconnected workplace possible. Within each will be rooms filled with giant wall-sized screens allowing us to work in a fully virtual, telepresence model. Banks of 3D printers would be continually churning out products ordered by the local community.

Hologram workers

Your workforce could be a globally connected group of people, contracted to provide services for your business. It's also likely you may never meet the people that are working for you, well not in person.

In 25 years' time the holographic projection of people and things will be the biggest change to the workplace since email. Seminars, that became webinars in the 90s, will now become holonars. You will sit in virtual auditoriums, next to three-dimensional light-based images of your colleagues from around the globe watching a hologram on the stage of someone giving a talk. And you will do this just as easily as you gather in the office today.

Launching a new business and hiring 500 people could be done in minutes. Your company could be just you and a couple of project managers: the thinkers, controlling every aspect of the company through new digital interfaces. The wall-sized touch screens would allow you to design new products, guide the use of raw materials and channel resources to where they are most effective would be done all with the wave of your hands.

You will launch many projects all at once and only give them a small amount of resource to start. They will have to prove themselves to earn more capital, so competition and evolution will drive the way business operates.

Mind control

2040 will also herald the decade of thought activation, allowing us to make the most of a new breed of personal technology, which will be attached to us permanently.

Forget “wearable tech” – in 25 years’ time you’ll be able to have chips embedded in your body, allowing you to access everything from phone calls to appliances.

Your body will have chips that interface with various parts of your body to either report on your health so you can manage your food and vitamin intake, or send signals to various organs to help regulate your body. Nanobots will crawl through your veins performing maintenance. Your mind will also be a lot more integrated and there will be many things you can control just by thinking about them.

Getting paid

By 2040 we’ll also start to see the emergence of a broader, stronger set of currencies that are internet-based and governed by independent bodies that manage an international network of exchanges.

Currencies will likely emerge as a way for businesses to work within their closed networks, with major corporations able to create and manage their own money, make internal payments – such as payroll, and even trade with other enterprises.

Any business will be able to make its own cryptographic currency – to buy and sell at values regulated by the market and at the perceived value of the company. As this trend develops, exchanges of currencies, much like we have today, will arise entirely independent of national economics.

Returning to the village

A lot of traditional work, in the trades for example, will morph significantly to a more technology centric approach to take care of fully automated home and office environments as hardware and software start to dominate the physical world.

Your house and belongings will be comprised of thousands of microcontrollers, servomotors and sensors controlling every aspect of the building and environment. Technicians will be able to log in remotely to diagnose and fix issues. Robots may arrive at your door, remotely controlled or autonomous, to perform circuit replacements, or new product installations.

Getting future-ready

Business is very inefficient today, particularly around decision-making and project management. This is because we lack the numbers and the depth of information to make them relevant to our business decisions.

So, becoming data-driven is key. Getting dashboards to gain visibility into how your business is performing is how it is all going to be done.

The first step you can take towards being successful in 2040 is to get out of the paper world. Everything you do in paper now is stuff that you will have to throw away – it doesn’t feed into your data.

To take charge of your business data today, get your accounting software and start with some charts. That’s the simplest thing you can do and it could be a powerful first step to prepare your business for the next 25 years.



Simon Raik-Allen is MYOB’s Chief Technology Officer. His role involves looking at the current and future trends in technology and how they can be developed to benefit New Zealand’s SMEs. According to Simon, technology will play a major role in the work of every New Zealand business operator by 2040.



SELF-DRIVING CARS

Self-drive vehicle technology is targeted at safety, efficiency, convenience, and of course – minimising the impact on the environment. Although a number of automotive manufacturers, such as BMW, are working on prototypes, internet giant Google, which has been working on self-driving car projects since 2008 has made some of the most significant progress in the technology. This year, Google unveiled a brand new self-driving car prototype, with no steering wheel, accelerator or brake pedal. It is the first truly driverless electric car that ferries two people from one place to another without any user interaction. The vehicles are designed to be shared as a replacement for taxis rather than personal cars. Current expectations are that self-driving vehicle technology is about five years away from being mature enough to be out on the streets, with some great advances of late from Google and Ford.

2040 New Zealand's decades in the sun

by Kim Campbell

In 2040 New Zealand will be the world's leading exponent of a smaller nation that is a highly flexible, willing, and non-threatening trading partner.

Isolation and small scale will have diminished as we turn new technologies, and our time zone as the first country to see the light, to our advantage. We will achieve all this by continuing to embrace political and economic reform.

Inevitably our ties to mid and north Asia will be strong as a result of their growing prosperity and our ability to produce food at an unsurpassed rate of innovation.

Our fundamental credentials to take our place at the world's forefront are already in place. Though not generally well known New Zealand is highly urbanized by world standards, with 86.2% of our population in cities. That's high compared with France (85%), the UK (79%) and Italy (68%).

Furthermore we rely to a high degree on manufacturing's contribution to our GDP at 14%, compared for example to other OECD countries such as France and the UK (11%) and Australia (10%). Our agriculture contributes a high 7% to GDP compared to the others at 2%, 1% and 3% respectively.

In 2040 a lot more paid work will be done remotely due to ultra fast data transit.

The nature of work itself will change too. Advances in automation and such as 3D printing will see a lot of backbreaking labour disappear. The labour cost in car making is already 5% compared with 50% in the past, with material costs 70-80%.

Some goods will scarcely be touched by a human hand, but even those manufacturers will still employ thousands of people – their work will be largely thinking! More and more people will be divided by their capacity to pick up new skills and educational achievements, which is their ability to learn and adapt.

A significant part of our population will be young, Asian and Polynesian, not wedded to post-colonial views or loyal to the British Crown or other former New Zealand traditions. They will be more demanding too, more focused on results in an entrepreneurial world.

Business and individuals will have to deal with a loss of anonymity. The boundaries of privacy and space change beyond recognition as our shopping habits, tastes and values are tracked online, analysed in consummate detail, and leave an enormous digital footprint.

Success will rely on how well a business differentiates itself through creativity and innovation, not price.

Energy will be less important as we learn to become more efficient, with plenty of sustainable alternatives ensuring abundant energy supply. The larger resource challenges will concentrate around food and water, of which we have plenty, but the political issues associated will call for cool heads as we strive to resolve the forces of modernism versus traditionalism and also of religious tensions.

Small to medium enterprises will still be the drivers of economies worldwide, though perversely some will be big!

One thing won't change and that is the need for flexible attitudes, staying positive, being adaptable to change, and importantly the ability to get along with other people.

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NZ 2040

by Russell Craig

With all the amazing technology that's been developed over the past century, we've still not managed to invent a crystal ball to see what the business world will look like in 25 years' time. If we did, I expect it would become the bestselling gadget of all time.



ROBOTS

These technologies deal with automated machines that can augment the role of humans in a wide range of areas, from performing precision or repetitive manufacturing tasks to going where people can't go in dangerous or hard-to-access environments. The concept of creating machines that can operate autonomously dates back to classical times, but the use of robots for practical purposes became widespread in the 20th Century. Today, robotics is a rapidly growing field, as technological advances continue and new robots are designed serve an ever-wider variety of practical purposes, whether domestically, commercially, or militarily. Many robots are currently employed in jobs that are hazardous to people such as defusing bombs, mining and exploring shipwrecks.

Still, three dramatic technological shifts have occurred in the last couple of years, which – if their global surge is anything to go by – provide us with a clear window on what the future of business may look like. These are:

- **The way that people use technology has evolved.** Mobile and touch devices are becoming the norm for employees, rather than desktop computers. As we continue to pursue lives with greater connectedness and mobility across multiple screens and devices, there will be an equal sea-change in understanding of our workplaces as flexible entities. Office “locations” may become a thing of the past, as telecommuting truly comes into its own.
- **The overwhelming shift in the business world into the cloud.** No longer are we dependent solely on local hardware capability for storage or computer power, but can utilise the power of the cloud. This will precipitate a business environment where it is increasingly easy to do business on a global scale. Equally, doing business in such an “always on, always connected” world will present certain challenges, but also many new opportunities, both at home and abroad.
- **The 3D printing revolution.** Although still in its early development stages, this new technology will redefine how we manufacture and distribute goods. As the technology continues to improve to the point where we can print a component instead of ordering one made elsewhere, the focus for many businesses will become exporting IP, rather than physical goods. Of course, this will also have a significant impact on our current manufacturing industries, and the jobs that currently exist in those sectors may not in 25 years.

For New Zealand business, these shifts in technology will converge with shifts in population. Forecasts suggest that by 2040, half the population of New Zealand will be located in Auckland, and even more connected than we are now, as the “internet of everything” continues to advance.

Similarly, indications now are that New Zealand’s Asian population will continue to increase significantly. This will parallel with greater trade engagement with our neighbouring Asian countries, even at the SME level, as the cloud continues to break down old paradigms of capability across business sectors. Meanwhile, markets like Africa will be opening up even more as economic growth expands.

There’s no doubt that such dramatic change will be incredibly disruptive. However, New Zealanders are without doubt some of the smartest, most connected citizens on the planet. As a people we are true competitors on a global scale, frequently punching above our weight in both productivity and innovation.

Microsoft New Zealand’s vision for business is closely aligned with this perception. We are passionate about driving innovation, education and our local partner network to grow New Zealand businesses, connect Kiwis to what matters to them, and compete on the world stage.

In a world where people are constantly attuned to the latest technological developments for enhancing their lives and business, Microsoft is taking the lead in innovating for effective solutions that will continue to build on New Zealand’s track record of success now and into the future.

For those Kiwi businesses that can embrace the technological shifts towards a flexible, mobile workforce, empowered by cloud solutions with devices to enable them to work better and faster, the future of business in New Zealand is certainly bright.

Russell Craig is National Technology Officer, Microsoft New Zealand



DRONES

Unmanned aerial vehicles (UAVs), commonly known as drones, are aircraft without a human pilot aboard. Its flight is controlled either autonomously by on-board computers, or by the remote control of a pilot on the ground or in another vehicle. Historically, drones were simple remotely piloted aircraft, but autonomous control is increasingly being used. Drones are in common use for military and special operations, but also appearing in a small but growing number of civil applications, such as policing and fire fighting, as well as non-military security work, such as surveillance of pipelines. There are many possible uses for drones in the future, from freight and transport, to surveillance and compliance.



The rooster's crow wakes the farmer at 5am on 6th February 2040. He gets out of bed, switching the 'rooster' ring tone on his smart device to off, before launching the farm management app on the dashboard of his tablet.

He inspects the overnight report from the farm's monitors, paying particular attention to soil moisture meters embedded in the soil around his forage pasture. He runs a small diagnostic programme on an alarm that is alerting him to a power fluctuation in one of the fence lines, noting he'll have to send a line runner bot out to repair the break before any of the herd notice there's a gap in the electric fence.

He enjoys a coffee with his wife, who has already fired up the business management app and is checking the latest overnight prices while doing the banking. He checks on one of the camera feeds in the office to make sure the dairy cows are lined up in front of the auto milk shed, being gently herded by a pair of rolling barriers, which guide them through the gates. He'll go down shortly and check his herd is comfortable and happy, but first he needs to launch the drone from its hanger to head out on the first of its visual inspections of the property.



As he heads out the door, he checks the irrigation app on his smartphone, and selects the best irrigation pattern for the day's weather forecast he's just received and the precise moisture content of the soil. Look's like it'll be another good day – might even get a bit of rain later.

A bright future dawning

by Nick Clark

In many respects the future described here is not that distant. We are seeing different combinations of some or all of those things starting to percolate through even now, particularly in some of the more intensive dairy operations.



As time passes and a new generation comes through, you'll see more and more of that approach to farming and by 2040 I'd expect it to be much more widespread, perhaps even ubiquitous.

New Zealand's farmers have always been innovators. New Zealand's famed 'number 8 wire' mentality had its genesis in the agricultural sector as farmers adopted, adapted and invented things necessary to succeed in an environment that was distant from the rest of the world.

Comparing where we've come from – even five years ago – it is amazing how much use of electronic and machine technology is in use on farms. Farming is perceived by many to be low skilled and low tech but the reality is very different.

There's a lot of skill, a lot of knowledge, and a lot of technical ability required in farming and these requirements will only grow. By 2040, we expect farming will be in many ways a high-tech industry.

That makes a lot of sense because farmers are very focused on trying to make things work better and more efficiently – to reduce cost and increase production. The tools that are available now are enabling a great deal more precision, which means less waste and better profitability.

This level of sophistication will be extremely important by 2040, if our productive sector is to meet the opportunities and challenges of global markets.



In terms of the demographics, the income and the growth trends, we are not in a bad place to be over the next 25 years. Looking at the projections – the world population will grow to 9 billion people in 2040. Most of that growth will be in developing countries: Asia, the Middle East, Africa and South America.

What you'll see in Asia, but also around the world generally, is a much more urbanised society. Around 1800 only about 3% of the world's population lived in cities. By 2000 it was 47%, by 2010 it was over 50%. By 2050 we might have 70% of the world's population living in cities with more than one million people.

That will have big implications as to what people will be eating. It will also have an enormous impact on how countries provide food for growing populations that live in cities.

If the growth rates continue that we've seen in the last 25 years, you'll see a lot more middle class and wealthier people, particularly in Asia, and they will increasingly have more of a protein diet, which New Zealand is well-placed to provide.

But there are pressures New Zealand will face. We will be facing challenges from lower cost producers in the developing world – as they get more productive and competitive, with more investment in their agricultural sectors.

You'll also see constraints on how much we can increase production in New Zealand: there's only so much land that can go into agriculture; there's only so much water that can be used, especially as farmers face increasingly stringent environmental controls.

Over the last 30 years, we've done pretty well in terms of agricultural productivity. The agricultural sector's growth since the 1980s has been three times higher than the economy as a whole.

This has enabled us to continue to be a strong, competitive producer and exporter. But we can't take it for granted that that is going to continue. We have to continue to invest in our people, in our transport and communication infrastructure, and in science, technology and genetics to ensure that we can continue to get those sorts of gains because of the limitations we face.

One of the areas that has got a lot of potential is agricultural services – particularly for export. We've got a huge amount of expertise developed over many years in agriculture, both behind the farm gate and in front of it in New Zealand. There's a massive market out there for our expertise, with the potential to provide a real opportunity for a new sector of farming.

Ultimately, the future of agri-business – and everything that flows from it into the economy – looks very bright in 2040. To achieve everything we want to for the country in 25 years means working smarter to get more production and greater value add without compromising the environment.

Nick Clark is Manager, General Policy for Federated Farmers, and the organisation's chief economist.



HOLOGRAMS

Holograms began life as a classic parlour trick, known as 'Pepper's Ghost'. Dating back to the 19th Century, this is an illusion that took advantage of a well-angled mirror to project the reflection of a ghost in a hidden room. The simple technique is still used to some degree today, particularly in the entertainment industry. Today, hologram research is in full swing and there are a number of glasses-free 3D projection innovations in the pipeline. Applications are moving beyond entertainment, into areas such as health, education and commerce.



Love your work

