Ethical considerations when investing in technology

June 2018

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Susheela Peres Da Costa ● head of advisory ● Regnan

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Emily Martin ● Chief investment officer ● Balance Impact

Knowledge areas and accreditation
Knowledge area: Ethics (60 minutes/1.0 point). FPA CPD points: Dimension: Professional Conduct (Ethics) (FPA 010130). AFA CPD points: 1.0 (AFA 01022009). CPA Australia CPD points: 1.0 (CPA 000557). TPB CPE (60 minutes/1.0 point). SMSF Association CPD points: 1.0.

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Overview

The technology sector has massively outperformed wider indexes, making it an attractive area for investors. However, the exponential rate of development is reshaping economies and society that have traditionally been structured around 19th and 20th century models.

For investors concerned about the type of world that they are helping to create, three key areas to consider are automation: artificial intelligence (AI), big data, and supply chains.

Learning objectives

After reading this article you should be able to:

- relate automation to social unrest
- analyse how economies might be changed by technology
- explain why attitudes towards AI and big data are changing
- discuss drivers of supply chain behaviour.

The ethics of investing in technology

There is picture of Amazon's founder's office in 1999. It is a small, tired space with "amazon.com" spray painted on a bent piece of cardboard that has been hung on the wall. The CEO and founder, Jeff Bezos, built his desk out of a door, two-by-four wood, and brackets.

Today, Amazon's success means that Bezos is the richest person in the world with a net worth of US$132.2 billion. If someone had invested $1,000 in Amazon in 2007, by October 2017 it would have been worth $12,398 (Carter 2017).

Other tech stocks have also performed remarkably well over the past 20 years. Facebook, Amazon, Netflix and Google's parent company Alphabet — collectively known as "FANG" on Wall Street — have all outperformed the stock market. In 2017 alone, Facebook rose 53%, Amazon 56%, Netflix 55% and Google 33% compared with the S&P 500 Index's gain of 19% (Pressman 2018).

The growth is not limited to online platforms; mobile supercomputing, intelligent robots, self-driving cars, neuro-technological brain enhancements and genetic editing have all developed at exponential speed. The average gain for tech stocks in the S&P 500 in 2017 index was 37%.

Professor Klaus Schwab, founder and executive chair of the World Economic Forum, declared this the fourth industrial revolution characterised by the fusion of the physical, digital and biological.

However, technology's rapid advances are reshaping both society and the economy, which raises a number of ethical issues. Three areas particularly worth considering are automation, AI and big data and supply chains.

Automation

The UK Ministry of Defence's *Global Strategic Trends — Out to 2045* identifies the automation of work as one of its top 13 threats, predicting that "unmanned systems" will be as ubiquitous as computers are today, which could ultimately lead to mass unemployment and social unrest (UK Ministry of Defence 2014).

"It's actually just an extension of automation and even artificial intelligence [AI] developments that we've been seeing since the industrial revolution, certainly in the case of automation. In the case of artificial intelligence, it's probably more like since the first Excel spreadsheet and calculator were developed," Regnan's head of advisory Susheela Peres Da Costa said.

Peres Da Costa added that technology has been displacing workforces for a very long time, but the difference now is the pace of change, making it "absolutely critical" that societies and economies get the transition right to avoid an underclasses of people who are disaffected and unable to participate in the economy, which can lead to social unrest.

"Obviously, stable economies are really the basis for investor returns … so investors might like to think about which economies are doing this relatively better and relatively more poorly — managing this transition well or badly — because that's going to be really important for understanding how the economics of those economies play out going forward," she said.

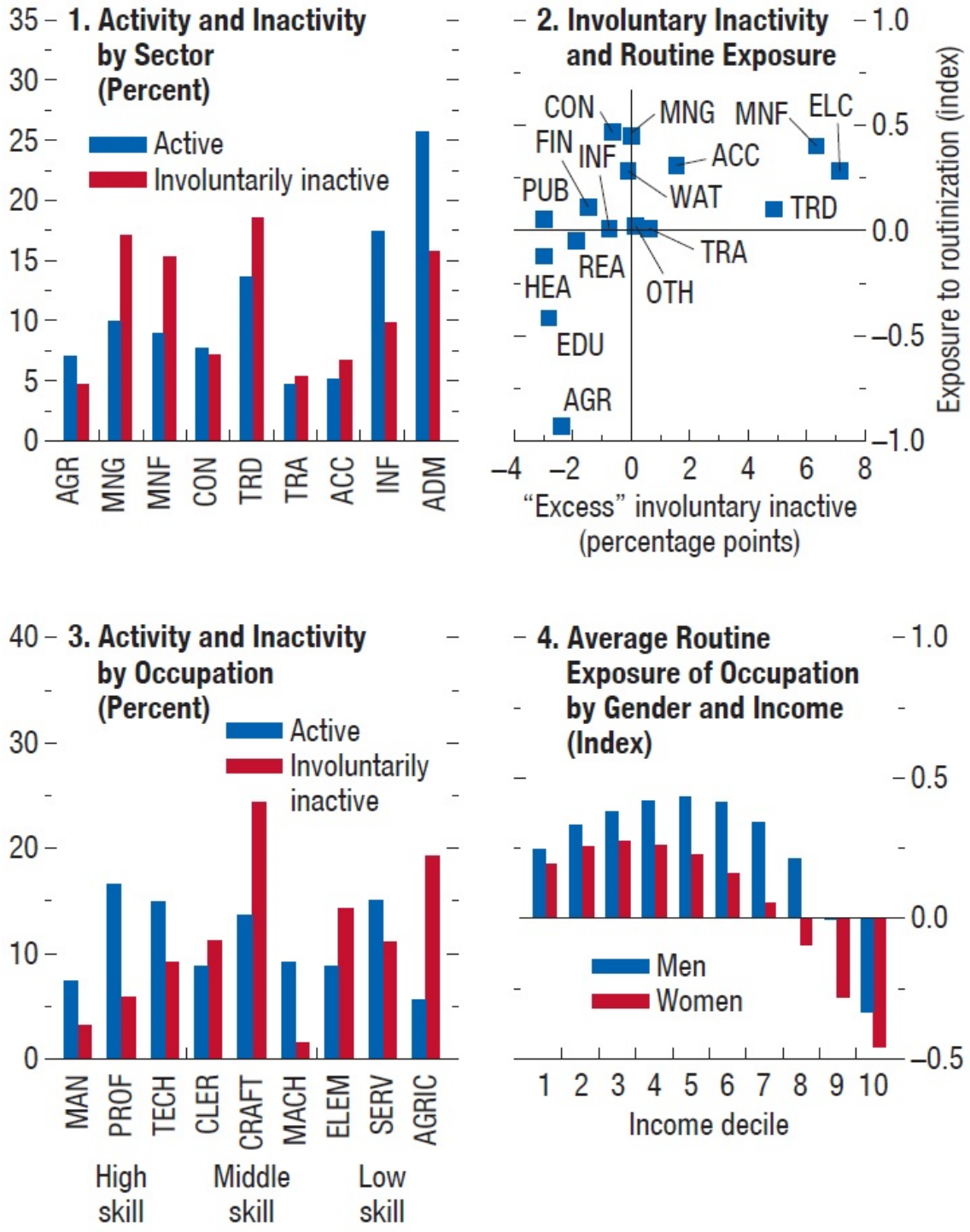
Importantly, in many instances, the automation of the workforce is already here, but societies and economies seem ill-prepared for the changes to work practices.

“If you think about things we see in everyday life like you go to the supermarket and there’s not a person there, there’s a whole lot of self-checkouts and to us that seems great because it’s faster. But at some point, there are people that have lost their jobs doing that,” Balance Impact’s chief investment officer Emily Martin said.

According to the International Monetary Fund (IMF), technological advances such as automation have weighed moderately on participation rates. For prime-age men (aged 25–54), the deepest decline in participation rates has been among those with lower education attainment and/or in the lower to middle parts of the income distribution (IMF 2018).

Certain sectors are at more risk. Wholesale and retail trade, manufacturing, mining and quarrying and utilities account for more than half of involuntary inactivity, despite having less than one-third of the workforce associated with them (see Figure 1).

Figure 1: At-risk sectors



ACC = accommodation and food service activities; ADM = administrative and support service activities; AGR = agriculture, forestry, and fishing; AGRIC = skilled agricultural workers; CLER = clerical workers; CON = construction; CRAFT = craft workers; EDU = education; ELC = electricity, gas, steam, and air-conditioning supply; ELEM = elementary occupations; FIN = financial and insurance activities; HEA = human health and social work activities; INF = information and communication; MACH = plant and machine operators; MAN = managers; MNF = manufacturing; MNG = mining and quarrying; OTH = other services; PROF = professionals; PUB = public administration and defense; REA = real estate activities; SERV = sales and service workers; TECH = technicians; TRA = transportation and storage; TRD = wholesale and retail trade; WAT = water supply, sewerage, waste management, and remediation activities.

Source: IMF.

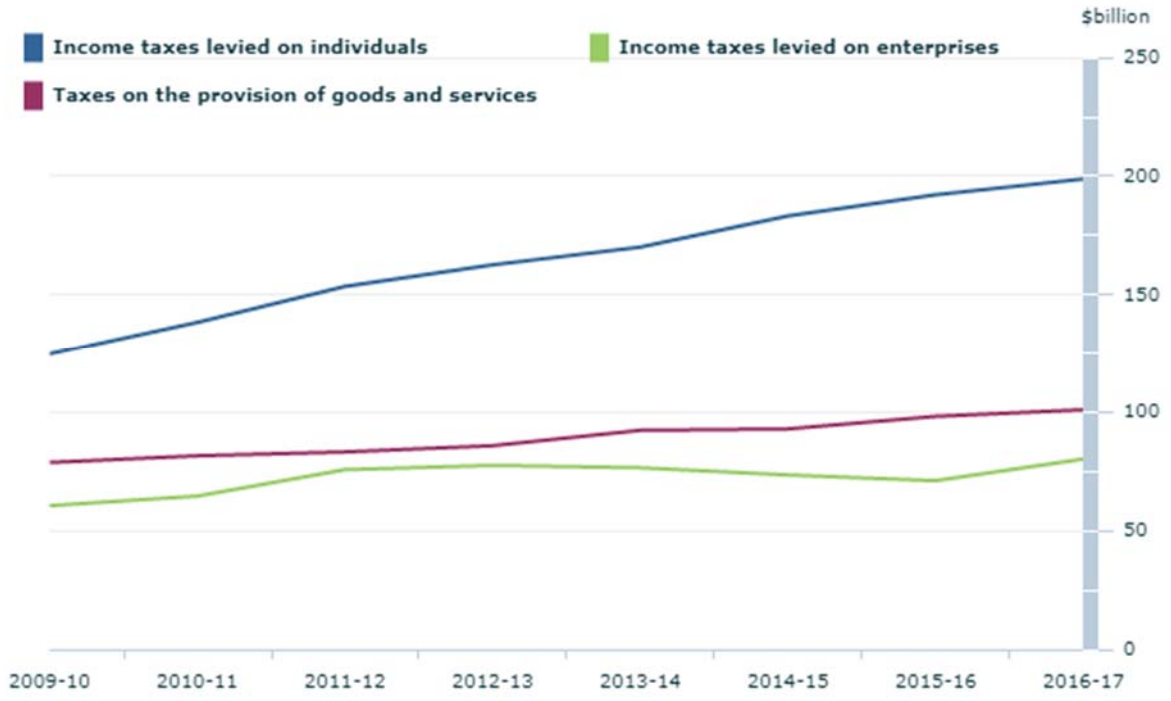
This is exacerbating a 30-year trend of growing income inequality, with wealth becoming more concentrated at the top. For those concerned about social cohesion, high levels of economic inequality in a society is linked to social and political unrest and upheaval.

“Technological competition is often ‘winner take all’, favouring monopolies or at least oligopolies (like we see in office software, online search and marketplaces, and social media platforms). These characteristics of technology drive inequality, since the profits derived by the makers of leading technologies are shared by relatively few,” Australian Ethical’s head of ethics research Dr Stuart Palmer said.

Tax base threatened

Another problem that may arise from technological advances relates to taxes. A substantial percentage of more economically developed countries’ government revenue is derived from income and payroll taxes. In Australia in 2016/17, the Federal Government (Government) collected $198.8 billion from income taxes levied on individuals, compared to $101.1 billion from taxes on goods and services and $80.4 billion on income taxes levied on enterprises (see Figure 2).

Figure 2: Commonwealth government taxation revenue



Source: ATO.

Fewer employees means fewer people paying tax, and few people on the payroll means a reduction in payroll tax receipts.

““Right now in America, for example, about 10% of tax base comes from corporate taxes and 80% of the tax base comes from income and payroll taxes. You also have them not paying as much tax as previously was being generated by income and payroll tax, so that creates another potential issue,” Martin said.

Less tax revenue and more people in need of social security support risks putting a significant strain on the fiscal position of countries, which in turn leads to key services no longer being provided, the IMF predicted (IMF 2018).

Peres Da Costa added from an ethical perspective it was important to understand the technology investments might support or restrain changes via the business community.

“There are many countries around the world where discussions about tax rates, tax types, all of that kind of thing are live. It’s really important how those things play out as to whether we will end up solving for these in ways that actually allow us to go forward with an economy that’s effective for everybody,” she said.

Peres Da Costa flagged that automation is occurring in all kinds of companies and not just the tech sector. As such, rather than picking sectors, it was important to focus on how transitions are being managed at an overall economic level and, as an investor, to pick jurisdictions where this was happening well.

“It’s very, very early days for this. What we’re seeing is that we have still quite industrial models of the economy that are dominating developed economies, and the transition hasn’t really begun to occur. We’ve seen some of the dislocation coming about, but we haven’t seen the tipping point where governments have really grappled with what that’s going to take,” she said.

“Whereas in previous times, those transitions might happen over a generation or two, these things are happening very quickly now. So, being able to provide things like retraining, new models of public participation, all of that kind of stuff is really important if you want people to keep buying things which are the underpinnings of our economy.”

Manufacturing relocation

As manufacturing becomes automated and technologies, such as 3D printing, become prevalent, factories are relocating closer to their markets to reduce costs. This is eroding the competitive advantage of countries that rely on cheap labour to fuel their economy.

Historically, less economically developed countries have leveraged their large pool of cheap labour to promote economic growth, but this may be different now.

“Manufacturing always moves to the lowest cost jurisdiction — and so now we’re thinking about the cost of transport and manufacturing and labour forming part of that equation — and that’s what you’re seeing with the migration of location where the manufacturing takes place. But separately, there’s frictionless information, which allows some of those service economy jobs to move into developing countries,” Peres Da Costa said.

This frictionless information has provided groups in developing countries with access to markets that they would not have otherwise had. It used to take a lot of capital to be able to build a product or service that had the scale and reach, and could get to developed countries’ markets. That was a real barrier to growth for some types of industries.

"That's changing now as communication makes it much easier. Things such as Airtasker now arguably allow people in developing countries to access some of the higher rates of pay associated with tasks that formerly needed to be performed close to home so there's a bit of a trade-off happening," Peres Da Costa said.

Automation in defence

Defence is one of the largest sectors globally (the top 25 military spending countries collectively spent US$1.68 trillion in 2016) and is a source of many technology advancements that work their way into the consumer markets. For instance, GPS is a feature in many cars, phones and apps, but the underlying satellite technology was developed, and is still operated, by the United States Air Force. It retains the ability to deny or degrade the service at any time.

A portion of investors choose to screen defence out of their portfolios completely. Some are selective in the types of companies and products in which they invest, avoiding cluster munitions, for instance. Others have no ethical qualms about the sector and invest across it all.

"There are many different types of ethical investors with many different types of priorities. Some of them take the view that they'd rather be invested and, as investors, exercise their influence to try and ensure higher standards either in manufacturing or in use or in regulation. Others would prefer to wash their hands of it completely. They're all different and legitimate approaches for ethical investors to take," Peres Da Costa said.

Unmanned systems in combat — more commonly called drones — have yet to have norms established around them, presenting ethical complexities for those wishing to invest into the technology.

Australian Ethical does not invest in defence companies, or in any companies involved in the production of weapons, but raises an important point. Even non-military technology may be used to cause devastating harm by those intent on using the new technologies for ill.

"This is not just the stuff of science fiction. These concerns are voiced by some of our most eminent AI researchers," Palmer said.

Peres Da Costa echoed this view.

"I mean that's part of the issue with technology isn't it? You never know to what use it's going to be put to," she said.

"The pace of change is such at the moment that it's not clear enough where the challenges are going to come from. So, the most that you can expect is that investors be attentive to whether the standards being applied are sufficiently high that the ethical considerations get enough of a look in by those making the decisions. That tends to mean the directors at the helms of these companies."

Governance

As demonstrated at the Royal Commission into Misconduct in Banking, Superannuation and Financial Services Industry, poor governance leads to ethically questionable behaviour.

Peres Da Costa pointed out when it comes to social, environmental or strategy issues, it all comes home to the board because they appoint the leaders, set the KPIs and the constraints in terms of freedom to determine strategy.

“All of that comes from the board. So, what you really want to see is that those people at the top making these decisions have the capability, enough information and enough competence in using and analysing that information to be able to make some of these ethical decisions,” she said.

“That’s really tricky in the area of technology because a lot of what they’re forced to grapple with is novel. So, regardless of whether we’re talking about a technology company or a bank, in many cases these are decisions about the application of the technology that hasn’t been done before, and so you don’t necessarily know going in what the unintended consequences might be.”

AI and big data

Increases in AI’s ability to analysis massive amounts of complex data sets is leading to new insights across multiple fields, including medical research, public policy and the delivery of social services. However, the applications of these insights are not always in the public interest, as demonstrated by Cambridge Analytica scandal.

For a long time, data and AI were viewed as ethically-neutral (despite the issues being explored ad nauseam in sci-fi) and little thought was given to how the information was going to be used, and by whom; that mindset is beginning to change.

“Because we went through a very long period where the world felt stable, I think there was quite a lot of complacency about what the data might be used for. The rise of social media is an example of where people have been very happy to share lots of personal information,” Peres Da Costa said.

She added that while some people may be comfortable with some types of governments using their data, access from other types of governments may give pause for thought.

China is in the process of rolling out a social credit rating system to score how trustworthy each of its 1.3 billion citizens are. The rating is based on data pulled from a variety sources, including online and government departments (Yu 2018)

The program is explicitly designed to shape behaviour.

Those that score well are given preferential treatment, such as access to fast lanes at airports and favourable housing arrangements. Those that score poorly are penalised. More severe punishments include restrictions on travel and denial of private schools access for children.

The rollout of the program is due to complete by 2020.

Within western democracies, Cambridge Analytica is under criminal investigation in both the US and the UK for its role in Donald Trump’s presidential campaign and the leave the EU campaign. The political consulting firm used data insights (gleaned from Facebook) to craft messages designed to influence the electoral process.

The scandal caused Facebook's stock to tumble and its founder, Mark Zuckerberg, to testify before the US Congress.

Martin believed that there will be consumer and regulatory shifts as people become more aware of the ethical implications.

"We will see the individual taking control of their data and more regulations coming as well, so the risk of investing in these industries is that they might be subject to more regulation in the future. There's a bit of a legislative risk there," she said.

Supply chains

Poor practices in technology companies' supply chains have made headlines for years. Nets around Chinese electronic factories to stop high suicide rates among workers and children mining cobalt in central Africa for batteries are just two examples. However, investors have the power to make informed decisions.

"Happily, this is one of the issues that ethical investors can be comparatively more effective at handling," Peres Da Costa said.

"There's been an awareness for a long time about risks in the supply chain, both in the extraction of raw materials but also in manufacturing. They [companies] have been able to analogise from other industries where this occurs because … we've been making garments in factories, including in developing countries with different labour standards, for a lot longer than we've been manufacturing iPhones."

As technology companies are powerful customers, they can influence their supply chains towards different practices. Investors can use codes of conduct to evaluate which companies have committed to higher standards, including due diligence on their supply chain.

"That's an area where there's information out there investors can use. It's not perfect, but it's certainly a more tractable problem than some of these larger questions that we've been talking about around automation and artificial intelligence," Peres Da Costa said.

Jurisdictions such as the UK, France and California have enacted legislation that requires companies to be transparent about human rights abuses in their supply chains. However, Australia is lagging behind its peers.

"Australia is not a leader in terms of transparency. It's difficult to get information out of companies about, for example, car emissions. It's very difficult to get information about supply chains. So, I feel like Australia is actually behind, quite far behind the UK and the US," Martin said.

"There's still a bit of an attitude of: 'Why are you asking? Just give us your money and invest in the shares and we'll look after it.' Whereas, when you start asking questions, I think it annoys them basically because they don't see it as something that's vital to their investment."

Peres Da Costa was reticent to name individual companies that had high standards in their supply chains. Instead, she pointed to initiatives, such as the Responsible Business Alliance, that had codes of conduct and "concrete" guidelines on responsible supply chains.

“Most of the big technology names that you would recognise are part of that alliance, and you can evaluate whether or not others that you might be considering investing in are part of that too. There are concrete standards, concrete expectations around labour rights and raw material extraction and so on that provide a great way to compare what companies are really doing against what’s a reasonable expectation for a company,” she said.

Martin is convinced that it is the industry’s responsibility to address the root cause of the issues.

“If you’re a CEO of a company and you’re profiting from child slavery, that’s terrible and I think it is your responsibility to go and ask the questions down the supply chain … It’s very important because otherwise you’re a party to that,” she said.

“I think you’re just as bad as the people that are — because you are. Effectively, you’re paying the bills of the people that are paying the child labourers.”

Peres Da Costa echoed Martin’s view that every action that a company takes has consequences. If a company expresses demand for one raw material versus another raw material, then it is an incentive to produce more of the former. If a company expresses demand for one kind of labour standard versus another kind of labour standard, the company is communicating its demand for that kind of standard within the supply chain.

“Being able to adhere to higher standards is just communicating a different standard that they have chosen. No economic activity is without consequence. So, it’s a matter of being mindful of what those consequences are and using leverage, which is the word the OECD [Organisation for Economic Co-operation and Development] would use about this, to try and ensure that those impacts are responsible ones,” Peres Da Costa said.

Conclusion

The technology sector has outperformed wider indexes, making it attractive to investors. As money has piled in, developments have exponentially accelerated, bringing about the beginnings of the fourth industrial revolution.

This is reshaping economies and society at a hitherto unexperienced rate. Automation can improve productivity, but put large numbers of people — particularly low-to-middle income workers — out of work, which in turn can lead to social unrest. Additionally, as the majority of tax revenue is derived from income and payroll, automation may have the unintended consequence of reducing the tax base, thereby making the provision of social services more difficult at a time when they are needed more.

Unmanned systems in combat are gaining prevalence, but, as yet, no norms have been established around their use. This makes the governance at defence companies all the more important.

Governance of other types of technology companies is also highly important, as most of the issues they have to contend with are novel and, as such, carry risk. For instance, tighter governance and oversight by Facebook may have prevented its founder needing to testify before US Congress over the use and potential abuse of personal data.

Thankfully, supply chains are one of the more tractable problems in technology. Codes of conduct and alliances exist that can be used to judge how well companies handle human rights and environmental abuses.

“It’s really about balancing the ethics and looking at what’s real today and what’s possible in the future and educating the client about that to make sure they’re making an informed decision,” Martin said.

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