

Check against delivery

Mark Machin on Opportunities in the Age of Disruption

I would imagine the term ‘disruption’ is used almost every day in Board rooms and executive suites around the world.

Since 1995, when the Harvard Business Review article by Bower and Christianson coined the term “disruptive innovation” for a marketing process, the term has taken on a broader meaning to include almost any transformational change.

It is abundantly clear that we are living and operating in an **age of disruption**.

各位来自中国的大学生你们好！欢迎你们来加拿大学习并出席今天的午餐会

If you were wearing **google pixel buds** you would have heard a real time translation of Mandarin.

You would have realized that I welcomed these young students from China who are studying in Canada and who are members of the New Horizons Club.

Today, language is being disrupted by real time translation.

Health care is being disrupted as well. Scientists today use 3D printers to create human tissues that can be used for medical testing and perhaps one day to produce human organs.

Demographics are a disruptor.

Worldwide, the population of people aged 60 years or over has doubled since 1980 and is expected to double again by 2050.

Climate change is a disruptor. Devastating wild fires are raging in California right now, and this past summer there were an unprecedented number of forest fires in the **Arctic Circle**.

Shareholder engagement is a disruptor. Pension funds and institutional investors are starting to ensure the companies they invest in operate in a sustainable way.

CPPIB is **embracing** a whole range of disruptions. And importantly, CPPIB is **becoming** a disruptor itself.

Today I want to share with you how we are doing this.

We are fortunate to know, with some degree of certainty, the future contributions to the Canada Pension Plan.

We have the benefit of scale and we have a reasonably large and growing fund size.

These two factors mean we can afford to be a highly disciplined and patient investor. We are able to look far into the distance, beyond any market cycle and short-term volatility.

CPPIB looks through a very large telescope to discover the large structural changes and shifts happening in the world that will fundamentally change how we all work and live.

I would like to speak about some of these today.

Without doubt, the first structural change affecting us all is the acceleration of technological change.

- Artificial Intelligence,
- machine learning,
- the explosion in automation,
- vast amounts of data,
- the internet of things,
- the rise of fintech,
- the move to autonomous vehicles...the list goes on!

At CPPIB, we have an obligation to analyze how these technologies are disrupting specific industries that may affect our investments not only today but decades ahead.

Because we are placing enormous bets, sometimes in the billions of dollars, we need to be expert at what I call the **implications business**.

Predicting the future so we can benefit from its growth and profit from it for the benefit of Canada's millions of pensioners.

You don't need to look very far to see massive future changes.

A few years ago, the idea of autonomous vehicles was spoken of in futuristic terms. "Someday there will be driverless cars," pundits would say.

In fact, that day is coming. Any day now, Waymo will commercially launch autonomous taxis in Arizona. And in 2020, Uber is planning to **test a fleet of airborne taxis** in Dallas, Los Angeles and Dubai.

Our job is to understand not just the exciting aspects of autonomous transport, but to judge the implications of it throughout the value chain...whether it's managing fleets of trucks, electric vehicle producers and their chargers, toll roads, gas stations or insurance.

An example of a developing company in our portfolio today is Zoox. Zoox is an autonomous vehicle company, headquartered in California, aiming to have its fleet of specially designed

robo-taxis ready by 2020.

Another exciting company we invested in that has been disrupting the financial services industry is Square Capital, a subsidiary of Square Inc. the payment processing company.

Square Capital invests in small business loans in the US using machine learning that pours over vast amounts of data. Square Capital is developing industry leading risk models to extend the right loan amount, at the right time, to the right small businesses.

And right here in Toronto, we were pleased to announce just a few weeks ago, a partnership with the Creative Destruction Lab at the University of Toronto's Rotman School of Management.

CDL is a seed-stage program that's been praised as one of the most advanced in the world. It connects science-based ventures with serial entrepreneurs, angel investors and venture capitalists to build massively scalable companies.

We're thrilled to be partnering with them to help inform our view of emerging technologies in the artificial intelligence and energy sectors.

The next disruptive change I'd like to speak about is the aging population.

People are living longer. Much longer.

Two years ago, Canadian seniors outnumbered Canadian children for the first time in our nation's history.

A quarter of China's population is estimated to be over 60 by 2030, and if you're a baby girl, born this morning in Tokyo, the chances of you living to be 100 are one in two.

These demographic shifts carry profound economic, social, health and political implications, both good and bad.

This demographic shift is one of the reasons why we invested in ORPEA, a leading European provider of long-term care services which today provide care to more than 82,000 people in 800 facilities.

We also invested in Viking River Cruises, which operates more than 60 cruise vessels on many rivers and oceans worldwide. As the North American baby boomer generation retires and seeks travel adventures, it made sense for us to invest.

Another significant global change we see is the shift of economic power from North America and Europe to Asia.

By 2030, Asia is expected to account for more than half of the world's GDP. China alone is estimated to represent 23% by 2030.

Before I moved to Canada two and half years ago, I lived in Hong Kong and Beijing for 22 years. The changes I witnessed were staggering. And the changes continue today as I witnessed recently.

In September I went into a coffee shop in Beijing. I handed over my cash to pay and they giggled. No one had any cash. They thought it amusing that this foreigner came in and didn't use his smart phone to pay. China has rapidly moved to a cashless society.

At CPPIB, we have been investing in China for a decade and we have been increasing these investments steadily. Today we have about 8% of our portfolio in China.

Our best-known investment in China is probably Alibaba. We invested back in 2011 because we believed strongly that China's huge rising middle class and its rapid adoption of wireless technology would make Alibaba a sound prospect in the long-term. We've increased our investment over the years and Alibaba continues to be a strong performer in our portfolio.

Less well-known but equally promising in the long-term is our partnership of four years with Longfor Group in China.

Longfor is a residential and retail developer and operator with projects in Suzhou, Chongqing, Shanghai and Chengdu.

This summer we co-invested with them in a new generation of rental housing programs. There's a huge demand for modern, quality rental housing for young professionals and new graduates in China.

Through this collaboration, we have the opportunity to participate in this fast-growing sector of Chinese real estate.

We are also embracing the opportunities created by climate change disruption.

We started work on this back in 2008. We are proud to be amongst international leaders who encourage companies to better consider and disclose how they manage climate change factors.

Last year we established our Power & Renewables group which is tasked with expanding our portfolio of renewable energy investments, taking advantage of this global shift to renewables and clean energy.

When it comes to energy, we are tracking multiple investment themes.

- Renewables,
- energy storage systems,
- smart meters,
- and related technologies.

Some of our investments include a joint venture with Votorantim Energia in Brazil operating wind parks, and Renew Power a leading renewable developer and operator in India with assets in wind, solar and rooftop solar power-production.

And closer to home, we've invested \$3 billion here in Canada in a number of wind and solar projects with Cordelio Power and Enbridge.

All of these examples illustrate how CPPIB is embracing disruption...
...whether that disruption is technological, demographics, economic, climate change or any number of other forces for change.

We seek the best opportunities that we can find and invest in them for the long-term. We do this while also incorporating a disciplined, multidimensional risk management framework.

But as I said earlier, we are also becoming disruptors ourselves.

We believe that by actively engaging with companies we invest in, we will help disrupt the status quo and help initiate meaningful change.

We have identified five specific areas where we will be a disruptor.

- Climate change,
- water conservation,
- human rights,
- executive compensation,
- and board effectiveness.

If the companies we invest in are not operating at the standards they should be, we engage directly with them to influence positive change.

From time to time we, like many investors, are challenged by people who put pressure on us to divest if they disagree with the policies or actions of a company we have chosen to invest in.

Divesting achieves little for CPPIB and all of our stakeholders. There is a large supply of capital in both public and private markets that can step in if we were to exit.

In fact, we believe the very opposite. We believe that only by staying in and being a positive force for change can we truly make the market and the world a better place.

We believe the best way to positively influence corporate behaviour is through principled, constructive and collaborative engagement.

We think the results are clear... it works.

Encouraging companies to take a constructive approach to environmental, social and governance issues makes them more likely to create sustainable value over the long term.

Here are some examples where we have done this.

Over the years, we have monitored and encouraged the work being done by oil and gas and mining companies in reaching agreement on key performance indicators and reporting guidelines for water conservation.

The World Economic Forum has consistently identified water supply crises as one of the greatest global risks to society.

CPPIB was among the first investor signatories supporting the launch of the CDP Water Program in 2010. This year we joined over 35 global investors in creating many collaborative engagements with boards and management on water risk in agricultural supply chains.

In 2016, we co-filed climate change-related disclosure shareholder proposals at two global mining companies that received the support of more than 90 percent of shareholders.

Our positive intervention changed those companies' practices.

In addition, since 2016, we've worked with 20 global investors in collaborative engagement related to child labour, poor safety and other human rights concerns in the cobalt mining industry in the Democratic Republic of Congo, the world's largest producer of cobalt.

Closer to home, in Canada this past year, we voted at 45 shareholder meetings of companies that have no female directors.

Not one.

We were pleased that so far 21 of those companies have added a female director to their boards. This is a great start, but there's more work to be done.

We'll continue to monitor improvements in the representation of women directors on the board of our investee companies and we plan to roll out this program globally.

Whether we're embracing disruption or becoming a disruptor our first obligation is to deliver solid financial returns, year-in, year-out.

We never lose sight of the most important reality of all; that we are working on behalf of 20 million Canadians.

A strong, reliable performance is what will ensure the fund is sustainable for many generations to come.

For the 2nd quarter of this year, CPPIB's investment performance achieved 10-year and 5-year annualized net nominal returns of 9.1% and 12.1%. These returns were well above the Chief Actuary's assumptions for his 75-year projections.

As we approach our 20th anniversary, we have grown to be one of the larger pension funds in the world.

Most importantly, we aim to be one of the best-managed pension funds in the world.

We will do this by turning the forces of

- technological,
- economic,
- social,
- and environmental change

into opportunities for sound investments.

All of you and twenty million Canadians are counting on us to **do just that.**

Thank you.