

# The Next Wave:

## Edmonton

August 2019

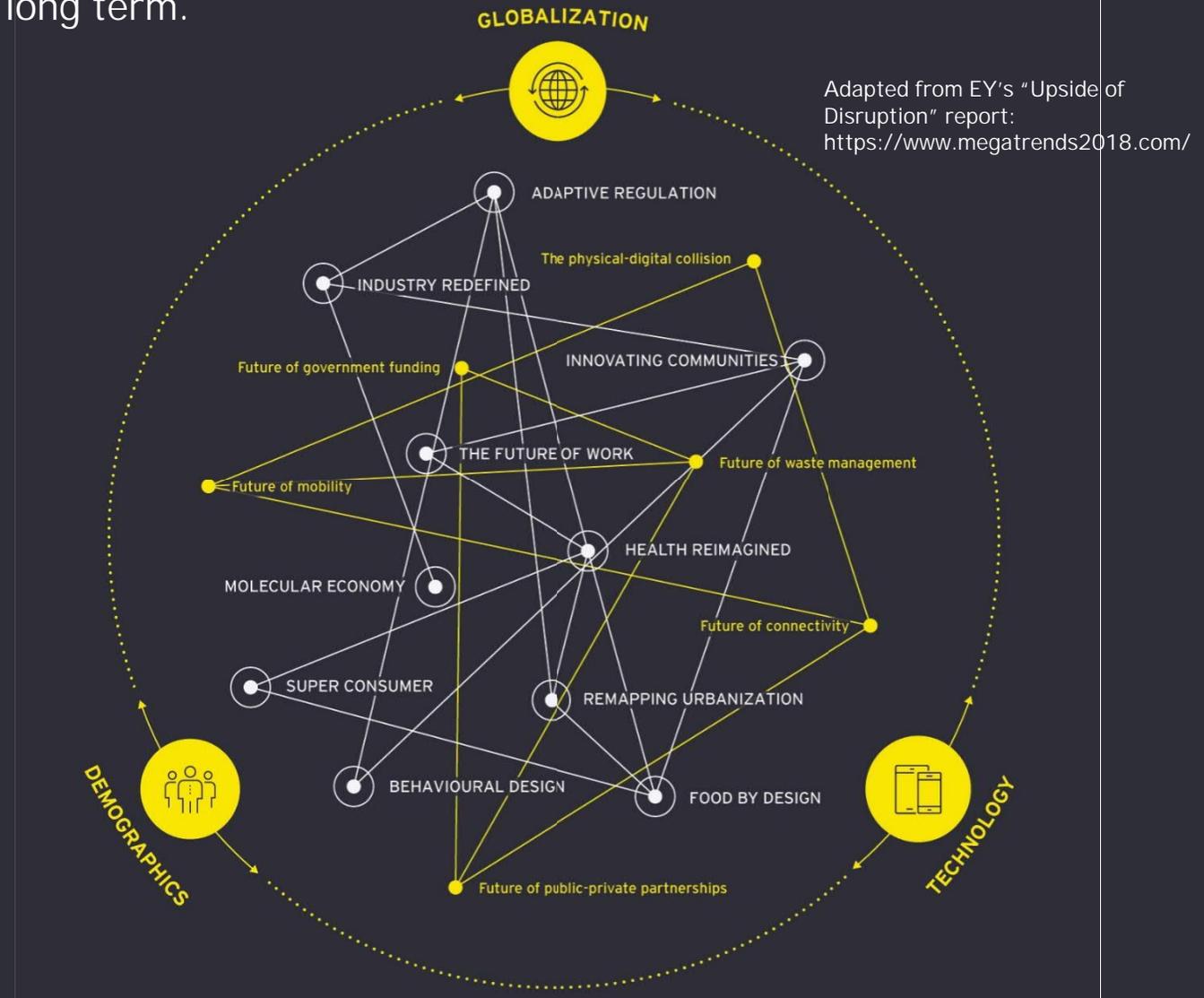
This paper was initiated to inform the development of The City Plan. The technical studies and papers were considered alongside public engagement, modelling and professional judgment to determine overall outcomes for The City Plan.



Building a better  
working world

Everything is changing. It is the only certainty. Yet the timing, severity and directionality of change is almost impossible to predict.

Globalization, technology and demographics, the primary disruptive forces shaping our society, are generating megatrends, resulting in a chaotic set of potential permutations for our future, both in the near, medium and long term.



Disruptions will continue to occur in waves, with increasing frequency and intensity. Disruption will permeate every facet of life, making predictions of the future nearly impossible.



Stephen Prendiville  
Partner  
Stephen.prendiville@ca.ey.com

The Disruption Age is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres, by rapid technological advances, major societal disruptions, civil unrest, immigration, large scale environmental shifts, new and ever changing business models coupled with more sophisticated and empowered consumers and citizens.

In the 1950s our computers could process approximately one computation in a second for USD \$1,000. Adjusting for inflation, today, we can process 10 billion similar computations per second for the same equivalent USD \$1,000.

Over 4 billion people are connected to the internet, and at least 3 start-ups are formed every second globally.

In the last two years we have produced more data than in the entire history of the internet and approximately 90% of all the data produced in our entire human existence,

A handful of websites produce more download activity in a day than the entire internet experienced in the year of 2002.

Change is not new. Generation after generation has had to manage and evolve to changes in society. Even in the last decade we have encountered many disruptions. Examples include the various elements of the sharing economy (ride, room, equipment), the gig economy, social media, smart phones, smart watches/wearables, e-scooters, food delivery apps, and many more.

Many of these disruptions were either not predicted in of themselves, or their full impact on society was and remains unforeseen – yet they no longer are considered “disruptions” in the sense that they are now almost universally accepted as our new normal.

What is interesting to contemplate is just how poorly society generally makes predictions associated with various disruptions. For example, even though the earliest efforts in smart phone development date back to the late 1980s, those concepts did not foresee the inclusion of the camera on the smart phone (and the first smart phone launched in the early 1990s resulted in the loss of significant investment dollars). It wasn't until 2007 that smart phones were launched and became universally acceptable and then, once a camera was put on a smart phone, developers did not predict the behavioural impact of that small addition, leading to a world where people are uploading massive volumes of video and picture content to various social media platforms.

Now consider that today billions of dollars are being spent to advance comparatively crazy concepts such as space tourism, autonomous vehicles, artificial intelligence, lab grown meat, 3D printing, nano-technology, quantum computing, facial recognition, advanced data and analytics, blockchain, personalized preventative and designer healthcare, virtual and augmented reality, drones, adaptive regulation and many more.

What unforeseen impacts will these potential disruptors have for our society? What are the other disruptors that we currently can't even contemplate?

These are big questions with very few easy or direct answers.

## What does any of this have to do with the City?

It is a fair question – most of the disruptions we have experienced or that may come in the future, are not under the City's control. The City is not in the business of leading the development and/or implementation of disruptive products and services.



But for illustration purposes – let's consider the impact of just one future disruptor – autonomous vehicles.

As of September 2018, 46 organizations were developing autonomous vehicles. Collectively, there are billions of dollars being invested by automakers, software developers, ride sharing/hailing companies, etc. to bring the vision for automated vehicles to our streets. While the timing, roll out and even the format of autonomous vehicles is unknown, we can reasonably predict that they will eventually be on our roads. The monetary profit incentive for the private sector to achieve full autonomous vehicle mode is significant, removing the cost of the driver from a host of business processes.

So automated vehicles will happen – but let's consider the implications for the City and what it may care about:

- 1) What will be the implications for the safety of citizens? How does the City move closer to vision zero without a large degree of new spending? Will there be a requirement to redesign intersections, sidewalks, lane segregations? Will existing policies need to be adjusted? What is the City's vision for autonomous interaction points and are today's investments in traffic-related infrastructure resilient to accommodate that vision?
- 2) What are the implications for parking requirements, regulations and pricing? Will the City encourage autonomous vehicles to roam or park? How will policies and/or pricing models be designed to encourage the intended behaviour? Will preferred behaviours differ by City zone or area? What does the choice mean for home building codes, street scaping, sidewalks, store fronts, increasing interaction with pedestrians and cyclists, etc?

## What does any of this have to do with the City? (cont'd)

- 3) What will the implications be for City building and placemaking objectives? If autonomous vehicles create frictionless guaranteed travel times – will people live within the City's boundaries or instead commute longer distances to the City. When you consider this question with other disruptors such as drone delivery of food and goods, or augmented reality connectivity for many jobs in the future – what will draw people to live, work and play in Edmonton? What could this mean for densification goals? The answers to these question could help drive the desired policy solutions to earlier questions. How can the City better promote its desired vision?
- 4) What do autonomous vehicles mean for infrastructure-related items such as the transit network utilization and design, the future of fuel filling stations (gas or electric?) and vehicle maintenance providers, parking structures or spaces, the power grid, home building standards, speed limits, traffic signals? What about consumption of services such as road advertising, radio versus in-car tv or other media (games) consumption, healthcare, emergency services responses and related catchment area requirements?
- 5) What do autonomous vehicles mean for bylaw and regulation enforcement, related revenue streams and enforcement personnel requirements? If AVs don't break speed limits, don't run red lights, don't park illegally etc., - then they likely present a significant opportunity for the deployment of enforcement personnel to other activities and policing requirements – but it will also result in a reduction in revenues from these streams that currently fund various related programs. What will be the right timing for reorganizing the deployment of enforcement personnel? Will enforcement need to scale up in the AV transition phase before scaling back when full AV mode has been achieved?

As you explore these questions what becomes clear is the City must consider its goals and desired vision, and then develop output-type policies that will be adaptive and flexible.

Autonomous vehicles are just one technological change, and they will not arrive in isolation of other significant changes. As such it is unlikely that just one set of isolated policy solutions can be applied to generate the desired outcomes for the City.

## How can Edmonton be prepared?

Across the world, very different cities are facing the same question: how to harness the opportunities and best prepare themselves for the Fourth Industrial Revolution? (World Economic Forum, 2018)

We need a shift. Harnessing the opportunities will require a collective effort. Not only must the municipal corporation play its part by re-training its mindset and processes to be agile and adaptable – but residents, citizens and by extension, City Council must also play their part to create the environment and permissions for agility.

An important defining aspect of a resilient competitive city is a strategic vision for long-term development. This vision must encompass city planning and programs and services but must also answer a fundamental question: what kind of life do our current and future residents want?

Today the City is working hard to keep up with disruption. However, as with almost all cities in North America, legacy systems and processes, that have for the better part of half a century served the City and citizens well, are now holding it back. Approval processes, procurement frameworks, business case decision matrices – were all designed to help the City make the “right” decisions and not “waste” taxpayers money, for a time when there was a higher degree of certainty in our economy and environment.

But what if making the right decision were more uncertain – more akin to a gamble? Current processes abhor uncertainty and render even the best ideas to the potential purgatory of analysis and business case testing.

New systems are necessary to better encourage “safe” risk taking. Piloting, prototyping, testing, innovation as a service models, fail fast methodologies are all tools the City could add to its tool box. However, this all requires a reassessment of risk tolerance for the City – something that must be led by City Council - and so by citizens.

At a more fundamental level the City can consider what it wants to do in terms of a flexible, agile and proactive planning framework. Proactivity is essential. If the City wants to take advantage of the opportunities, it cannot just sit and wait, it must proactively make decisions to pursue the opportunities as they are presented.

This might be one of the most fundamental shifts in thinking. Setting and sticking to a bold vision – saying no to some ideas that do not fit that vision, and then saying yes and moving fast when ideas fit the vision – this must become the new normal.

But the shift starts by setting and articulating that bold vision in a manner that facilitates those decisions – and this can be a challenging prospect for any city.

# What is Edmonton doing?

Since 2017, City Council, Administration and Edmontonians have collaborated to identify the possibilities of what Edmonton could be in the future.

ConnectEdmonton: Edmonton's Strategic Plan 2019-2028, encapsulates the results from this extensive engagement and is the long-term, aspirational direction for Edmonton.

The City Plan outlines the way the city will build and grow to meet the needs of two million people and provides the framework for physical growth, transportation and environment directions that will enable the realization of the four strategic goals in ConnectEdmonton.

However, ConnectEdmonton can also be framed as the plan for how the City will proactively attract and retain as a minimum – 2 million people. This simple perspective shift recasts the plan from a planning exercise – to an economic development, resiliency, attractiveness and longevity exercise. Critical is the concept of retention – as the future of work is likely to be hypermobile.

ConnectEdmonton, City Council's strategic plan, sets out four 10 year strategic goals to advance its vision of the City: Healthy City, Urban Places, Regional Prosperity and Climate Resilience.

Meanwhile, The City Plan includes the "Essential City" – protecting what is seen as essential to the Edmonton identity and experience, and the "Big City Moves". The Big City Moves have strong alignment to Council's strategic goals and are "Greener as We Grow", "A Rebuildable City", "A Community of Communities", "Inclusive and Compassionate" and "Catalyze and Converge".

The challenge for the City Plan is the degree to which progress might continue to be assessed using historical mentalities. Mainly, a collective thought that the future is singular and predictable, and the vision outlined in the "Plans" must be followed in a resolute and absolute fashion to achieve success.

Today - there is no right answer to the question of "how". However, there are a number of reasonable calls to action:

- The City must act proactively to ride the disruptive waves. Waiting to see what will happen and then making or updating more plans – while it might mean continued survival – is unlikely to result in a thriving and vibrant city;
- The City must change now. Change the language, change the discussion. The City Plan should be cast as a guide, not an absolute. The City and City Council needs to change the message today – from the provision of assurance that we have a plan and we'll stick to it – to a promise of adaptability, agility and growth while protecting what is essential and taking advantage of the waves that we want to ride;
- To embed these behavioural changes – the City will need to update its processes to acknowledge the reality of regular mistakes, errors and failures in the disruption age – every opportunity will not pan out – every initiative will not be successful – but with appropriate tools (such as piloting, agility decision making models and so on), the City and City Council should be able to continue to demonstrate value to residents.

## What else could the City do?

Can Edmonton stand out from the crowd of other medium-sized cities in North America and offer better solutions to mobility, affordability, recreation, connectivity?

Can the City deliver services in a manner that is digitally connected and smart?

Positive responses to these questions are indicators of the cities that are becoming destinations for the next generation of mobile workers.

The old adage, “fly alone die alone” is an important consideration for the City. Simply put – it cannot hope to be resilient to the future of disruption alone. Creating positive ecosystems for advocacy and partnership between the City, regional partners, business, citizens, the education sector and other orders of government will be necessary to create a more resilient strategy.

All of this disruption also represents opportunity. If the City can instill flexibility, bravery, willingness and energy to take bold action and to focus on outcomes rather than the regulation of inputs, then it can leapfrog its competition. More importantly, it can be the centre of focus and confidence in a society that will experience many anxieties due to change for some time to come.

The city that achieves the concept of adaptive, vision and output-orientated regulation or policy development, will create a resilient and more harmonious environment. This environment will nurture businesses and communities, and ultimately will allow that city to continue to attract top talent and investment.

The City Plan presents such an opportunity for Edmonton. The plan calls for a full and comprehensive reset and amalgamation of the “Ways”, the transportation master plan and the municipal development plan to make them resilient and flexible to the coming waves of disruption – this is essential.

But the City Plan also represents a chance to instill the tools and frameworks to allow the municipality to be adaptable and resilient in the face of continued pressures.

The opportunity to evolve, grow and improve the lives of all residents exists. The coming disruptions offers a renewed chance for cities to play a central role in solving the complex issues of homelessness, social injustice, immigration, accessibility, environmental change and many others. The time to prepare ourselves and realize the opportunity is now.

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