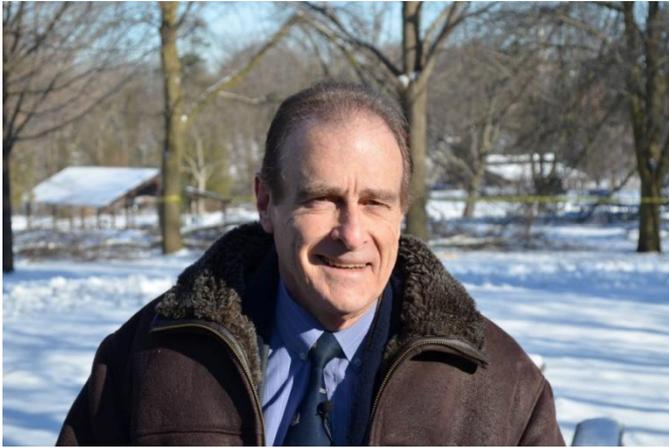


DEPUTY MAYOR'S INNOVATION AND TECHNOLOGY ROUNDTABLE



Roundtable Summary

A summary of the June 23rd, 2014
Deputy Mayor's Innovation and Technology Roundtable
with recommendations



MESSAGE FROM THE DEPUTY MAYOR

NORM KELLY

The state of Toronto's technology sector is essential to Toronto's prosperity. It is crucial the City of Toronto listen to the technology industry and develop strategies to promote and propel it into the future. Due to its evolutionary nature, technology is able to provide economic renewal and diversification and thus make major contributions to Toronto's economy.

At the *Deputy Mayor's Innovation and Technology Roundtable*, we took an important step towards the formation of a stronger partnership with Toronto's tech sector. At the meeting, stakeholders took time out of their busy schedules to work with decision makers to develop solutions that address some of the issues facing their business community. The contributions from the participants form the basis for this report and for any initiatives that arise from it.

This report summarizes findings from the meeting and outlines important next steps to keep building this relationship with our partners and with others that drive our economy. I ask for your support in adopting these important recommendations so that we can give our tech sector professionals the support they need.

Sincerely,

A handwritten signature in green ink, appearing to read "Norm Kelly".

Deputy Mayor Norm Kelly



MESSAGE FROM THE COUNCILLOR

MICHAEL THOMPSON

The Innovation & Technology Roundtable provided us with an opportunity to bring business, the City and other stakeholders together to discuss the business of innovation and technology in the City of Toronto. Our goal was to review issues faced by the technology sector and to build a working relationship that can lead to ongoing collaboration and possible partnerships.

Toronto has many unique assets to support a strong and growing innovation and technology ecosystem, including an excellent technology infrastructure, a large, highly-educated and diverse talent pool and one of the world's leading financial services sectors. We also have a firm commitment to provide the sector with the tools it needs to grow and flourish.

Thanks to candid discussions and insightful input from Roundtable participants, the City is in a stronger position to advance initiatives that will make the City of Toronto a better place for business in the technology sector and across the economy.

Sincerely,

A handwritten signature in black ink that reads "Michael Thompson". The signature is fluid and cursive, with a large, sweeping flourish at the end.

Councillor Michael Thompson
Chair, Economic Development &
Culture Committee
Ward 37 – Scarborough Centre

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OVERVIEW

Having been selected as the #1 city for innovation in the world¹, the City of Toronto has a favourable future laid ahead of it. Our diverse work force and economy, urban density, and infrastructure place Toronto in a unique and advantageous position in the world market. The following report discusses Toronto's current position, relays notable comments raised by participants, and suggests recommendations to help bolster Toronto's burgeoning technology and innovation industry to take full advantage of its recent accolade.

Technology Today

The increased connectivity and access to intangible resources such as financing and human capital offered by dense metropolitan areas are of considerable value to businesses and industries which aim to empower the capability of technology and innovation, and increase profitability and utility from capital infrastructure.

While Toronto's many employment zones provide valuable space to allow high-tech and large-scale production to flourish, Toronto is also uniquely positioned to promote and sustain innovation and technology, ushering global markets and industrialization into the future. With the accolade of 2014 Intelligent Community of the year, Toronto has been placed in a unique position to improve its growth potential by enticing specialized labour and investment to new and emerging high technology companies in the City.

Moving into the Future

A city's performance on the global stage is increasingly more dependent on the availability of smart city infrastructure. When utilized, smart city infrastructure can allow for greater analysis into how to most efficiently integrate and co-ordinate each piece of infrastructure within the city, creating a more holistic instead of segmented approach to providing city infrastructure and services. In turn, smart city infrastructure allows for sustainable economic development and an improved quality of life.

Smart city infrastructure can also facilitate efficient allocation of resources by allowing for a more active and pervasive engagement and understanding of the needs of its citizens – efficient allocation of resources can only be achieved once adequate input from those who stand, as a collective, to realize the greatest benefit, is fully understood.

¹https://www.intelligentcommunity.org/index.php?src=gendocs&ref=ICF_Awards&category=Events&link=ICF_Awards

CONNECTING PEOPLE

Perhaps the most prominent topic when discussing economic improvement and development is the City's endowment of communication and public transportation infrastructure. The majority of roundtable participants expressed dismay with the City's current public transit infrastructure and the need for a more pervasive, efficient and effective transportation and communication network. The congestion currently suffered by both public and private transportation networks is taking an immense toll on the economic potential of the City.

Efficient transportation and communication are essential to both the collaboration and the construction of new and innovative ideas, and to the ability of businesses to effectively connect with varying customer and client bases. Individuals must be able to connect with each other both in person and over communication networks to allow for the efficient transfer of information and to facilitate the formation of productive relationships between individuals and communities. The more efficiently a city is able to connect individuals to one another, the more productive and competitive its industry will be.

The traffic congestion which public transportation offsets can also provide gains in the economic development front. Commuters can work on public transit, as opposed to cars, which improves their well-being and boosts their productivity². In addition to cost savings and an increased quality of life, a pervasive public transportation and communication system also serves to attract younger and innovative individuals looking for an affordable and business friendly place to live.

In large metropolitan areas which have multiple urban centers such as Toronto, the importance of communication and transportation networking infrastructure is the most evident. Toronto's industrial and cultural diversity allows for greater inter disciplinary innovation and capitalization – creating a prime breeding ground for technological advancement³.



² <http://www.citylab.com/commute/2012/04/americas-best-cities-transit-according-walk-score/1842/>

³ <http://www.theatlantic.com/national/archive/2010/04/smart-work-and-smart-cities-pay/39393/>

Competing vs Collaborating

During discussion many participants articulated how technology is not a competitive industry, but is rather rooted in collaboration. Participants stressed how Toronto must adopt an attitude of collaboration with other technology centers instead of trying to compete with them. The City should not only be drawing people for the connection and infrastructure it has to offer internally, but for the many connections throughout the province, country and world it can offer individuals to help expand and diversify their business. Many participants postulated of the fruitful relationship Toronto's technology industry could have with other technology centers such as Waterloo or San Francisco.

TECHNOLOGY INFRASTRUCTURE

Participants stressed how the City should try to immerse itself in technology infrastructure to help citizens realize the benefit it has to offer in areas such as energy savings and increased quality of life. By promoting greater use of technology in areas such as commercial and private buildings and development, citizens will become increasingly cognizant of the benefits technology offers. Actively promoting the integration of technology and communication in the private sector and property development projects would not only serve individuals utilizing the infrastructure itself, but would also promote its development within the city.

CHARGING THE WORKFORCE

An above average quality of life and a stable political environment have helped to make Toronto the fourth most attractive place in the world to work⁴, an accolade which would supposedly bring young and innovative new talent to the City. However, despite Toronto's shining reputation, during the roundtable discussion technology companies relayed their continued struggle to retain individuals with the specific skill sets needed to propel their company and tech industry as a whole.



Toronto's ability to promote itself as a leader of industry and modern living is crucial to its future success. However, in speaking with colleagues, government officials and fellow industry leaders, many participants felt Toronto and its resident businesses and organizations were doing a poor job of advocating the advantages Toronto has over competing cities. There is little room for modesty when competing on a global scale – Toronto must proactively promote the fact that it is the 2014 global leader in innovation⁵,

and the tremendous opportunity for technological advancement which exists in the City.

⁴ <http://www.pwc.com/us/en/cities-of-opportunity/2014/pdf-download.jhtml>

⁵ https://www.intelligentcommunity.org/index.php?src=gendocs&ref=ICF_Awards&category=Events&link=ICF_Awards

Participants also strongly felt Toronto based tech companies are demanding more experience than necessary when hiring new employees. While older, more experienced individuals may have a thorough understanding of an otherwise complicated position, there is tremendous advantage to allowing new individuals into the game. Given the opportunity, participants felt young people and the economy could greatly benefit from the fresh vision and enthusiastic character young people offer. Young individuals are eager to learn and take advantage of new ideas and methods. A lack of opportunities for young people to work not only disheartens an otherwise optimistic workforce, but also encourages them to seek new and more welcoming opportunities in other cities, such as New York or San Francisco.

WORKING SMART

Cities with a high quality of life, such as Toronto, have been proven to exhibit a strong correlation with economic output per capita. Conversely, studies have also shown there to be zero correlation between hours worked and economic output per capita⁶. The economic output of cities exhibiting a working population which have a higher tendency to work long hours was on par with metropolitan areas which exhibited comparatively less, or average working hours. It would therefore appear that working smarter, not harder, is what brings the greatest wealth and well-being to cities. Individuals who work normal hours have a higher quality of life are more optimistic and motivated to engage opportunities which further their career, and are more willing to work harder to reach goals. It is evident that an amiable work life balance is far more important than having a workforce devoted to a single purpose.

Diversity

The more diverse a society is, the greater it can benefit from increased communication infrastructure⁶. Communication allows communities and industries who would otherwise be unable to connect, the opportunity to collaborate and arrive at previously inconceivable solutions to problems and improvements to the status quo. In addition, Technology and communication allow businesses to reach both physically and culturally distant clients and consumer groups, bringing greater competition and efficiency to the market.

With a culturally diverse society and an economy based on industries varying from natural resource extraction, to financing, and technology, the potential for profitable connections and overlap between cultures and Toronto based industries is immense. Studies have shown the earnings potential offered by heterogeneous metropolitan areas such as Toronto's far exceed those of a more homogenous composition⁶. This correlation runs true in all respects, from culture, to education, to age.

Though a community may be largely composed of highly educated individuals, it does not necessarily produce the same amount of innovation and creativity as an educationally diverse society does. In order to thrive, communities and metropolitan areas alike require a balance of blue and white collar labour forces; drifting to either extreme both exposes the economy to greater risk and restricts its ability to draw from different areas to resolve problems. The more heterogeneous a

⁶ <http://www.theatlantic.com/national/archive/2010/04/smart-work-and-smart-cities-pay/39393/>

society is, the larger the available knowledge and skill base which can be drawn upon to find effective resolutions to problems and areas of improvement. Toronto's labour force is fortunate to be incredibly diverse, with three world-ranked universities and a plethora of colleges offering secondary education in every conceivable occupation; the heights which Toronto's labour force is able to achieve are unprecedented.

Allowing for immigration inflow is crucial to maintaining cultural diversity. Studies have shown notions that immigrants take jobs away from domestically-born workers, drive down wages, and pose economic and fiscal burdens on states and cities are incredibly misguided⁷. In reality, anti-immigration sentiment only serves to hinder industry by restricting its ability to utilize new talent and ideas. Studies overwhelmingly suggest that metropolitan earnings are positively associated with the resident percentage of immigrants. More open and tolerant metropolitan areas benefit from an enhanced ability to attract ambitious and skilled people of all backgrounds, races, ethnicities, and sexual orientations.

By embracing diversity through technology and communication improvements, Toronto is nurturing the work force and its ability to rise to the challenge of furthering industry and society. It is essential to Toronto's future that a healthy, vibrant, welcoming and diverse cultural industrial background be maintained.

Addressing the Digital Divide

The digital divide is the economic and social inequality which affects the access to, use of, or knowledge of information and communication technologies (ICT)⁸. The divide within cities such as Toronto may refer to inequalities between individual, households, businesses, or geographical areas. Obtaining access to and actively utilizing information communication technology has been linked to a number of demographic and socio-economic characteristics such as: income, education, race, gender, and geographic location (urban-rural), age, skills, awareness, political and cultural and psychological attitudes.

Though individuals may be capable of accessing the internet, many are unable to gain access to adequate infrastructure, or are simply unable to understand and effectively utilize the information and capability the internet and other communication networks have to offer. These problems are significant barriers to the mass connectivity needed to make efficient use of a city's knowledge base⁸.

The ubiquitous nature of social media sites among youth has proved to be the most effective way of attracting individuals to the internet, and has helped to increase media and digital literacy throughout every walk of life⁹. Social Media web sites can serve as both a manifestation of, and a means by which to combat the digital divide. Web sites such as Tumblr and Twitter help address this divide through the ethnic and cultural diversity of its users, and are making significant contributions to the shortening of the digital divide. If an economy and society are to reap the greatest benefit technology and ICT has to offer, it must connect as many people, from as many different walks of

⁷ <http://www.theatlantic.com/national/archive/2010/04/smart-work-and-smart-cities-pay/39393/>

⁸ <http://publications.gc.ca/Collection/Statcan/56F0009X/56F0009XIE2002001.pdf>

⁹ <http://harvardhrj.com/wp-content/uploads/2009/09/185-220.pdf>

life, as possible. Throughout history, the evolution of technology has naturally gravitated towards better serving the underprivileged and unseen populations, and helped to better situate them in local and global markets⁹.

CONCLUSION

Toronto's diversity, pool of knowledge and ability to satisfy market demand provides an optimum environment for innovation to take place. In order for Toronto to accelerate into new markets and dominate global trends, it must take advantage of and promote its position as a leader in technology and innovation for businesses.

The City's ability to connect individuals by facilitating discussion and collaboration will strengthen the technology sector and solidify continued growth and successes. Innovation is most efficiently facilitated through a stable network that is able to carry mass amounts of information to and from all individuals. The intelligence of a community is no longer merely measured by that of the individuals it holds, but by its ability to connect individuals whom differ by every imaginable measure.

The leadership experience of participants at the *Innovation and Technology Roundtable* demonstrated a widespread desire of Toronto's technology sector to work with the City to help ensure further successes. Their participation warrants a special thanks for their valuable contribution of time and insight, and their input has helped us better understand the industries in the sector and what we must do to ensure continued growth.



Co-Chairs Deputy Mayor Norm Kelly and Councillor Michael Thompson brief media about successes of the roundtable and highlight key points with participants.

Innovation & Technology Advisory Committee

The General Manager of the Economic Development & Culture Division has agreed to establish an Innovation and Technology Program Advisory Committee comprised of members of the innovation and technology community and key stakeholders.

The advisory committee will facilitate input between the roundtable participants, other stakeholders from the sector and the City of Toronto. The program advisory committee is a working group of stakeholders that provides advice to the General Manager of Economic Development & Culture on issues within the division's area of responsibility – many of which have been outlined above. No further action is required from the Economic Development and Culture Committee.

RECOMMENDATIONS

Supporting Major 3rd Party Tech Sector Events and Initiatives

1. Direct the General Manager of Economic Development and Culture to, in consultation with other relevant city divisions, study the feasibility of further promoting and supporting major 3rd party tech sector events and initiatives that:
 - a. promote and build upon the City's brand as a global tech hub;
 - b. facilitate employment opportunities or career advancement opportunities for tech sector professionals within the City;
 - c. provide a positive economic impact for the City; and
 - d. outside of the provision of staff support and existing City resources, do not require any financial commitment from the City

The General Manager of Economic Development and Culture will report findings to the Economic Development and Culture Committee in the second quarter of 2015.

Measuring the effectiveness of City Incubators and Accelerators

2. Direct the General Manager of Economic Development and Culture to work with the relevant City divisions to examine and review the effectiveness and measurable impacts of City-supported incubators and accelerators and to report findings back to the Economic Development Committee in the second Quarter of 2015.

Access to Capital

3. Direct the General Manager of Economic Development and Culture to explore opportunities to educate and build awareness for tech sector start-ups to access capital – particularly the first \$0-\$50,000 and to update the Economic Development and Culture Committee on these actions in the second quarter of 2015.

Fiber optic system

Fiber-optic lines are cables that can carry large amounts of digital information over long distances quickly. They are a vital part of the City's infrastructure, which the tech sector heavily relies upon.

4. Direct the General Manager of Economic Development and Culture to, in consultation with the Chief Information Officer, and all other relevant City divisions, conduct a study of Toronto's fiber-optic network in relation to some of the world's leading technology sector hubs and, if necessary, to outline the steps required to improve upon Toronto's fiber optic network.

The General Manager of Economic Development and Culture and the Chief Information Officer will report findings to the Economic Development and Culture Committee in the second quarter of 2015.

No-fee wireless Internet access

5. Direct the General Manager of Economic Development and Culture to, in consultation with the Chief Information Officer, explore options to both directly and indirectly increase the amount of no-fee wireless Internet access throughout the City of Toronto.

Chief Technology Commissioner

The innovation and technology sector is loosely organized, geographically dispersed and highly fluid. Toronto's tech sector is in need of a one-stop-shop for support and a constant source of promotion. Other technology hubs including New York City feature a Chief Digital Officer as a means of supporting and developing its tech sector. The following recommendation seeks to create a similar position in Toronto and further solidify Toronto as a global tech hub.

6. Direct the General Manager of Economic Development and Culture in consultation with the City Manager to explore the feasibility of creating the City of Toronto Office of the Chief Technology Commissioner. The mandate of the Chief Technology Commissioner would include, but not be limited to:
 - a. building a more conducive environment for nurturing start-ups, organizations and individuals within the tech community
 - b. organizing and maintaining an industry steering committee that work to promote and expand Toronto's tech sector
 - c. modernizing digital infrastructure and advocating for and facilitating greater accessibility of internet and fiber optic connectivity City-wide