

Strategic Big Data

Why More Data is Better

Business Case

In association with:



The Information and Communications Technology Council (ICTC) is a centre of expertise in ICT business intelligence, labour market research, policy development and workforce solutions. ICTC enables industries to maintain a competitive advantage in a global market and develop Canada's future skilled and innovative talent. For more information, please visit our website at www.ictc-ctic.ca.



The Toronto Financial Services Alliance is a public/private initiative whose mandate is to enhance and promote the long-term competitiveness of Toronto as a premier North American financial services centre. Its membership encompasses core financial services companies – banks, brokerages, investment fund managers, insurance companies – as well as partner sectors – accounting, law and education. The TFSA was created in 2001 by the financial services industry, in partnership with the City of Toronto and with the support of the federal and provincial governments. For more information, please check our Website at www.tfsa.ca.



As part of the Toronto Financial Services Alliance, the Centre of Excellence in Financial Services Education (www.tfsa.ca/coe) acts as a catalyst to strengthen and expand Toronto's talent pool and elevate the region's global stature as a financial services capital. The Centre of Excellence aggregates research and information on Toronto's talent and educational strengths for the benefit of educators, employers and students/graduates; works with employers and educators to improve the focus and quality of education programs; encourages cross-sector dialogue on talent and education-related issues, and showcases the region's strengths and the career opportunities that await in the Toronto region. The Centre of Excellence is supported by the Ministry of Training, Colleges and Universities and the City of Toronto.

1.0 Overview

At an ever increasing rate, financial institutions are using big data analytics to predict customer behaviour and drive business growth. Today's financial industry is unlike any of its predecessors. In order to capitalize on new business opportunity, financial institutions must be in-tune with the preferences of their clients, and must cater to their needs in new and innovative ways.

Strategic big data represents the shift in focus from individual projects to enterprise-level solutions that move beyond traditional IT approaches. The financial services industry is increasingly dealing with greater data volume, variety, and complexity, which are forcing a paradigm shift in how financial institutions retain, organize, and ultimately analyze the information contained in their enterprise data warehouse. Strategic big data and actionable analytics refer to the abandonment of a single enterprise data centre in favour of multiple systems, including:

- Content management
- Data warehouses
- Data marts
- Specialized file systems
- Cloud systems

These systems unite with data services, forming a strategic and "logical" enterprise data solution.¹ Despite its name, *big data* is not big at all—it reflects a lean approach to data analytics that allows financial institutions to increase efficiencies, learn more about their customers, and deliver better products and services.

We are at the cusp of the big data revolution. Today, most financial institutions are unprepared to capitalize on big data. Most remain challenged by what to do with the information currently residing on their servers, let alone adopting tools that collect *even more* of that data.

¹ Gartner (23 October 2013). Gartner Identified the Top 10 Strategic Technology Trends for 2013." *Gartner*.

2.0 Opportunity

Strategic big data reflects the turning point in how financial institutions and the economy at large leverage ICT to obtain competitive advantage. CIOs and other financial executives are increasingly adopting the attitude that more data is better. Before big data solutions were available, the concept of *more data* was problematic because financial institutions didn't have the tools to effectively organize and manage all their information. Today, however, the resources are available for financial firms to use big data to their advantage. Best of all, the big data paradigm is a continuation of the trends defining and reshaping the financial services industry: bigger, faster, deeper, cheaper, and mobile.²

Leaner than you think

Contrary to its title, big data is much leaner and versatile than many of the data solutions available today. Big data simply refers to an organization's ability and willingness to embrace more data to drive its business processes and decisions. The *lean approach* to big data can help financial institutions focus on the data they need to achieve specific goals or outcomes.

Driver of social finance

The proliferation of mobile technologies and social media has created an insatiable appetite for real-time, on-the-go banking and other financial services. Big data analytics allows retail banks to zero-in on the business processes that improve operational performance and enhance customer services. Social media platforms and mobile apps are merely vehicles by which retail banks and other financial providers engage their customers and offer enhanced services. Underlying these platforms is business intelligence driven by the collection and organization of data. As social finance continues to grow, data analytics will play an integral role in how financial institutions deliver differentiated services to their diverse client base.³

² CIO (2012). Strategic Guide to Big Data Analytics. *CIO*.

³ Deloitte (2012). Big data: Time for a lean approach in financial services. *Deloitte Analytics*.

Through big data analytics, financial institutions can fully embrace all that social finance has to offer, including:

- Rewards and discounts
- Financial management and education
- Market segmentation
- Payments
- Apps
- Security⁴

Achieve market segmentation

In the age of social and mobile media, consumers are proud to display their personalities and preferences for the world to see. No other time like the present has given people more tools to embrace individualism. The more than one billion Facebook subscribers⁵ and 1.2 billion mobile broadband users around the world⁶ are a testament to the age of individualism.

In a market that places a premium on the individual, big data analytics allow financial institutions to capitalize on the unique preferences of their customers. Big data solutions reflect the next wave of efficient, timely, and more intelligent business practices. Big data provides financial institutions the resources to collect and organize data that better enables them to achieve market segmentation and boost business opportunity.

3.0 Advantage of Increasing Adoption

The propensity to adopt new and emerging technologies is what separates cutting-edge firms from the rest of the pack. This is true not only for financial services, but for other tech-driven industries that rely on ICTs to tackle new challenges and take advantage of growing opportunities. For these reasons, among others, finding new and better ways to manage large data

inventories can transform how financial institutions reach new business.

Tackle analytical challenges

The growth of data collection technologies has redefined the boundaries of business intelligence. New and innovative technologies that enable financial institutions to collect and analyze data are growing each day, but so too are the analytical challenges associated with their provision. With new possibilities come new challenges. More data means that financial institutions can ask more complicated questions and zero-in on specific segments of their markets, but it also means tougher analytical challenges. Strategic big data can make sense of it all, providing an enterprise-wide solution for making use of greater volumes of data.

Let's face it: huge quantities of data are a challenge as much as they are an opportunity. With a big data approach to financial services, challenges can be transformed into opportunities.

Create new business insights

With the analytical tools in place, financial institutions are better able to answer those complicated questions that drive business intelligence and ultimately feed into an effective marketing strategy. Business intelligence starts with the collection and organization of data, which is then analyzed for trends and transmuted into a business strategy. Big data analytics are the best tools for creating new business insights.

4.0 Case Study

Scotiabank embraces big data to improve risk management

The Bank of Nova Scotia has undergone an initiative to improve counterparty credit exposure (CCE). By making use of real-time data, Scotiabank is leaving historical data behind in an effort to reduce the unknown elements of risk management. By embracing big data technology, Scotiabank is transforming its predictive models and analytical tools, and improving its projections while reducing

⁴ Ibid.

⁵ Lim Yung-Hui. "1 Billion Facebook Users On Earth: Are We There Yet?" *Forbes*.

⁶ ITU (2011).

the uncertainties associated with historical information.

CCE assesses the factors behind the counterparty's ability to meet its obligations, and measures the amount of money potentially at risk should the counterparty fail to repay. CCE is a very complicated area, one that has proved too complicated for historical data. Historical information has become ineffective in predicting the future behaviour of counterparties. New data tools powered by IBM have enabled Scotiabank to assess multiple scenarios before issuing loans to counterparties, the most powerful of which are tools enabling the bank to analyze unstructured data. This means that Scotiabank analysts are now able to collect even more data—information that previously did not fit into traditional databases—and develop predictive models on the basis of more information. Credit score predictions can now run against hundreds of data sets in a matter of minutes, as opposed to the 10 sample data sets previously.⁷

Access to, and utilization of, real-time data has enhanced Scotiabank's risk management strategy, enabling its analysts to collect more information and do more with data currently available.

5.0 Why Toronto

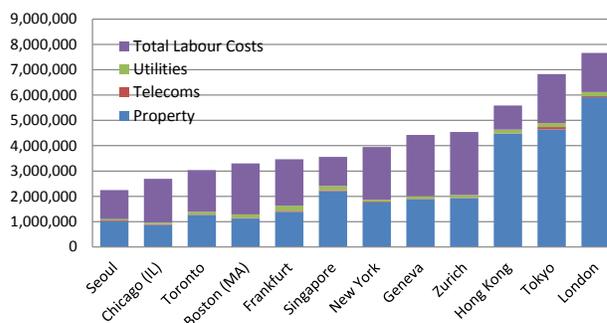
Toronto compares well against other financial centres, and provides great opportunity for cost savings, labour attractiveness, and IT uptake.

Toronto offers cost advantages

According to Z/Yen GFCI Index, Toronto is the third most affordable option for data centre operations, well ahead of New York, Tokyo, and London. Although Chicago is marginally cheaper, Toronto offers a more affordable labour pool. Toronto offers an internationally-recognized financial centre with lower costs than the majority of its competitors, enabling financial institutions to capitalize on the big data revolution.

⁷ Jonathan Stoller. "Analytics: Taking hindsight out of risk management." *The Globe and Mail*.

Cost of a data centre operation in the Z/Yen*
GFCI Top 12 (£)



Source: OCO Global (2013). Foreign Direct Investment in Financial Services IT.

Toronto offers one of the world's most diverse labour forces

As the centre of Ontario's ICT industry, Toronto employs 180,000 ICT professionals, and attracts 50% of all ICT immigrants to Canada. In 2012 Toronto ranked just below Houston as North America's leader for IT employment, ahead of New York, San Francisco, and Chicago.⁸ As North America's second strongest hub for IT employment, Toronto continues to attract world-class IT talent. One-half of the region's population was born outside of Canada, allowing for greater opportunity to connect with developed and emerging global markets.

Toronto offers a world-class ICT industry

The Toronto region is the third largest ICT hub in North America, surpassing Chicago and Los Angeles. It is home to over 13,000 ICT companies that collectively generate over \$52 billion in annual revenues. The Greater Toronto Area is the headquarters of three of Canada's top ten ICT corporate R&D operations, 20 of the top 25 ICT multinationals doing business in Canada, and five of the top ten fastest growing ICT companies in the country.⁹

Toronto's financial ecosystem is powered by one of the world's most vibrant ICT hubs. The synergy between the region's financial service providers and ICT industry make it an ideal place to begin leveraging big data to obtain competitive

⁸ IT Business (13 February 2012). "UPDATE: Toronto's IT job market is second hottest in North America, study says."

⁹ Invest in York (2013). Information & Communications Technology (ICT) Sector Facts – York Region.

advantage. As Toronto's financial institutions continue to expand their IT capabilities, big data solutions will be what separate the leaders from the followers. Financial institutions that develop big data capabilities will be better suited to leverage the range of social and mobile media tools needed to deliver the services customers want.

6.0 The Way Forward

Adopt the attitude that more data is better

Most financial institutions have not reached the point where *more data is better*. Most organizations continue to face challenges deploying big data solutions, largely due to weak or outdated information management systems. Firms that lack adequate infrastructure can experience content chaos using or expanding their data.¹⁰ For Toronto's financial services industry, this challenge is multiplied when we reflect on the sheer size of the industry's client base. As an example, Canada's top-5 banks serve more than 75 million clients globally.

As one of the cornerstones of global finance, Toronto's financial services industry can reach new heights by adopting the attitude that *more data is better*. This attitude can drive industry specific applications ranging from predictive damage assessments in the insurance industry to fraud detection in banking, all while improving business processes such as risk management, IT management, finance and accounting, supply chain operations, and customer relationship management.

The big data revolution is coming. The financial industry has the most to gain by ensuring that it arrives.

7.0 Three Reasons to Invest in Toronto's Financial Services Sector

1. Toronto offers unique IT cost advantages when compared to other financial hubs, and provides the most affordable data centre services in North America.
2. As a driver of social finance, Toronto's financial services industry is well-positioned to leverage its world-class ICT industry to capitalize on the big data paradigm.
3. Toronto's financial industry serves hundreds of millions of global clients, making it a prime benefactor of the big data revolution; the attitude that *more data is better* has the potential to impact the region's financial services more than any other industry.

¹⁰ CIO (2012). Strategic Guide to Big Data Analytics. CIO.



The Toronto Financial Services Alliance (TFSA) is a unique public-private partnership dedicated to building Toronto as a global financial services centre.

For more information on the TFSA and Toronto's financial services sector, please visit tfsa.ca or call 416-933-6780.