

# Integrated Ecosystems

Toronto's Complete Business  
Performance System

# Business Case

In association with:



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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](http://www.tfsa.ca).



As part of the Toronto Financial Services Alliance, the Centre of Excellence in Financial Services Education ([www.tfsa.ca/coe](http://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

Financial service providers are today faced with a highly volatile business climate. Perhaps at no other time than the present have banks and investment services faced more challenges. These challenges include increased regulation, improving business performance while reducing costs, and managing big data. The good news is advances in technology have made these challenges more manageable. Emerging technologies have introduced flexible, scalable IT solutions that can help financial institutions improve end-user experience, boost productivity, and integrate software/hardware applications.

The line separating hardware and software has become increasingly blurred, signaling a shift in how software and related services address infrastructure and application workload. Unfortunately, most banks haven't reached the stage where they can increase capability while reducing IT costs. The majority of financial providers in Canada and abroad lack data centres that can be classified as "highly efficient and strategic."

Advances in technology are showing us that highly efficient and strategic data centres cannot be achieved without an underlying system (or systems) that integrate the entire process. To that end, an integrated IT ecosystem refers to the group of technologies and related processes that package software and services to address infrastructure and application workload. Integrated ecosystems reflect the next wave of IT that will replace legacy systems currently employed by leading financial institutions.

## 2.0 Opportunity

The market is already undergoing a substantial shift from traditional systems to more integrated approaches that optimize performance. The integrated ecosystem is more of an approach to IT than a specific technology; it's an enterprise IT solution that can accelerate business growth and make financial data centres smarter.

One of the biggest challenges financial service providers face is how to make their data centres smarter. The power of virtualization at the heart of the integrated ecosystem provides financial institutions with three key value propositions:

- Improving time to value
- Reducing operational costs
- Managing growing operational risks

Currently, most large bank data centres don't operate in a way that increases business value and reduces cost. Integrated ecosystems enable financial service providers to virtualize the services that don't need to be local and consolidate services performed in data centres.<sup>1</sup>

## 3.0 Advantage of Increasing Adoption

Integrated ecosystems allow financial institutions to meet their desire for lower costs, greater efficiency, enhanced security, and better IT governance and compliance standards. Below is an outline of how integrated ecosystems support one of the key goals of all multinational business models: enterprise technology standardization.

### Achieving enterprise technology standardization

One of the defining features of large multinational businesses, such as Canada's top-5 banks, is the lack of technology standardization across different units.<sup>2</sup> Standardizing diverse technology approaches greatly enhances organizational efficiency, and is one of the key targets of financial institutions that now face smaller IT budgets. Enterprise-level standardization of technology and related infrastructure provides one of the best cost-reduction strategies any financial CIO can hope to achieve. The integrated ecosystem model offers the best method to achieve technology standardization and reshape diverse architectures around common solutions.

<sup>1</sup> Riverbed Technology (2012). Branch Infrastructure Consolidation Solutions.

<sup>2</sup> Sapient (2011). Cloud Computing for the Financial Services Industry.

Developing an integrated ecosystem for large data centres involve integrating and simplifying all aspects of the data centre itself, including: servers, networks, storage, virtualization, management, development, middleware, deployment, and applications.

## Utilizing the cloud

Adopting an integrated approach to IT requires the full exploitation of cloud computing, which is shifting the IT paradigm in Canada and abroad. Through cloud-based virtualization and integration, banks operating branches across the country can centralize their IT functions without compromising performance. Cloud integration can also improve branch infrastructure while reducing overhead costs by letting branches run print, DNS, DHCP, and security features through a virtual services platform (VSP).

## Consolidation of workloads

Today, financial services leads all other industries in global IT spending.<sup>3</sup> In 2013 financial IT spending is growing at CAGR ~4%.<sup>4</sup> One of the main reasons why financial institutions spend so much on IT is because their systems are based on historically siloed development and deployment models. The current system is defined by thousands of physical servers interlocked by a complex network of disparate workloads. An integrated ecosystem solves this problem by supporting diverse workloads over a pool of shared resources, which improves system maintenance. For the banking sector, an integrated IT ecosystem can support the consolidation of branch infrastructure.<sup>5</sup>

## Emphasis on virtual

Enterprises across the economy are increasing their uptake of cloud-based applications and services. According to some estimates, spending on

cloud-based IaaS will grow by close to 50% in 2013.<sup>6</sup>

Virtualization allows banks to centralize their servers and data, and consolidate branch infrastructure.<sup>7</sup> The integration of cloud also means that in-branch physical infrastructure can be kept to a minimum; banks no longer need servers and substantial storage space inside the branch. Front office applications can run on a virtual desktop hosted over the cloud. By reducing physical desktops and opting instead for virtual cloud desktops, banks can reduce costs and enhance security. It has been shown that physical desktops are often the biggest security threats banks face, as unauthorized access can occur at any time.

## Fully packaged solution

Contrary to most IT infrastructure migration solutions, integrating a virtual ecosystem can be accomplished through packaged, cloud-based solutions that simplify application migration, web application deployment, and system maintenance.

## IT governance and compliance

According to primary consultations conducted by ICTC, IT governance and compliance are among the chief concerns of Toronto financial service providers. CIOs and Senior Managers operating across the banking, insurance, and investment domains highlight the need for more professionals who can guide them through IT regulations.

In response to new Basel III regulations, banks will be required to improve capital efficiency and smart regulatory compliance, while improving operational efficiencies (in other words, doing more with less). The pre-Basel return on equity (ROE) of top banks was 20%. Following the implementation of Basel III, ROE is expected to drop to 7%, thus placing a premium on smarter risk management and integrated IT solutions that improve operational effectiveness.<sup>8</sup>

Integrated ecosystems allow financial institutions to enhance shareholder value. Governance ensures that a financial firm's business and IT domains are aligned. Integrated ecosystems offer predefined

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<sup>3</sup> Lucas Mearian (19 January 2012). Bank IT spending to be 'rocky' through 2013. *Financial IT*.

<sup>3</sup> Penny Crossman (16 June 2012). U.S. Banks' IT Spending Outlook Raised Significantly. *American Banker*.

<sup>4</sup> Gartner (2013). IT Spending Forecast 4Q12 Update: 2013 – The Year Ahead.

<sup>5</sup> IBM (2012). Smarter Bank Data with Expert Integrated Ecosystems.

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<sup>6</sup> Gartner (2013).

<sup>7</sup> Riverbed Technology (2012). Branch Infrastructure Consolidation Solutions.

<sup>8</sup> IBM (2013). Integrating and Innovating for Impact.

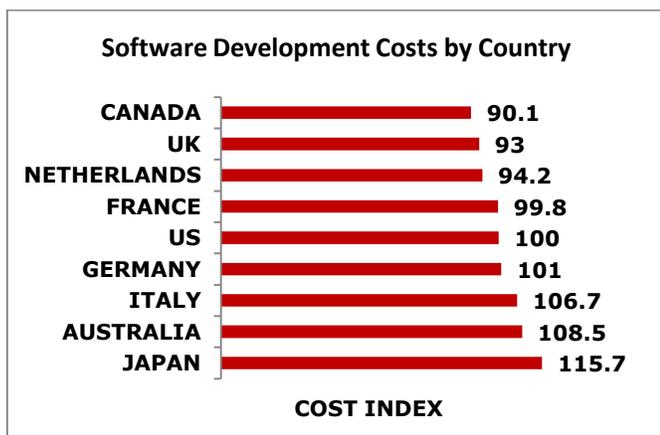
system capabilities that enhance enterprise risk management. Toronto financial providers have increasingly relied on the internet to deliver their services, making a lack of timely integration between systems extremely costly. Regular instability in online and mobile banking applications may lead to stricter regulations governing financial IT, making the adoption of integrated ecosystems a timely strategy for mitigating these risks.<sup>9</sup>

## 4.0 Why Toronto

The Toronto region is home to a different kind of integrated ecosystem—one that connects over 13,000 ICT companies, 180,000 ICT professionals, and over 40 national and international bank headquarters. At the forefront of Canada’s emerging technologies industry, Toronto is home to flourishing cloud, data analytics, and mobile app economies.

### Canada leads mature countries in software development costs

Approximately 80% of Toronto IT firms provide software and related services. The Toronto region is also home to some of Canada’s largest software development facilities, offering some of the lowest annual location costs in the developed world. The Toronto region has helped make Canada one of the most affordable destinations for software development.



Source: Invest Toronto. Toronto’s ICT Sector.

## One of the world’s highest ranked tech hubs

Among the world’s 25 top tech hubs, Toronto is ranked 4<sup>th</sup>, ahead of Los Angeles, Singapore, Paris, Chicago, and Sydney. The only regions to top Toronto are Silicon Valley, New York, and London. Toronto’s globally-ranked tech hub will make the shift toward integrated ecosystems much more viable.

Over the next 3-to-5 years, the shift toward integrated solutions will intensify. Toronto will be at the centre of North America’s integrated IT ecosystem, and industries across the region’s digital economy will increase their uptake of virtualization and smart data analytics. The growing emphasis on virtual will place a bigger spotlight on Toronto, which continues to represent Canada as a leader in the digital revolution.

## 5.0 The Way Forward

### The power of cloud

We have seen how corporate cloud solutions can enhance integration across the entire IT ecosystem. The power of the cloud lies in its interoperability and ability to deliver IT resources more conveniently. The cloud is already overlapping and replacing traditional IT solutions. A greater emphasis on virtual computing, made possible through cloud-enabled integrated ecosystems, can help financial institutions implement a fully packaged solution to meet all their IT needs.

### Maximizing efficiency

Currently, financial service providers have data centres that consume too much budget and require too much maintenance. This reality is contrary to what advanced computing ought to be. Financial CIOs looking to enhance efficiencies on a reduced budget can greatly benefit from the virtual revolution that is at the heart of the integrated ecosystem.

According to a recent study,<sup>10</sup> only 20% of CIOs said they had an efficient data centre. This study

<sup>9</sup> IBM (2012). Smarter Bank Data with Expert Integrated Ecosystems.

<sup>10</sup> IBM (20120).

also pointed to virtualized system integration as a solution to achieving greater efficiency. The vast majority of CIOs running efficient, strategic data centres do so by:

- Using automation tools to manage virtual machines
- Integrating storage virtualization to enable better functionality and access to more advanced features across different storage systems
- Using storage service catalogues for cost-effective storage

Integrated ecosystems have the potential to transform data centres, allowing financial institutions to implement better business processes related to core banking modernization, risk management, governance, and analytics.

enhanced virtual service platforms, and will require specialized vendors to deliver those services. As the centre of Canada's emerging technology industry, the Toronto region is strongly positioned to meet ongoing demand for in-branch optimization.

## 6.0 Four Reasons to Invest in Toronto's Financial Services Sector

1. Toronto's financial industry employs a large base of professionals at the intersection of technology and business who can align the industry's IT and business goals—one of the primary reasons to adopt an integrated ecosystem.
2. As the epicentre of Canada's cloud and virtualization industry, Toronto provides the region's financial institutions the best opportunity to optimize enterprise IT integration.
3. Toronto-based banks have spearheaded a host of innovations that can be readily pooled into one integrated system solution, including digital signage, mobile banking, and digital self-service kiosks. Greater adoption of cloud-based applications and services is the next step the region needs to capitalize on the virtual revolution.
4. Canada's top-5 banks operate across the country, making them the prime benefactors of integrated ecosystems that streamline branch infrastructure from a central location. Over the next 3-to-5 years, Canadian banks will require



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](https://www.tfsa.ca) or call 416-933-6780.