



To: Mayor and Councillors **Date:** October 7, 2015
From: Grant Fengstad **File:** 04-1300-01/2015-Vol 01
 Director, Information Technology
Re: **Digital Strategy - Commitment to Security and Protection of Privacy**

As per the direction provided at the General Purposes Committee meeting of Monday, October 5th 2015, please reference the attached and updated page of Richmond’s Digital Strategy, specifically the following paragraphs:

While this strategy will deliver a great experience for our customers, our commitment to ensuring the security and the protection of information will continue to be a fundamental obligation. Protection of privacy and personal information is mandated by Provincial legislation.

Extensive privacy impact assessments currently exist and are required for all new systems that contain personal information. The focus of these assessments is to ensure compliance with privacy protection legislation. Evolving best practices for data security will continue to be adopted to ensure protection of all of our systems.

I trust that this additional wording meets the intent expressed at Committee and gives comfort that the protection of privacy and the security of personal information is and will remain a fundamental priority for the City as it moves forward with the Digital Strategy.

Grant Fengstad
Director, Information Technology

GF:gf

pc: SMT



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OCT 8 2015



WHY HAVE A DIGITAL STRATEGY?

The times are continuously changing for municipal governments. These statistics from the Canadian Internet Registry Association from 2012 set the stage for the drivers behind this new Digital Strategy:

- 87% of Canadians have Internet broadband access at home.
- 53% of Canadians have mobile Internet access (estimated at more than 70% in 2015).

Expectations of on-demand information and services—from shopping to finance to travel, etc.—are now 24 hours a day, seven days a week.

For the City to continue to effectively serve its constituents, it needs to align its services towards meeting the needs of this growing segment. Digital Strategy is more than simply 'putting services on the Web'. It is about rethinking how those services are defined and delivered, to ensure that our customers are at the forefront of all our efforts.

The objectives and desired outcomes of the Digital Strategy are:

- To fully integrate and enable all systems at the City to provide Web- and Mobile-enabled services to our citizens.
- To ensure citizens of Richmond have a cohesive, integrated customer experience.
- To delight our customers with an integrated business process approach.
- To provide a single eCommerce engine to simplify and streamline online customer transactions.
- To make better business decisions for the citizens of the City of Richmond by having improved data analysis and Business Intelligence.

While this strategy will deliver a great experience for our customers, our commitment to ensuring the security and the protection of information will continue to be a fundamental obligation. Protection of privacy and personal information is mandated by Provincial legislation.

Extensive privacy impact assessments currently exist and are required for all new systems that contain personal information. The focus of these assessments is to ensure compliance with privacy protection legislation. Evolving best practices for data security will continue to be adopted to ensure protection of all of our systems.



City of Richmond

Report to Committee

To: General Purposes Committee
From: Grant Fengstad
 Director, Information Technology
Re: **Richmond Digital Strategy**

Date: September 15, 2015
File: 04-1300-01/2015-Vol
 01

Staff Recommendation

That the proposed Richmond Digital Strategy attached to the staff report titled “Richmond Digital Strategy”, dated September 15, 2015 from the Director, Information Technology, be adopted as a framework to guide strategic decisions regarding the City’s digital services and infrastructure, in order to enhance the City’s services and access for residents and strengthen Richmond’s competitive advantage.

Grant Fengstad
 Director, Information Technology
 (604-276-4096)

Att. 1

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Communications	<input checked="" type="checkbox"/>	
Economic Development	<input checked="" type="checkbox"/>	
Recreation Services	<input checked="" type="checkbox"/>	
Engineering	<input checked="" type="checkbox"/>	
Fire Rescue	<input checked="" type="checkbox"/>	
Transportation	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO

Staff Report

Origin

A Digital Strategy is defined as the use of digital tools, such as AutoCAD which enables staff to electronically create and design plans, channels such as the use of email and social media to distribute information and products like Hansen, our work management system to achieve the goal of being more efficient and effective using technology. For the City of Richmond, it means transforming how the City is able to leverage these tools and technology to better serve our citizens and improve the efficiency and effectiveness of our employees. The CAO has directed Information Technology to take Richmond to the forefront in terms of utilizing technology to drive and support the effectiveness of Richmond's operations as a local Government'.

The vision of the Digital Strategy at the City of Richmond is:

- To optimize and integrate business processes which leverage technology innovation to deliver exceptional services.

Since 2013, the Digital Strategy at the City of Richmond has been directed by a Steering Committee comprised of stakeholders representing each division within the City. Led by Information Technology, the Committee has proposed a multi-year plan that will see the phased roll out of various technologies over the next few years. Each division stakeholder has brought his or her own insight and vision to the project, and has helped to create a broad-based, extensive strategy that will propel the City's current digital technology approach to one that is at the forefront of North American municipalities.

This report supports Council's 2014-2018 Term Goal #9 A Well-Informed Citizenry:

Continue to develop and provide programs and services that ensure the Richmond community is well-informed and engaged on City business and decision making.

9.1. Understandable, timely, easily accessible public communication.

9.2. Effective engagement strategies and tools.

Analysis

The Richmond Digital Strategy identifies the opportunities and clarifies the needs, both within a service delivery model and in the customer-engagement platform. A customer-centric approach puts our customers (the citizens, business operators, visitors and partners of the City of Richmond) at the centre of everything we do by developing and improving our technology to provide them with a better customer experience.

Global technology use has shifted to become more mobile focused and self-serve. Many industries have been transformed by embracing new digital technologies to provide the best in customer service. The finance and travel industries, for example, have moved their previously paper-heavy and process-based businesses online.

The predominance of web-based organizations such as Amazon, Yahoo, Google, Facebook and others has shifted peoples' expectations of real time delivery and responsiveness. The unparalleled influx of information that people receive on a daily – often hourly basis has created a need for organizations to more strategically disseminate the information they are providing so it best meets their customers' needs. City of Richmond citizens will demand information from the City that is easy to access, customized and flexible.

As part of the Y2K transition, the City implemented a number of business oriented systems that were selected as providing the best services for each line of business. This resulted in a number of independent systems within the City, each with their own data and information isolated to each system. While we have served the community well in regards to providing specific services, we have somewhat limited our ability to really connect with our customer – the resident/citizen that chooses to live in the City, the business operator that chooses to run their business here or the developer that invests in the City.

Our planning systems have done an admirable job of managing development related applications, defining land uses and documenting the building and zoning assets throughout the City. The work management system has been successful in attending to repairs on infrastructure such as road work, documenting service requests coming from the community and scheduling preventative maintenance tasks on infrastructure such as pump stations.

Each system has a representation of our 'customer'. The information related to our customers is contained within each island. We cannot easily ascertain all services a specific customer utilizes within the City. This limits our ability to have that global perspective in terms of really planning and preparing the City for what services are most important to our customers.

The Internet globally has had a major impact on how customers expect to interact and engage with businesses and government. Customers expect to have information easily accessible to them at any time. Given that customers now have the ability to book travel, conduct their banking, make dinner reservations – all online at their convenience – this is now extending into an expectation in terms of how people wish to interact with their government.

This transformation in local government is inevitable and will be imposed by the progress local government is making. It is just a matter of time in terms of when Richmond will need to react to this change. We can choose to be pro-active which will enable reliable planning in terms of the initiatives and financial impacts versus being reactive which would result in having to catch up with the market and incurring financial impacts within a much lesser time frame.

With the introduction of smartphones and purpose-built applications, citizens now want to have information at their fingertips or be able to take a picture of a road pothole and send that to the City to have it addressed.

We have historically been very dependent on the capabilities of the software vendors and/or systems provided by these vendors. Our ability to innovate and provide new services or capabilities has been defined by the respective development roadmaps our vendors have.

The strategy calls upon the City to implement new technologies that integrates systems and also provides new innovative capabilities for both web and mobile-based applications. We will also

establish a customer-centric platform that will require a shift in our focus to move from being a service-centric to a customer-centric organization. The strategic direction is focused around five key areas:

1. Extending the Reach of City Online Services

Implementing the Digital Strategy at the City of Richmond will extend the reach of all of our online services. The benefits to the community will be as follows:

- **Improved convenience:** Government services, such as bill payments, inquiries, licensing and development related applications will be available on demand, 24 hours a day, 7 days a week.
- **Improved business processes:** The Strategy will focus on simplifying business processes and enhancing the ways we provide services to the community.

2. Expanding the Connected City Architecture

The increase in the desire of organizations and individuals to be connected to the Internet at all times, wherever and whenever they need, has resulted in a dramatic increase in the need for more bandwidth, speed and mobility. To mitigate this challenge and to provide the City of Richmond community with the access they need, the City is expanding the connected City architecture by focusing on the following:

- **Increased reach of fibre optics and broadband infrastructure:** City owned facilities are connected to a City owned municipal fibre network infrastructure that provides high bandwidth services to many of Community Centres and other public facilities.
- **Increased Wi-Fi (wireless Internet) availability:** One primary focus will be the introduction of more public spaces that are Wi-Fi enabled. Currently, the City of Richmond provides free Wi-Fi access for the public at City Hall premises. This is being expanded to all City owned Community Centres, select heritage sites and a number of parks.

3. Extending Mobility for Staff

In 2015, nearly 70% of Canadians own a smartphone. This number has been steadily increasing over the past decade and is projected to continue to rise over the next five years. Additionally, with the high rate of technological innovation and evolution in this area, smartphones are being upgraded on average, every two years.

We have an opportunity to become a leader in how mobile technologies are leveraged to enable business processes and empower employees – specifically those employees that work in the field rather than an office. The City of Richmond Digital Strategy is focusing on extending the mobility of our staff to further help them do their jobs in a more effective and efficient way.

To extend the mobility of City employees, the City is developing a connective layer of technology that we have labeled our Digital Nervous Ecosystem. This technology integrates to many of our independent systems and enables innovative mobile and web services where these systems on their own were unable to do so. This mobile enablement means the work orders would be electronically assigned to work crews and individuals. Employees would access the work orders using a mobile application on their smartphone or tablet and provide real-time updates as the work is being done at the work site.

4. Integrating and Interconnecting City Infrastructure

Interconnectivity among systems is key to running effective organizations in the hyper-connected global world, and municipal governments are no different in their need for integration.

The City of Richmond Digital Strategy will be focused on integrating and interconnecting these systems to enable information and data to be shared easily from one system to another and one department to another.

- **Creation of a Digital Nervous Ecosystem:** The new City of Richmond Digital Nervous Ecosystem is a connecting layer of technology that sits on top of multiple systems.
- **Integration of systems to the Digital Nervous Ecosystem:** Currently there are multiple systems that operate independently with data and information isolated within that system. For example, in the City there are vehicle detectors that exist in roadways, traffic lights, pump stations and water metres. These sensors collect data points of information that are captured independently within their respective systems. Through the integration of systems, we will now be able to pro-actively act on key business events, such as the detection of a major traffic incident at an intersection. This event would have business rules defined that would notify staff, create a service request for work crews to inspect City infrastructure, send a notification to e-Comm and post an update to the City mobile app advising the community of the incident causing extraordinary traffic delays.

5. Promoting Open and Transparent Government

In the past few decades, open and transparent government has become more important than ever for North Americans. For municipalities, transparency around public meetings is especially important as citizens learn about policy decisions that affect their lives and see how their tax dollars are being spent.

Technology has enabled governments to be much more open and transparent. Streaming video of council meetings, social media websites, virtual town halls and mobile apps are making it easier than ever for the public to provide input to government and feel more connected and engaged.

Each of these strategic directions will be addressed, not by a series of individual actions and activities, but by an integrated technology approach that will bring together technology and business areas.

Components of the Digital Nervous Ecosystem include several new technologies that will be seamless to our customers (citizens, businesses, visitors, partners and employees), and will result in an improved mobile and web experience. The Digital Nervous Ecosystem will also provide the City with significantly improved data analysis, as it will include improved data warehousing and Business Intelligence. This will enable the City to obtain more information about usage of City services and customer experiences and preferences. Ultimately, this allows the City to provide improved services and offerings to its citizens, as employees and Council are able to make more informed decisions on how to spend taxpayers' money and resources. In addition, through this integrated approach, citizens will be more engaged as they can use social media and other digital tools to provide direct feedback to the City of Richmond. That feedback will be tracked and managed as part of the customer engagement process providing council and staff a real time view of the community on issues.

The Digital Strategy will be transformative for the City of Richmond and its citizens as the City continues to grow in population at a rapid rate. Over the next decade, the burgeoning population will create an increase in demand on City services. Implementing this strategy now will allow the City to be ahead of this growth curve and well prepared to meet the changing needs of the City.

The Digital Strategy provides a framework to guide strategic decisions regarding the City's digital services and infrastructure that enhance the City's services and access for residents. It identifies five key initiatives and associated projects and actions at various stages of development over the life of the strategy. In 2014, we implemented a pilot / prototype system which enabled both the Richmond BC mobile app and the Elections mobile app. The funding approved for this initiative was \$300,000. As part of the 2015 capital plan, \$1.8M was approved. Staff are presently developing and implementing some of the foundation pieces of the Digital Nervous Ecosystem. The CAO has asked for a complete plan outlining the full scope of the digital strategy to be implemented over the next three years within this council term.

Financial Impact

The remaining funding is estimated to be \$5.5 million over the next three years. Staff will develop project plans and funding strategies for Council consideration and prioritization as part of the regular budget and capital planning processes.

Conclusion

This Digital Strategy, with input from the organizational Steering Committee, addresses current opportunities and challenges and will equip Richmond with the tools to transform its current customer service approach from service-centric to customer-centric. The strategy outlines five strategic directions which act as a framework to guide actions and work plans. With leadership and support from the City, this Digital Strategy will move the City of Richmond to the forefront of innovation for municipal government across North America.



Adrienne Ash
Systems Analyst
(604-276-4213)

GF:ala

Att. 1: City of Richmond Digital Strategy document

A person is shown from the side, holding a smartphone. The background is a bright, sunlit outdoor area with a bokeh effect of light spots. A yellow trapezoidal shape is overlaid on the left side of the image, containing the title text.

**RICHMOND'S
DIGITAL
STRATEGY**
SEPTEMBER 2015

CNCL - 250

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The Internet of everything
changes everything.

– John Chambers, chairman and CEO of Cisco

EXECUTIVE SUMMARY

The City of Richmond is undertaking the development and implementation of a new Digital Strategy that will support the City's vision of being "the most appealing, liveable, and well-managed community in Canada."

A "Digital Strategy" is defined as the use of digital tools, channels and products to achieve a goal or goals. For the City of Richmond, it means transforming how the City is able to leverage digital tools and technology to better serve our citizens and improve the workplace for our employees. The vision of the Digital Strategy at the City of Richmond is:

To optimize and integrate business processes which leverage technology innovation to deliver exceptional services.

The Digital Strategy at the City of Richmond is directed by a Steering Committee comprised of representatives and stakeholders from each division across the City. Led by Information Technology, the Committee has proposed a multi-year plan that will see the phased roll out of various technologies over the next three to five years. Each division stakeholder has brought his or her own insight and vision to the project, and has helped to create a broad-based, extensive strategy that will propel the City's current digital technology approach to one that is at the forefront of North American municipalities.

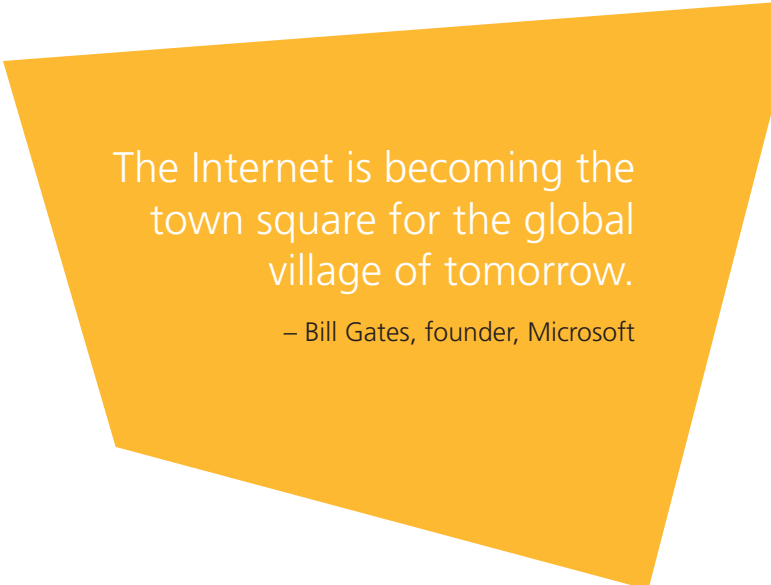
Over the past decade, the City of Richmond Information Technology department has set the foundation for the Digital Strategy by establishing a robust technology platform throughout the City that has served the citizens well to date. Various service-specific systems have been successfully utilized for many years to help the City's different departments execute on their mandates. These systems include:

- Work Order Management System
- Property Management System
- Program Registration System
- Finance and Human Resources System
- Tax Collection System
- Traffic Control Management System

While these systems have performed well and met the needs of the City and the community, the time has come to shift from a primarily service-centric approach to customer-centric. A customer-centric approach puts our customers (the citizens, business operators and partners of the City of Richmond) at the centre of everything we do by developing and improving our technology to provide them with a better customer experience.

Global technology use has shifted to become more mobile focused and self-serve. Many industries have been transformed by embracing new digital technologies to provide the best in customer service. The finance and travel industries, for example, have moved their previously paper-heavy and process-based businesses online.

The predominance of web-based organizations such as Amazon, Yahoo, Google, Facebook and others has shifted peoples' expectations of real time delivery and responsiveness. The unparalleled influx of information that people receive on a daily—often hourly—basis has created a need for organizations to more strategically disseminate the information they are providing so it best meets their customers' needs. City of Richmond citizens will demand information from the City that is easy to access, customized and flexible.



At the core, establishing the City of Richmond as customer-centric will require a shift in our digital strategic direction and the introduction of several new technologies. The strategic direction for the Digital Strategy is focused around five key areas:

1. Extending the reach of City online services
2. Expanding the connected City architecture
3. Extending mobility for staff
4. Integrating and interconnecting City infrastructure
5. Promoting open and transparent government

Each of these strategic directions will be addressed, not by a series of individual actions and activities, but by an integrated technology approach that will bring together technology and departments. The Digital Strategy will be focused around the development of a "Digital Nervous Ecosystem" (DNE), an integration system that will bring together the various business systems at the City of Richmond.

Components of the Digital Nervous Ecosystem include several new technologies that will be seamless to our customers (City citizens, businesses and employees), and will result in an improved mobile and web experience. The Digital Nervous Ecosystem will also provide the City with significantly improved data analysis, as it will include improved data warehousing and Business Intelligence. This will enable the City to obtain more information about usage of City services

and customer experiences and preferences. Ultimately, this allows the City to provide significantly improved services and offerings to its citizens, as employees and Council are able to make more informed decisions on how to spend taxpayers' money and resources.

The Digital Strategy will be transformative for the City of Richmond and its citizens as the City continues to grow in population at a rapid rate. Over the next decade, the burgeoning population will create an increase in demand on City services. Implementing this strategy now will allow the City to be ahead of this growth curve and well prepared to meet the changing needs of the City.



Take Richmond to the forefront of technology in terms of Municipal Government.

– George Duncan, CAO, City of Richmond

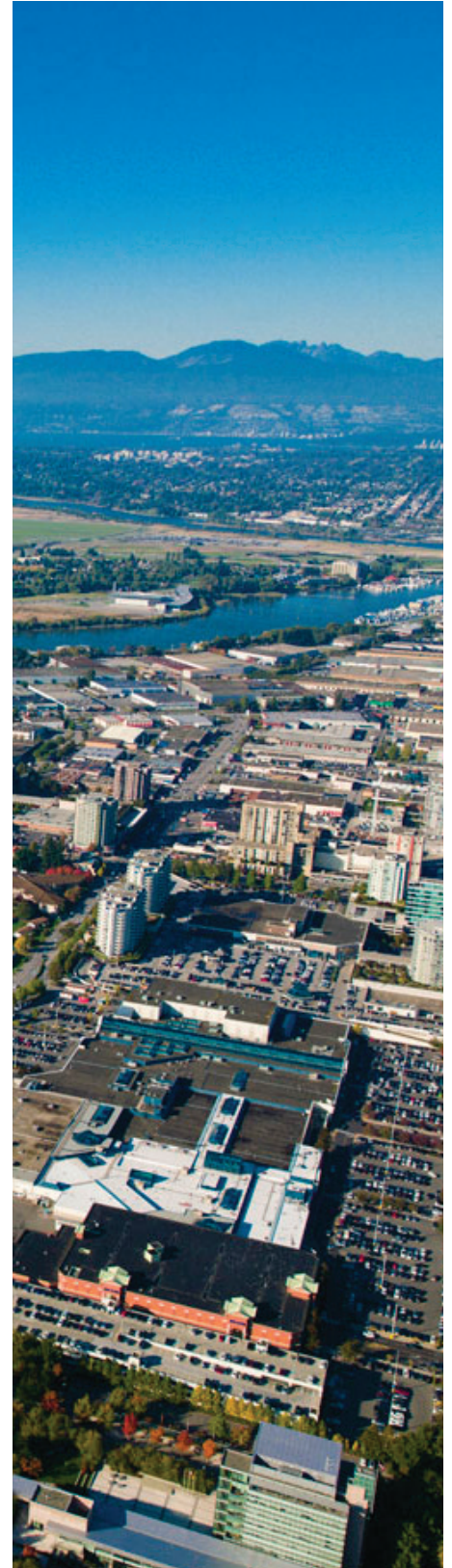
INTRODUCTION

As the global marketplace evolves to being more digitally enhanced and mobile, so too are North America's municipalities moving towards a more digital approach. The City of Richmond has always been committed to providing its citizens with the most innovative technologies to best serve their needs. As technology evolves, so will the City of Richmond.

This document provides an overview of how the City of Richmond is leveraging today's digital technologies to transform its current customer service approach from being service-centric to customer-centric. It will show how the introduction of a multi-layered technology system called the "Digital Nervous Ecosystem" (DNE) will enable the City to capitalize on new technologies to evolve current business systems into mobile-enhanced and web-based technologies.

It will outline the strategic direction that the Digital Strategy will take, and it will highlight how a "Day in the Life" of different City of Richmond customers will improve through the Digital Strategy.

It will demonstrate how evolving technologies to a digital platform will help the City of Richmond realize its vision of being "the most appealing, liveable, and well-managed community in Canada."



THE PURPOSE

The only wrong move when it comes to Digital Transformation is not to make any move at all.

– Dider Bonnet, Senior VP CapGemini

Over the past few years, there has been a visible and dramatic transformation in how organizations (including municipalities) share information with individuals. The evolution of technology to web and mobile along with the introduction of Social Media has increased the amount of information that people receive and process. At the same time, the vehicle used to disseminate and share this information has shifted equally dramatically to predominately web-based and mobile-enhanced technologies that capture and share information on demand in a customizable and flexible way.

For the citizens, businesses and employees of the City of Richmond, this has had many different impacts—both professionally and personally. More and more businesses are available online, and many offer their goods and services over the Web or via mobile application.





WHY HAVE A DIGITAL STRATEGY?

The times are continuously changing for municipal governments. These statistics from the Canadian Internet Registry Association from 2012 set the stage for the drivers behind this new Digital Strategy:

- 87% of Canadians have Internet broadband access at home
- 53% of Canadians have mobile Internet access (estimated at more than 70% in 2015)

Expectations of on-demand information and services—from shopping to finance to travel, etc.—are now 24 hours a day, seven days a week.

For the City to continue to effectively serve its constituents, it needs to align its services towards meeting the needs of this growing segment. Digital Strategy is more than simply 'putting services on the Web'. It is about rethinking how those services are defined and delivered, to ensure that our customers are at the forefront of all our efforts.

The objectives and desired outcomes of the Digital Strategy are:

- To fully integrate and enable all systems at the City to provide Web- and Mobile-enabled services to our citizens.
- To ensure citizens of Richmond have a cohesive, integrated customer experience.
- To delight our customers with an integrated business process approach.
- To provide a single eCommerce engine to simplify and streamline online customer transactions.
- To make better business decisions for the citizens of the City of Richmond by having improved data analysis and Business Intelligence.

CURRENT STATE

The City of Richmond exists to serve the citizens and businesses of Richmond. There are dozens of business systems that the City uses to provide services to our customers and to keep the City operating.

Historically, systems at the City of Richmond were purchased and implemented to specifically address the needs of the service area for which they were responsible. These systems are best-in-class products for the service they deliver and are used by many municipalities in North America. At the time, there was no method of integrating the systems or the data stored within them. As a result there is duplication of data and no single representation of fact (no single source of truth for data).

This segregation of systems is typical of many organizations that embraced technology early. It also leads to the challenge of what to do with systems that are unable to support newer technologies such as Web-based access, self-service and mobile. Those systems that do provide online capability often require unique sign-on to each separate system, rather than a single sign-on which is more user friendly. Ultimately, disparate systems make it difficult for the City to have a holistic view of data and understand what the data is telling us.

When faced with aligning 2015 customer expectations and needs with current systems, the City of Richmond decided on a new Digital Strategy that would provide integration between systems and facilitate mobile enablement.

A committee with representation from each division in the City was struck to develop a strategy based on best practices from digital strategies of other municipalities infused with the innovative spirit and business strategy of the City of Richmond.



Mobile: The term 'mobile' in a Digital Strategy refers to anything relating to cellular phones, handheld computers, and similar technology.



Web enabled: Web enabled refers to a product or service that can be used through, or in conjunction with, the Internet or World Wide Web. A Web-enabled product may be accessed through a Web browser or be able to connect to other Web-based applications in order to synchronize data.



Digital Nervous Ecosystem (DNE): A connecting layer of technology that sits on top of multiple different systems and channels data from system to system. Much like the human body has a Central Nervous System whose function is to integrate information it receives from all parts of the body and then coordinate and influence the activity of the body parts, the Digital Nervous Ecosystem's function is to integrate information from multiple different systems.



Fibre optics: Fibre optics are cables that transmit information from computer to computer. Computers use fibre optics to provide broad access to the Internet.



Broadband: A high-capacity transmission technique using a wide range of frequencies, which enables a large number of messages to be communicated simultaneously.



Wi Fi: The term WiFi refers to wireless networks that allow computer systems to network and to speak to each other.

OPPORTUNITIES

The systems currently in place at the City of Richmond provide a solid foundation on which to build the Digital Strategy. By introducing several new layers of technology through the Digital Strategy, the City of Richmond has an opportunity to showcase itself as an innovator and leader in the concept of being a “Smart City”.

Innovation has always been at the core of the City of Richmond's approaches to technology and other areas. Staying in line with—or ahead of—global trends in municipal government is key to advancing the City's infrastructures and services delivery for our citizens, business owners, visitors, partners and employees.

The implementation of the Digital Strategy will provide many opportunities for the City to move from a service-centric organization to a customer-centric organization and will leap the City forward to current technology trends in a cost effective and timely way. The following are examples of opportunities that inspire and shape the Digital Strategy:

- The demographic of the City of Richmond is continuing to shift in ethnic diversity with Chinese origin citizens approaching a majority of the average population (49%). As well, there is an increase in resident population in the 20-30 year range. These demographics are digitally savvy and will expect more of the City services to be web and mobile enhanced.
- Significant commercial and residential development in the City provides an opportunity for the City to leverage digital technology in City infrastructure that supports this development.
- Improvements in data analysis and Business Intelligence solutions allow the City to better understand how its citizens, business operators and visitors use the City's infrastructure.
- The trend towards mobile provides an enormous opportunity for the City of Richmond to better connect with more of its citizens and business owners and visitors. Mobile apps such as the City of Richmond app enable both the City and tourism partners to showcase their offerings in an easy to access, visually stimulating and easily navigable way. Feedback on the new app is a positive indicator of how big an opportunity the mobile story is for the City.

We have technology, finally, that for the first time in human history allows people to really maintain rich connections with much larger numbers of people.

– Pierre Omidyar, founder, eBay

TRENDS

The City of Richmond has always prided itself on staying not just aligned with global technology trends, but ahead of them. Over the past several years, the technology industry has clearly shifted to an on-demand, highly connectable, cloud and mobile industry, where customization and localization is integral to successful delivery.

MOBILE

According to the 2015 Internet Report released by Kleiner Perkins Caufield & Byers, a leading technology Venture Capital firm, the mobile story continues to be the single, largest trend that all organizations need to pay attention to. The report cites some interesting statistics:

- Mobile Internet use is growing faster than Internet usage in general. There are 2.8 billion Internet users, up 8 percent from 2014, and 2.1 billion mobile Internet users, an increase of 23 percent.
- Mobile data usage rose 69 percent last year, and 55 percent of mobile data traffic is from video.
- In 2008, Americans spent 20 minutes a day on average with the mobile Web. This year, they spend close to three hours, more time than they spend on laptops.

INTERNET OF THINGS (IOT)

In 2015 and beyond, the focus for many technology giants is bringing together the “Internet of Things” or IoT as it is known. The IoT is a proposed development of the Internet in which everyday objects have network connectivity, allowing them to send and receive data. It involves connecting all the various devices that could access the Internet—tablets, mobile, laptops, desktops, home alarm systems, appliances, etc. The IoT is fundamentally what the City of Richmond’s Digital Strategy is all about. Connecting all our various disparate systems through a technology layer that allows us to better share and manage information to provide our citizens with better customer service.

CUSTOMIZED USER EXPERIENCE (OR USER-CUSTOMIZED PORTAL)

Thanks to the prevalence of social media and Google, the technology of websites has evolved to be focused not just on usability but rather on customer experience. Users of these sites sign in and customize the portal or front page of the site to tailor to their specific needs. Once the site is ‘set up’, content is pushed to the front end of the site that is specifically relevant to the user. Our “Day in the Life” examples demonstrate how the City of Richmond will utilize this technology ability as a key part of our Digital Strategy.



STRATEGIC DIRECTION

VISION

The vision of the Digital Strategy for the City of Richmond is:

To optimize and integrate business processes which leverage technology innovation to deliver exceptional services.

Achieving this vision will require contribution and support from throughout the City—from all divisions and from every level.

GOAL

The goal of the Digital Strategy is:

To facilitate strategic thinking and better coordination around the digital innovation and enabling concepts of “Smart City”, with the ultimate goal of embedding digital technology into the City’s operations, information dissemination and communication with the residents and business community.

Achieving the goal of making the City of Richmond a web- and mobile-enabled “Smart City” requires a well thought out strategy direction, focused on specific deliverables and key areas. The following five areas of focus have been identified as key to the success of the Digital Strategy:

1. Extending the reach of City online services
2. Expanding the connected City architecture
3. Extending mobility for staff
4. Integrating and interconnecting City infrastructure
5. Promoting open and transparent government

Mobile is the future and there's no such thing as communication overload.

– Eric Schmidt, Google



STRATEGIC DIRECTION:
1. EXTENDING THE REACH OF CITY ONLINE SERVICES

The City of Richmond currently offers several services via the City of Richmond website for citizens and business owners. Business licenses, pet licenses, parking tickets, and more can all currently be accessed via www.richmond.ca. Generally the website is currently designed by division or function.

In this era of digital government, our citizens need and want to be at the core of our business processes. We know our customers—the citizens and business owners of the City—don't necessarily care about the organizational structure of our municipal government nor should they need to know that to effectively deal with the City via our website. We want to enable them to do their business, to live their lives within the City of Richmond, supported by our organization.

Implementing the Digital Strategy at the City of Richmond will extend the reach of all of our online services. The benefits to the community will be as follows:

- **Improved convenience:** Government services (such as bill payments, inquiries, licenses, etc.) will be available on demand, 24/7.
- **Improved business processes:** The City of Richmond is committed to supporting our business community. The new Digital Strategy has been developed with business in mind—helping them to become more efficient and effective. The Digital Strategy will focus on helping businesses save time by reducing the bureaucracy often associated with working with government. Access to more online business-related services such as procurement opportunities (both new bids and in progress or won opportunities), business licenses registration and re-registration, and paying bills and receiving payments online illustrates how transformative the Strategy will be to the Richmond business community. The City will continue to work with various business associations to identify further business opportunities that can be enhanced via the Digital Strategy. Many of the efficiency gains from the digital strategy and a more web-enabled government will flow directly to the business bottom line.



STRATEGIC DIRECTION:
**2. EXPANDING THE
CONNECTED CITY
ARCHITECTURE**

A positive outcome of the global shift to increased connectivity through digital technology has been the increase of communication not only from business-to-consumer but also business-to-business and within the walls of an organization. Communication within and among organizations is no longer the domain of face-to-face, voice or even written correspondence. Today, internal communications and communications from one organization to another is increasingly shared over digital channels, i.e. the exchange of data and information over the Internet. This increase in digital communication while extremely positive on the one hand, as it creates much more efficient channels of communication, is also challenging on the other hand, for more people are demanding to be connected at all times than ever before.

This increase in the desire of organizations to be connected to the Internet at all times, wherever and whenever the need, has resulted in a dramatic increase in the need for more bandwidth speed and mobility. To mitigate this challenge and to provide the City of Richmond businesses and

citizens with the access they need, the City of Richmond is expanding the connected City architecture by focusing on the following:

- **Increased fibre optics and broadband:** At the City of Richmond, the use of fibre optics and broadband has enabled various City departments and offices at different locations to connect and access more efficiently the City's network, data and systems. This connectivity will increase over the next few years as we roll out the Digital Strategy. More public spaces that are city-owned or managed will have increased fibre optic and broadband capability.
- **Increased Wi Fi availability:** One primary focus will be the introduction of more public spaces that are Wi Fi-enabled. Currently, the City of Richmond provides free Wi Fi access to the public on City Hall premises. This will be expanded to encompass other city-owned and managed facilities, buildings and community centres, allowing citizens and staff to better communicate and share information with one another.



STRATEGIC DIRECTION: 3. EXTENDING MOBILITY FOR STAFF

In 2015, nearly 70% of Canadians own a smartphone. This number has been steadily increasing over the past decade and is projected to continue to rise over the next five years. Municipal governments by and large are not maximizing mobile technology to further their business objectives and empower their employees—specifically those employees that work in the field rather than an office. The City of Richmond Digital Strategy is focusing on extending the mobility of our staff to further help them do their jobs in a more effective and efficient way.

To extend the mobility of City employees, the City is developing a connective layer of technology known as the Digital Nervous Ecosystem that sits on top of various systems and channels information as needed to mobile devices. This mobile enablement means that work orders would be electronically assigned to work crews and individuals. Employees would access the work orders through a mobile application on their smart phone or tablets, and provide real-time updates as the work is being done and completed right at the work site.

In my opinion, the future
of mobile is the future of
everything

– Matt Galligan, SimpleGeo



STRATEGIC DIRECTION: 4. INTEGRATE AND INTERCONNECT CITY INFRASTRUCTURE

Interconnectivity among systems is key to running effective organizations in the hyper-connected global world, and municipal governments are no different in their need for integration.

The City of Richmond Digital Strategy will be focused on integrating and interconnecting these systems to enable information and data to be easily shared from one system to another—and one department to another.

- **Creation of a Digital Nervous Ecosystem:** The new City of Richmond “DNE”, or Digital Nervous Ecosystem, is a connecting layer of technology that sits on top of multiple different systems and channels data from system to system.
- **Integration of various systems to DNE:** Currently there are multiple systems that operate independently to capture and store information points from various City of Richmond departments or functions. For

example, in the City there are sensors that exist in roadways, traffic lights, pump stations, etc. These collect data points of information as they are captured but the information typically sits in one database and is not shared with other areas. With the DNE sitting on top of the different systems, these data points can be shared from system to system. As issues or unexpected events happen, these sensors will provide valuable data to the DNE triggering other systems to automatically respond and start business processes.

Most importantly, this seamless integration of data sharing and business process is not overtly apparent to the citizens of Richmond. The citizens will only know that the faulty light at the intersection was fixed or that the potholes in the highway were repaired—the sharing of information through integrated systems resulting in an improved customer experience for citizens.



STRATEGIC DIRECTION:
**5. PROMOTE OPEN,
TRANSPARENT
GOVERNMENT**

In the past several decades, open and transparent government has become more important than ever for North Americans. For municipalities, transparency around public meetings is especially important as citizens learn about policy decisions that affect their lives and see how their tax dollars are being spent. Proactive citizen participation helps improve policy outcomes. Technology has enabled governments to be much more open and transparent. Tools such as streaming video of council meetings or other meetings, social media websites, virtual town halls and mobile apps are making it easier than ever for the public to provide input to government, and feel more connected and engaged.

Engaging with our citizens and listening to their input and feedback has always been important to the City of Richmond. We have provided many different vehicles for citizens of Richmond to communicate with the City and City Council. The Digital Strategy will support and further this commitment to our citizens and allow them to communicate

in a much more efficient, timely and broader way. Using online engagement tools, it is easy for more people to contribute ideas of community improvement and provide feedback on current initiatives. Tools that will be used to further the City of Richmond's efforts for an open and transparent government include:

- Streaming video (for use at Council meetings or other meetings)
- Social media websites
- Virtual town halls
- Mobile apps

These tools are a convenient way for citizens to stay engaged with the government decision-making about the community and in turn, help the organization collect timely and actionable input from citizens.

A DAY IN THE LIFE OF A RICHMOND CITIZEN

Implementation of the Digital Strategy will transform how the City of Richmond interacts with our customers. The following Day in the Life scenario envisions what that could mean to our citizens and staff.



Meet Jennifer, a Richmond resident. She's married, has 2 children and a dog. She is doing some renovations to her home. In her neighbourhood, the City is considering a rezoning application for a new condo development and she and her husband are keen to learn more about it. She has a profile on the City web portal and has signed up for the City services that are important to her. Here's how Jennifer's day could look after the Digital Strategy.


9pm

Hi Jennifer, Tomorrow is garbage collection day.



7am

Inbox (1)
Hi Jennifer, There will be road construction today, please check for an alternate route to your destination.



11am

She is notified that her children's swim class has opened up. While using the portal to register them, she also renews her dog licence.



There is one payment system that processes the payment for all services.

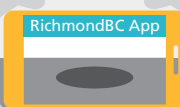
The registration system books the swimming class.

The permit system renews the dog licence.

She receives the dog tag in the mail.

12pm

She notices a pothole in the street, so she takes a picture using the RichmondBC mobile app to report it to the City.




The work order system creates a case and schedules staff to complete the work.

Hi Jennifer, Work is complete.

3pm

She schedules a plumbing inspection for her new home renovations.





The property system books an inspection and schedules an inspector's time.

7pm

Hi Jennifer, City Council Meeting is tonight. On the Agenda: **New Condo Development**

[WATCH IT LIVE ONLINE](#)

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NEXT STEPS

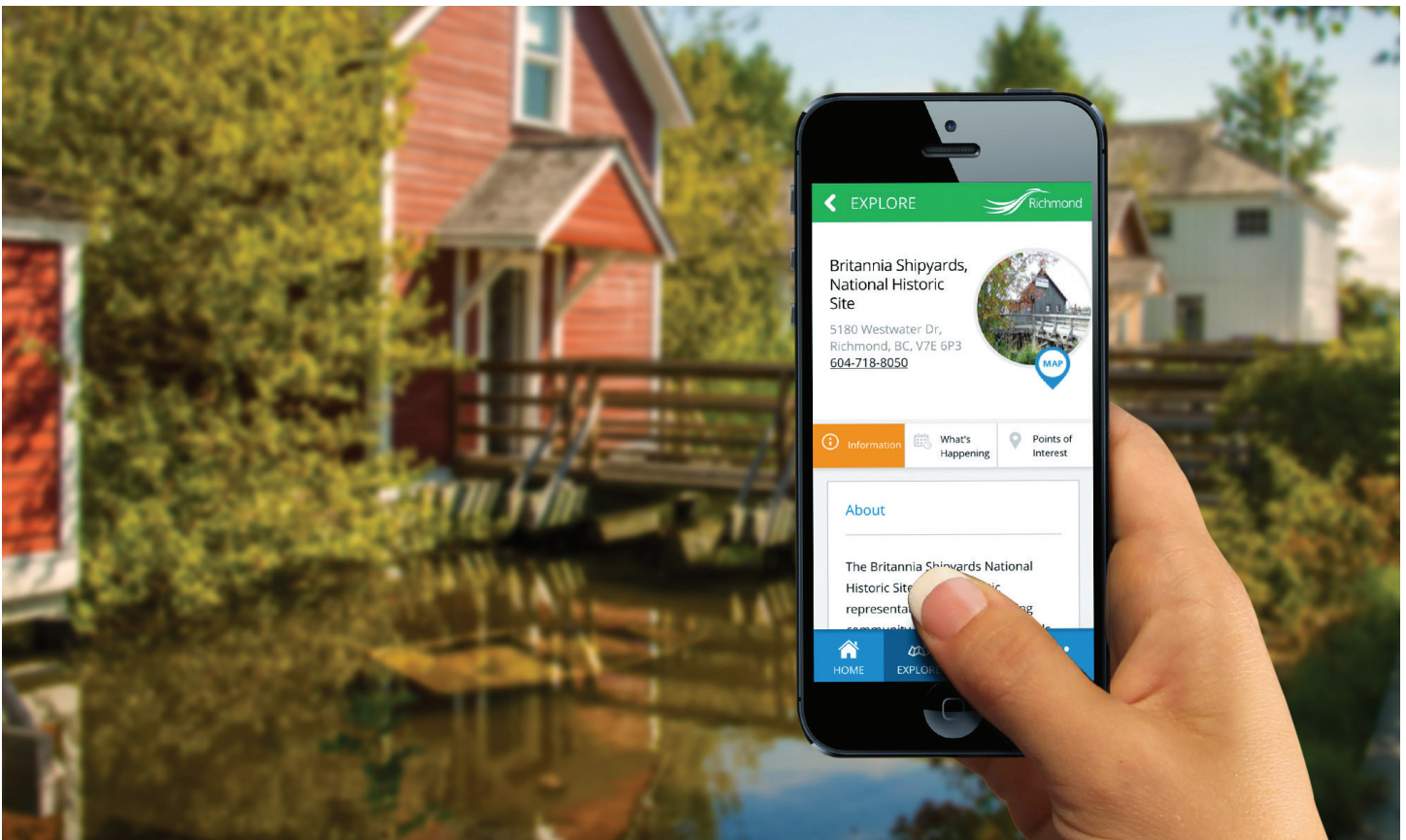
This Digital Strategy document is a current snapshot of a multi-year, multi-phased transformation of how the City of Richmond will connect with its customers. The Digital Strategy Committee has established a timeline for the roll out of the various components of the Digital Strategy, some of which have already been launched.

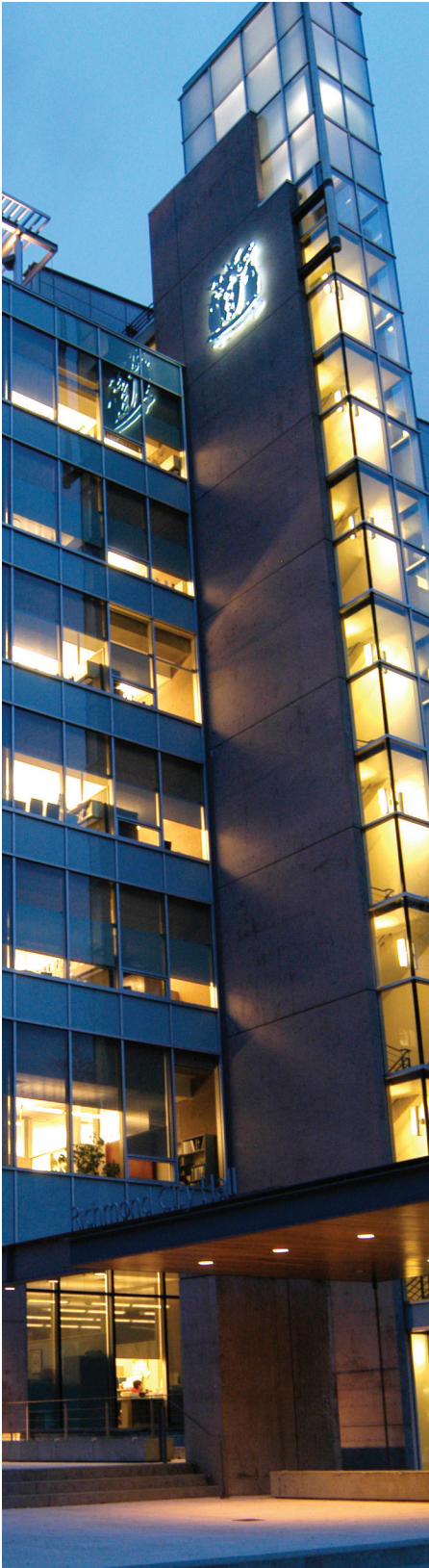
In 2014, the City launched its new Mobile App, which is available for iPhone and Android devices. This App was developed due to the successful implementation of a layer of technology (a predecessor to the Digital Nervous Ecosystem) that connects the Events database with the Community Services database and the registration system for both the City of Richmond and the Richmond Oval. The App to date has been extensively downloaded and overall feedback has been extremely positive.

2015 AND BEYOND

The next focus of the Digital Strategy will be to create a mobile-enabled version of our Public Works system and the creation of the Digital Nervous Ecosystem technology layer. Once these are established, and the City has an improved ability to understand our customers, we will be relaunching the City of Richmond website. This new website will provide our citizens with a highly customizable, interactive user interface that seamlessly connects user information to provide the citizens of Richmond with a customer-centric experience on the website.

The efforts to successfully deliver the City of Richmond Digital Strategy cannot be done in isolation by Information Technology alone. To date, the cross-functional Steering Committee has helped to ensure the project is a city-wide initiative and this continued engagement across divisions is key to the project's ultimate success.





CONCLUSION

This document has provided an overview of how the City of Richmond is leveraging today's digital technologies to transform its current customer service approach from service-centric to customer-centric. It has demonstrated how by introducing a connecting layer of technology to bring together all the multiple systems already in place at the City, the City can improve its customer service, become a more efficient and effective organization, create more engaged employees and citizens, and instill a customer-centric culture throughout all departments and at all levels.

The Digital Strategy is clearly aligned with the City of Richmond's vision of being "the most appealing, liveable, and well-managed community in Canada."

With the support of City Council, the CAO, the Senior Management Team and the employees of the City of Richmond, this Digital Strategy will move the City of Richmond to the forefront of innovation for municipal government across North America.