



Each year, ICF selects a theme to guide its Awards program and annual Summit. The theme of the 2018 program is “**Humanizing Data**.” It provides your community with an opportunity to report on its achievements in Big Data and Open Data, as described below. After reading the theme description, please complete the three questions that follow and **return this form with the Smart21 Questionnaire** to [awards@intelligentcommunity.org](mailto:awards@intelligentcommunity.org).

## Humanizing Data

Data has become the heartbeat of the new economy and the lifeblood of smart public policy in the 21<sup>st</sup> Century.

Two words born in the mid-1990s still shape our understanding of data’s central role. Engineers at Silicon Graphics, an early tech innovator, began talking about “Big Data” at about the same time the words “Open Data” first appeared in a report, which advocated for the free exchange of scientific information.

Two decades later, Big Data describes the high-speed collection, processing and availability of huge volumes of information. What once required days, weeks or months of computer time can now be processed and displayed in real time. Greater processing capacity has encouraged us to add sensors to objects, animals and even to ourselves, and to “scrape” the digital streams of the Internet to generate an even greater flood of data. By getting us answers sooner, Big Data delivers greater value. It also reveals patterns we might never have suspected were there, but which alter our decisions, investments and our well-being. The impact on businesses and institutions already mounts into the billions, measured by cost-savings, convenience, operational improvements and new forms of economic activity.

If data is Big, however, does it only belong to Big companies and Big institutions? Where do individuals and communities fit in a data-driven future?

That’s where Big meets Open. The global Open Data movement has driven municipal, state, provincial and national governments to publish data sets from the vast store of information they collect. Researchers, hackathons and entrepreneurs explore the spread of disease and crime, create real-time transit schedules and develop quality audits for everything from hospitals to restaurants, instantly available on smartphones. New companies spring up to make money from this release of “the peoples’

property,” including such firms as the real estate website Zillow and Garmin, a US\$7 billion maker of navigation software and hardware. Governments save money by attracting more bidders for contracts and delivering useful up-to-the-minute information online rather than through call centers. Where governments are committed to transparency, Open Data is shrinking the shadows where corruption flourishes.

As data has become a matter of public policy, its quality, use and interpretation have become the stuff of debate. Data touches issues from privacy and security to economic inequality, and from the right to claim an individual identity to the “right to be forgotten.” Technologists complain about a lack of standards that force them to devote countless hours to preparing government data for use. Open Data advocates demand that information be free – while most governments reserve the right to determine what citizens need to know.

Whether big, open or both, data has become the beating heart of business and government. By fueling a better-informed society, it supports human hopes and human potential. It is valuable when it contributes to prosperity, knowledge, safety, cultural richness and greater collaboration, and it is threatening when directed to lesser goals. In the 2018 Intelligent Community Awards and Summit, we celebrate the people, the communities and the innovators who are humanizing data for the economic, social and cultural benefit of the community. We will identify and honor those whose technical accomplishments lead to less poverty, greater health, higher hopes and longer and richer lives, beginning in the first and most important place of all: the place called home.

## Theme Questions

Name of Community Winnipeg	
State/Province Manitoba	Country: Canada

1. Health, Welfare and Safety. Provide up to two examples of open data programs in your community that the health, welfare and safety of residents. Explain how government collaborated with third parties to enable useful applications to be created from government data sets, and what results have been achieved.

EXAMPLE 1

<b>Name</b>	Peg
<b>Description</b>	<p>The Peg is a community indicators system that was developed to measure the well-being and community vitality of the City of Winnipeg. The name was selected for its dual meaning, being a common local term for Winnipeg and also referring to ‘pegging’ the specifics of and solutions to community monitoring. Peg categorizes community indicators into eight themes – basic needs, health, economy, natural environment, built environment, governance, education and learning, and social vitality. The system also identifies an additional category of poverty as being a cross-cutting issue that spans across the other themes. Its online user-interface (<a href="http://www.mypeg.ca">www.mypeg.ca</a>) allows a user to explore indicators in each of the themes and access related data and information. Data can also be accessed through an interactive map tool that provides geographical referencing and context to the information. The data is from reliable, credible external sources. This information originates from a variety of open data sources in the form of statistics, mapping data, and research reports. These sources include the City of Winnipeg Open Data Portal, Statistics Canada, and Manitoba Centre for Health Policy. In addition, Peg contains a ‘stories’ section that provides personal accounts of Winnipeg locals’ experiences with the indicators, that uses narratives as a method of providing greater meaning to abstract data.</p> <p>The concept for a Winnipeg-based community indicators system began to coalesce when the local United Way conducted a community engagement process entitled Journey Forward that examined key social issues in the community. This process prompted considerations and questions about key social issues in Winnipeg. The outcome of these considerations and questions was an</p>

	<p>agreement on the necessity to develop a community indicator system that effectively and comprehensively tracks the well-being of Winnipeg residents. The United Way approached the International Institute for Sustainable Development (IISD) to discuss working together in developing a system for Winnipeg, and the two organizations subsequently have led the development process over the last decade.</p> <p>In order to ensure the community indicators system accurately represents the comprehensive needs and interests of Winnipeg at-large, the United Way and IISD developed Peg through a highly inclusive and participatory process. Peg's development has involved the input of all sectors of the community contributing to the project in various capacities, including guidance and direction on Peg's development, involvement in the indicator selection process, advising on community engagement and public relations, technical expertise, and assisting in obtaining data and relevant information.</p>
<p><b>Collaboration</b></p>	<p>Peg was developed through the leadership of two well-established organizations that brought different but complementary expertise and experience – the United Way of Winnipeg and the International Institute for Sustainable Development (IISD). The United Way contacted IISD because of their expertise in sustainable development research and their previous work on sustainability indicators. As IISD brought the research expertise and knowledge to Peg, the United Way, a strongly networked organization, brought the necessary community contacts and experience in community engagement to build project partnerships and community collaboration. These two complementary functions ensured that Peg developed through expert knowledge of indicator systems and through the inclusion of many different community inputs and perspectives, contributing to the development of a comprehensive, integrated system ultimately accepted by a majority of community stakeholders.</p> <p>The United Way and IISD began the process by engaging in the more 'philosophical' considerations of the project, including what is the definition of 'community, what is considered a 'meaningful indicator', and what does it mean to be a 'Winnipegger'. The results of these discussions showed a need for a system that recognizes the interconnectedness of social, economic and environmental issues in order to engage in meaningful and insightful analysis on the well-being of Winnipeg residents, as opposed to simply developing a set of isolated metrics in where each metric provides one-dimensional information of interest to specific sectors or organizations.</p> <p>The United Way and IISD were the main drivers of Peg's development; however, the process was highly inclusive and participatory, involving all sectors in the community – public sector (mostly local government, but input did come from provincial and federal civil servants), academic (University of Winnipeg and University of Manitoba), business (represented by the Chamber of Commerce), and non-government organizations (NGOs). The United Way and IISD estimate that over 800 people were engaged through the course of the project. High-level guidance for Peg was provided by a steering committee that was assembled specifically to represent every sector of the city, and indicators were selected through diverse working groups to ensure that (as much as possible) all aspects of community well-being were equally considered. In addition, the general public was invited to provide feedback on the indicator selection process through social media, such as Facebook. This inclusivity allowed the Peg indicator system to be developed 'by the community and for the community', a first in Canada.</p>
<p><b>Results</b></p>	<p>United Way's and IISD's continual leadership, commitment and collaboration were required for Peg to come into fruition. Ensuring that the community indicators system is comprehensive, integrative and sufficiently represents the needs and concerns of the community requires high levels of continuous input and a large amount of data. The concept of Peg has developed progressively over a 10-year span. Its success, thus, hinged on the commitment of the initiative's driving organizations (the United Way and IISD) to ensure the system was being built and community partners were continually engaged. The United Way and IISD both have maintained involvement and interest in Peg, and their perseverance has built momentum and sustained a large and diverse network of actors around the indicator system.</p> <p>In 2014, IISD and the United Way of Winnipeg were awarded a Community Indicators Consortium Impact Award. This Award is an international award administered by the Community Indicators Consortium (CIC), and recognizes projects that best demonstrate the power of indicators to drive positive community change.</p>

Today, the City of Winnipeg views Peg is an important piece of community infrastructure that tracks indicators affecting the quality of life of Winnipeggers. Providing clear, measurable data on important issues allows its citizens to identify areas where they are making progress as well as areas where they need to work differently. The relationship between humans and the environment requires attention, care and work in order to achieve goals towards sustainability and well-being.

EXAMPLE 2

<b>Name</b>	Open Democracy Manitoba (ODM)
<b>Description</b>	<p>Kyle Geske, a local Winnipeg computer engineer and IT educator, was out with friends and discussing the upcoming 2010 civic election in Winnipeg when he and the group realized they had very little information regarding the candidates and the way the local election system worked. They discussed how some local elected positions had virtually no information regarding what they did and even less on who was running for them. Fortunately, the group included a graphic designer and three programmers who realized they could simply build the resources they were all lacking and Open Democracy Manitoba (ODM) was on its way.</p> <p>Open Democracy Manitoba is a citizen-run community organization that builds digital tools for democratic engagement. Their mission is to empower citizens, helping them to learn about the roles, decisions, and visions of their political representatives in order to have a more accountable and respectful democracy.</p> <p>ODM has helped hundreds of thousands of Manitoba voters research their political candidates and learn about their local democratic process by building two key websites, WinnipegElection.ca for the 2010 and 2014 Winnipeg civic elections, as well as ManitobaElection.ca for the 2011 and 2016 provincial Manitoba elections. These sites featured interactive constituency maps, a calendar of election-related events, and educational resources on legislative politics in Manitoba. Listed alongside the election candidates were links to their web pages, email addresses, Facebook fan pages and Twitter feeds. Linked online news articles mentioning the candidates provided up-to-date election coverage from a variety of media sources.</p> <p>For WinnipegElection.ca, ODM used the ward boundary maps from the City's Open Data portal. ODM developed an open questionnaire for all the candidates to share their opinions and let the community get to know them better. In keeping with the mission, ODM built the system to be open source and available to anyone who wanted to build a similar election site.</p> <p>ODM's latest project, WinnipegElected.ca was launched in 2016 and focused on providing the public with information on City Council's decisions on reports, motions and by-laws. This uses the City Council meeting dispositions on the City of Winnipeg's Open Data portal.</p>
<b>Collaboration</b>	<p>WinnipegElected.ca was built in collaboration with the City of Winnipeg City Clerk's Department. The department releases dispositions of all Council meetings on the Open Data Portal. Open Democracy Manitoba wanted to parse out the details of Council meetings in a more structured format, but were unable to get additional information due to the format of the released documents. ODM worked with the City Clerk's Department to tweak the format of the Council dispositions into a more machine-readable friendly format. Using simple tables in a word document, the format was still familiar, but also provided additional meta-information. Open Democracy Manitoba was able to turn what was before a simple word document description of the Council meetings into a data rich format, and has released that back in an Open Data format.</p> <p>The information created for WinnipegElected.ca came from the City of Winnipeg City Clerk's Department who then reformatted the public data release allowing it to be pulled into the ODM database and linked back onto the City's Open Data Portal. The City Clerks Department also coordinates changes with ODM to maintain data cohesion.</p>
<b>Results</b>	<p>The successful Open Democracy Manitoba model has been recognized by more than just Winnipeggers. The group was thrilled to accept a \$25,000 grant from the Canadian Internet Registration Authority's Community Investment Program. With the grant money, ODM built a "general purpose" election toolkit for future civic and provincial elections. This project is open-sourced with the intention of allowing other citizen groups throughout Canada and the rest of the world to make their own election portal websites. ODM has inspired and helped citizen's groups in Kingston, Ontario and Nanaimo, BC to build their own municipal election portals.</p>



In 2017, a jury from the Canadian Open Data Awards felt that ODM has brought their mission to life with impact, including (as leaders do) influencing others to follow in their footsteps: their volunteer work on two election portals was made open-source which inspired groups across Canada to build similar resources. The jury awarded the Open Data for Democracy Award to Open Democracy Manitoba.

The partnership between Open Democracy Manitoba and the City of Winnipeg's City Clerk's Department and commitment to making data more accessible is the hallmark of the WinnipegElected.ca project and develops a model for other communities. This activity sparked the interest of the federal government, which has struggled with similar problems in delivering their open government initiatives. Further collaboration between all levels of government to tackle these issues is ongoing, and an opportunity for ODM (Winnipeg) to be a leader in this space.

Open Democracy Manitoba is a community organization that builds online resources with the goal of fostering government accountability, transparency and public education. With 1.3 million page views and over 250,000 active users, their websites are operating in the spirit of openness and community. They build non-partisan resources for citizens who want to learn about how democracy works but do not know where to get the information. These sites help hundreds of thousands of voters research their candidates. Their sites facilitate a platform for local politicians to share their opinions and policy decisions. The City of Winnipeg has redesigned the reporting process for use in data analytics for their Open Data program - to improve public services, increase public integrity, manage public resources more effectively, create safer communities and increase corporate accountability. Any city now has an opensource blueprint for improving access to data.

The promise of the internet is free and democratized data. With the world's information at our fingertips, everything is possible, and we can be the best-informed generation in history. However, having access to data and being able to find, digest and make sense of it are two very different things. Not knowing where to get information can be as bad as never having access. Open Democracy Manitoba aims to humanize the data needed to make informed decisions about our local government, how it works and how to make sure we are active participants. It is contributing to our prosperity, knowledge, safety, cultural richness and greater collaboration.

2. Economic Development. Provide up to two examples of open data programs that have led to business opportunities for individual entrepreneurs or established companies in your community and explain the collaboration that made it possible and the results achieved.

EXAMPLE 1

<b>Name</b>	Open Data Transit API Program
<b>Description</b>	<p>Winnipeg Transit is Winnipeg's public transportation service. This public transit agency is a bus-only transit system and operates over 600 buses to more than 5,000 bus stops within the city limits. A key component of Transit's service is their Intelligent Transportation Systems (ITS) which comprised of the iBUS – Intelligent Transportation System Technology. iBus provides real-time bus departure information to passengers via an online trip planner called Navigo. While Navigo gives real-time bus information, the interfaces are difficult to navigate and not smartphone friendly. Transit realized that their native app development for iPhone and Blackberry was not the team's core competency. The solution was to deploy an Open Data Transit API Program where programmers create new applications for passengers. Through the City of Winnipeg's Open Data Web Service, Winnipeg-based entrepreneurs can now create third-party apps for any mobile (iPhones and Android devices) or desktop platform.</p> <p>Winnipeg Transit's Open Data Web Service is an application-programming interface (API) which provides a way for program app developers to retrieve live information about the transit's services by sending requests to URLs (<a href="https://api.winnipegtransit.com/home/api/v2">https://api.winnipegtransit.com/home/api/v2</a>). The data returned in the ubiquitous XML format, is subject to change throughout the day providing a real-time picture of what is currently happening on the streets. The City Transit releases all of their scheduled transit information, including stops, bus routes, and live bus status data through the API and the Google standard feed (General Transit Feed Specification).</p>
<b>Collaboration</b>	Winnipeg Transit frequently worked with app developers to clarify the usage of the API, and also took feedback and suggestions for improvement of the system. They worked with iOS / Android app developers on the transit applications. Winnipeg Transit helped developers navigate through

	<p>the transit API, pointed out some features that were available and even beta-tested their apps. Transit also worked with the Information Communication Technology Association of Manitoba (ICTAM) to develop an Open Data group to bring in more consultation on data that industry would like Transit to provide.</p> <p>The Open Data Transit API Program is part of the City of Winnipeg's Open Data Program. The development of the Open Data program is a citywide endeavour, as the data resides across all departments. These departments worked with internal stakeholders to identify candidate datasets and automated the moving of data onto the Open Data portal in a manner that protects the privacy and security of the citizens of Winnipeg.</p>
<p><b>Results</b></p>	<p>The Winnipeg Transit API became available to developers in 2011. Since that time, there have been 17 Android and iPhone apps released by Winnipeg entrepreneurs. Locally designed apps like Winnipeg Bus Live (exclusively for Android) and iRide Winnipeg (for iPhone) are good basic products that helped Winnipeggers figure out their transit options either by using their phone's location or by having them enter in a route number.</p> <p>Winnipeg Transit is leading by example with good Open Data practices. They have published their data in General Transit Feed Specification format under the ODC PDDL. The zip file includes a LICENSE file with the full text of the PDDL. These licensing terms provide absolute clarity to developers who wish to use Winnipeg Transit data.</p> <p>Winnipeg Transit also leads by example with their transit API's terms of condition. Their Terms of Use clearly distinguishes between the restrictions and limitations of their web service, and the Open Data license for the data. This approach allows the city to prevent over-use or abuse of the web service, and offers the web service on an equitable basis to all data consumers. At the same time, their policy makes the raw data available to data consumers without restrictions, so data consumers may provide their own services with that data, reducing the requirement for resources from the city.</p> <p>By making real-time scheduling information available to developers, Winnipeg Transit empowered developers to build better products than what it can offer itself. This has led to a significant cost savings for the City of Winnipeg (not having to employ a full time app developer) and allowed for development exposure and ad revenue for local developers.</p>

EXAMPLE 2

<p><b>Name</b></p>	<p>TRAINFO</p>
<p><b>Description</b></p>	<p>Railway grade crossings can lead to significant travel delays for emergency responders trying to reach an incident. When trains block these crossings, what are the consequence for emergency first responders? The success of an emergency response is measurement of minutes or even seconds. To detect a railway blockage and communicate this to local emergency dispatchers, there needs to be real-time information flows.</p> <p>TRAINFO is a local company from Winnipeg that provides live train crossing information. They integrate this information into real-time travel routing apps and enterprise fleet management software systems to help drivers avoid delays at railway crossings. They also collect historical train crossing information to support transportation engineering and planning applications.</p> <p>Understanding traffic delays at railway crossings is critical for addressing congestion. The current methods estimate these delays using traffic flow theory equations based on deficient data and many assumptions that inadequately reflect reality. TRAINFO partnered with MORR – a transportation engineering consulting company – to develop a new approach that directly measures traffic delay at railway crossings with high-quality data. They came up with a way to predict when a train is coming, where it is going and what the average wait time will be. TRAINFO was able to determine that traffic delays at railway crossings are more than four times higher than calculated by the Estimation Method. This significantly affects benefit-cost analyses and infrastructure investment decisions.</p> <p>The brainpower of TRAINFO is their new, low-cost level crossing information system called LeXIS. This system provides real-time alerts to road users by integrating affordable and reliable ITS technologies when railway crossings are blocked. LeXIS features include patented train detection sensors, travel time monitoring Bluetooth sensors, proprietary analytics software and cloud based</p>

	<p>servers, real-time road user notifications and wireless communications. To notify road users in real-time about railway crossing blockages and to help them re-route and avoid these delays is done through variable message signs (VMS) and by reporting to Waze, the world's largest crowd-sourced traffic navigation app. Cellular modems are used to transmit data between system components which allows integration into transportation management centres.</p>
<b>Collaboration</b>	<p>To provide real-time railway data on the 250 rail crossings in Winnipeg, the Transportation Management Centre (TMC) called upon TRAINFO to help develop an application. The TMC is the City of Winnipeg's traffic nerve centre that provides residents and city departments real-time roadway data and visual information. The centre's information system is fed real-time data from every traffic signal found in the city's 650 intersections, each connected by LTE wireless. TRAINFO collaborated with TMC to determine how their LeXIS Cloud Server can transmit real-time railway crossing data wirelessly to TMC's information systems.</p> <p>TRAINFO is also currently working with Waze on their Connected Citizens Program. The Connected Citizens Program is an ongoing partnership between Waze and various international government agencies to share publicly-available data in order to accomplish two goals: 1) improve the quality of the Waze App; and 2) utilize Waze data to improve city planning, inform infrastructure decisions and increase the efficiency of day-to-day operations, in this case, dealing with railway crossing disruptions. Waze in partnership with TRAINFO is collectively looking at ways to help identify potential government clients to respond more immediately to railway crossing congestions.</p>
<b>Results</b>	<p>TRAINFO designs, implements, monitors, and analyzes resulting data for a train and vehicle detection system. By employing their LeXIS information system, TRAINFO is able to: 1) Quantify travel time and delay to motorists due to railway crossing blockages; 2) Provide information to motorists on a VMS that encourages timely diversion to alternative routes to mitigate the impact of rail crossing blockages on travel time; 3) Quantify the number of road users that detour to an alternative route based on VMS information; and 4) Collect data to support objective decision making for future infrastructure investments (for example, the benefits of VMS for motorist information at at-grade railway intersections).</p> <p>The developments at TRAINFO are ongoing and scheduled for completion in 2019. Analyses compare the travel time delay using traditional methods and directly measuring real-time delay using TRAINFO's low-cost level crossing information system. The methods and technology deployed by TRAINFO show that traffic delays are higher than using traditional methods and significantly affect benefit-cost analyses.</p> <p>The potential business opportunities for TRAINFO are significant, given the strong relationship developed with the City of Winnipeg's Transportation Management Centre and the world's largest crowd-sourced traffic navigation app, Waze. By developing a system that can confidently predict when a train is coming, where it is going and what the average wait time will be, will be an attractive asset for many municipalities, especially in North America where there are approximately 261,000 at-grade public rail crossings.</p>

3. Attracting Opportunity. Provide up to two examples of open data programs that have served to attract inward opportunity to your community, whether tourists and visitors, employers seeking to locate there, or financial investment. Explain the collaboration that made it possible and the results achieved.

EXAMPLE 1

<b>Name</b>	Manitoba Centre for Health Policy's Population Research Data Repository
<b>Description</b>	<p>The Manitoba Centre for Health Policy (MCHP) is a research unit within the Department of Community Health Sciences, in the College of Medicine, Faculty of Health Sciences at the University of Manitoba, focusing on the question "What makes people healthy?"</p> <p>The mission of MCHP is to provide accurate and timely information to health care decision-makers, analysts and providers, so they can offer services which are effective and efficient in maintaining and improving the health of all Manitobans. Researchers rely upon the Manitoba Population Research Data Repository (Repository) to describe and explain patterns of care and profiles of illness and to explore other factors that influence health, including income, education, employment, and social status. This Repository is big data and is unique in terms of its comprehensiveness, degree of integration, and orientation around an anonymized population</p>

	<p>registry. The Repository housed at MCHP is a collection of more than 40 years of administrative, registry, survey, and other data primarily relating to residents of Manitoba.</p> <p>The MCHP acts as a steward for the databases. Although the data is free and accessible to the research community, approval is required. The proposed research goes through a review process. The Province of Manitoba is reviewing the data access policy under the Freedom of Information and Privacy Association Act.</p> <p>The MCHP uses de-identified data from the administrative records. De-identified means that identifiers, such as names and addresses, are removed before the data is transferred to the Repository to protect everyone's privacy. Each record comes with a scrambled identifier and allows the MCHP to link each record in different datasets.</p>
<b>Collaboration</b>	<p>MCHP is a team of more than 60 university researchers and graduate students, data managers, systems analysts, research coordinators and research support staff. Researchers benefit from collaboration with peers in Manitoba, across Canada, the United States, Europe and Australia. The MCHP has an Advisory Board bolstered by high-profile representatives from research, health care, business and government. To help do the right research, and to support the translation of this research into action in Manitoba's health care services, the MCHP works with The Need To Know Team.</p> <p>The realization that better research could result from user collaboration led to the vision, and birth of The Need To Know Team. The Team is a collaboration of: the Manitoba Centre for Health Policy (MCHP), a unit of the Department of Community Health Sciences, University of Manitoba; 10 rural and northern Manitoba regional health authorities (RHAs); and Manitoba Health. The goal of the team is to: create new knowledge directly relevant to rural and northern RHAs; develop useful models for health information infrastructure, training, and interaction that increases the capacity for collaborative research; and disseminate and apply health research to increase the effectiveness of health services and the health of RHA populations. The Team's vision follows three key themes: the need to undertake collaborative research of relevance to the intended users; the importance of capacity building and effective working relationships; and the need for researchers and planners to communicate findings and plan strategies to facilitate research that influences decisions.</p>
<b>Results</b>	<p>MCHP research findings has helped spur development of primary health care centres and nursing homes, cervical cancer screening programs, regional injury prevention programs, and proposed changes to mental health services throughout Manitoba. Most of the information / data that forms the basis of research at MCHP came from the Manitoba Population Research Data Repository. Researchers used the information to perform their research and publish reports based on their findings. These deliverables ranged from identifying medical testing playing as a key role in emergency department wait times to identifying mental disorders in Manitoba children.</p> <p>One notable outcome was in regards to the linkage of cancer registry data to other administrative health databases improving opportunities for population health and health services research for individuals who have cancer. The overall purpose of this deliverable was to bring the Manitoba Cancer Registry data into the Research Data Repository, in order to establish a broader base for cancer research using linked administrative health databases. This deliverable applied routine data quality evaluation tools developed at MCHP to the Manitoba Cancer Registry and then looked at some new measures of data quality using the linked data housed in the Repository. Through two demonstration projects that looked at comorbidity measures for predicting health care utilization, and emergency department use before and after diagnosis, the MCHP examined opportunities for new cancer research projects that involve linkage of cancer registry data to administrative data.</p> <p>Another outcome worth mentioning began from the research involving the escalation of chronic kidney disease at MCHP. Rates of kidney failure or end stage kidney disease (ESKD) have been steadily increasing with the prevalence of diabetes and the aging population in Manitoba. The purpose of the research was to gain a greater understanding of chronic kidney disease (CKD) and ESKD in adults and children in the province. The findings provided background knowledge to prevent new cases of CKD, to intervene early to slow the progression to ESKD.</p> <p>The impact of the MCHP research led to a Kidney Failure Risk Equation Study by researcher Dr. Navdeep Tangri and his colleagues at the Seven Oaks Hospital Chronic Disease Innovation Centre (CDIC). The study pointed to the development of a simple and reliable tool that used</p>



patients who have kidney disease. The Kidney Failure Risk Equation was able to accurately predict which patients are at risk of kidney failure. Tangri’s study resulted in an algorithm, published in the Journal of the American Medical Association that used eight common lab tests to accurately predict a two and five year risk of kidney failure. To validate, Dr. Tangri and other international researchers used 700,000 patient records from 30 countries. This simplified the equation and confirmed that it is applicable to kidney patients globally.

The Kidney Failure Risk Equation is now a global standard for predicting kidney failure. CDIC researchers with the assistance from Tactica Interactive, a Winnipeg-based digital media company, created online tools to help family physicians use the Kidney Failure Risk Equation with their patients ([kidneyfailurerisk.com](http://kidneyfailurerisk.com)). Researchers are now applying the same process to create better risk equations for other diseases.

The Manitoba Population Research Data Repository is a unique set of data that has a large bandwidth of health information in Manitoba. With a core group of forward thinking researchers, this has presented itself with the opportunity to explore deeply into health analytics. Data analytics is the examination of raw data to discover insights to help support informed decision-making. As more of our health care research becomes accessible, a great deal of information generates, and the opportunity to harness its power for our health system use increases, just as it has in other industries.

EXAMPLE 2

<b>Name</b>	City of Winnipeg Open Data Portal
<b>Description</b>	<p>Quality information about a community is critical for corporate professionals as they gather data relevant to their business expansion or relocation projects. Site selection experts rely on the speed and accessibility of the internet for community information because the timeline for making business expansion or relocation evaluations has dramatically shortened in recent years.</p> <p>Businesses, governments and people need to be able to access information, learn from it, reuse it, build on it, and ultimately profit from it. The more data can be used, and combined with other data (from public or private sources), the more valuable it becomes.</p> <p>To help potential incoming businesses select their most desired location, the City of Winnipeg developed an Open Data Plan that endorses the broad principles of “open and accessible data” and “open standards”. Dictated by the Plan was the creation of the Open Data Catalogue portal (<a href="http://data.winnipeg.ca">data.winnipeg.ca</a>). The launch of the Open Data ortal was just the beginning of an open data initiative that continues today to add new data offerings to the catalogue while striving for efficiencies, openness and transparency.</p> <p>The Open Data Portal consist of machine-readable data that includes site locational attributes - major infrastructure access (major highways, intermodal facilities, airports), local labour force, development opportunities, development costs (land prices, off-site levies), property taxes, permit and zoning, quality of life, local business environment and local government decision-making and planning. The portal also includes the development of data visualization and engagement tools - GIS applications, as well as administrative and communication strategies. The City created a dashboard to facilitate navigation, and engaging on social media.</p> <p>Hosted online in a cloud-based central repository, the Open Data Catalogue repository is shared and used as a platform for all validated and relevant data. The portal currently has 155 uploads, including datasets, documents, APIs, and other media. The data is published under an open government license modified from the federal version. The portal uses Socrata as its platform, which provides means of filtering, visualizing and exporting results; it also includes an option for users to suggest additions</p>
<b>Collaboration</b>	<p>The development of the Open Data Catalogue comprised of both significant internal and external collaborations among several city departments, non-profit stakeholders, and private sector companies as well as from the Canada’s Open Data Exchange – an initiative that collected feedback from major municipalities across Canada on how they worked together to achieve commercial results from open data. The City’s goal was to break down silos between city departments, ensure city services actually use available technology and ensure services improve without costing a lot more money.</p>

	<p>The City also prioritized multiple levels of engagement. First, it created an Open Data Advisory Group to provide industry input and direction. Engagement followed with the public, by responding to suggestions promptly and by soliciting feedback and participation. It engaged with members of the media, offering them datasets of value for their stories in order to improve transparency and provide mediated information access to those stakeholders lacking the means to engage directly with the data.</p> <p>The City invited businesses and non-profits to access the Open Data Portal to create applications as another means to add value to datasets and enhance investment opportunities. It engaged with other levels of government by reusing and improving upon existing datasets. It also engaged with local academic institutions, schools, and libraries: working with the data is an educational opportunity for students and provided research value.</p>
<b>Results</b>	<p>The City of Winnipeg has invested in creating an environment and infrastructure that will enable frequent publishing of open data, while adhering to the highest standards of quality and security. Furthermore, a solid governance structure is in place with publishing processes and policies that safeguard a sustainable and successful program.</p> <p>The City's Open Data Portal increases government transparency and makes local government data accessible to residents, businesses and other governments, in this particular case, the site selection professionals. The site is a hub where Winnipeg data is available to the global online community in machine-readable format for use by site selectors and researchers. The portal provides timely and reliable data in a trusted and consistent manner for the purpose of locational decision-making. This is used either in isolation or combined with other data inputs.</p> <p>The Open Data Portal is aligning Winnipeg's data with the principles of the open-data movement and the practicalities of its implementation. While this list is necessarily not comprehensive but growing, the Portal is offering a gateway for businesses and investors to access freely and evaluate the locational and investment opportunities in Winnipeg.</p> <p>Overall, the City of Winnipeg's Open Data Program is improving public services, increasing public integrity, more effectively managing public resources, creating safer communities and increasing corporate accountability. This collectively shows the positive attributes of Winnipeg as a potential site for business expansion and relocation.</p>

### Ownership of Information

By submitting this information, the above-named community attests and acknowledges that:

- All information provided is accurate and fairly represents the past and current condition of the community to the best knowledge of the individual submitting the information.
- All information submitted to the ICF in connection with its international awards program becomes the property of the Intelligent Community Forum and will be used for the purposes of research, analysis and publication in pursuit of its global mission.