How to Master the Big Data Landscape:
Key trends and observations from big data experts and influencers.

Hear from:

www.BigDataSummitCanada.com
These Leading Big Data Experts Share How Data Has Impacted Their Organizations and What They’ve Learned in the Process.
Q1. How do you communicate data to the wider business to affect decision-making?
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**Houtsin Diep,**
Manager, Digital Analytics (Lead), **McDonald’s Canada**

Simplifying data to focus KPIs to target the broadest business objective, or global maxima, is an effective way to ensure data-driven insights is affecting decision-making. The balance that needs to be maintained is how much additional contextual information is provided before the organization can effectively take action on the insight.

**Dr. Eugene Wen,**
Vice President, Group Advanced Analytics, **Manulife**

To be able to better communicate to decision makers in the business three aspects need to be in place. First, data and analysis need to be directly addressing business needs and answer the urgent issue the business decision makers are dealing with. Second, the data and analytical results need to be presented in a visualized way with plain language. Third, the analysts need to fully understand the business process so communication and follow-up discussion is meaningful to the broader audiences.

**Nima Safaei,**
Associate Director, Network Analytics, **Scotiabank Global Banking and Markets**

Having internal data management and analytics teams is a must for organizations to get into data-driven decision making level. Data Management team is responsible to gather, maintain and process data for analytics team. Then, the analytics team will be responsible for extracting knowledge from data through AI tools and translating the knowledge into insights for decision makers through the appropriate visualization and reporting packages.

However, there is an issue here: The majority of executives don't trust their own data and analytics insights. The key root is “sheer complexity” of results. When there's a lot of information to parse, the mind gets overloaded and tends to revert to the brain's “somatic markers” which signal whether something feels right, or doesn't. My suggestion is that the executives should elevate their analytical knowledge in accordance with the managerial skills.
Q1. How do you communicate data to the wider business to affect decision-making?

Saad Rais, Lead Data Scientist, Ontario Ministry of Health And Long-Term Care

As literacy in data and analytics grows, there is an increasing desire by our clients to have interactive tools that allow them to discover results and answer questions on their own. Many clients don’t want numbers given to them anymore – they want to arrive at their own conclusions through exploring and visualizing the data. To this end, we have recently produced reports that employ a suite of innovative ways to visualize the data. The end user has the ability to filter the data, drill down on the results, and select variables of interest, all in a visually stimulating interface. I believe this is the way forward to communicate data.

Christopher Brockbank, Chief Marketing Officer, Firma Foreign Exchange

We make access to data available and easy to access for all departments from any device. We have a data portal that produces actionable insight and information and is the go to location for business information that adjudicates current and past performance, delivers insight and drives business decision information that creates actions. We also hold education sessions to improve the understanding for all who need to use information to make informed decisions faster and better than before.

Manu Sud, Manager, Ministry of Energy, Government of Ontario

The best way I use is Reasoning, which is about using the facts and figures in front of you to make decisions. It is easier said than done. Another aspect I use is intuition. Using a more formal, structured approach, using both intuition and reasoning, data analysis can be conveyed.
Q1. How do you communicate data to the wider business to affect decision-making?

Jean Louis Verboomen, Director, Data Science, XE.com

A picture does indeed speak a thousand words. Data visualization continues to be key in communicating complex data to a wider business audience. However, visualization has traditionally been centered on structured data while unstructured data was typically ignored. Unstructured data is any data that does not fit into relational databases. It is estimated that 90% of all data is either semi-structured or unstructured. This includes videos, presentations, company records, social media, RSS, documents, and text - all of which are vital to understand for businesses. While structured data analytics describes what's happening, analysis of unstructured data gives you the why.

However, much of this wealth of valuable insights is currently going untouched. In a 2015 IDG Enterprise study on big data and analytics, 83% of IT professionals who responded said they have made structured data initiatives a high priority for their organizations, yet just 43% said the same of unstructured data initiatives. The use of this rich data will have a major impact on organizational decision making moving forward.

Andrew Brown, Senior Director, AI and Advanced Analytics Research, CIBC

Good data infrastructure and management practices serve as the foundation, but require analytics to unlock the value of that data for decision-making. In a large organization, this is delivered through multiple channels: data feeds to various business analytics systems, self-service platforms which allow business users to answer query and display data as they require it, analysis by data science scientist and, development of predictive analytics applications for executing decisions with higher speed and accuracy.
Q1. How do you communicate data to the wider business to affect decision-making?

Sylvie Makhzoum, Vice President Data, Analytics & Insights, TD Insurance

There are different ways of communicating data:

• Performance management: Creating Insights reports to take action on the results.
• Building predictive models on sales or profitability and implement the scores in the operational system
• Self-serve data: create data marts for the business to look at the data using different views

Bala Gopalakrishnan, Managing Director, Data Solutions, The Weather Network

The key is to identify the data that speaks to the Organization's goals. Data that goes deeper than what is normally analyzed in the organization and then providing insights from the deeper analysis on the data can shape new thinking and new strategies in the organization.

Couple years ago – FourSquare predicted the number of iPhones that will be sold using mobile location data comparing number of users lining up outside Apple stores compared to the previous iPhone release.

The results were more bang on than predictions of Financial analysts and it immediately put the FourSquare data story into the spotlight.

Vicky Marsolais, Director, Data and Analytics, National Programs and Strategies, CAA (Canadian Automobile Association)

Really, based on relevance. We have access to some much data but of course, it's not all relevant to everyone. I believe in the importance of distilling the relevant insights for the key audience and presenting it in a clear, digestible format. Critical insights need a multi-pronged approach of visual and oral presentation to ensure the full nuance is captured.
Q2. What’s the biggest area where you see data impacting your organization?
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Houtsin Diep, Manager, Digital Analytics (Lead), McDonald’s Canada

We are moving towards an appreciation for sound data management in order to bring about personalised marketing for guests. As with many organizations with siloed data repositories, the continued challenge is to bring the data together in a meaningful and relevant manner in order to best serve our guests.

Dr. Eugene Wen, Vice President, Group Advanced Analytics, Manulife

Manulife is committed to modernize our data infrastructure and develop advanced analytics as a major investment. As a life insurance company, modernizing underwriting process and improving customer engagement will provide substantial gain to the business. Fraud analytics will strengthen the integrity of the system.

Nima Safaei, Associate Director, Network Analytics, Scotiabank Global Banking and Markets

Customer Support, Global Marketing, Anomaly (fraud) detection, cybersecurity.
Q2. What’s the biggest area where you see data impacting your organization?

Saad Rais, Lead Data Scientist, Ontario Ministry of Health And Long-Term Care

My goal is to have data science make a notable impact on the performance of the healthcare system, in terms of providing better care and making optimal use of resources. For example, predictive models that predict the risk of a patient acquiring a health condition can allow the patient, provider, and the healthcare system to take proactive measures to mitigate that risk. Data science can also be used to detect anomalous activity reporting behaviour by facilities and providers, and potentially recover funds due to fraudulent or abusive activity.

Christopher Brockbank, Chief Marketing Officer, Firma Foreign Exchange

Transaction information linked to Customer relationship information. It produces data and insight that converts into actions that can enhance revenue, improve profit, reduce risk and enhance lifetime value with clients.

Manu Sud, Manager, Ministry of Energy, Government of Ontario

Data is helping us do Collaborative Business Intelligence (CBI). It is a combination of collaboration tools - using traditional BI tools and also including social media. Yes, data can provide analysis and policy building blocks. However, by having large data, people are willing to work together and get insights together. The collaborative BI tools make the sharing easier in generating automated reports and can help management to set up intelligent alerts, share public or embedded dashboards with a flexible level of interactivity.
Q2. What's the biggest area where you see data impacting your organization?

Jean Louis Verboomen, Director, Data Science, XE.com

According to IBM, we now produce 2.5 billion gigabytes of data each day, and this growth isn't showing signs of slowing down. As a result, the biggest impact of data on the organization is actually on how we market our products and services to Customers.

Current analytical techniques go beyond looking at individual transactions and can analyze a customer's entire digital footprint, providing businesses with complete insight into their interests, activity, and future behavior. Advanced big data and text analysis enables businesses to now derive meaning from unstructured data to understand what consumers like and how they want to be communicated with, and when.

Andrew Brown, Senior Director, AI and Advanced Analytics Research, CIBC

The greatest potential lies in using the information that we have about our clients to provide them with a banking experience that is more personalized, easier to use and provides them with a high value of service and advice.
Q2. What’s the biggest area where you see data impacting your organization?

Sylvie Makhzoum, Vice President Data, Analytics & Insights, TD Insurance

I think everywhere, but specifically in claims department there is a lot of opportunity there to automate processes and make it easier for the customer.

Bala Gopalakrishnan, Managing Director, Data Solutions, The Weather Network

The biggest area is revenue growth itself. Data when collected, analyzed and used correctly allows any Organization to understand customers, employees and helps prioritize growth areas and strategies to enable such growth.

It helps identify pain points as well as opportunities that maybe hidden otherwise in the data deluge that Organizations see nowadays. Right Data and the right insights derived could be the difference between success and failure of Organizations in the future.

Vicky Marsolais, Director, Data and Analytics, National Programs and Strategies, CAA (Canadian Automobile Association)

The greatest opportunities that I'm seeing are still on the marketing side of the business. More, and more the power of data for marketers lies in helping them better understand customer behaviour, respond accordingly, and truly capitalize on unique customer opportunities.
Q3. How is AI affecting organizations today and where do you see it taking us in the next 5-10 years?
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**Houtsin Diep,**
Manager, Digital Analytics (Lead), McDonald’s Canada

The adoption of AI is early in the hype cycle and organizations are still jumping on the previous Data Science bandwagon to ensure they do not fall behind the competition. There is a dearth of talent for these emerging areas and skills upgrade will be a key necessity for organizations to explore, rather than going to market for new talent. As we progress through the next few years, there will be a strong disillusionment as we will be challenged to realise the benefits of AI/Data Science since they are not a panacea to sound data management and analytic principles.

**Vicky Marsolais,**
Director, Data and Analytics, National Programs and Strategies, CAA (Canadian Automobile Association)

Today, I believe that AI is becoming more relevant and increasingly on organizations’ radars. New opportunities are emerging daily to explore the power of AI and implement it to improve business performance. Over the next 5-10 years, I believe the use of AI will become far more wide-spread and the opportunities of AI will become more refined and realized. AI, when used effectively, has the potential to help organizations to respond to unique customer and business opportunities far more effectively and faster. AI offers us the benefits of speed and scale, two critical notions in every data organization. It is what will truly enable 1 to 1 customer strategies.
Q3. How is AI affecting organizations today and where do you see it taking us in the next 5-10 years?

Dr. Eugene Wen, Vice President, Group Advanced Analytics, Manulife

AI technology has been recognized by companies as a new opportunity to improve their service to customers and operational efficiency. This has led to substantial investments by leading companies into AI related projects and Big Data infrastructures, while also creating a substantial demand for talents in the AI/machine learning field. Like in dealing major emerging technologies in the past, many companies are struggling in positioning AI from both strategic and operational perspectives. It would be worth to emphasize that any AI related strategies need to be aligned closely with business strategy. An isolated AI strategy itself would not go far in supporting the business bottom line. At operating front, introduction of AI has created pressure on redesigning daily operational processes and modernizing legacy systems in large enterprises.

In the next five to ten years the AI technology application in business will be more mature and widely adapted. The leading companies have potentially experienced the benefit from this investment. Many might also have experienced some failures and less than expected returns on investments. The volume and variety of data are going to continue to increase, video and speech data may become more predominant than what they are today. The demand on high capacity and high speech data infrastructure will continue. The supply of AI talents are expected to improve, as many Universities and other Institutions have started to setup data science programs. As the demand for talent of experienced data scientist will remain globalized, data science works will result in a new trend of sharing work among different continents. The offshoring and outsourcing both AI research and development (R&D) and daily operations will likely become a common practice in large enterprises. Big Data systems will help to make these practices being part of future new business models.
Q3. How is AI affecting organizations today and where do you see it taking us in the next 5-10 years?

Nima Safaei, Associate Director, Network Analytics, Scotiabank Global Banking and Markets

Currently, many company leaders aren’t sure what to expect from AI or how it fits into their business model. However in my opinion, the customer-facing activities, including marketing automation, support, and service in addition to IT and supply chain management, will be the most affected areas by AI in the next five years. Demand management, supply chain optimization, more efficient distributed order management systems, and Enterprise Resource Planning (ERP) systems that can scale to support new business models are a few of the many areas AI will make contributions in the next five years.

Saad Rais, Lead Data Scientist, Ontario Ministry of Health and Long-Term Care

The application of AI in healthcare in Ontario is in its early stages, but it is gaining traction and is poised for exponential growth. I anticipate – and it has already started – that AI, in harmony with our rich healthcare data, will be used to predict patient care pathways, conditions, and outcomes, to perform anomaly detection, and to make decisions at different levels of healthcare delivery. These analyses will empower patients, and enable care providers and healthcare facilities to perform their role with greater precision, efficiency, and effectiveness. Ideally, the end result should be better patient outcomes and smarter use of our resources.

Christopher Brockbank, Chief Marketing Officer, Firma Foreign Exchange

AI is affecting every part of most organizations today. Everything from automating administrative tasks to mechanizing customer elements that save the customer, and the company, time and money. It also helps deliver enhanced value by working in real time to capture and action data and information that traditionally would have been done by humans. AI will displace and replace many routine human tasks and strongly reduce administrative staffing requirements by up to 95% in the next 5-10 years.
Q3. How is AI affecting organizations today and where do you see it taking us in the next 5-10 years?

Manu Sud, Manager, Ministry of Energy, Government of Ontario

The development of general AI is very much in its early stages. AI is a tool for humans to use to augment our own capabilities. One of the main problems I see is about solving gradual learning, which would give AI the ability to solve new tasks using previously learnt skills. What's happening at the moment is that we see subcomponents of AI (or narrow AI) solutions becoming more widely used in everyday life. In the next 5-10 years, it will probably be narrow AI that will have the biggest impact on business and society, and it is likely to become more common in most businesses and governments.

Jean Louis Verboomen, Director, Data Science, XE.com

In our minds, processing speed and utilization of data are having the biggest impacts on organizations and their use of AI. According to a Forrester survey, businesses will invest 300% more in artificial intelligence (AI) in 2017 than they did in 2016. This has significant ramifications for analytics, with machine learning able to analyze data at a scale humans simply couldn't. As Forrester notes, it will 'drive faster business decisions in marketing, e-commerce, product management, and other areas of the business by helping close the gap from insights to action.' In their 2015 survey, just 51% of data and analytics decision-makers said they could easily obtain data and analyze it without the help of technologist, yet they anticipate this rising to 66% in 2017.

Andrew Brown, Senior Director, AI and Advanced Analytics Research, CIBC

AI has the potential to improve and automate simple decision-making tasks, which occupy valuable employee time. Many involve judgements that aggregate multiple sources of data, or rapidly processing large volumes of data. Using AI systems to filter and order the most difficult cases, we can increase employee productivity. Also, by unburdening staff of repetitive and often tedious tasks, we can empower them to focus on more impactful activities in areas such as customer marketing, client care and risk management. Today, AI projects are often done as isolated projects, but as the appreciation of the benefits grows through the organization, in tandem with improvements in our data infrastructure, the integration of AI into diverse aspects of the business will become more seamless.
Q3. How is AI affecting organizations today and where do you see it taking us in the next 5-10 years?

Sylvie Makhzoum, Vice President Data, Analytics & Insights, TD Insurance

AI always existed under different names (like neural network etc.), however in the past we had limited access to data and systems accessing these data; for AI to make a big difference it starts with the data. Today, we have unlimited access to structure and unstructured data, AI becomes a necessary engine to be able to answer customer needs on an individual basis and this is what the customers want us to do. For the next 5 to 10 years, I see AI will evolve faster than ever. By using AI we will be able to automate systems and work that we were never able to do in the past because these systems simply couldn't handle the amount of data that today's platforms require in order to produce actionable intelligence.

Bala Gopalakrishnan, Managing Director, Data Solutions, The Weather Network

Organizations are dealing with a tremendous influx of data coming from various sources such as Social Media, CRM, E-Commerce, industry reports, mobile apps, website click streams, customer support, call centre logs etc.

It is becoming humanly impossible to derive nuggets of insights from such a firehose of data and increasingly AI will become a predominant factor that will scrutinize all data and find the insights that are relevant to the organization's key goals.

AI will be used both in identifying problems before they become huge issues and identifying trends from the customers that is key for identifying future strategies.
Q4. What emerging trend or technology in data analytics are you most excited about?
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**Houtsin Diep,**
Manager, Digital Analytics (Lead), *McDonald’s Canada*

I’m excited about bringing near-real time data to the analytics lifecycle in a way that is value-add for consumers. This is something that dominates the technology space and has numerous extensible applications for industries that are later adopters.

**Vicky Marsolais,**
Director, Data and Analytics, National Programs and Strategies, *CAA (Canadian Automobile Association)*

I’m most excited about the trend of data accessibility. Most organizations have more data than they know what to do with. Taking that data and translating it into actionable insight and opportunities for key business teams and staff is key and what I find most exciting.

**Dr. Eugene Wen,**
Vice President, Group Advanced Analytics, *Manulife*

First, AI/machine learning is becoming widely acceptable in business development. Second, speech and image analytics are gaining further accuracy by making real time intelligent gathering, customization and interaction with customers feasible.
Q4. What emerging trend or technology in data analytics are you most excited about?

Nima Safaei,  
Associate Director, Network Analytics, Scotiabank Global Banking and Markets  

- Analytical techniques: Deep learning architecture; Operations Research for Machine Learning  
- Hardware: GPU technology for faster training in deep learning

Saad Rais,  
Lead Data Scientist, Ontario Ministry of Health And Long-Term Care  

I am excited about two new developments in my organization – the use of scalable cloud computing, and the acquisition of real-time data for analytical purposes. Together, they will open up new opportunities for developing web and mobile applications that allow us to make real-time decisions. Moreover, we will be able to build predictive models that continuously learn through real-time data feeds. This new scope of analytics will augment our existing analytical products, and facilitate automated updates to our analyses.

Christopher Brockbank,  
Chief Marketing Officer, Firma Foreign Exchange  

Using real time information, news and market data to create real-time and custom customer solutions that deliver exceptional value that cannot be competitively matched. We are excited to be at the forefront of the Financial Services Real Time Economy helping our customers grow faster, go further and save time and money.
Q4. What emerging trend or technology in data analytics are you most excited about?

**Manu Sud,**
Manager, Ministry of Energy, Government of Ontario

I am excited about Natural Language Processing (NLP). It is a branch of artificial intelligence related to the understanding of human language(s) by a computer program. It can be based on linguistics and deep learning or can be completely new. Ultimately it is a type of AI that works with pattern recognition by analyzing massive amounts of data to find correlations and thereby improve the program’s understanding. Applying NLP to BI would let users spend more time in analysing data rather than spending time cleansing it or telling others to cleanse it. Before we can evolve in AI, significant achievements in NLP would be needed.

**Jean Louis Verboomen,**
Director, Data Science, XE.com

We are very excited about the emergence and use of prescriptive analytics. Prescriptive analytics uses the insights revealed by predictive analytics and provides a call to action based on what it finds. It analyzes current data sets for patterns and evaluates the outcomes of the multiple scenarios that could be enacted based on decisions that could be made based on the data, providing decision makers with hypotheticals as to the impact of each option.

The amazing thing is that while the use of predictive analytics is common, only 10% of organizations currently use some form of prescriptive analytics, according to Gartner, but this will grow to 35% by 2020.

**Andrew Brown,**
Senior Director, AI and Advanced Analytics Research, CIBC

The burgeoning field of AI is set to impact the industry in multiple ways. Speech and language interfaces will facilitate faster interaction through voice and chat. Better fraud and security techniques will reduce the cost of financial crime and the inconvenience of false alarms. More automated analysis and decision-making will increase the efficiency with which organizations can process the large volumes of data that handle and meet their regulatory reporting obligations. Most importantly, AI will enhance the level of advice and personalization that banks are able to provide their clients.
Q4. What emerging trend or technology in data analytics are you most excited about?

**Sylvie Makhzoum**, Vice President Data, Analytics & Insights, TD Insurance

I would say AI. I am a Statistician so being able to analyze big data and build models and be able to implement them on an individual basis is so exciting!!! As I said AI existed, it is the application of AI that is easier to do now with the new big data platforms. It is now easier to produce actionable insights.

**Bala Gopalakrishnan**, Managing Director, Data Solutions, The Weather Network

Democratization of data analytics tools that will allow many non-technical folks to quickly set up systems to ingest, analyze, visualize and learn from data is going to be the trend that opens large-scale, data based decision-making adopted across organizations.

The technologies and tools that are emerging allow for more learning and more decisions to be made directly by those running the business, without investing in very sophisticated data science teams. It is like the early days of spreadsheets, which were still operated by specialized folks in the company and soon gave way to mass adoption.
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• Get your data strategy off the ground
• Integrate with existing processes
• Gain organizational support
• Implement a data-first strategy

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