



CanadianCIO Innovation Summit

EXPLORING
BIG DATA
EXPERIENCES
AND SHARING
INSIGHTS

CanadianCIO

IN PARTNERSHIP WITH:



CIO Innovation Summit

In September of 2014, Canadian**CIO** held its first annual CIO Innovation Summit at the J. W. Marriott Rousseau in Muskoka, Ontario. This event brought a group of CIOs together with other business and thought leaders from across the country for a two-day session focused on the use of big data and analytics in their businesses.

Moderated by Shane Schick, Chief Content Officer of ITWC and editor of Canadian**CIO**, the CIO Innovation Summit provided participants a unique opportunity for a truly interactive and thought-provoking discussion. Going beyond the usual line-up of presentations and question/answer formats that are common today, this Summit was comprised of a balance of structured and unstructured events.

This paper provides an overview of the formal discussions which took place. A great deal more was shared in the smaller informal discussions that occurred over the two days in Muskoka.

We would like to thank Rogers for partnering with us to create a unique forum for thought-provoking, meaningful discussions among peers. There is much we can learn from each other. The shared insights and perspectives provided on the following pages will help you to better understand and develop your own approach to big data.



Jim Love
CIO and Chief Digital Officer
ITWC



Table of Contents

The Night Before – Setting the Stage	5
Opening Plenary and Interview Findings	7
Panel Session: The CIO, the Analyst, and the Executive	13
Discussion Groups	18
Legal and Governance	22
Culture	23
Final Insights	24

Speakers and Panelists



Claudiu Popa, CEO and Principal Risk Advisory, Informatica



Steve Van Binsbergen, Senior Director, Solutions Marketing, Rogers



Shane Schick, Editor, Canadian **CIO**, Chief Content Officer, ITWC



Brett Shepherd, Director, Big Data, Splunk Inc.



Fariba Anderson, Former CIO, MPAC



Joseph Coltson, Managing Director, Global e-Discovery and Forensic Services



Leila Lavaee, Data Analytics Lead, Digital Channels Insights, TD Bank



Doug Weir, Co-founder and CEO of Alpha Insights

The Night Before – Setting the Stage

Claudiu Popa, CEO and Principal Risk Advisory, Informatica

Claudiu Popa set the stage with a presentation that clearly identified the relationship between big data and data security by highlighting several key facts and trends. The first of these — a statistic that many of us have heard some variation of — 90 per cent of the information in the world has been created in the past two years. Popa brought this fact into a razor sharp focus when he pointed out that within one minute, we can witness the creation of:

- 571 new websites
- 204,166,667 e-mails
- 2,000,000 Google searches
- 100,000 tweets
- 48 hours of YouTube videos

Popa emphasized the point that while the volume of data is one issue, accuracy of analysis is another. He stated that looking purely for correlations can lead to very mistaken conclusions. Bringing this to life by way of example, he illustrated how one piece of totally irrelevant data (e.g., the height of a range of mountains) can be correlated with the murder rate in New York City over several years. Are the two related? Clearly not. But in a world where we are using automated tools to look for patterns in massive pools of data, we have to realize that we are bound to find linkages that do not lead to or prove causality. Detecting patterns is only the first step. Determining validity of any correlation is another crucial step.

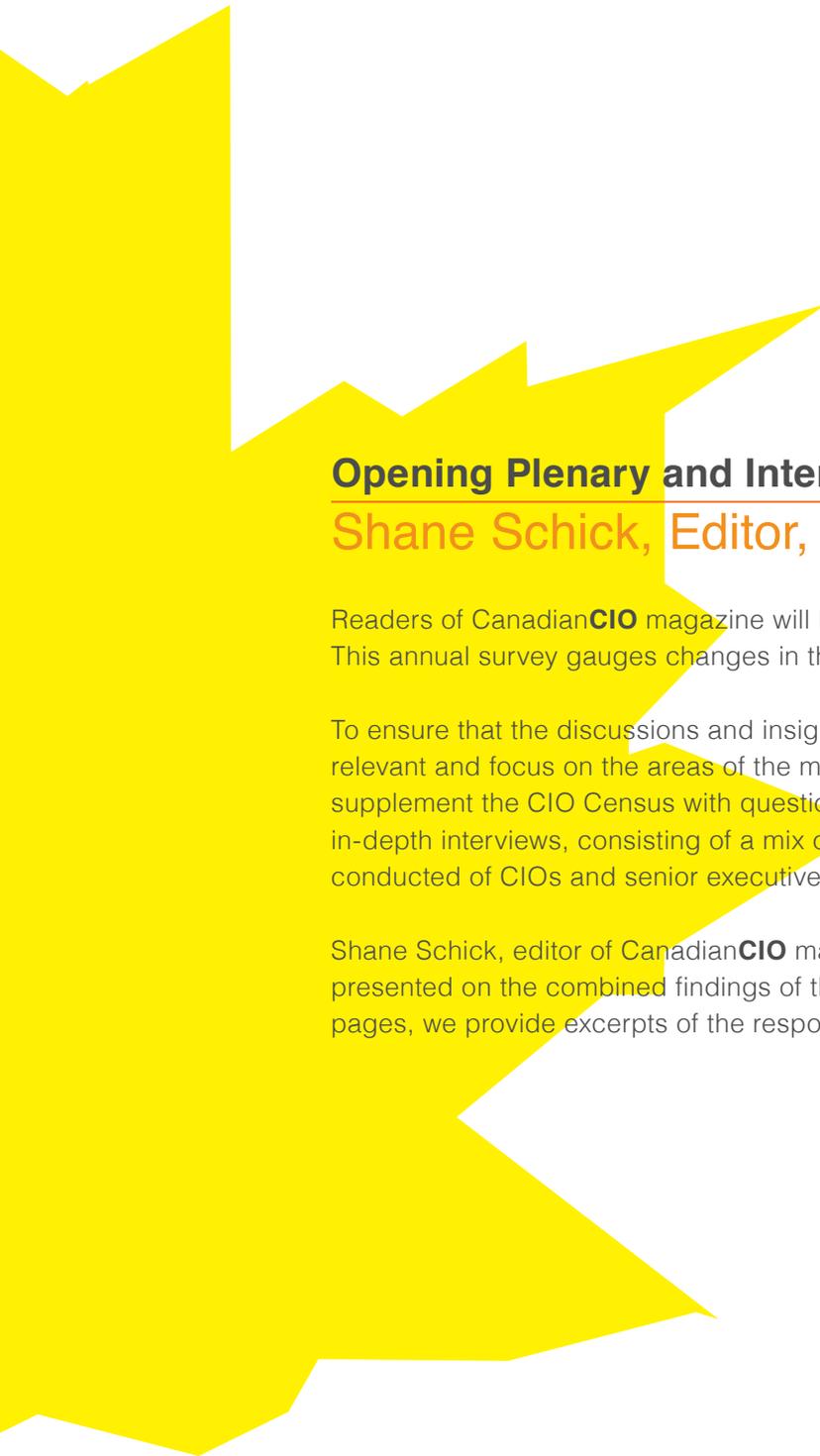
Similarly, in a slide entitled “2013-- the year hacking became big business”, Popa brought the security situation into clear focus as well:

- 1 million mobile malware threats
- 3.1 million stolen smartphones
- 100 million credit cards compromised
- 200 billion spam messages/day

Big data often consists of very personal data. For this reason, the retention of data in order to undertake the sophisticated analysis we require to leverage it, increases the risks of its misuse.

How can we realize the promise and not get swamped in the problems? That sums up our challenge: build the type of organizational culture and processes that will allow us to harness the potential of big data. Popa offered some best practices that set the stage for our discussions the following day:

- Act quickly on risks
- Ensure results are clear
- Create a culture of testing
- Anonymize then analyze results
- Know how to collect, then interpret data



Opening Plenary and Interview Findings

Shane Schick, Editor, CanadianCIO

Readers of Canadian**CIO** magazine will be familiar with the **CanadianCIO Census**. This annual survey gauges changes in the CIO role and that of the IT department.

To ensure that the discussions and insights shared at the CIO Summit would be relevant and focus on the areas of the most interest and challenge, ITWC decided to supplement the CIO Census with questions specifically focused on big data. Thirty-five in-depth interviews, consisting of a mix of qualitative and quantitative questions, were conducted of CIOs and senior executives across Canada.

Shane Schick, editor of Canadian**CIO** magazine and Chief Content Officer of ITWC, presented on the combined findings of this research to attendees. On the following pages, we provide excerpts of the responses provided to the interview questions.

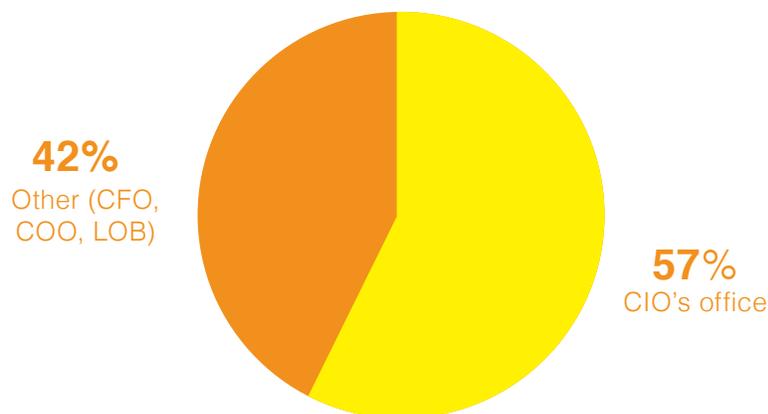
Excerpts of Interview Responses

What are the most pressing matters today for the CIO with respect to their line of business colleagues?

- Getting the right information at the right time. The move towards more data driven decisions.
- There is not just one pressing matter. Access to data is number one and number two is to use it not just for reporting and monitoring but for executing on business decision and processes.
- Sharing the information so that other people understand the needs of the technology and what is required.
- Proper management and control over information. Leveraging information to gain competitive advantage. Lack of proper skill set and training could lead to misuse or misrepresentation of information used in decision making.
- The biggest diversity is knowledge. Education is a critical area of big data. Some know all, some nothing...which makes it very challenging.

Where do you believe big data should be housed?

The response to this question is quite revealing. That the majority of respondents favour the CIO as the custodian of big data should come as no surprise, after all the interviews were conducted predominantly of CIOs. However, that over 40 percent replied that big data should be housed elsewhere is significant.

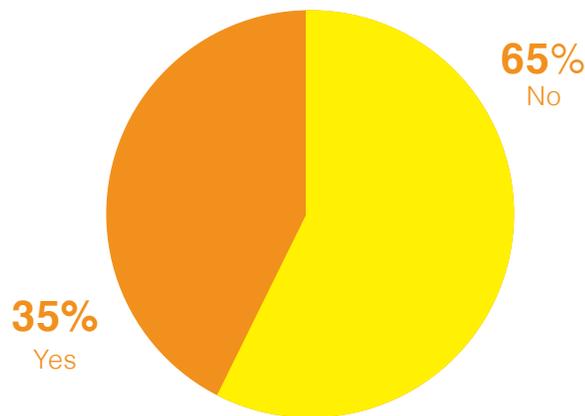


Are you providing and/or enabling shared or self-service analytics resources for non-data scientists and how? What about data replication?

Companies participating in the interviews provide a wide range of shared service resources and tools, from spreadsheets and ad-hoc reporting to templates, dashboards and Sharepoint sites.

When the question moved from shared to self-service analytic resources, the number of companies providing any service at all declined markedly. The majority of companies indicated that they do not provide self-service for a variety of reasons: data complexity and difficulty in extending self-service using current tools with current capabilities. A few of the respondents noted security concerns.

These findings were echoed when we looked at data visualization or highly personalized/contextual reporting tools. The vast majority of companies interviewed, 65 percent, do not provide tools of this nature.



Are different skill sets required for big data analytics and if yes, what are these?

The responses highlight that there are those who still believe that technical skills are a foundational competency for big data, as illustrated by the following response: “A combination of good understanding of physical analysis and data structure when pulling information and linking from multiple sources from big data such as social media and Internet.”

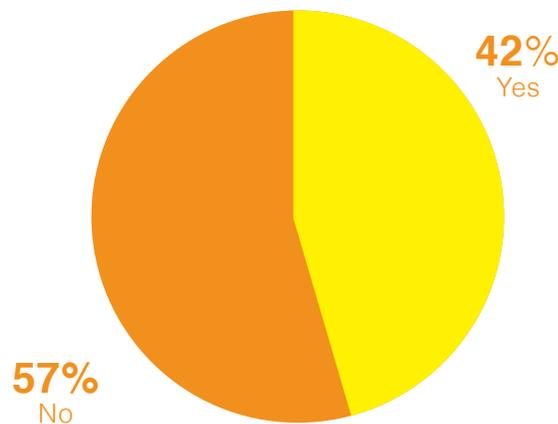
Many respondents also focused on the need for context and business knowledge, some fearing that the lack of business experience could lead to mis-interpretation of the data.

- You need people with strong knowledge of the industry and what the organization is doing. That will save you lots of hassles in finding out that the wrong conclusions were drawn.
- Scientists know how to create and devise the methods to get the information out, but they do not know the use cases, and that battle-field experience can help define it and create the test to prove it.

Are you concerned about a skills gap or the cost of acquiring and retaining big data analytic resources?

The majority of those interviewed are confident in their ability to attract and retain the type of talent they need. A significant minority are more concerned with the potential skills gap. Their detailed comments are quite interesting.

- It's not a commodity at this point. There is a premium attached to this. So the worry is about managing it effectively.
- Big data is not old enough to have an established group of experts like COBOL programmers. Anyone with basic database expertise — you can hire them and train them to the new paradigms like SQL.
- I think my main concern is acquiring and retaining talent because the skills are unique and these types of skills require longer cycles to master and are definitely a particular concern for the organization.
- This is becoming the norm and there are wide varieties of skill sets that are advanced in the transition to the big data world. It is an extension which still has to evolve and this is the next evolution.
- People with the right training are not easy to get and tracking them to this area is not easy and keeping them here is not easy.
- This is a whole new concept for us.



Have you identified any other challenges or concerns with the use of big data and self-service analytics?

Respondents were clearly concerned with big data overall, and particularly with self-service analytics and the potential for the misuse of resources.

- I am concerned with the notion of big data and data hoarding. It's a problem, and you have to have a business strategy to determine what you need and what you do with the data. Stop wild-goose chasing and seeking solutions for problems that do not exist.

Others were concerned with misinterpretation of data:

- The mismanagement and misuse of information by unskilled personnel could lead to poor decisions and consequently adverse consequences.
- Big data, over the course of a year, may be impacted by factors not brought into the next year such as simple consumer trends, environment and economic factors. It may give you the wrong answer.

Some respondents were concerned that we might be pursuing big data before having really mastered using the data in existence today. As two participants so eloquently put it: “We’re still struggling with small data” and “How do you focus on big data when people are still not using the data we have already created?”

Will big data reshape the CIO organization?

Despite the stated concerns and even some healthy skepticism, a significant number of participants acknowledged that big data brings with it a large degree of uncertainty and unknowns about the long-term impact. In particular, they believe it will likely change the CIO organization in a number of areas:

- Recruitment
- Education and training requirements
- Security, governance and compliance
- Privacy

The degree of change ranged from a shift in focus to a complete restructuring changing everything including reporting lines, CIO to CEOs, boards and even lines of business.

Conclusions

Schick summed up the findings with some key actions items that emerged from his review of the data.

Big data impact analysis

Big data affects each company in similar ways, but there are also real marked differences depending on a number of factors. Organizations and their CIOs need to conduct an analysis of the impact of big data.

The 80/20 rule applies

Companies need to aim for the biggest value and to have some early wins. Significant results can be achieved without boiling the ocean. And it's probably unwise to charge ahead with big data, if you have not yet derived value from the data you already have.

The solutions are iterative rather than transformative

Crawl, walk, then run is a clear message coming out of the findings. But so is the message that those who have experienced success with big data moved step by step and learned from each step along the way.

CIOs need to share more as a community to foster big data practices

One thing that the survey and the rest of the Summit clearly illustrated: we have a great deal of knowledge and experience to share. Without giving away any corporate secrets, as a community of CIOs, we can help each other avoid mistakes and achieve new insights leveraging big data.

Panel Session

The CIO, the Analyst, and the Executive

The morning of Day one featured a panel discussion moderated by Shane Schick and three leading experts, each approaching big data from a different viewpoint. The panel members were:

Panelist:

Fariba Anderson, Former CIO, MPAC

Point of View: CIO

Background: Fariba has a wide history of dealing with big data in a range of industries from initial applications in credit and underwriting data to ground-breaking work with the Ontario Lottery and Gaming Corporation.

Leila Lavaee, Data Analytics Lead, Digital Channels Insights, TD Bank Financial Group, Digital Strategy and Customer Experience

Point of View: Analyst/Strategist

Background: With an extensive media background, Leila brought her skills and experience in media and web analytics to the bank's customer analytics and 360° view of the customer.

Steve Van Binsbergen, Senior Director, Solutions Marketing, Rogers

Point of View: Marketing

Background: With over 25 years in the technology sector, Steve's known for his ability to successfully commercialize unrealized opportunities. His focus is on the customer experience which he calls "the last holdout" and a "key competitive differentiator" in the modern company.

Key Panel Discussion Points:

Each panelist agreed that big data needs to be focused on results. Leila Lavaee spoke of being in search of an insight. Others put it in the terms of focusing on a problem to solve.

Anderson noted that each crisis represents an opportunity to show how big data can solve real business problems. Referring to her time at Ontario Lottery and Gaming Corporation (OLG), she noted that the crisis in confidence with the lottery scandals was a disaster that led to the greatest big data operation in the history of the lottery. Those individuals that followed this news story will know that the data analysis methodology developed in response to those scandals has allowed OLG to identify and weed out fraudulent behaviour and also to greatly assist in identifying rightful winners.

“Nothing makes big data more important than a disaster.”

—Fariba Anderson

If we want big data to contribute real value to our organizations, results matter. As Van Binsbergen stated, all too often we are “drowning in data but with few insights because we haven’t discovered how to aggregate that data in a useful way”.

Concern over privacy and security not an excuse

Van Binsbergen also noted that that any discussion of big data inevitably leads to discussions and concerns about privacy and security. “But we can’t let these get in our way.”

Anderson echoed this sentiment when she related how, when faced with what she felt were real obstacles presented by privacy legislation to the lottery project, she sought out then Privacy Commissioner, Anne Cavoukian. She was given a key piece of advice: “Never use privacy legislation as an excuse for not doing your job”.

Bringing the different players together

There are a number of different functional roles engaged in big data. Lavaee pointed out that in each of these — from analysts to executives— everyone is speaking a different language.

Part of the reason for speaking different languages is training, each of us having varied disciplines. However, Lavaee pointed out “we are not training people to understand data analytics”. The other part of this is that there are so many different aspects of analytics: customer analytics, web analytics, social analytics and more.

CIO/CMO

We are all familiar with the CIO and CMO role discussion. According to Van Binsbergen, the onrush of the Internet of Things (IoT) will necessitate a greater collaboration between these two functional leads. According to him, there are already “1.3 million Rogers devices connected to internet. The data coming from the IoT will be phenomenal and make a big contribution to efficiency and customer satisfaction.” But this will only happen if we can harness it technically and in terms of our ability to ‘micro-segment’ and focus on business questions. Otherwise we risk “drowning in data with few insights because we haven’t found a way to aggregate data in a useful way”.

Data scientists and data analysts

As big data takes off, one of the key roles emerging is that of the data scientist. According to Lavaee, these individuals are “PhDs and mathematicians. But there are very few of them”. Their challenge, as Lavaee put it, is to “get the business impact — to get me the bigger picture”.

Van Binsbergen echoed these comments. “One of the biggest challenges is translating between the data scientists and the marketing analysts.” Anderson noted the existence of different types of analytical approaches even within IT. In this, she favours recruiting with a business focus. “It’s very difficult to change the thought process of a specialist/expert.”

Age gap

Anderson also pointed out that it is not just roles with differing perspectives that give rise to challenges: there is a difference between the way younger workers see and work with data. This theme was echoed throughout the day. Anderson stated that, “Young people have internalized data. They live it, not learn it”.

Bringing together the different roles

How do we bring all this together? One suggestion was that we understand the different roles that are necessary and embrace the diversity.

Anderson proposed that there are three different but equally necessary sets of skills, echoing the ideas expressed in our pre-conference interviews. These are:

- **IT skills to capture the right data.** Such professionals may not be skilled at interpreting data but they are skilled at getting to one version of the truth and bringing a structured approach to collection.
- **Analytical skills to bring the focus and analysis to correctly interpret the data.** As much as we need the structured approach of IT, we also need the business context and analytic skills that will drive insight. We need to stop arguing about the data and instead focus on what we can learn from it.
- **Business skills to drive results.** Insights without action render big data useless.

Lavaee proposed that it takes a real focus on customer experience to provide the impetus for bringing these different roles together to speak a common language and seek a common goal.

Need for leadership

Bringing these disparate roles and interests together requires real leadership. This presents both an opportunity and a challenge for the CIO. According to Anderson, “CIOs need to realize they have to do innovative things”.

Chief digital officer

Yet another C level title has emerged: the Chief Digital Officer (CDO). Gartner has been reporting that this new C-level executive will be a key facet in organizations in the very near future. While this constant invention and reinvention of C-level titles may seem silly to some, for others it is a natural reflection of the changes that are occurring. Anderson quipped that at a recent Gartner presentation she was surprised to learn that companies once had a “Chief Electrical Officer”.

Van Binsbergen also pointed out that our structures are influenced by how they were set up. According to him, accounting companies were the earliest consulting advisors to large companies. It should come as no surprise then that they would recommend that the CIO reports to the CFO, a pattern that many companies have followed.

How the CDO and other roles will be defined is an open question. Who will fill this role? How strategic will it be? While ITWC has the CDO role as one of the most senior executive positions, Van Binsbergen indicated that Rogers also has a CDO, however, that position reports to their customer experience area.

The key issue here is the need for a new strategic focus on, and leadership in, the area of big data.

Cultural change and leadership

The discussion on roles and leadership reflects the key notion expressed earlier in the day by the panel: big data requires and represents key cultural change — something that any organizational change expert will attest is the most difficult thing to do. As Anderson noted, “Peter Drucker was famous for saying culture eats strategy for breakfast”. To which she added her own twist, “and executives for lunch, and vendors for dinner”. To Anderson, leading this cultural change requires a special skill. She added, “As a leader you get defined by the people following you. If you are too far ahead, nobody is following you”.

Measures of success

If the CIO is going to take on the role of leading the cultural as well as the technical shift, Van Binsbergen suggests that that how we measure and even compensate the CIO may have to change. "... we need to compensate CIOs based on the overall success of the organization and not silly IT-centric metrics."

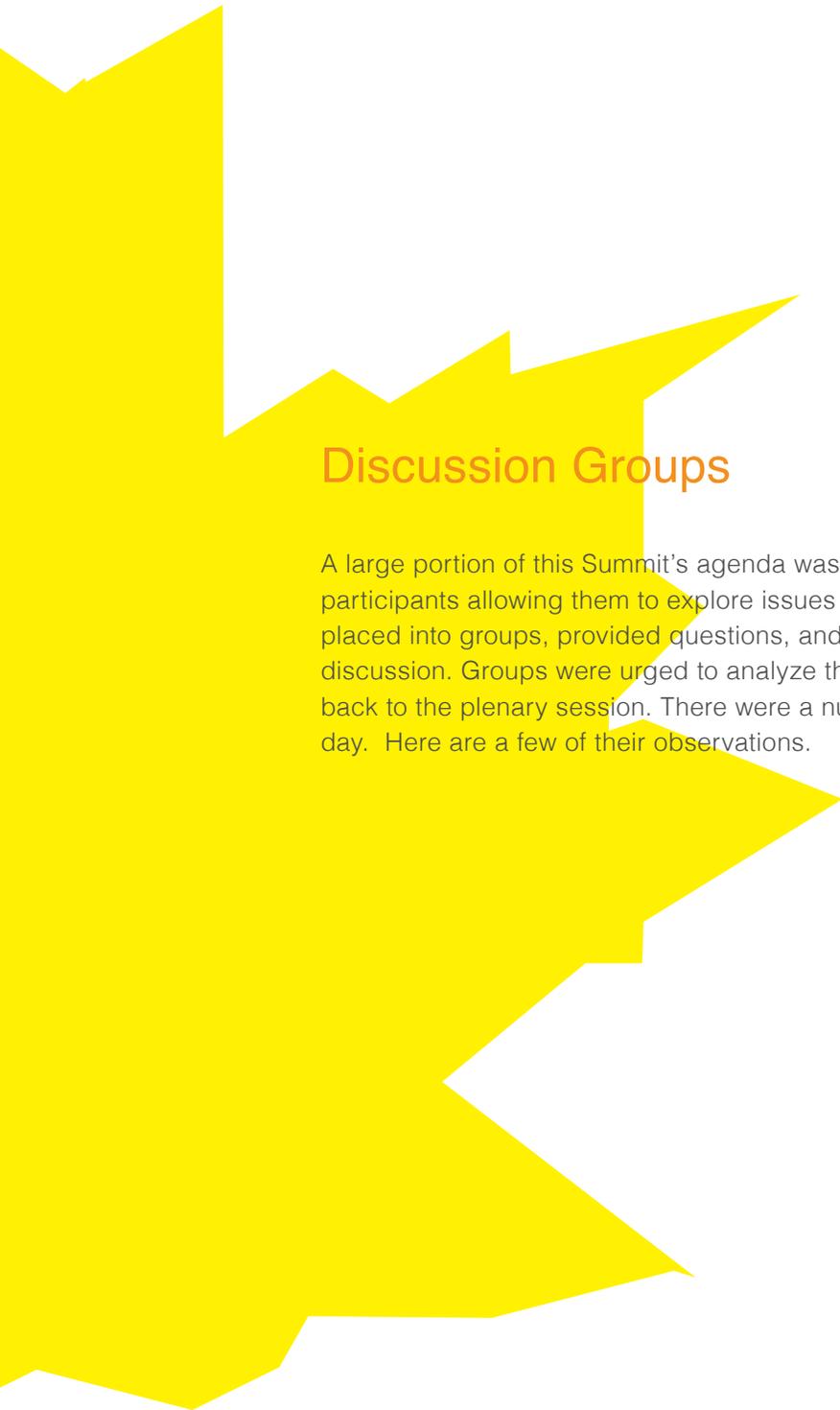
What are these new metrics? Lavaee focused on customer experience and customer satisfaction as key. The challenge is that "you have to be able to correlate actions with customer satisfaction". She gave the example of an Australian bank that achieved great results by focusing on customer satisfaction and in particular on "cross selling".

Van Binsbergen agreed and echoed the challenge of cultural change. "This is one of the last holdouts because it requires a change in culture. It's one of the most difficult areas and one of the few real differentiators."

Andersen pointed out that customer metrics may take different forms depending on the type of organization. In the case of OLG, the key metric is credibility.

Summing It Up

Moderator Shane Schick noted that the challenge of bringing these different areas and issues together was important and urgent. Whatever your measure of customer experience, it is clear, customers can sense a disconnect.

A large, abstract yellow graphic on the left side of the page, composed of several overlapping, jagged shapes that resemble a stylized mountain range or a series of peaks. The graphic is solid yellow and extends from the top to the bottom of the page.

Discussion Groups

A large portion of this Summit's agenda was devoted to discussions among the participants allowing them to explore issues and share experiences. Attendees were placed into groups, provided questions, and given a focused period of time for discussion. Groups were urged to analyze the issues, brainstorm solutions and report back to the plenary session. There were a number of these sessions throughout the day. Here are a few of their observations.

Group Observations

Data and innovation

A key issue is bringing all the data together. IT is good at that. We should never diminish this – it's a tough job.

Lines of business may have too narrow a scope and this can lead to “silo” thinking.

The issue is cultural – and according to one group, it is twofold.

First, the organization has to want to use and then actually use the data to make real decisions. We have to work to create that. It's push, not pull. Secondly, the issue of ownership is a red herring and it's the wrong question to be asking. We shouldn't be talking about who owns the data. We should be focused on collaboration.

The unifying force for one group echoed comments made by our earlier panel with respect to the customer experience. To them, the focus on the customer is what will bring all this together.

Big data and big data governance

Some large organizations don't realize how much data they are collecting. There is a constant struggle between which data should be open and which should be controlled in its distribution.

Again we met the idea of one version of the truth as something that IT could facilitate under a strong governance process.

These groups argued for a clear and consistent governance structure. As one CIO noted, “Rock, paper, scissors is not a governance process. You can't leave it to change and to winners and losers”.

Measuring return on investment

The strategic value of big data may be difficult to quantify, but it is real.

According to one group, “failure to manage it can lead to loss of customers, loss of traction in an industry” and even the demise of mighty companies. As one participant noted, “Kodak. Pulp and Paper. If either company had looked at the data ages ago, if data was part of the decision process, the results might have been different.”

Another group raised the question of how exactly you would show the value in different industries. For example, they considered a cemetery. How would a business like this mine data? But even for as difficult a business as cemeteries might be, the group felt there are still opportunities to use analytics to understand and add value to the business.

According to another group, however, we need to remember that exploration doesn't always produce results every time. "Not all drills strike oil" was the observation of one CIO from the petroleum industry.

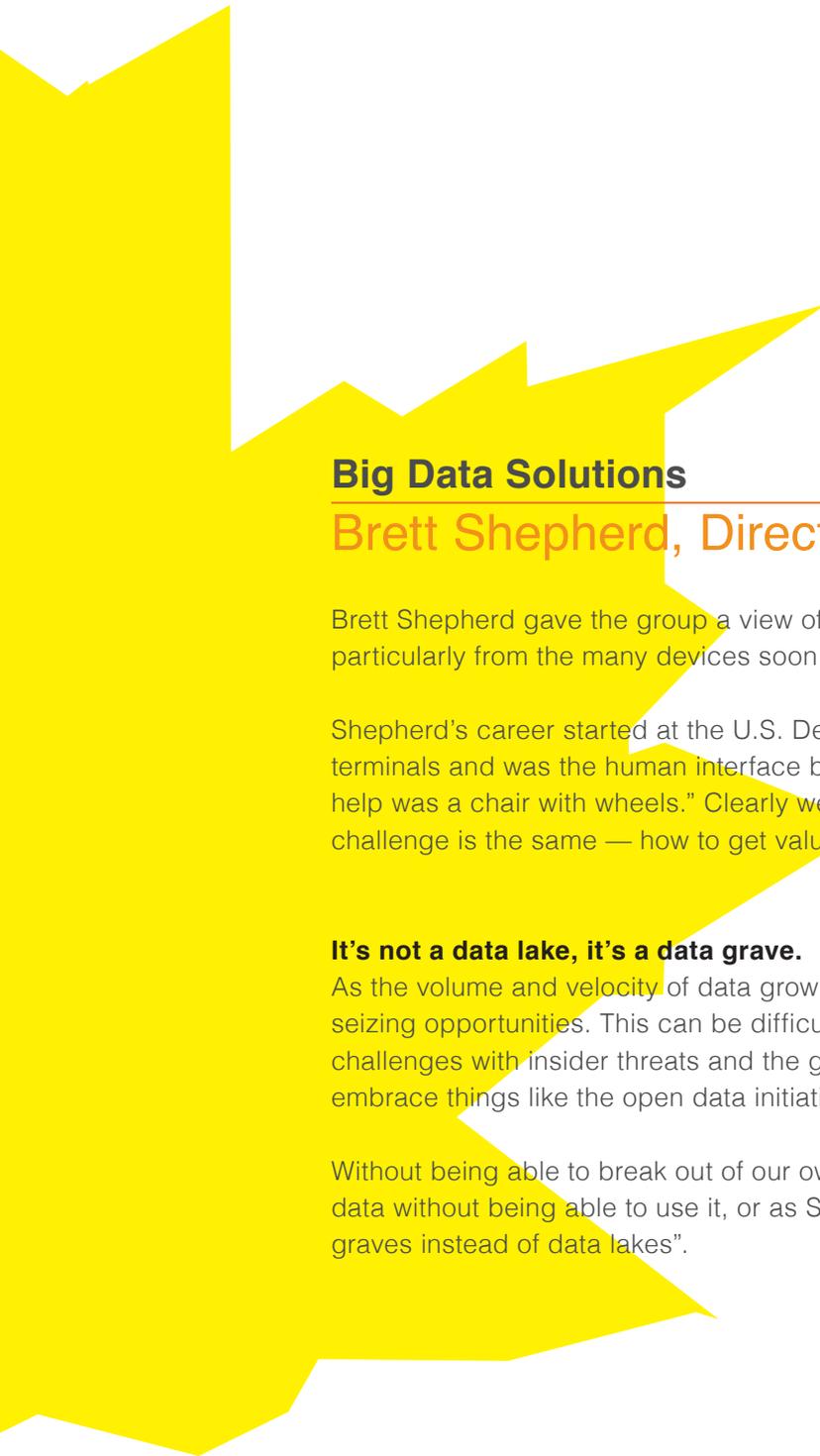
Social media

Two groups were given a case to evaluate regarding social media. It involved a school, but turned into a very active discussion about an issue that affects many companies. They came back proposing that all entities really look at the issues involved at their base level. What is really at the heart of the problem?

And while one of the recommendations was a clear policy on social media as it impacts organizations, a number of different recommendations were made, including:

- create a safe place for commentary (rather than stamping it out)
- become more active in social media to learn how to navigate it
- put scoring in place to be able to analyze social media comments
- be clear about expectations. When there are ethical or other issues, make your corporate position clear to all.

By diving in versus restricting access to the pool of data, companies can get valuable information about employee and customer engagement and gain new insights.



Big Data Solutions

Brett Shepherd, Director Big Data, Splunk Inc.

Brett Shepherd gave the group a view of the future analyses of unstructured data, particularly from the many devices soon to be linked, compliments of the IoT.

Shepherd's career started at the U.S. Department of Defence where he had two terminals and was the human interface between the systems. "My biggest technology help was a chair with wheels." Clearly we have come a long way since then, but the challenge is the same — how to get value from the data.

It's not a data lake, it's a data grave.

As the volume and velocity of data grows, the challenge of big data becomes one of seizing opportunities. This can be difficult to do. For example, in the context of security challenges with insider threats and the greater focus on citizen privacy, how do we embrace things like the open data initiative?

Without being able to break out of our own thinking modes, we risk accumulating data without being able to use it, or as Shepherd so eloquently put it, we create "data graves instead of data lakes".

Traditional sources dominate

While there are a lot of new ideas, we are still dominated by traditional data sources. Most of our data is transactions-based and it has huge growth potential. Machine data is the fastest growing and most valuable area of big data.

Shepherd proposed a new model for how we look at data. Instead of seeing it in technical terms he suggested viewing it through the analogy of a shopping mall. Big Box stores are the anchors. These equate to the big data stores, the structured data of the enterprises. But in each mall there are boutiques. These are the open source, “Hadoop” and other items that change over time.

Traditional business intelligence tools work well on structured data and these should be used in the Big Box context when structured data is the subject. But for other issues, we may have to break out of our traditional structured thinking and embrace new tools with strange names. Shepherd’s own firm devised a tool that used Hadoop. The merging of Hadoop and Splunk created a tool called Hunk.

Not all tools are perfect and we’ll have to adapt to that as well. Sometimes we’ll have to use, as Shepherd termed it, “the best of the worst”.

New structures

But the change in thinking is about more than selecting cute names or coming up with analogies. The way we think about data in a business sense is going to have to change. Shepherd illustrated this by referencing data deletion. In an old relational database concept, we can actually delete records and, with referential integrity considered, remove all trace of them. New big data stores may not be capable of this. How do we deal with that when a business requests that we delete data? This to Shepherd is one example of the new way of thinking.

Focus on concrete objectives

Despite the new ways we must conceive to address the challenge, one thing remains constant. We have to focus on insights and actions that make a real difference. The promise of big data is that it can help us with these difficult issues.

Shepherd gave the example of how, in a broadcast environment — where companies are creating and distributing vast amounts of content across the globe and on multiple channels — the ability to read and analyze huge amounts of data is critical to sleeping through the night. “When your data analysis can look at all of this in real time and determine “what is a paper-cut versus what is an antennae (a severe issue), when it can spot the difference, that is when those in charge of this get to sleep through the night.”



Legal and Governance

Joseph Coltson, Managing Director, Global e-Discovery and Forensic Services

Joseph Coltson was billed as a speaker on the Legal and Governance issues – a task that he addressed well and succinctly. Essentially he expanded on the main issues of big data and governance. As the cost of storage has plummeted and as the tools to manage vast stores of data have come to the fore, big data has increasingly allowed us to live in a world where no data is ever deleted. Yet we also live in a world where litigation is common and that brings us to a huge liability issue.

In any lawsuit, all the data you have is discoverable, that is, subject to being turned over to the other side, often regardless of cost or inconvenience, let alone the added issues of trying to examine it all. In what is called a litigation hold, all data must be preserved, including meta data. Coltson commented that you are allowed to de-duplicate and potentially to get rid of data that may never be relevant. Presenting a challenge that may not have an easy answer, he asked the audience to consider “how much data should be retained?”

In framing these otherwise dry issues, Coltson kept the audience on the edge of their seats as he showed how important it is — particularly when legal issues are involved — to be able to concisely illustrate big data issues in plain language. He walked the audience through a criminal case that he had worked on in his days as an investigator, speaking to how the data was so crucial to the case and how it was recovered and collected.

However, in that particular case, a critical issue arose when Coltson was asked by the defense whether he had missed anything. To any CIO, the idea of data that is missing is one that will focus the mind. You know what you have. You don't know what you don't have. Proving you have not lost data is virtually impossible. Proving that you have done all the due diligence is equally daunting. Coltson was faced with this same issue when he was asked whether he had gone through all the data. Attempting to point out what this challenge entailed meant utilizing an analogy that a non-technical person could easily understand. When he pointed out to the judge that the data he had, if printed on standard letter size paper, would be a stack as tall as the CN Tower, the point was made.



Culture

Doug Weir, Co-founder and CEO of Alpha Insights

Doug Weir is known to many IT professionals and is one of the most senior recruiters in the industry. His role in the Summit though was to share his insights as the entrepreneur he is, engaged in a company that is bringing out new products leveraging big data.

In his presentation Weir dispelled the myth that you have to be young to be able to think creatively about big data. And, he cemented an insight that many presenters had echoed. When we focus on the business result, the challenges of big data come into focus in a real and meaningful way.

Weir's new company provides a complex search engine looking for relevance in unstructured data. The first application was risk evaluation but his company is branching into different areas. He cautioned about taking on what you can't do well. "If you don't have the ability to do it right. What makes you think you have the time to do it over?"

We cannot be afraid of failure. As Weir said, “the real difference (between new and old mind sets) is that youth has learned that failure is normal. If it doesn’t work, you accept that, move on and try something else.” Weir was candid about his own failures but he noted, “not a single failure was related to the technology”.

This made his other point even more relevant as he stated that, “most companies do not have data-driven cultures”. They are not as open minded or as agile as they might think and that, according to Weir, is a risk. From someone who is seasoned in the need to stay focused, but who knows that being too focused can blind you to potential problems, Weir advises, “Don’t look too far to the left or right or you’ll miss your deadline. But if you don’t look left or right, your solution will be irrelevant”.

There are real rewards to balancing all of these challenges. Weir pointed to the example of Royal Dutch Shell that is applying the principles of big data. In his words, “Royal Dutch Shell is using big data to find people who can work together and innovate. If that works, they will have no shortage of talent they need”.

Final Insights

The challenges of big data are not technical. They are organizational and cultural. We can't ignore the technology. It is changing so fast and making many of our current ways of thinking about it obsolete.

It's not about push, it's about pull. Simply having the data is not enough to create value. If you have it and don't use it, it's not a data lake, it's a data grave.

We need to create the organizational cultures that need and use big data effectively and embrace each crisis as a way of demonstrating its value in our enterprises. We have to have the courage to explore and realize that every drill doesn't hit oil. But mostly, we must stay focused on the business needs for what big data can do for our operations and our pursuit of customer experience.

We have to be able to talk about data in ways that resonates with the business user. From a legal and governance aspect we have to inform our senior leaders that big data is a double-edged sword. It can be an asset, but it can also be a liability. If you have it, it's discoverable. This is just one of the challenges of the new governance that must be developed to manage big data in the enterprise.

It's about bringing things together, that dreaded and over used word, synergy. No one person, department, age group, skill set, or technology gives us the answers.

Some wisdom doesn't change. As Weir pointed out, we need to look straight ahead and stay focused on the immediate challenges. We also need to occasionally look left and right and see things in new ways. If we focus on only one aspect, we will not be successful in this new and emerging world of big data.

CanadianCIO is pleased to have brought this community together to engage in meaningful conversation, and we look forward continuing the dialogue through this annual event.

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