REAL TIME BUSINESS: MAKING THE MOST OF BIG DATA

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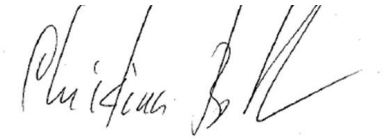

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EXECUTIVE SUMMARY

Executives want up-to-date information about what's happening in their company to help them make better and faster decisions. A recent survey of financial executives by the Canadian Financial Executives Research Foundation found that more than nine out of 10 said their ability to analyze and retrieve information in real time in the areas of profitability and cost analysis needs at least some improvement. But there are barriers: nearly one in three respondents said that their company is making decisions from outdated aggregated data and information. And while many companies acknowledge business processes are increasingly complex, some of them are still running their organizations exclusively using relatively simple tools such as spreadsheets.

Finance professionals, who have traditionally dealt with historical data collected over periods of time, are under more pressure than ever before, juggling multiple priorities while managing demands for up to date information. But traditional month end sales information may be too late for some financial managers with tight margins. Quarterly earnings is ancient history by the time it's reported in financial statements.

Ideally, executives should be able to make decisions as quickly as possible in response to changing market conditions by drilling down and analyzing various financial metrics in real time. A retailer, for instance, may want to analyze sales data using different filters such as by country, region, store, product line or even specific items. A financial manager may want to run forecasts very quickly, using different future scenarios, in a streamlined process analyzing many years of historical data. As transactions are increasingly processed in real time, for instance, with instant electronic payments, executives want to see the revenue – and more importantly, the profitability information – in real time as well. This kind of instantaneous business process of retrieving data stored in the easily accessible main memory of the computer rather than on physical disks is becoming known as real time business.

The demand for accurate operational data in real time is driven in part by the widespread use of mobile devices in the workplace, a trend known as the consumerization of IT. Workers who personally own mobile devices such as tablets expect to have access to the same state-of-the art devices at work to get secure access to up to date information from all aspects of their business. For instance, both of the

two global co-CEOs of SAP regularly keep up to date on many aspects of the company through their iPads (along with 20,000 other employees).

A survey of financial executives conducted in early 2012 by the Canadian Financial Executives Research Foundation (CFERF) revealed some interesting findings:

Many executives want up-to-date information about what's happening in their company to help them make better and faster decisions. A significant percentage of survey respondents are interested in slicing and dicing their data in real time, in order to respond as rapidly as possible to business trends, indicating that real time data management would receive increased attention over the next 12 months. Interestingly, 28% of respondents said that their company is making decisions from outdated aggregated data and information. Meanwhile, one in four indicated that their company does not have a plan in place that would allow it to better analyze massive volumes of data, while one third said they do have such a plan, but have not implemented it.

Many companies are still using simple business tools although business processes are increasingly complex. More than two thirds of respondents said business processes have become somewhat more or far more complex compared to just 12 months ago. Did companies respond by getting more powerful and sophisticated tools to adapt to this situation? It appears not all did: a significant percentage of survey respondents (31%) use spreadsheets exclusively to retrieve and analyze business data while 66% said that their company was unable to run complex "what if" analyses. This results in constantly reacting to emergencies and rationalizing outcomes with after-the-fact analysis. It also makes it hard to respond in a timely manner to changes in business operations.

Financial executives say increasing profit is their top priority, and this area is where they'd like to improve their ability to analyze and retrieve information in real time. More than eight out of ten (95%) survey respondents identified profitability and cost analysis as areas needing at least some improvement in speed and efficiency of data retrieval. The area of profitability and cost analysis and management was also identified by 66% of survey respondents as the parts of the finance function which displayed

the most signs of stress or even distress. In addition, an overwhelming majority of respondents identified the need to improve the speed and efficiency of data retrieval in the areas of risk assessment and risk management, as well as budgeting and planning.

But it's not only the C-suite executives who crave current numbers in their palms. Mobile executives complain that out of date information (on, for instance, lead time or inventory) could result in dissatisfied and lost customers. Procurement professionals want to manage their supply chain in real time.

But aggregating huge amounts of data across a company to prepare it for quick analysis, especially on mobile devices, is not always easy. For starters, different areas of a company may have inconsistent standards, processes or routines for measuring, quantifying and inputting their data. A company which grew through a merger or acquisition, for instance, may be running multiple legacy systems and databases which may not be compatible.

To add to the challenge, companies are collecting digital data at phenomenal rate. As the datasets increase so can the time required to search and analyze the information stored. Add to this the constant acceleration of the pace of business, and companies are struggling to mine and analyze information. Meanwhile, the information itself is dynamic and continuously changing.

Some examples of companies using big data to help them do business in real time include:

- An agricultural chemical company combines customer purchases with weather pattern data to generate real time information for farmers to help them determine the best time to apply the products, according to "Big Data is watching you," published in the *Globe and Mail* on Jan. 6, 2012
- A live entertainment company has purchased a consumer data analytics firm which will help it analyze the information it has on the 200 million ticket buyers in its database. The acquisition is also expected to help with the company's dynamic pricing model, in which ticket prices rise and fall in real time, depending on supply and demand.

- Industries employing assets such as heavy equipment and machinery need to be predictive around maintenance and replacement. By integrating and analyzing multiple sources of data, they may be more able to predict when machines will be likely to break, rather than waiting for them to do so. This could save costs by allowing a plant to plan for downtime.
- A major brewer uses weather data to predict beer demand so it can adjust shipments to retail stores.
- Nongfu Spring Co., Ltd., a Chinese manufacturer of bottled water with one million customers and millions of point of sale records has exponentially accelerated its ability to analyze sales performance of individual products in stores. It has reduced one business process from 24 hours to 37 seconds.
- An international auto parts manufacturer uses real time analytics to improve the precision of its sales forecasts, allowing it to reduce costly inventory while still maintaining sufficient production to meet customer demand.
- A tech company can process 1.8 million contract records with multiple attributes in less than a second.
- An airline uses real time business to track seat availability and adjust pricing in real time, rather than day by day, resulting in millions of dollars in increased revenue.
- Colgate-Palmolive increased processing times on important sales and profitability reports from 77 minutes to 13 seconds. This allows the sales team to have current information on how Colgate-Palmolive products are faring in stores, so they can adjust pricing and promotions to respond to retailers and customers while also ensuring they are meeting internal goals.

> “Fundamentally the finance function has not in the past been a real time function. It’s basically dealing with periods and batch data, and the real time aspect of the business is the front end where the customer is, where the business decisions are made, and it seems to me that there is a big opportunity for the finance function to join forces with the front end, and create the business case. There is a cost of big data, the storage cost is coming down rapidly, but the analytics has a cost and therefore there has to be a business case to incur that cost and get some kind of benefit back. And benefit generally comes from responding very, very quickly to changing circumstances.”
>
> **Tim Spielman – Academic Chair, SAIT Polytechnic**

RESEARCH METHODOLOGY

The CFERF research study ***Real time business: Making the most of big data*** highlights the perspectives of senior financial executives, from public and private companies, who have shared their insights into how they manage and analyze their data.

The study was prepared based on the results of an online survey of 104 financial executives from January 23 to March 13, 2012, representing a cross-section of Canadian industries and sectors, and was complemented by the views of a group of financial executives who attended a research forum on February 23, 2012. For more demographic information, please see Appendix A.

BUSINESS PRIORITIES

45% of survey respondents said real time data management would receive increased attention over the next 12 months (see Chart 1).

Not surprisingly, like any business, the primary focus of survey respondents was increasing profit (81%) (see Chart 3). This priority was followed by cost cutting (79%) and organic growth (75%). After these top three priorities, financial executives say they plan to increase the speed of business processes. This was followed by M&A. One out of five respondents said they were focused on survival.

Business processes in the finance function have been increasing in complexity, according to survey respondents. Seven in 10 said business processes have become somewhat or far more complex compared with 12 months ago (see Chart 2).

> "What type of decisions are our managers or the executives making? And what type of information do we need to get to give them, so that we pull the proper information to give them in real time, so they can make the decisions?"
>
> **Richard Babich – Instructor, SAIT Polytechnic**

CHART 1 – BUSINESS ASPECTS EXPECTED TO RECEIVE INCREASED ATTENTION OVER THE NEXT 12 MONTHS

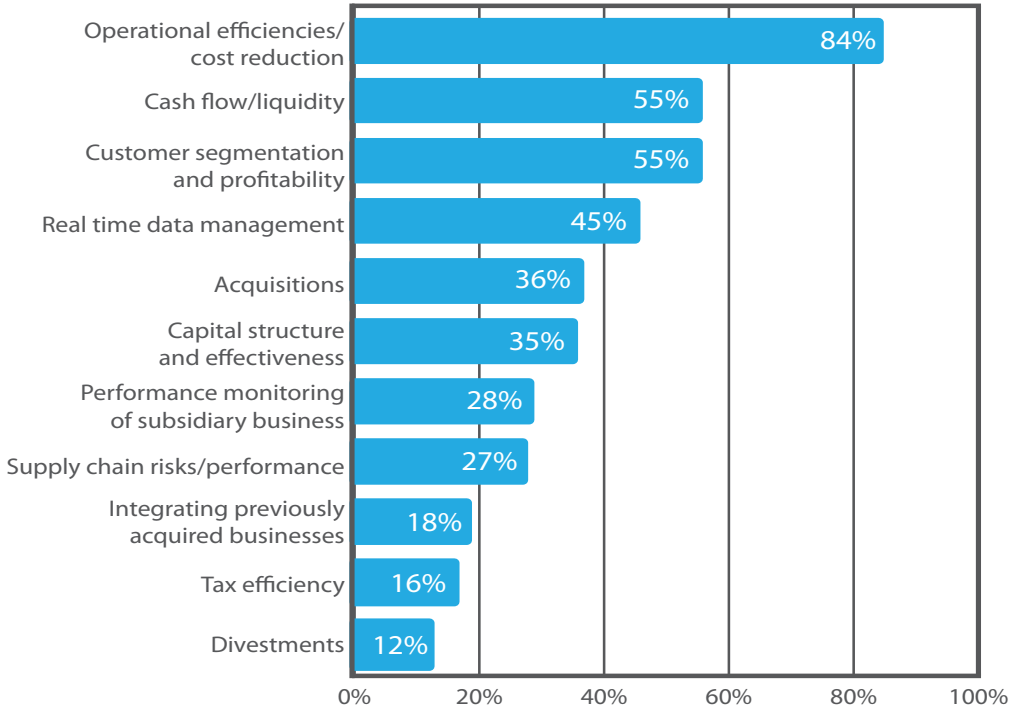


CHART 2 – LEVEL OF CHANGE IN BUSINESS PROCESS COMPLEXITY IN THE FINANCE FUNCTION COMPARED WITH 12 MONTHS AGO

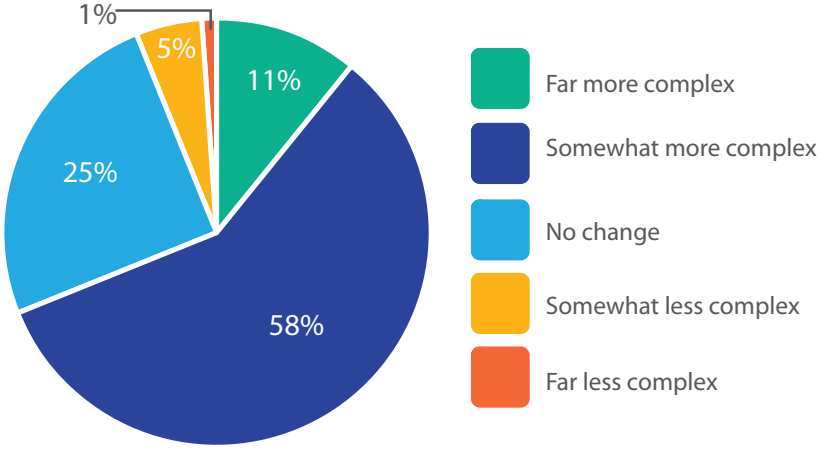
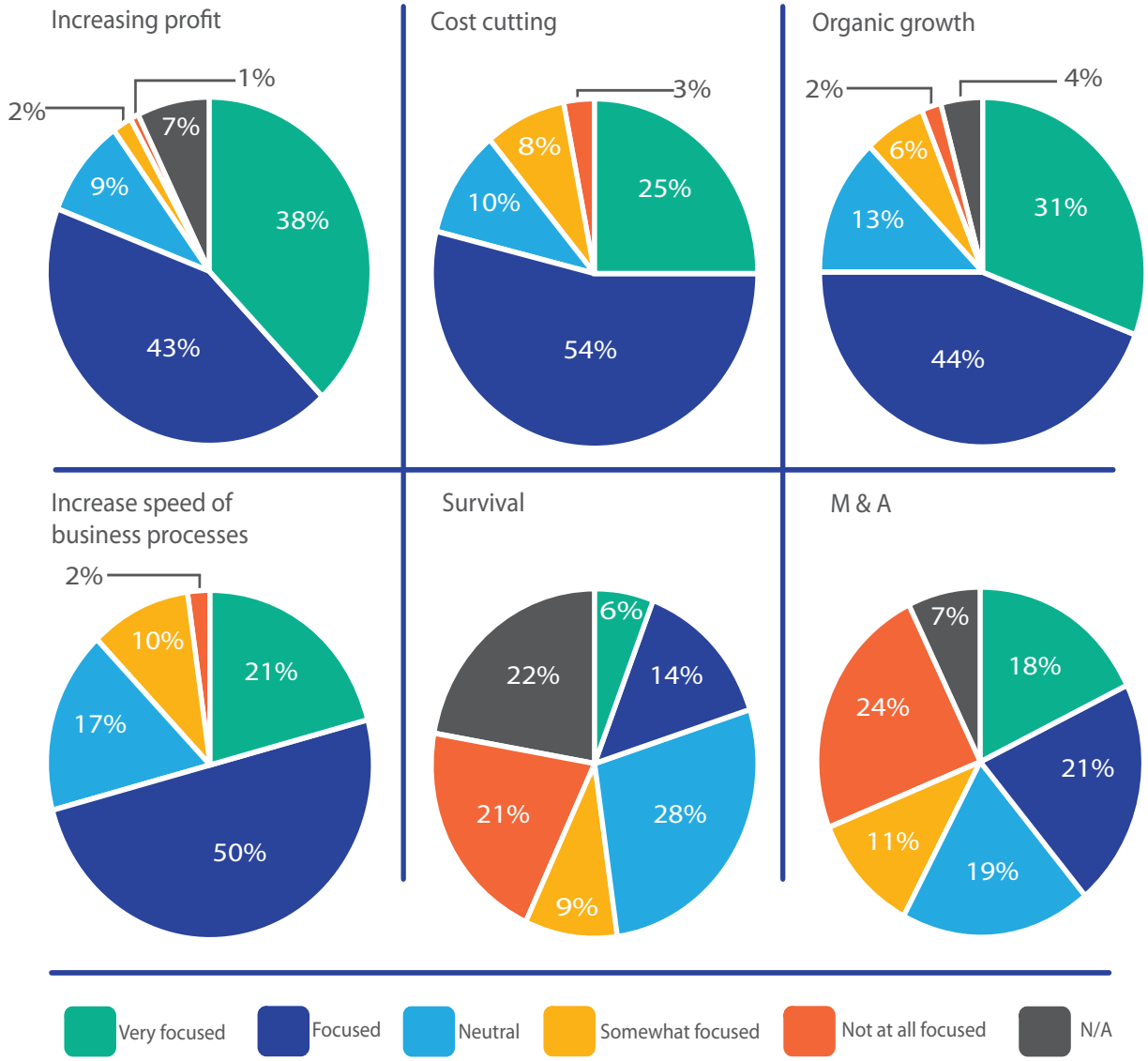


CHART 3 – ORGANIZATION'S FOCUS OVER THE NEXT 12 MONTHS



Real time analytics at Maple Leaf Foods – A case study

Maple Leaf Foods Inc. has long had a culture of measurement. The company is implementing real time analytics in a bid to advance consistent, cohesive consolidation and analysis of various silos of information, according to Michael Correa, Vice President, Information Solutions at Maple Leaf Foods. Maple Leaf is launching new analytics systems and processes. The priority will be to use analytics to drive profits, focusing on information that needs to be real time in order to improve decision making.

"We have a lot of information that is very expensive to get a hold of," he said. The objective is to move to a single version of the truth. One area the company has decided to prioritize in the area of real time analytics is commodities pricing and trading information. "When we're trading bellies and hogs and hams, we're on the mercantile and we're looking at real time live information. That price can change during the course of the day. Demand and supply is global, so we will bring in information both from our transactional systems, but also data that comes in from the marketplace – we will bring them together within our systems to create that real time analysis of what we should be selling at. That then drives ultimately what we produce that afternoon or the next day. Until we go-live with this later in 2012, we take very large amounts of information from the public domain and from different systems within our company, collate and assemble that information for our decision making, and that would take the better part of the day. Going forward we will be able to have that information first thing in the morning as changes occur in the marketplace. So in automating this process we're able to make faster decisions, or move to market quicker. This is a competitive advantage. We know this will save us an effort to assemble the data. Ultimately the big piece is profitable growth so we can actually get to the marketplace and understand what's happening in the marketplace fast and secure more profitable growth, more business as a result."

EASE AND SPEED OF RETRIEVING DATA

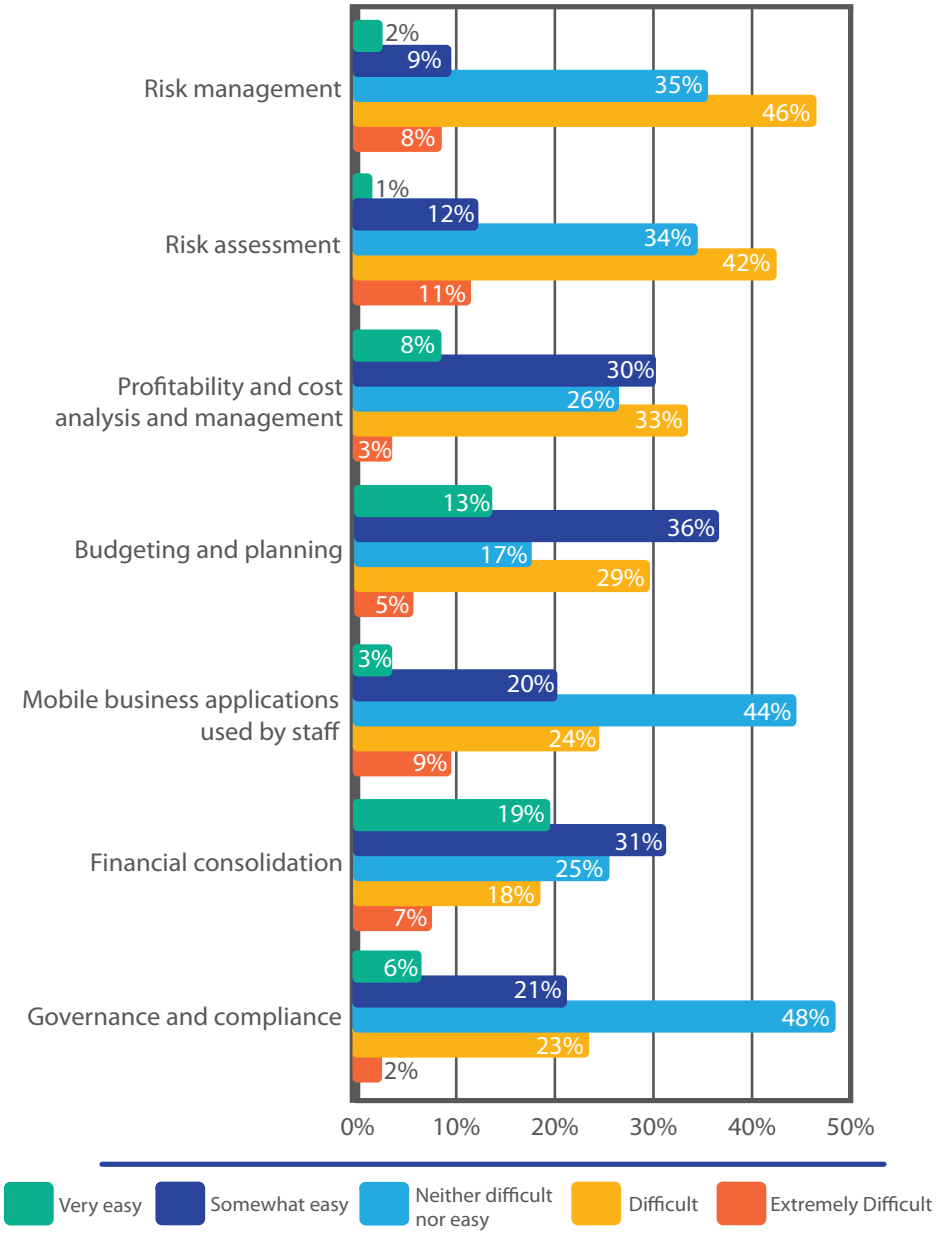
> "Within our own company we're pumping out probably a couple of million transactions each month, just for timesheet data, to cite one example. And we're a consulting business, so it is at that level where you really have to understand what's happening. We have a lot of junior financial analysts, and how does one train the individuals to understand not only the data structures, but how to be able to leverage the information? It may not work to can the reports because, as soon as you do the first drill down, you might find something that will cause you to go off in a different direction. So, how do you really get the value out of the large databases that we have? It continues to be an area that we struggle with."
>
> **David Anderson – Executive Vice President and Chief Financial Officer, CGI Group Inc.**

While most companies use some kind of business analytics software combined with spreadsheets (62%), about one in three companies are still using fairly rudimentary strategies to comb through numbers, using only spreadsheets to retrieve and analyze business data.

The most difficult areas to retrieve corporate data quickly and easily were risk management and risk assessment (more than half of survey respondents rated these areas difficult or extremely difficult). Profitability and cost analysis and management was rated difficult or extremely difficult by 36%, followed by budgeting and planning (34%) (see Chart 4).

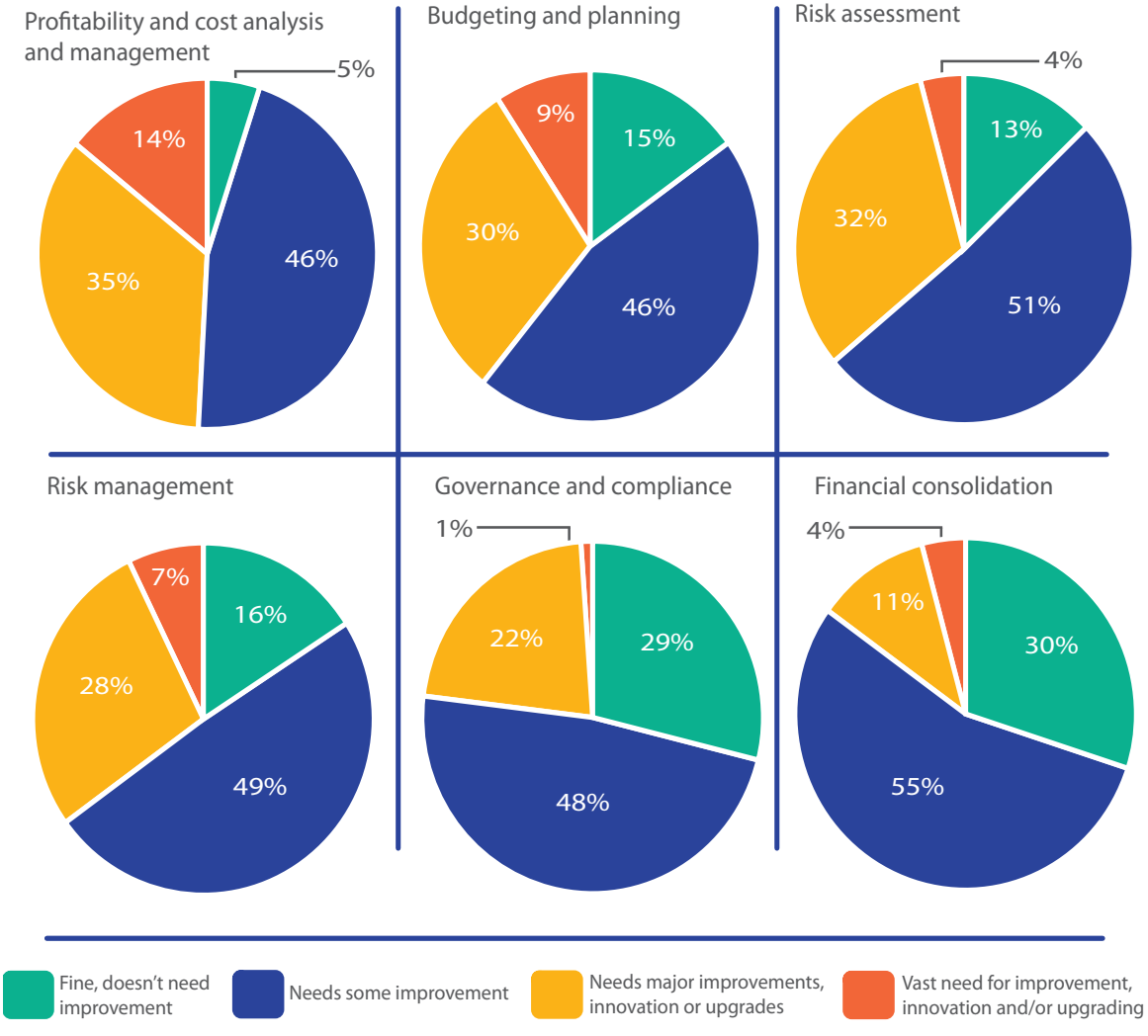
For Roger Bissoondatt, CFO of the BC Liquor Distribution Branch, an ongoing concern is correlating the information in the organization's data warehouse with its general ledger. The data warehouse, which was developed ten years ago to analyze trends, was not meant to be tied directly and reconciled to the organization's financial records. "The project being implemented will close that gap by actually feeding information from the financials into the data warehouse," Bissoondatt said. "There will still be some timing differences, but I think the bigger challenge we have is the huge amount of data we have in the data warehouse and how we can effectively use it to make meaningful decisions. I believe you need to understand the data in order to make good decisions and that is where the challenge lies."

CHART 4 – EASE AND SPEED OF RETRIEVING CORPORATE DATA IN REAL TIME



Interestingly, although it was most difficult to retrieve data in risk, this was not the utmost priority for improving information retrieval. Half of survey respondents identified profitability and cost analysis and management as a problem area needing major or even vast improvements in the area of speed and efficiency of data retrieval. (see Chart 5).

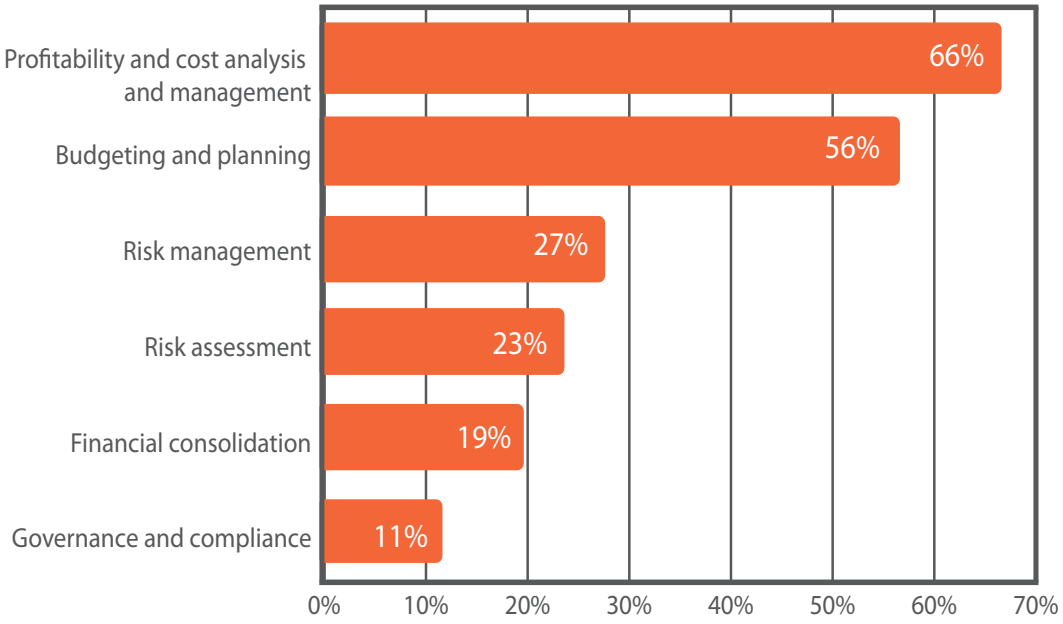
CHART 5 – AREAS NEEDING IMPROVEMENT IN SPEED AND EFFICIENCY OF DATA RETRIEVAL



EASE AND SPEED OF RETRIEVING DATA

The area of profitability and cost analysis and management was also identified by 66% of survey respondents as the parts of the finance function which displayed the most signs of stress or distress (see Chart 6). Budgeting and planning was identified as leading areas showing signs of stress and distress by over half of survey respondents (56%).

CHART 6 – FINANCE FUNCTION AREAS DISPLAYING SIGNS OF STRESS OR DISTRESS



"We use real time information for our day to day business in trading and client sales as we need market prices at that specific second. Obviously for our core business we use real time information, and those are mostly based on in-house systems. We should be using more real time information at a high level basis in order to make decisions strategically for the upcoming two to five months, and have all the data available in a certain format. That's very much of a challenge because there is so much data and it's all in various systems. Having everything in one unique data repository and integrated is key but difficult. That's obviously something that we're looking into... We were asked by the regulator for specific information when the European crisis started and they wanted it for the following week, the problem being that it wasn't directly available in our system. So you have to actually react very quickly to the regulatory constraints and rules that are coming up in this particular environment."

Christian Settano – CFO, Société Générale Corporate and Investment Banking Canada

"I was helping a large bank install a customer information system, which looked at behavioral anomalies in customer transactions. State of the art technically for the bank was a batch overnight processing that looked at unusual transactions and reported on them the next morning, so that we could go talk to the customer and try to understand if something had changed in the customer's life which had caused that unusual transaction to take place. And the Product Marketing VP, about three months into a nine month project, looking at business needs rather than technical constraints said: 'We really want to do this in real time.' I think that's the challenge that we're all facing, that we need to act on business needs and make decisions as the business is going on –while the customer is in the branch, or while the customer is on the phone to the call centre, or while we're placing an order for some material, and the circumstances change on the telephone as we're doing it. So we need to make very real decisions on the fly as we go, and I think that's where big data is taking us."

Bob Angel – President, The Gilford Group Limited

BUSINESS PROCESS ISSUES

More than one in four (28%) of organizations are making decisions from outdated aggregated data and information.

While companies may carefully collect and store data, being able to access it quickly and effectively in order to make decisions in a timely manner is another matter entirely. When respondents were asked about their ability to integrate stored data into their day-to-day decision making, two-thirds (66%) revealed difficulties with modelling different hypothetical scenarios, resulting in constantly reacting to emergencies and rationalizing outcomes with after-the-fact analysis. This makes it hard to respond to changes in business operations (see Chart 7).

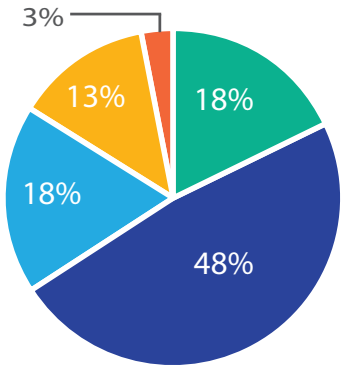
Slow analysis times forced the analytics function to the back office so, for instance, analytics are not accessible during meetings, according to 56%, while others (39%) said their department has an over dependence on IT for service delivery, particularly when seeking answers to questions that requires changes in the data warehouse. Nearly half said there is a gap between data recording and availability in the data warehouse. In other words, the assistance of an IT intermediary is required to answer questions (see Chart 7).

Case study: Getting data right

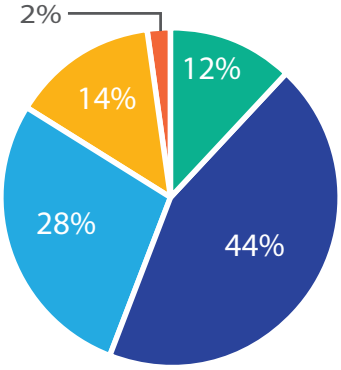
For Ted Reid, CFO of Paladin Security, the priority is trying to maintain accuracy of data which is accessible by many staff. For instance, the service company, which bills by time and uses a timesheet process involving telephone verification, allows many users to have access to its database. The problem is to ensure the information is entered correctly "right out of the gate", according to Reid. "That's probably our biggest challenge, is people having the ability to change our data," Reid said. "We do have tracking, but obviously when you've got 5,000 employees, it's difficult to manage flexibility for exceptions. If it gets out of control, it gets out of control in a hurry. And you can't be supervising every single change that happens to your data. So it's getting it right the first time and trying to use technology to increase the quality of our data." Time is spent trying to validate the data. "We have to make sure that our invoices to clients are correct so they go through various verification stages before we send an invoice. Our goal is to be real time and each day lock down our data so that we know what happened for that day. But obviously the issue is, if someone is sick and they have to leave their shift, then they have to record that in. So there's always movement in our data on a day to day basis. It's a big challenge."

CHART 7 – SURVEY RESPONDENTS WERE ASKED TO RATE THEIR AGREEMENT WITH THE FOLLOWING STATEMENTS:

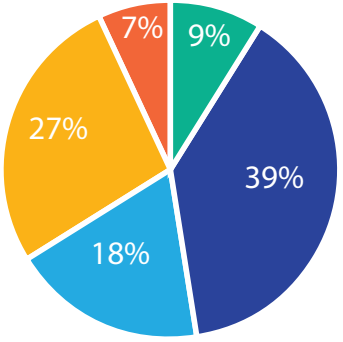
Inability to run complex "what if" analyses, resulting in constantly reacting to emergencies and rationalizing outcomes with after-the-fact analysis. Hard to respond to changes in business operations.



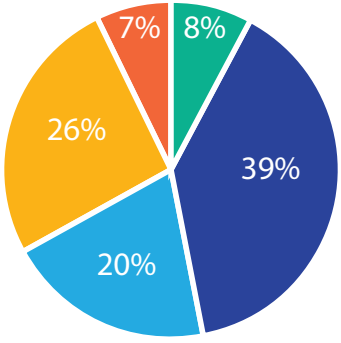
Slow analysis times lead to delegating analytics function to the back office instead of during meetings.



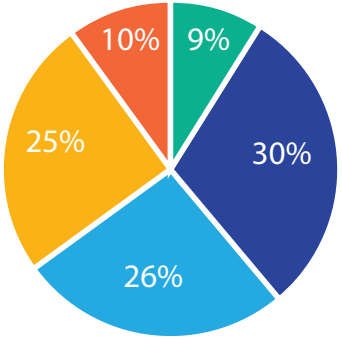
There is a gap between data recording and availability in the data warehouse.



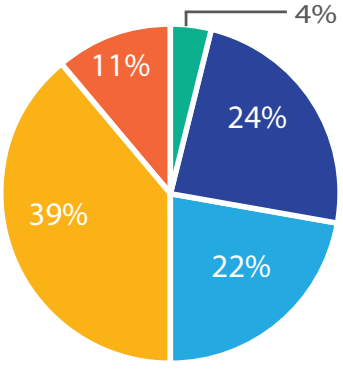
There is a lack of consolidated views of business transactions and real-time data (e.g. from sensors or devices).



My department has an over dependence on IT for service delivery, particularly when seeking answers to questions that requires changes in the data warehouse.



Our company is making decisions from outdated, aggregated data and information.



Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree

Making manufacturing real time at Maple Leaf Foods

Maple Leaf Foods is planning to introduce real time analytics in its manufacturing operations, according to Michael Correa, Vice President, Information Solutions at Maple Leaf Foods. "The information on the production cycle is often collected manually; literally on paper. So it is not until the end of the day or the end of a shift, that information is keyed into a computer system and assembled for us to take a look at how well we did during the day. So how was the yield, how did we perform from a labour perspective?

In addition to that, because we are manual, and because waiting until the end of the day isn't good enough for us, we've had to put more stops during the cycle of manufacturing to do samples and tests, to see how we were doing. So for instance, quality is very important to us. When we are manual, we'll stop the line every 30 minutes or 45 minutes for testing to make sure we are within quality specifications. So this is just longer steps, more labour, additional time during a manual process.

Moving towards real time analytics will mean that this information will have the machines and the people that are on the lines connected back into our analytical systems in real time. Real time analysis will bring us a couple of things. We'll be able to make changes to process in-shift, for instance, if our variation in the product is too large, we'll be able to see it in real time and make corrections. We'll be able to sample the data in real time and know all of our critical quality metrics, the people metrics, the use of our materials – confirmation in real time of what's going on. In essence, we can keep the lines running longer without having to stop and do samples or quality checks. We'll be able to do those quality checks as the line is running. This will reduce manufacturing costs and improve consistency. The automation that's behind this – the real time aspect – allows us to actually create rules in our system so that if everything's running well we know we're great. We can keep going at green, but if we move towards or near our tolerances – if we're going yellow or red – the system will actually alert us and potentially even stop the line."

"With real time transactions on such things as airlines, if you can't get real time metrics on your profit margins on a particular flight, you're going to start having problems pretty quickly. So the fact that your pricing may have to be dynamic means that everything behind that had better be fairly close to dynamic/real time or supported with a model that can take that give you effective control and take the decision out of your hands and deal with it appropriately. And you better hope that model does it right."

Mark Donaghy – VP Finance and General Manager, SCiAN Services Inc.

"If it's not real time information, it means that you probably have a lot of people working to get that data prepared. It's probably not very useful once it's produced, and companies still have a lot of those processes around. We've got to ask ourselves what's the value of the information when it's non-real time? The cost to produce it is very high in several organizations. It's easy to say: it's not important, we're not going to change, we're not going to invest in a system. But what you're really doing is to perpetuate processes that may be non-efficient and are not very good for the company."

Carl Gauvreau – Principal, force5 inc. and former CFO, Hartco Inc.

"One of the things that intrigued me and one of the things that I want to understand better is the ability to aid in decision making... And I think that's a really important thing to be able to take your data, look at things from a holistic point of view and determine if you're making decisions with different legs of your supply chain or whatever, to be able to make that 'what if' decision, to be able to run a couple scenarios through and see: Are you able to support that? Or is that a future thing? And how does that operate? "

Richard Babich – Instructor, SAIT Polytechnic

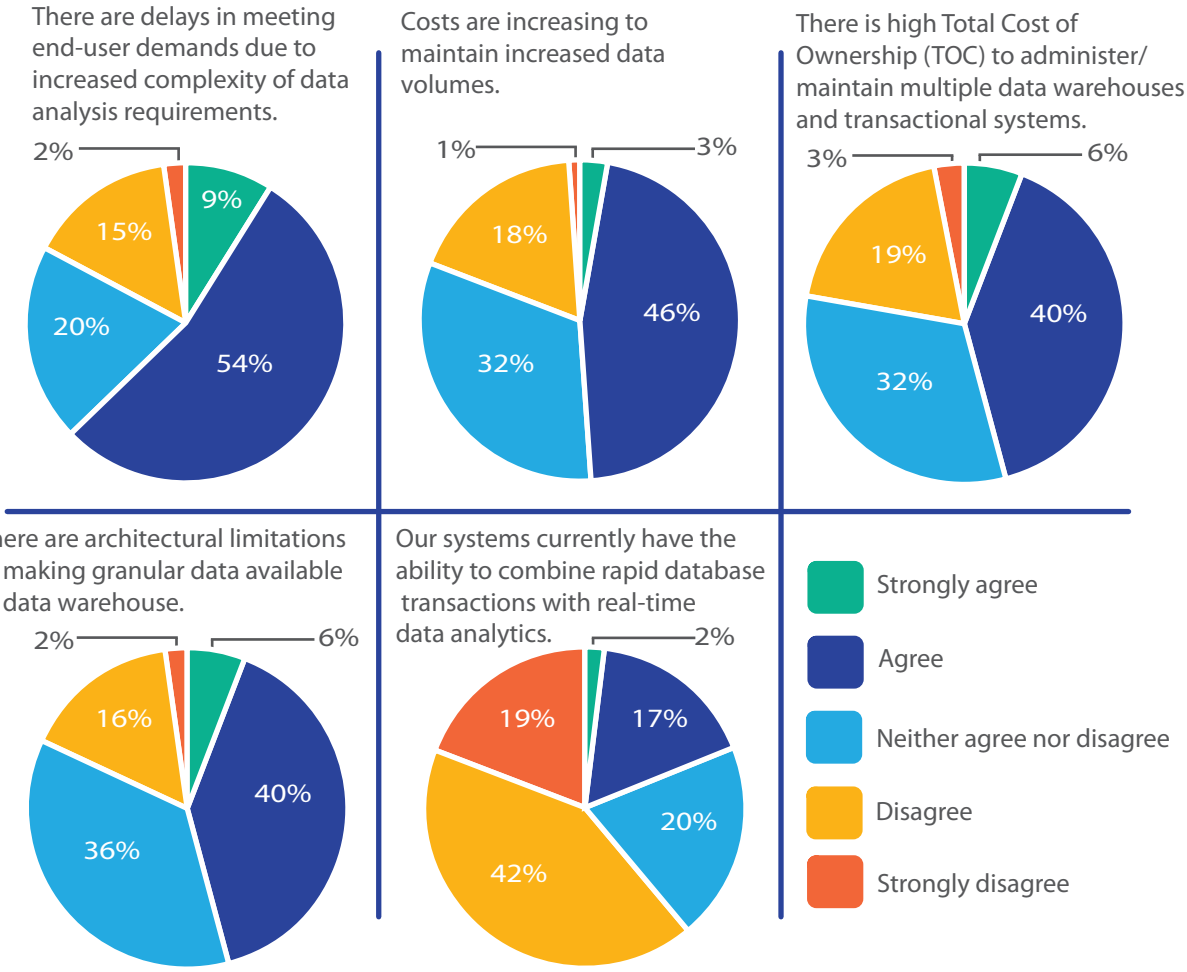
IT ISSUES

The increased complexity of corporate data analysis requirements have resulted in delays in meeting user demands, according to many survey respondents (63%) (see Chart 8). Meanwhile, as data demands grow in complexity and data warehouses expand in size, it seems maintaining increased data volumes comes at a cost. Half of respondents said these costs are increasing, and nearly half said their company has a high Total Cost of Ownership (TCO) to administer/maintain multiple data warehouses and transactional systems. Only one in five said their organization's systems currently have the ability to combine rapid database transactions with real time data analytics.

> "IT needs to listen more to finance needs. IT seems to tell management what they actually need rather than IT providing the reports required and demanded by management to run an efficient business."
>
> **– Survey respondent**

It was not unusual to hear complaints from study participants that the finance function was not able to define its own data needs from an IT perspective. According to one survey participant, "IT rules the information that the users will require. That's a major, major problem." The executive reported struggling to locate the history of a transaction: "If you want to look up simple information, you have no idea what day that transaction was posted, you've got to drill down, drill down, and drill down. Or as an alternative, reports come out in text, so you have to spend your time converting them to Excel, so wasting a lot of time. The portal for sales people doesn't coincide with the financial data ... so there is always a sales guy asking: 'How come the sales portal says we made $1 million but you're telling me we only made $600,000, what's the difference?' ... I'm no longer a finance person," the executive said. "It's faster to talk to people to know what's going on than spending my time on extracting data. Live data does not exist. The only time it exists is at month end. You can manipulate it, you can close your book. And it's only accessible to a few other people."

CHART 8 – SURVEY RESPONDENTS WERE ASKED TO RATE THEIR AGREEMENT WITH THE FOLLOWING STATEMENTS:



ANALYZING DATA

24% of respondents said they do not have a plan in place to better analyze massive volumes of data; 34% said they do but have not implemented it; 33% have started implementation and 9% are near completion.

> "With larger and larger [volume of] data, it becomes increasingly difficult to determine their quality and make necessary corrections when issues are noted."
>
> **– Survey respondent**

Executives were expecting improvements in their organization's ability to manage and analyze their data. Six in 10 said it was somewhat difficult or very difficult for their organization to manage and analyze massive volumes of data at the time of the survey, in January, 2012; but only three in 10 expected it would still remain this way by January 2013.

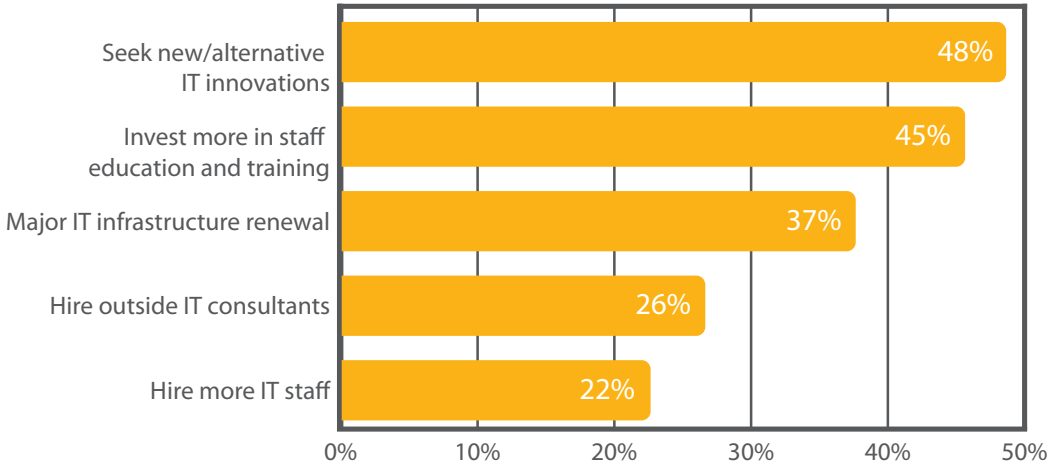
> "We're consultants. What we see in the market is that there is a need to know how to use the data and technology in a way that makes it pay off for the business. That's the big challenge that our clients are facing. There is a need to make data meaningful and useful to customers and employees in the company. In fact, what they're looking for is how to connect or how to cement everyone in the business with their internal or external clients or customers. So that's the challenge we see."
>
> **Jean D'Aquila – Director, Eastern region of Canada, Avalon Corporate Solutions Corp.**

> "How do you keep the data simple and action oriented? You can have all the data you want, but if we don't make it simple enough for our operational managers to act on it, then it's a waste of time. There won't be any benefit if there are no actions or change because of data; it has to be simple, and it has to be clear what needs to be done."
>
> **Ted Reid – CFO, Paladin Security**

A significant majority (79%) are likely to undertake or seriously consider working to improve business productivity in the next 12 months. Other priorities include improving IT efficiency (45%); accelerating business performance (44%); unlocking new insights (31%) and nearly one in four are likely to implement real time decision making (increase speed of data retrieval).

In order to accomplish these improvements, nearly half said they plan to seek new alternative IT solutions during the next 12 months and 45% plan to invest more in staff education and training (see Chart 9).

CHART 9 – SOLUTIONS SURVEY RESPONDENTS PLAN TO INVESTIGATE IN THE NEXT 12 MONTHS



When financial executives were asked about their major challenges in IT and managing and analyzing data, they responded with a range of concerns:

Planning and priorities

- Lack of a definitive plan
- Difficulty determining priorities with all the competing requests

- Hard to get a handle on narrowing down what information is actually needed and used
- Needs for information constantly evolving and shifting
- Prioritizing reporting requirements. Too many reports often lead to recipients either spending too little time with important reports or tuning out in-coming report mail
- Being able to focus on the right data and summarizing it in a fashion that is meaningful and helps support decisions

Resources and quality control

- The cost of data storage and adequate network capacity
- Difficult to ensure accurate data collection and proper use of software tools to facilitate accurate reporting
- Adequate staffing
- Receiving capital and support from our corporate head office

Maintenance and upgrades

- Changes are needed to the software we use to input, correlate and then output the relevant data we use on a day-to-day basis
- We need to upgrade the current data warehouse
- We have multiple third party systems for different functions that don't integrate well
- Biggest challenge is finding the time to implement new systems while carrying on business with old systems
- We have a changing reporting environment, so there is a need to ensure the application is robust enough to capture potential future reporting requirements, as well as reporting we would like to do corporately and for analysis purposes

Teamwork

- IT should be more responsive to the needs of the finance department
- Changing the business processes and culture to make the best use of the information
- Ownership of data and accountability for managing volumes

"TransAlta is implementing a real time "in-memory" platform to add three capabilities that are key to achieving business value from our BI strategy: agility, simplicity and self-service. Agility is achieved by being able to make changes to our analytical models as our business changes without having to unload and reload volumes of data. Simplicity is achieved by eliminating data copying and aggregating data required in a traditional data warehouse environment. The IT organization previously would need to build out these additional layers of data aggregation, which introduces delays and additional risk to finance resulting in operational reports not being available or failing when business users require access to the information. With the 'in-memory' platform, real time analytics accessing is possible even on the most granular data at lightning fast speed.

Finally, TransAlta's goal of introducing a level of self-service is enabled by the performance of an 'in-memory' platform allowing for continuous analysis but also by providing meaning to the data such as the agreed upon data definition and audit traceability back to the source data. This gives our users complete trust in the reports. With these capabilities, we believe the real time in-memory solution will be a game changer for TransAlta."

Dean Balog – Enterprise Information Architect, TransAlta Corp.

"We have not talked about the changes in the behaviour that are going to be required, either within the finance group or with any of the other groups that are analyzing this data. How to understand how to bring the information forward; how to compile it in a way that management can actually understand the value of the data; how to create the call to action; and then compel management to make the decision. We can work hard to get the right data to the table, but if we don't know how to market it properly, we'll never get a decision made."

David Anderson – Executive Vice President and CFO, CGI Group Inc.

"We have a time period that lasts about a month every semester, where we have a massive shift in learners. We have about 18,000 learners that register during that time period. And it gets incredibly complex because you can have an almost full class one week and then three days later there are two or three students, and you have to cancel courses or shift rooms. It's a really dynamic environment and having a real time application that allowed us to actually see the movement and to see the trends, to assist in business decision making for courses and number of instructors and all of that, particularly here in Alberta with our budget, the pressure and constraints are actually growing."

Tim Spielman – Academic Chair, SAIT Polytechnic

CONCLUSION

The pace of business is rapidly accelerating, and executives need to make decisions quickly in response to changing conditions. The ability to process massive amounts of data to respond to end-user queries is becoming a must-have, rather than a nice-to-have, for organizations to remain competitive.

Managers need to get answers quickly to respond to customers in a timely manner. For instance, a customer wants to place a large order, but also wants a significant discount. They would like an answer right away. The company which can respond most quickly may be the one to get the business, but it also has to be able to crunch the numbers at lightning speed in order to ensure that the sale will still be profitable. For this to happen, the information must be in the hands of the decision makers.

From an operational perspective, real time business may allow for the simplification of business processes, in turn boosting employee productivity. It may also foster operational efficiencies, for instance, by allowing companies to more effectively manage their inventory levels and thus achieve cost reductions and revenue gains.

The CFO must also assess the risk of not having real time information, says Peter Lane, former Senior Vice President, Finance and Administration at Canadian Tire Corp.'s Retail Division. "The question is: What is the risk of not having this information available to us immediately? When you start assessing it from that perspective, it brings some of the issues more to the fore. For instance, credit card fraud -- if you don't have that information immediately available to you in a format that clearly says we've got a problem here, then the risk is extremely high. So when you look at it from that perspective, there is value by virtue of the risk you face if you don't have it. If you put it in a risk/reward context, as opposed to a value/reward context, it just shines a different light on the need."

Respondents had a range of recommended solutions to increase the speed and ease of data retrieval in their organizations:

- Integrate information from service providers with company's financial systems
- Separate business development data from business operations data
- Hire more highly skilled IT staff with better knowledge of business processes
- Digital billing to customers and digital time sheets
- Define and standardize collection of data across company
- Upgrade and replace existing ERP system
- Use of a strong business analytics platform
- Move to a uniform platform

What is the role of the CFO in introducing or moving towards real time business? Since CFOs are generally responsible for IT, they must assess the potential return on the cost of investing in real time capabilities.

"I see real time business as a great opportunity for the CFO, because the reach and speed of communications technology means the CFO will have to take charge of what's changing in the moment and respond immediately to preserve financial integrity of the organization. But observing CFO capabilities for a long time makes me somewhat sceptical whether that's actually going to happen any time soon, at least in most cases."

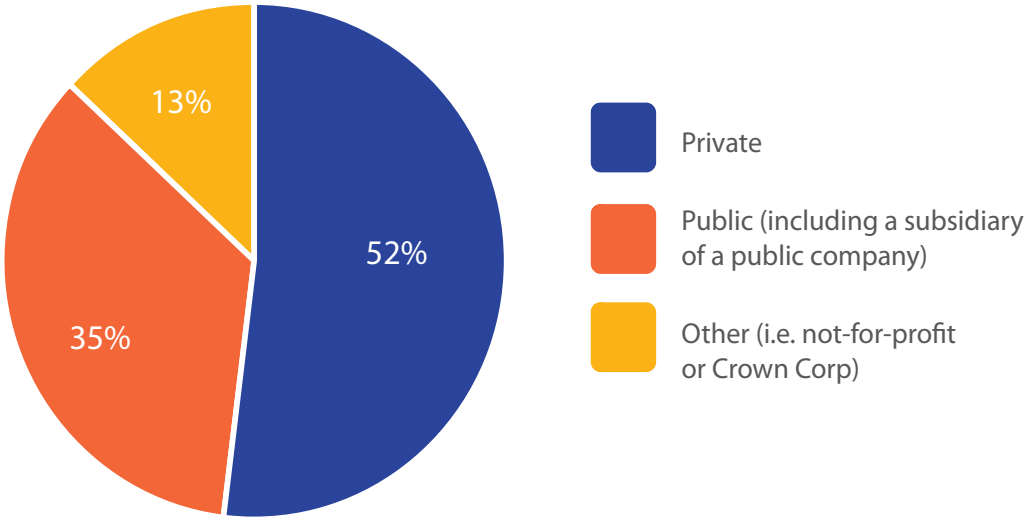
Bob Angel – President, The Gilford Group Limited

"Concerning technology, the role of the CFO is threefold. One is to make sure that for any investment made, we put a value on the technology that we're trying to implement. But I think the second one is as important. Helping people think about priorities in terms of connecting with the business objectives. It's numbers but there are also a whole lot of strategic considerations you need to look at. And the third role is that the CFO needs to get more acquainted with technology, what it can do, and needs to understand what's out there to help the organization. You've got to be proactive, and that's the area where finance has always been a bit in the back office, waiting for people to come with their wish list. But you've got to make your own assessment because that's how you'll help put the priorities together."

Carl Gauvreau – Former CFO, Hartco Inc.

APPENDIX A: DEMOGRAPHICS

CORPORATE STRUCTURE



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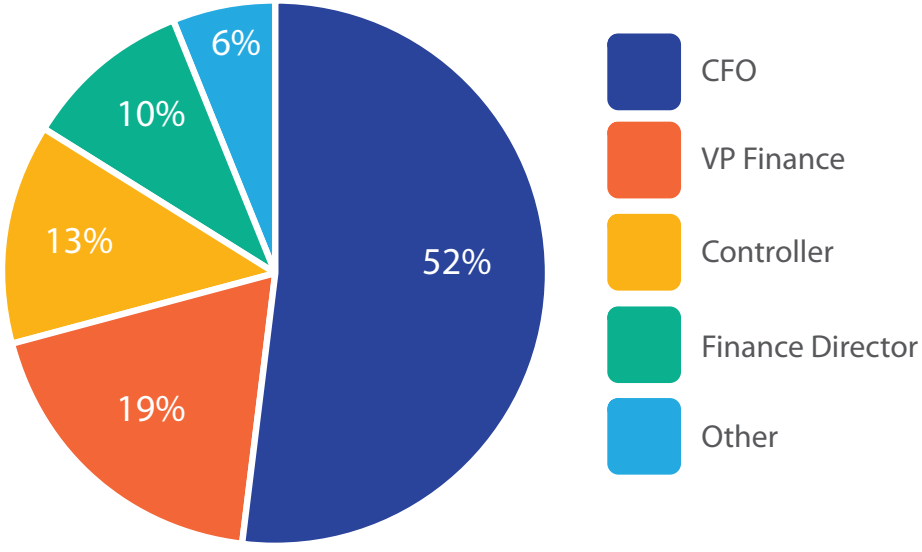

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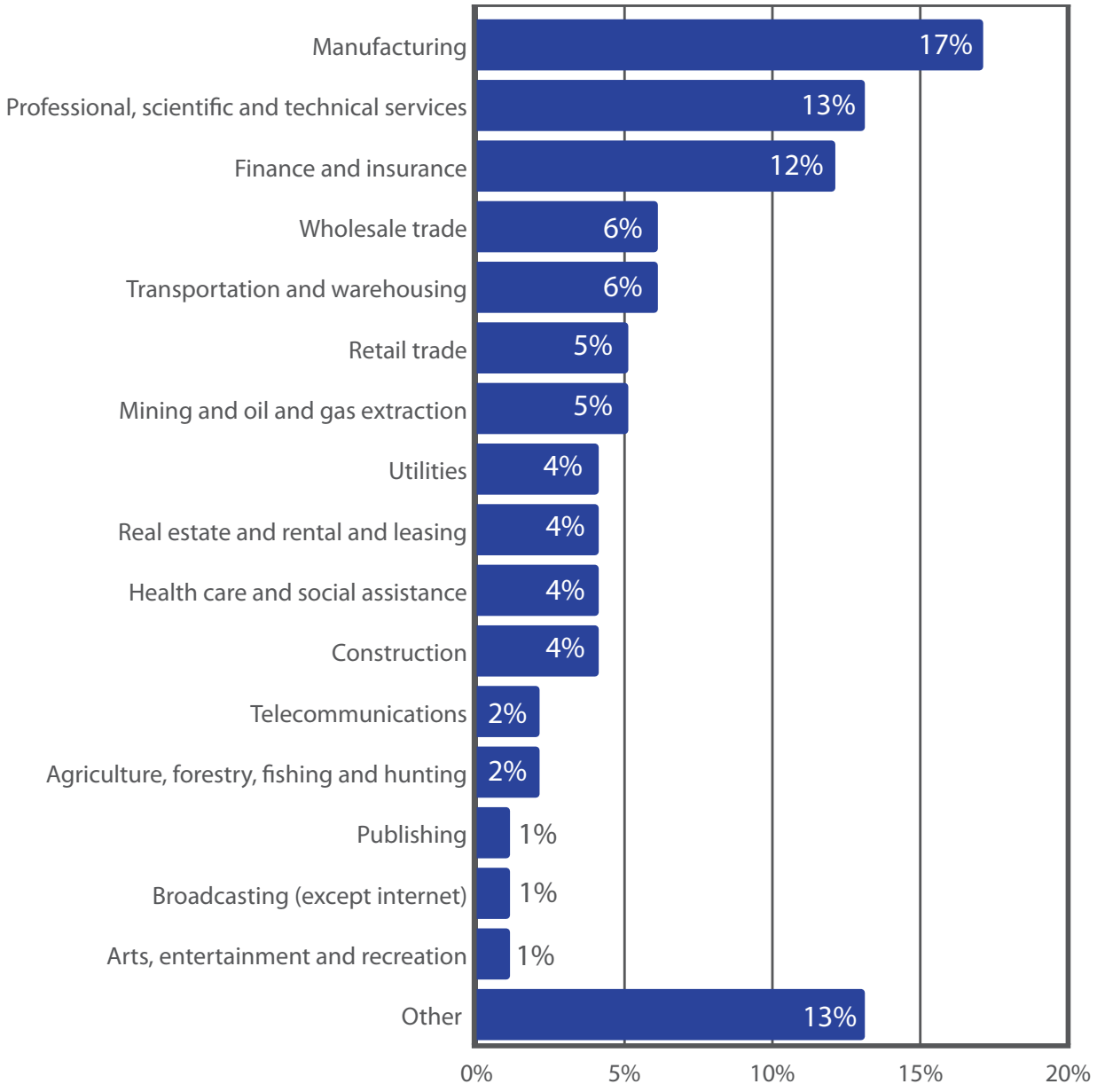
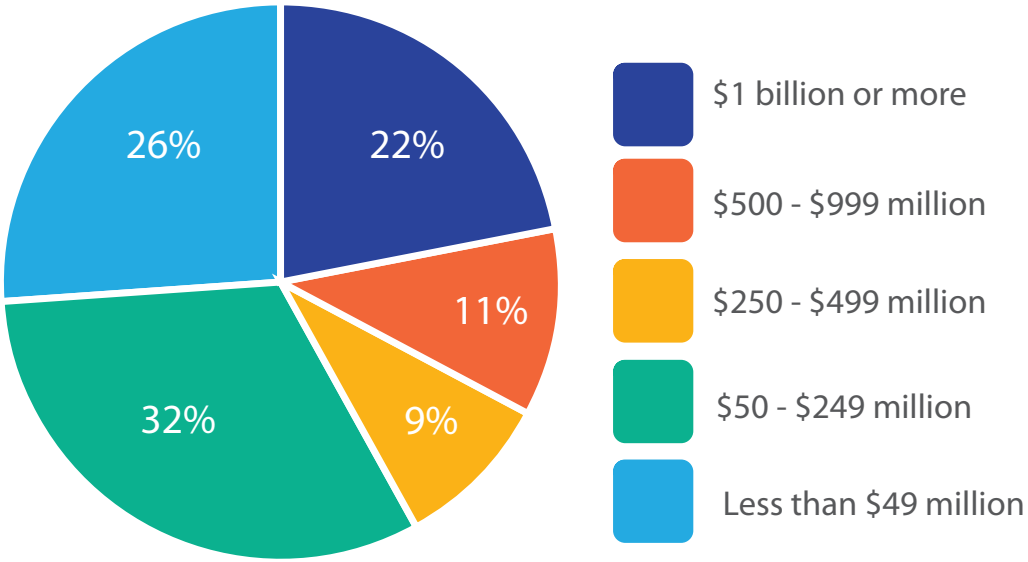
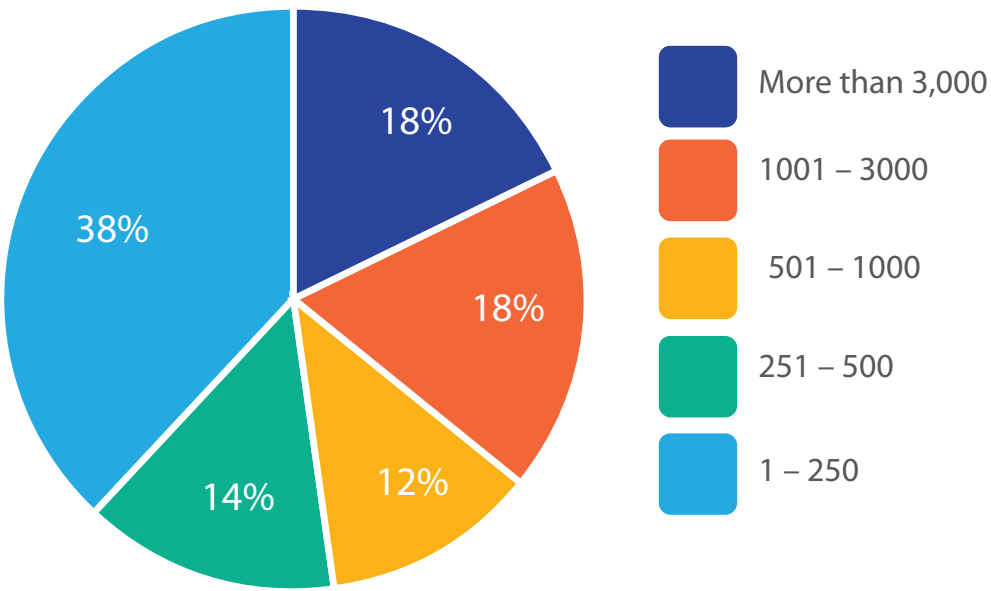


APPENDIX A

ANNUAL REVENUE



EMPLOYEES



APPENDIX B: FORUM PARTICIPANTS

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Christian Bellavance – VP, Research & Communications, FEI Canada

Dave Porter – Director, Value Engineering, Mobility, Analytics, Database & Technology, SAP Canada Inc.

Vancouver Participants:

Roger Bissoondatt – Chief Financial Officer, BC Liquor Distribution Branch

Michael Conway – Chief Executive & National President, FEI Canada

Ted Reid – Chief Financial Officer, Paladin Security

Calgary Participants:

Richard Babich – Instructor, SAIT Polytechnic

Keith Pedersen – Consultant

Tim Spielman – Academic Chair, SAIT Polytechnic

Montreal Participants:

David Anderson – Executive Vice President & Chief Financial Officer, CGI Group Inc.

Jean D'Aquila – Director, Eastern region of Canada, Avalon Corporate Solutions Corp.

Carl Gauvreau – Principal, Force5 inc. and former CFO, Hartco Inc.

Christian Settano – Chief Financial Officer, Société Générale Corporate and Investment Banking Canada

APPENDIX B

Toronto Participants:

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Mark Donaghy – General Manager and Vice President Finance, SCiAN Services

Peter Lane – Former Senior Vice President, Finance and Administration at Canadian Tire Corp.'s Retail Division

Danielle Parent – Vice President, Finance & Administration, Fujitsu Canada, Inc.

William VanRoosendaal – Controller, Redpath Sugar Ltd.

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Melissa Gibson – Communications & Research Manager, FEI Canada

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Michael Matrick – Account Executive, Canada, Business Analytics & Technology, SAP Canada Inc.

Doug Shirra – Director, Canada Enterprise & Central Region Marketing, SAP Canada Inc.

Sami Toubal-Seghir – Innovation Consultant, Mobility, SAP Canada Inc.

Sylvie Turcotte – Innovation Consultant, Finance, SAP Canada Inc.

Interviews:

Dean Balog – Enterprise Information Architect, TransAlta Corp.

Michael Correa – Vice President, Sales & Distribution Process & Solution Lead at Maple Leaf Foods

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