

# From Data to Decisions

## LESSONS FROM THE FIELD

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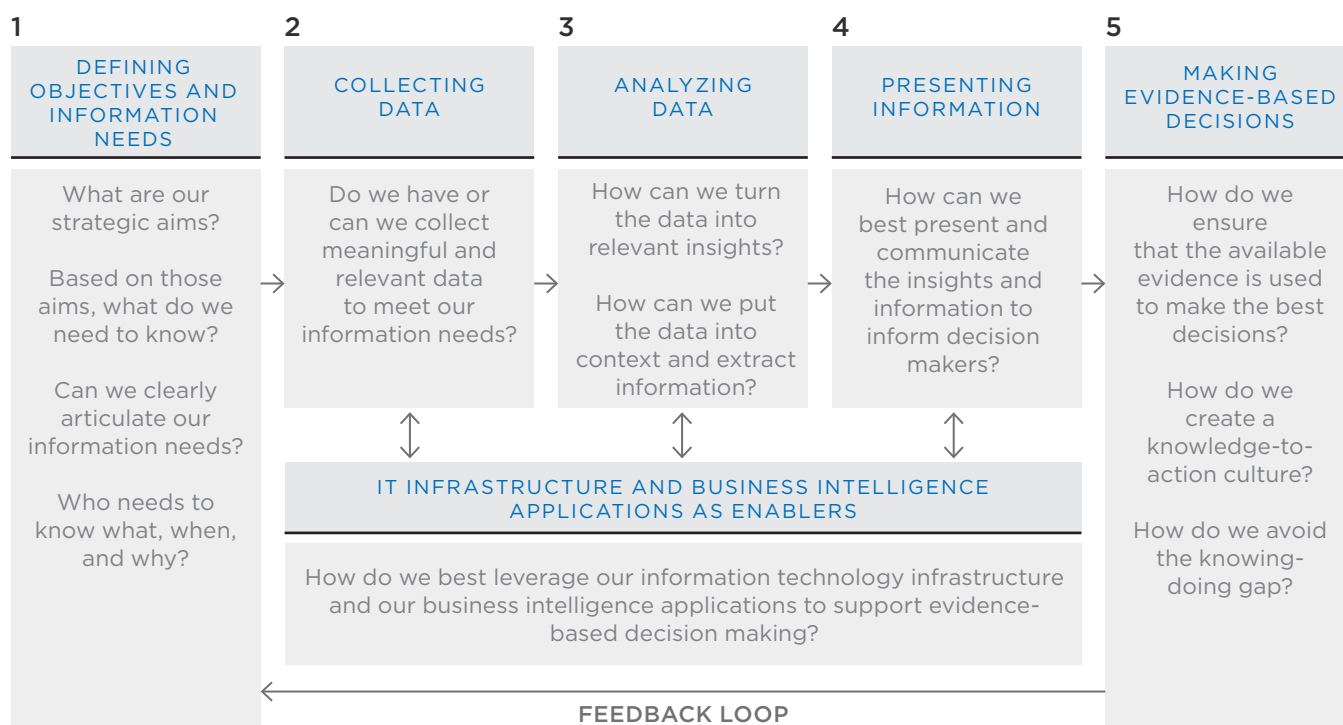
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## Collecting and using the right data to support decisions

Here are some practical examples of how organizations have applied the principles of evidence-based management (EBM) to move from data to decisions, as outlined in CPA Canada's Guidance, *From Data to Decisions: Five steps to evidence-based management*. Figure 1 provides a graphic illustration of the five-step process.

The main aim of EBM is to make sure that organizations collect the right data to support the important decisions they have to make, instead of measuring everything and ending up drowning in data while thirsting for insights.



**FIGURE 1** Evidence-based management framework

## Performance analytics: From data to decisions at Service Hotel<sup>1</sup>

Service Hotel is a small family-owned hotel group that focuses on personalized service in the middle-class market. The group was collecting traditional performance data in terms of:

- finance (e.g., net profit margin, profit per available room, turnover);
- customer (e.g., complaints, customer loyalty, service perceptions);
- operations (e.g., occupancy rate, energy and water usage per room, maintenance costs); and
- employees (e.g., staff turnover, employee satisfaction, staff training).

Even though the data was reported on regularly, few decisions were ever based on the data. The aim was to create more of an EBM environment following the five steps:

### STEP 1

#### Defining objectives and information needs

The group of directors went back to their strategy and formulated a set of high-level questions or hypotheses on which they wanted more information. This gave them a framework for the data collection and analysis and made sure that any organization intelligence initiatives were clearly linked to true information needs and unanswered questions. The team of directors realized the previous analysis was often just providing them with confirmations of things they already knew. They identified 22 key questions, which included these two:

- To what extent are more satisfied customers more loyal customers?
- To what extent do happier employees deliver a friendlier service?

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<sup>1</sup> Service Hotel is a fictional name to protect the anonymity of this organization.



With this set of questions, the team of directors had defined the objectives and information needs.

## STEP 2

### Collecting data

The organization tackled these questions one after another, and checked how well the existing data was helping them to answer their key questions. In many cases, it meant introducing new data collection methods or supplementing existing data sets with new ones. For example, the organization had enough data from their employee and customer satisfaction surveys to understand whether happier employees provide a better service. But the team realized the data collection could be simplified and collected more frequently. The annual survey wasn't really giving them the depth of data they needed, and only allowed them to perform the analysis once a year. As a consequence, they introduced a shorter and more frequent online employee satisfaction survey. The same was true for customer satisfaction and loyalty, but here they introduced completely new data collection methods. Instead of the long and expensive annual customer satisfaction survey, they now rely on just two simpler indicators: the net promoter score (NPS) and the trip advisor rating. NPS is a measure that is based on a single question: "How likely are you to recommend us to a friend?" and rated on a 10-point scale. This indicator is now collected in monthly customer surveys that sample a proportion of recent guests. The second indicator is the Trip Advisor rating, which is an assessment from an online forum that allows customers to rate hotels on a one to five point scale. The team realized they might as well use the feedback provided by customers that is collected and published by this online forum. They felt it was not only essential to take on board feedback everyone can read, but it would be foolish not to make use of this "free" data set.

## STEP 3

### Analyzing data

To ensure the data was properly analyzed, the team recruited a new analyst and trained two existing employees (one from finance and one from HR). The employee satisfaction and customer satisfaction data was analyzed using correlation analysis to test the strength of the relationship. The NPS and Trip Advisor data was also tested against customer and finance data to determine the links. What the organization found out was there were very strong correlations between customer satisfaction and organizational performance. In particular, the organization realized the importance of positive online reviews, because they would translate into immediate increases in sales. The organization also found a **correlation** between employee satisfaction and service delivery — indicating that happier employees deliver a better customer service.

## STEP 4

### Presenting information

The organization realized existing management reports were not providing management with the information it needed. In the past, the set of key performance indicators (KPIs) was presented in data tables showing performance against target and comparing performance to the previous year. This meant it was hard to really gain insights and make connections between the different data sets. It was also hard to spot trends and performance patterns over time. Instead, **a set of dashboards was introduced**, with a one-page summary dashboard for each of the 22 key management questions. Instead of lists of measures, these new dashboards now followed the principles of a newspaper front page with headline, picture, and high-level narrative. Each summary dashboard now includes a short headline — outlining the current situation, a red-amber-green traffic light to show performance against target, a data chart, and a narrative comment to provide context.

**STEP 5****Making evidence-based decisions**

The management team now reviews the data regularly. It has introduced weekly operational performance review meetings, at which immediate short-term operational performance aspects are discussed. In addition, it has introduced more strategic monthly performance improvement meetings at which the 22 questions are discussed. Each meeting looks at five questions on a rotating schedule, with some time allotted to exceptional issues. The management team is making sure that if any presented data is not really used to make decisions, then the data collection will be stopped or the indicator will be replaced with something more useful. The decisions made so far include:

- a revised staff induction and training program based on the customer feedback;
- a new customer segmentation and marketing strategy (including online and social media); and
- new package deals for high-value customers.

## People analytics: From data to decisions at Google Inc.

Google is a multinational Internet and software corporation based in Mountain View, California, that specializes in Internet search, cloud computing, and advertising technologies. Google's mission is to organize the world's information and make it universally accessible and useful. And in pursuing this mission, Google is very serious about using information to inform their decisions.

Founded by two engineers, Google is an organization in which data-driven insights and EBM are part of its DNA, and where Googlers (employees in Google) speak the language of data as part of their culture. Google aims to make all decisions based on data, analytics, and the scientific method of the EBM framework.

In the five-step EBM framework, data provides answers, but unless you are clear about the questions you need to answer, data is pretty useless. Google aims to start with these questions and be very clear about

the information it needs at the outset. Its executive chairman, Eric Schmidt, says: "We run the company by questions, not by answers. So in the strategy process we've so far formulated 30 questions that we have to answer [...] You ask it as a question, rather than a pithy answer, and that stimulates conversation. Out of the conversation comes innovation. Innovation is not something that I just wake up one day and say 'I want to innovate.' I think you get a better innovative culture if you ask it as a question."



## Supporting human resources decision making at Google

Within its global HR function, Google has created a people analytics department that supports the organization with making decisions on people using data. One question Google wanted to have answered was: “Do managers actually matter?” This is a question Google has been wrestling with from the outset, where its founders were questioning the contribution managers make. At some point Google actually got rid of all managers and made everyone an individual contributor, which didn’t really work, and managers were brought back in.

Within the people analytics department, Google has created a group called the information lab, which comprises social scientists who are part of the department, but focus more on longer-term questions, with the aim of conducting innovative research that transforms organizational practice both within Google and beyond. This team took on the project of answering

the question: Do managers matter? — code-named “Project Oxygen.” In doing so, the objectives and information needs were clearly defined.

The team first looked at the data sources that already existed, which were performance reviews (top-down review of managers) and employee surveys (bottom-up review of managers). The team took this data and plotted it on a graph that revealed that managers were generally perceived as good. The problem was the data didn’t really show a lot of variation, so the team decided to split the data into the top and bottom quartiles.

Using regression analysis, the team was able to show a big difference between these two groups in terms of team productivity, employee happiness, and employee turnover. In summary, the teams with the better managers performed better, and employees were happier and more likely to stay. Although this has confirmed that good managers do actually make a difference, this analysis wouldn’t allow Google to act on the data. The

next question they needed answered was: “What makes a good manager at Google?” Answering this question would provide much more usable insights.

So the team introduced two new data collections. The first was a “Great Managers Award,” through which employees could nominate managers they felt were particularly good. As part of the nomination, employees had to provide examples of behaviours they felt supported their good assessment of managers. The second data set came from interviews with the managers in each of the two quartiles (bottom and top) to understand what they were doing or not doing (the managers didn’t know which quartile they were in).

The data from the interviews and from the Great Manager Award nominations was then coded using **text analysis**. Based on this, the analytics team was able to extract the top eight behaviours of a high-scoring manager, as well as the top three reasons why managers were struggling in their role.

The findings are summarized below.

A high-scoring manager (eight top ones in Google):

A good coach	Empowers the team, does not micromanage
Expresses interest/concern for team members’ success and personal well-being	Productive and results-oriented
A good communicator — listens and shares information	Helps with career development
Has a clear vision/strategy for the team	Has important technical skills that help him/her to advise the team

What causes managers to struggle (the top three in Google):

1. Has a tough transition (e.g., suddenly promoted, or hired from outside with little training);
2. Lacks a consistent philosophy/approach to performance management and career development; and
3. Spends too little time on managing and communicating.

Google used different ways of sharing these insights with the relevant managers, including a new manager communication that outlined the findings and expectations. But just sharing the insights wasn’t enough; Google saw a need to act on the insights. Many concrete actions followed this analysis. Here are some key ones:

- Google started to measure people against these behaviours. For that purpose, it introduced a new twice-yearly feedback survey;
- Google decided to continue with the Great Manager Award; and
- Google revised the management training.

This case example illustrates how decisions can be supported by good data. Google followed the five steps of EBM by: defining the objectives and information needs: “Do managers matter?” and “What makes a good manager within Google?”; collecting data: using existing data from performance reviews and employee surveys and creating new data sets from the award nominations and managers’ interviews; analyzing the data: simple plotting of the results, regression analysis, and text analysis; presenting the information: new communications to the managers; and making evidence-based decisions: revising the training, measuring performance in line with the findings, introducing new feedback mechanisms.

## Big data analytics: The case of Tesco

A further example comes from Tesco. The British-based international grocery and general merchandising retail group operates 4,331 stores across 14 countries, employs 470,000 people, and in 2011 generated £67.6bn (C\$105 billion) in revenue. Tesco is the largest private sector employer in the United Kingdom, and is currently the third largest global retailer based on revenue, and the second largest based on profit. Over the years, the organization has been transformed from a “pile it high, sell it cheap” market trader to a world-leading retail group. While it originally specialized in food and drink, it now (a) offers a wide range of products, including clothing and consumer electronics, and (b) offers an increasing range of services, such as telecoms, health, Internet, insurance, and financial services. In addition to its stores, Tesco has created a very successful online supermarket offering, among other things, groceries, home retailing, and music downloads. Even amidst the current global recession,

Tesco is performing extremely well with an 8.1% growth in annual revenue and an 11.3% growth in profits before tax.

### STEP 1

#### Defining objectives and information needs

Tesco’s philosophy is not to answer every conceivable question with performance data, but only the critical and most important questions. Tesco has created a corporate Balanced Scorecard, and based on its strategic objectives has defined the analytical questions it needs to have answered. Indeed, the organization is happy to look at just a 10% sample of the data to identify key issues, and then investigate further using larger data sets for the questions that actually matter to customers and the organization.

The ability to collect and analyze data has transformed Tesco from an organization that thinks it knows what customers want to one that has the knowledge and

insights into what customers prefer, and how these preferences keep shifting over time. Former chief executive officer (CEO) Sir Terry Leahy states: “We don’t spend a pound or dollar on a store without talking to our customers — they are the best management consultants.”

## STEP 2

### Collecting data

An essential component of Tesco’s performance data is its massive customer knowledge. Back in 1994, Tesco introduced its loyalty program called Clubcard. Although it was ostensibly introduced as a loyalty program (such programs were beginning to become popular around that time), the main premise underpinning the Clubcard was to gain customer insights that would help Tesco to improve the way it runs its organization.

Most experts would today agree loyalty programs that are only used to target customers with discounts and offers are ultimately self-defeating. Rather, loyalty programs are beneficial (a) when the potential to generate competitive advantage from the data is recognized, and (b) when the capability to mine data, and to make sense of and apply the insights gleaned from that data, is inculcated into the organization as a capability and focus. It was the decision-support “potential” of the data that convinced the senior leaders in Tesco to endorse the idea of a loyalty program.

Today, Tesco operates one of the most successful loyalty programs ever created. With over 14 million users, the Clubcard program allows Tesco to collect detailed transaction information on two-thirds of all shopping baskets processed at their tills. However, for the program to remain useful, it was critical that Tesco was able to turn its data into customer knowledge it could act on.

Many of Tesco’s competitors abandoned their loyalty card programs, arguing that analyzing all the data would be madness. Tesco, on the other hand, always recognized the mission-critical importance of analyzing the data — figuring how to secure competitive advantage from customer data was far from “madness.”

## STEP 3

### Analyzing data

When Tesco started with the Clubcard program, it decided to outsource the data analysis to Dunnhumby — an organization that specializes in data analysis. Tesco realized it didn’t have the skills to systematically analyze the mass of data gleaned from its customers, and therefore left it to Dunnhumby to develop the strategy for the data analysis. Later on, Tesco decided to buy a 53% stake in Dunnhumby, which today has more than 850 employees throughout the world and annual sales in excess of £150 million (C\$233 million).

With the increasing realization that analytics are an important driver of success, Tesco realized it needed to have in-house competencies to analyze customer and performance data. It created an internal team that was responsible for analyzing data and extracting insights. Tim Mason, Tesco’s marketing director and chairman of Tesco.com explains: “These people are geographers, statisticians who had spent a lot of time applying those skills to understanding how customers would behave. They could crunch through the stuff that came from the Clubcard, see the patterns in it and they could start to help the management of the organization understand what was going on, but also point towards what should be done about it. They had to find the data, and present it in a way that makes the decisions stark, and clear.” Tesco ensures it maintains the ability to develop common-sense responses. It aims to create processes that enable relevant insights to be used to improve the customers’ experience.

**STEP 4****Presenting information**

Data is presented in different ways in Tesco, but includes insightful performance reports as well as organizational intelligence applications that provide dashboards and performance reports to the management team. Most reporting is scheduled weekly or monthly. These dashboards and reports allow executives to drill down into the data and perform high-level analysis of their own.

**STEP 5****Making evidence-based decisions**

Tesco's objective is to never make any changes without first talking to its customers. It also ensures it runs experiments to test ideas before implementing them on a wider scale. The performance data plays a vital role in this process and has enabled Tesco to take new ideas and offers to smaller groups of customers, while using the remaining customers as control groups. This takes a lot of risk out of innovative ideas. In many ways, the performance and customer data has become a powerful laboratory to test whether new ideas work or not. In the book *Scoring Points: How Tesco Continues to Win Customer Loyalty*, authors Clive Humby, Terry Hunt, and Tim Phillip recall that Tesco's performance information, especially its Clubcard data, is not just about passively observing trends, it is a massive laboratory of customer behaviour: "When it was doing something wrong, it knew about it in days. When it was doing something right, it could implement it nation-wide in weeks."

Tesco's marketing director Simon Uwins says: "As a company we have moved from being intuitive to being analytical. This is a much more complicated business than it used to be. We don't forget our intuition, but better data led to better thinking, and our data give us the confidence to ask the right questions. You can have all the data you want, but the key is to use them to ask the right questions."

For example, Tesco is now able to conduct experiments to understand whether new product lines, innovative offers, and price reductions have the desired effects. Using its customer data allows Tesco to track the response immediately, which takes a lot of guesswork out of organizational decisions. □

This publication is one in a series on *From Data to Decisions*. An Overview and Guidance are also available on our website. For additional information, please contact Carol Raven, Principal, Strategic Management Accounting & Finance at 416-204-3489 or email [craven@cpacanada.ca](mailto:craven@cpacanada.ca).









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