



Business intelligence in travel

BCD travel

travel smart. achieve more.



Business intelligence in travel

Contents

- Infographic: From data to action 3
- Introduction 4
- What is business intelligence? 5
 - Predictive analytics 16
 - Prescriptive analytics 17
- Challenges of business intelligence 18
 - Data normalization 19
- Get the most from your data 22
- What's ahead 22
 - *Multi-source data consolidation case study* 23
- Get ready for the future: Use BI now 27



Claudia Unger, Director of Research & Intelligence for BCD Travel

Claudia leads a research team charged with identifying ideas that businesses can use to improve their travel programs. They take intriguing tactics and concepts that are being used outside our industry—and some that are way out on the frontier, like behavioral economics—and explore how to make them resonate in managed travel.



From data to action

Bringing business intelligence to travel management



Travel-related spend data can be hard to **capture**: it can come from many sources and be spread across multiple programs and systems.

It comes from **approved** sources, and it might be **quality** data...



but then again it might not.



Trying to capture it yourself can be **inefficient** and **time consuming**...



and data can be **lost**.



See and **measure** more results:

Consolidate your data, **visualize** and **analyze**



Use multi-source data consolidation to integrate all your available data into one database so it can be mapped, processed and cleansed into high-impact visuals that are easy to analyze.



Predicting



Monitoring



Analyzing



Reporting



Data

Reaching higher levels, you'll better understand and use the data that impacts your travel program...



Be confident in your data



Draw conclusions from contextual data and take actions



Influence traveler behavior



Monitor and adjust policy

and make decisions that will have a positive impact.

THAT is business intelligence!



Introduction



Business leaders' interest in data has gone viral over the last year. And as their interest grows, these leaders raise a number of questions: How can we understand data? How can we compare and benchmark? What's the best way to look at data?

The answer, for travel as for many other areas of corporate activity: business intelligence (BI). From simple reporting to complex predictive analytics, business intelligence gives you the information and the context you need to answer your travel program performance questions. You can see what happened in the past, analyze why it happened, monitor current developments, and even predict what may happen in the future.

For corporate travel programs, the right business intelligence strategy means you can analyze all your travel-related spend as easily as you can review a single booking. With continuous development in data accessibility, more travel managers will be able to integrate all data sources within one data warehouse. And ultimately, business intelligence through Big Data could be a game changer.

There might be more than meets the eye

Used to your advantage, business intelligence can raise your status within your organization. You and your management can gain deeper insights into travel, its impact on employees and the risks and rewards of a well-run program. And that means you make a more strategic contribution to the business.

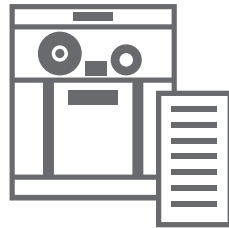


What is business intelligence?

The increasing interest in data has prompted renewed discussion around business intelligence. While not a new topic, there's still a lot of uncertainty around what BI actually is, how it's used and how other terms, like 'reporting' and 'analysis,' relate to it.

Business intelligence (BI) is an umbrella term that includes the applications, infrastructure, tools and best practices that enable you to access and analyze information to improve decisions and performance.¹

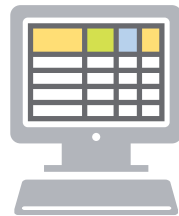
The evolution of business intelligence*



Phase 1: 1980s–1994

The data technician era

Only IT professionals that knew Structured Query Language (SQL), a programming language, could write computer code to query the information database. This was true even for simple reporting like top carriers by spend.



Phase 2: 1994–2010

The data analyst era

The first generation of business intelligence tools arose. You didn't have to know SQL anymore but you did have to have a high level of technical training to get useful information from the database.



Phase 3: 2010–now

Mainstream analysis begins

Managers are generally more effective at consuming data and drawing useful conclusions from it. More importantly, at the same time business intelligence tools have become significantly easier to use.

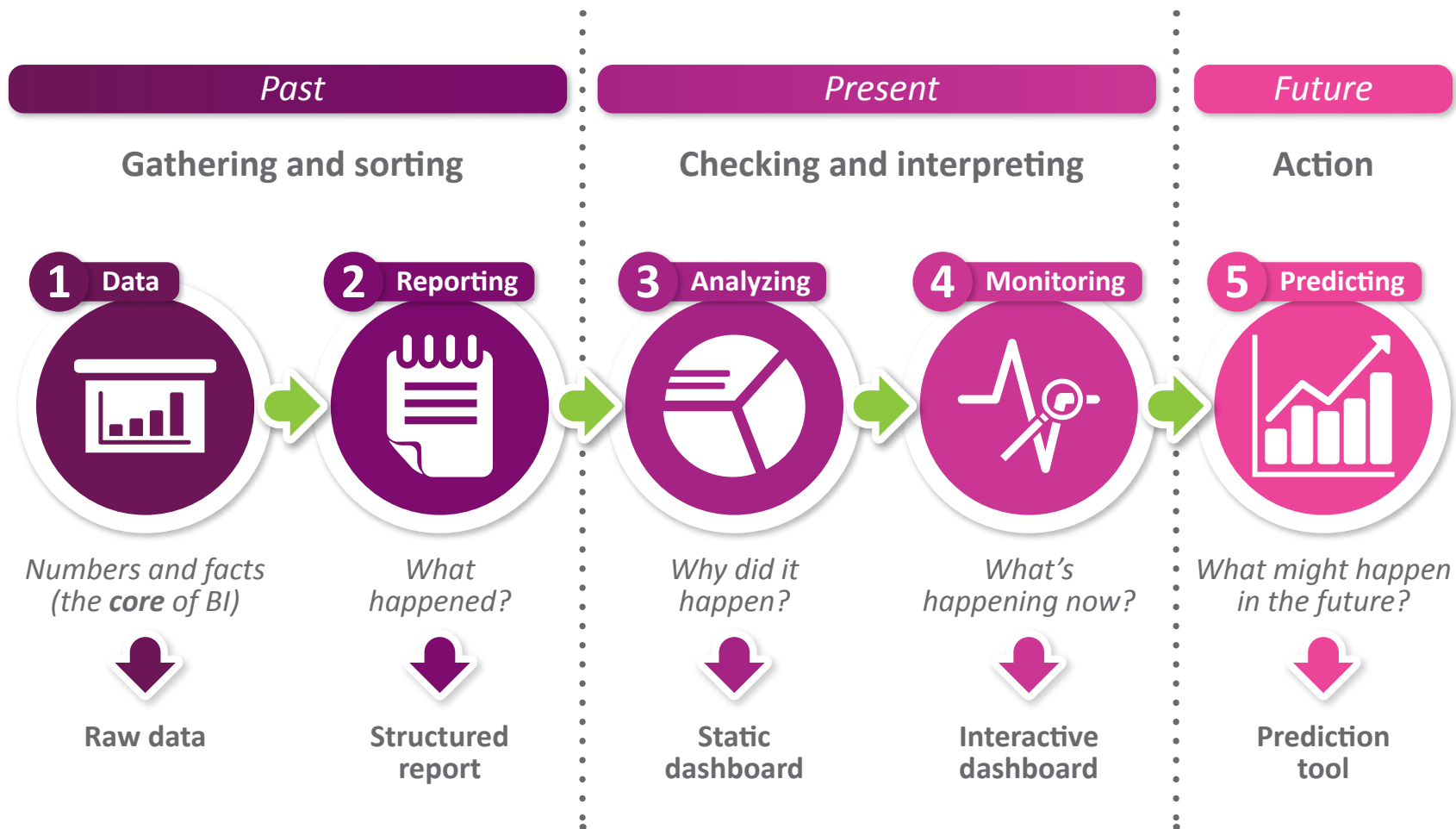
*All dates are indicative. In reality, they are approximate and overlapping.

¹Gartner, 2013



Remember, your business intelligence is based on historical data, which fuels action—and even future predictions.

The graphic below showcases the different uses of BI.



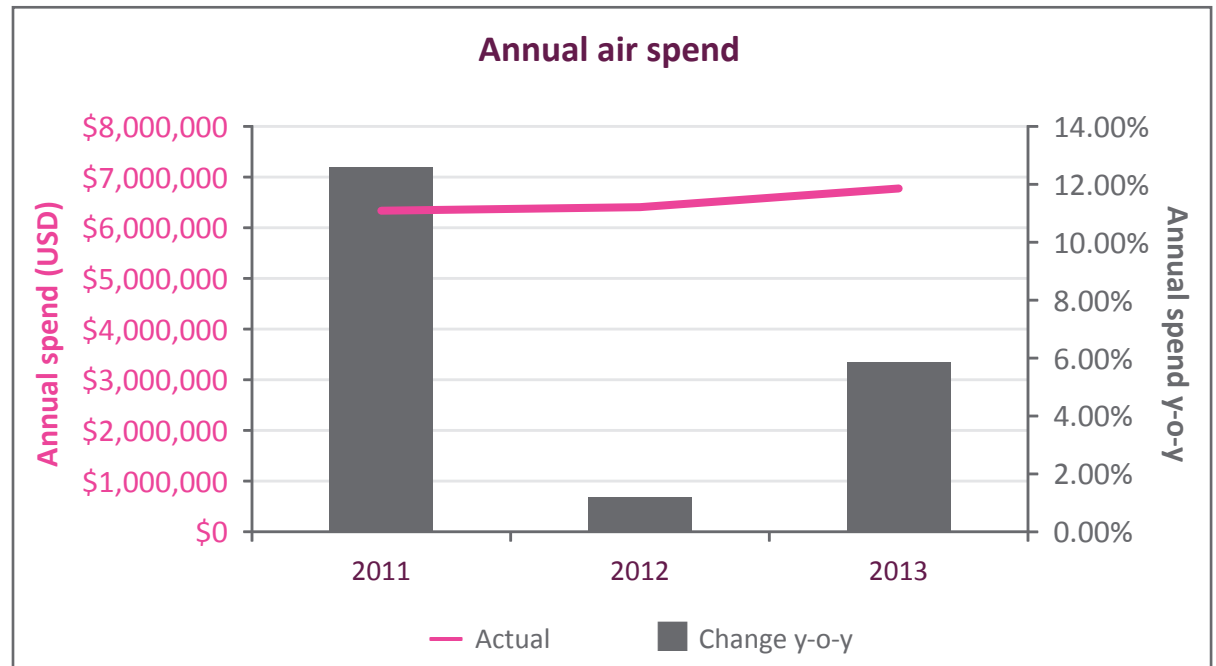


Reporting

What happened?

Reporting is the most basic form of business intelligence—and the most widely used. Just bring up an Excel spreadsheet and sift through the data. You can apply filters or build pivot tables for easy reference. It’s a quick way to get an overview of your historical data.

For example, in the graphic to the right, you can look at last year’s air spend (the magenta line) and year-over-year (y-o-y) changes (the gray bars) with a simple graphic.





Analyzing

Why did it happen?

To understand why your data shows what it does, take the next step and analyze it. Ask questions. And don't be surprised to discover that there's more than one reason for the result. The more questions you ask, the more defined the answers will become.

In the previous air spend example, you might want to ask:

- Why are we spending more on travel? Is it because of more trips or higher prices? If more trips, what are the origins and destinations?
- If higher prices, why?
 - Seasonality?
 - Different travel patterns (e.g., intercontinental vs. domestic)?
 - Inflation (i.e., compared against market index or peers)?
 - Different airlines, advance booking, cabin class or booking class?

You can use business intelligence to discover the answers to these questions. Let's look at a few.

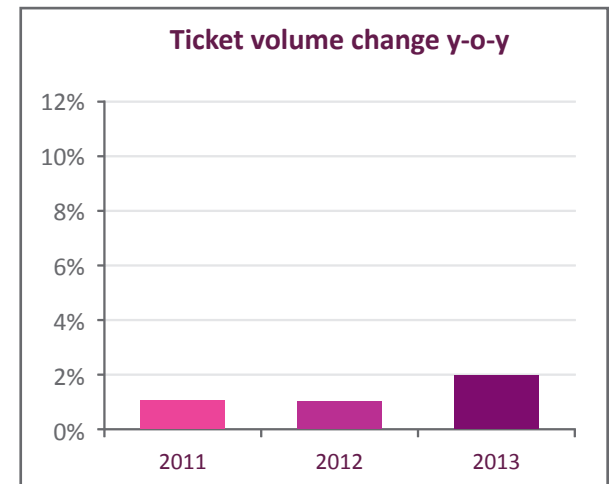
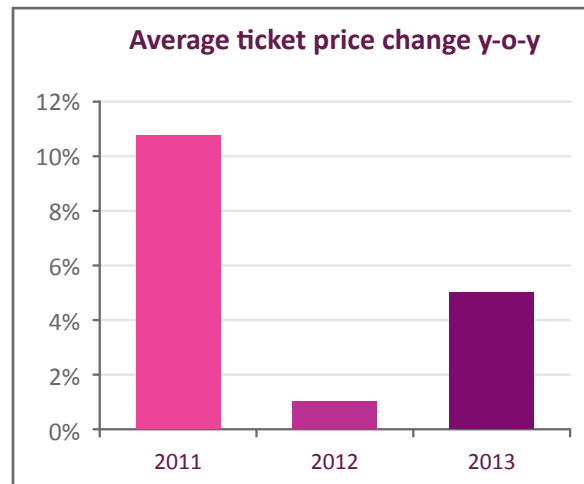




Analyzing

Question:

Why are we spending more on travel?



After a quick visual analysis, you can see that the average ticket price (ATP) plays a far more important role in the increased 2013 air spend than ticket volume.



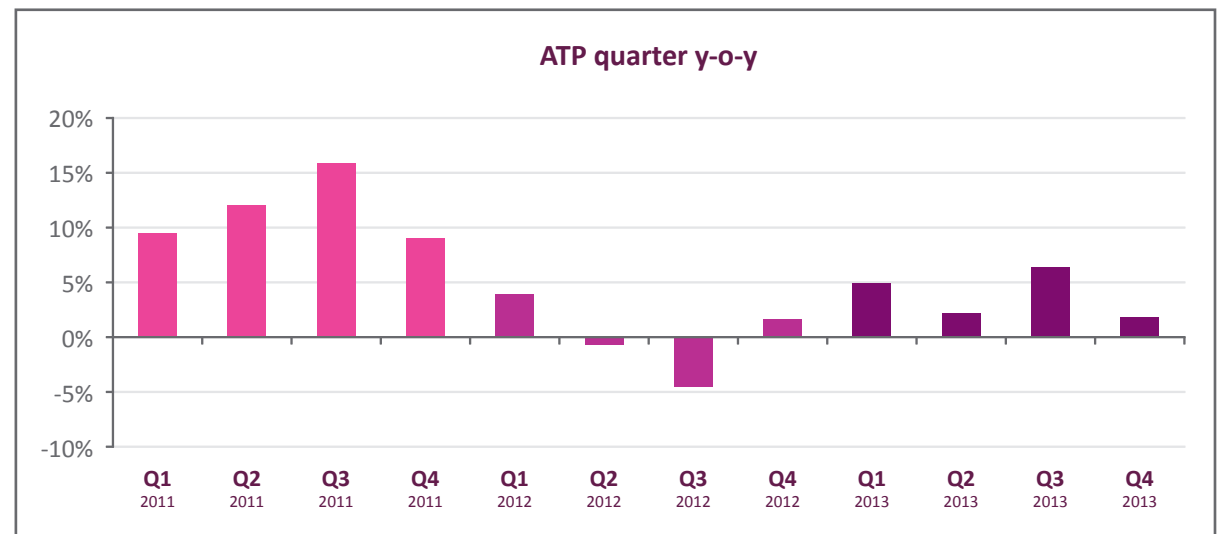


Analyzing

Question:

Is the ATP change constant or seasonal?

An analysis of seasonality shows whether a change in average ticket price is constant or seasonal. The graph below shows ATP changes by quarter for 2011 through 2013. This maps the long-term trend for seasonality. At this level there appears to be no pattern.



To validate this analysis, you can look at the data a bit differently.



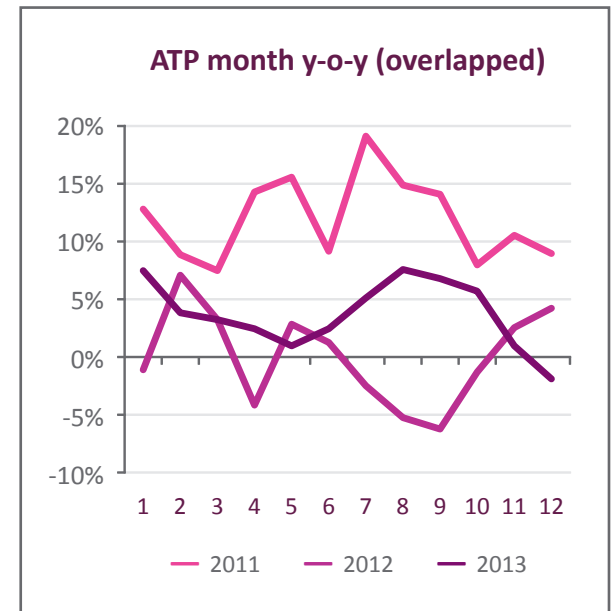
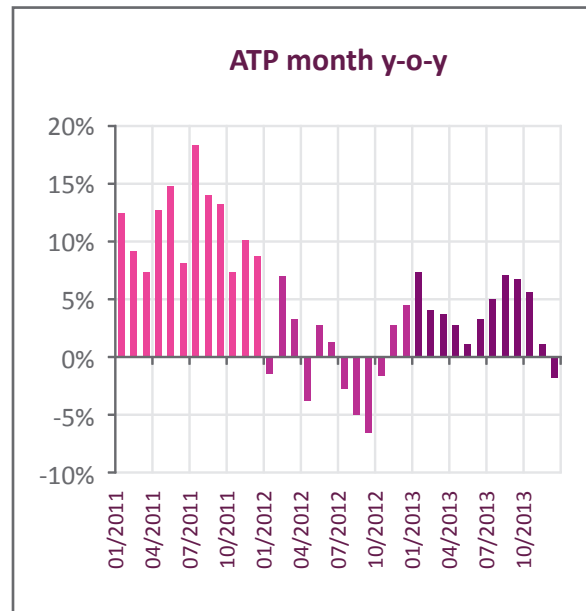


Analyzing

Question:

Is the ATP change constant or seasonal?

The following graphs take a more detailed look at seasonality. The first one shows all months in a bar chart to display the long term trend more clearly. The second shows the same information overlapped so you can easily see seasonality trends repeating year over year.



There's little seasonality in this example. Even though 2011 and 2013 show a similar seasonality pattern, 2012 looks very different. In this situation, you need further analysis for confirmation.





Analyzing

Question:

Why have ticket prices increased?

Data visualizations can help you identify patterns and, together with expert knowledge, pinpoint actual drivers and/or predictors.

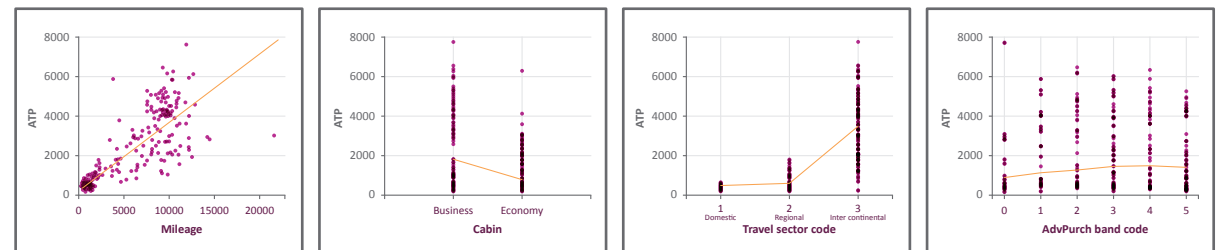
With correlation and regression analyses, you can answer questions about drivers of average ticket price, the relationship between ATP and traveler behavior and the strength of each.

The examples below look at how the following relationships drive average ticket price:

- Price and miles flown
- Price and cabin class—business and economy
- Price and travel sector—domestic, regional or intercontinental
- Price and advance purchase bands

The scatter plot is likely the fastest and easiest tool you can use to show these relationships. Each dot represents a dataset entry and the graph can be completed with a regression line (linear or non-linear) to highlight the main trend.

In the examples below, we use an aggregated dataset, where each point represents a monthly average for a given country and cabin class. Bear in mind that the more you aggregate, the fewer patterns you'll be able to identify.



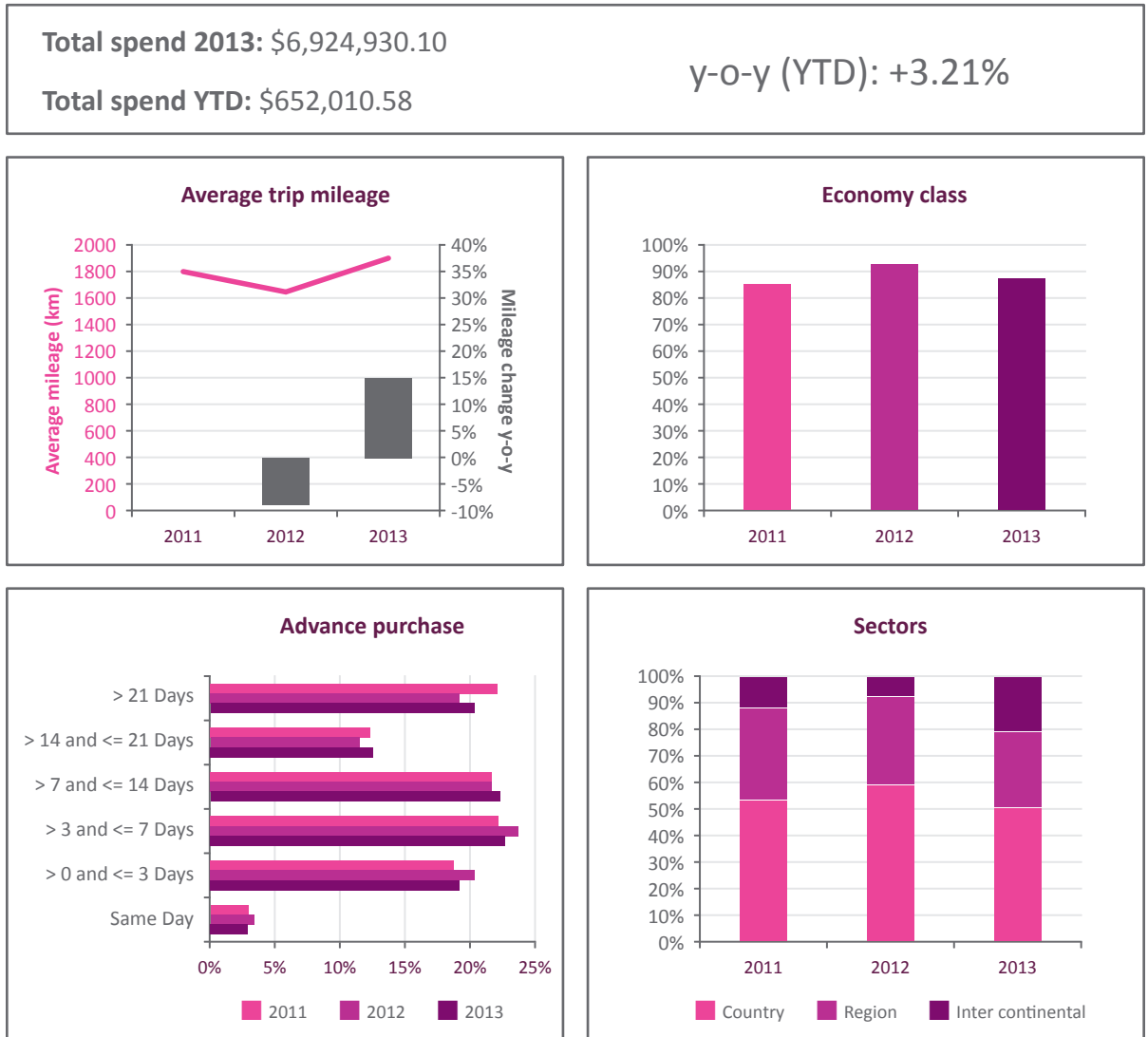
The analyses confirm that mileage, cabin, sector traveled and advance purchase behavior all drive average ticket price. This visual exploration gives a good overview of the relationships between variables. However, to get a more detailed view of the actual relationships and their weighting, you'd need to use a more advanced modeling technique like statistical modeling.





Analyzing

While the graphs on the previous page are accurate and useful, they may be difficult to digest quickly. However, with the right reporting tool, you can create a dashboard that shows the main point of each graph through simple and colorful visualizations. Dashboards make your data more accessible and easy to understand, especially for stakeholders who don't work with this information on a daily basis. Compare the graphs on the previous page to the scorecards on the right. Each show the same main point, but the scorecards are much easier to understand quickly.



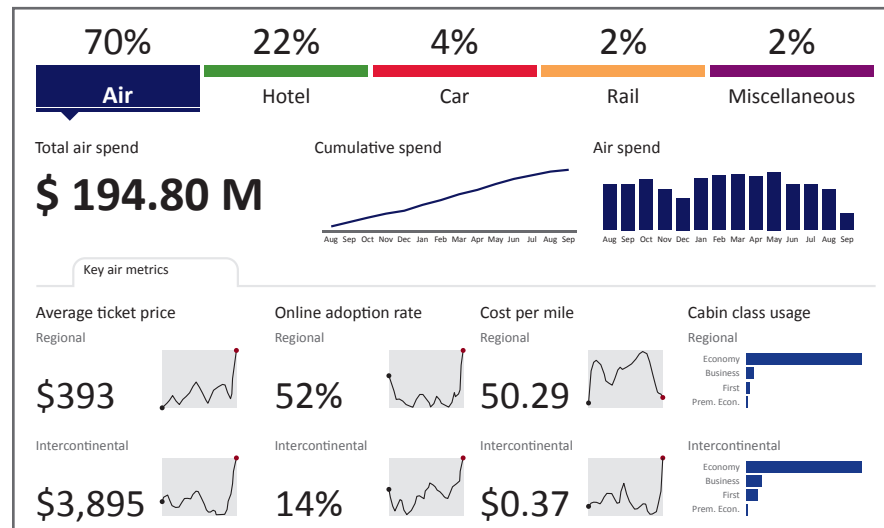


Monitoring

What's happening *now*?

Once you're in control of your past data, move towards monitoring what is happening today. Since you now know what caused past results, you also know what to target to influence results. This will help you achieve your goals and create targeted campaigns to keep your travelers on track.

Let's stay with our air spend example, but this time let's look at current air spend. With interactive scorecards, you can drill down into your findings. For instance, perhaps you see there's a much higher ATP this month for a certain route: just click on the graphic and you'll get to the data behind it—down to the level of a single transaction.



At this stage you can also benchmark internal business units or, depending on the data you have available, your competition, your industry's best practice or your travel management company's average client.

You can also use targets and scorecards to keep your performance against partner and preferred supplier contracts and agreements on track.



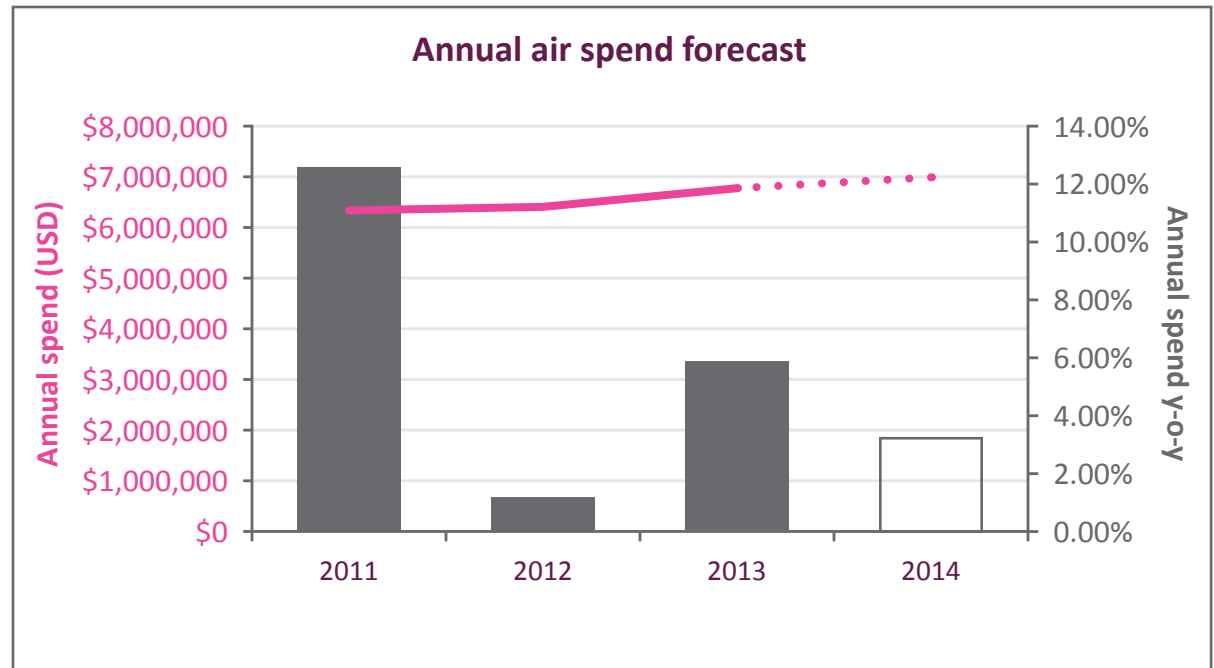


Predicting

What *might* happen?

You're now moving into the future—and need to remember that all the answers you get are predictions. They can point you in the right direction, and may sometimes even be completely accurate, but they're still predictions. They're only as good as the historical data you use, the model you create and your knowledge of events that happened in the past and influenced your data.

Predictions will not only help you estimate your travel spend for the next year, but will also help you plan accordingly and determine which areas you might want to improve.



Once more the gray bars indicate the y-o-y changes in annual travel spend but the 2014 empty bar is new. This is the forecasted y-o-y change. The solid magenta line again reflects the annual air spend; when this becomes dotted, it represents the forecasted amount.



Predictive and prescriptive analytics

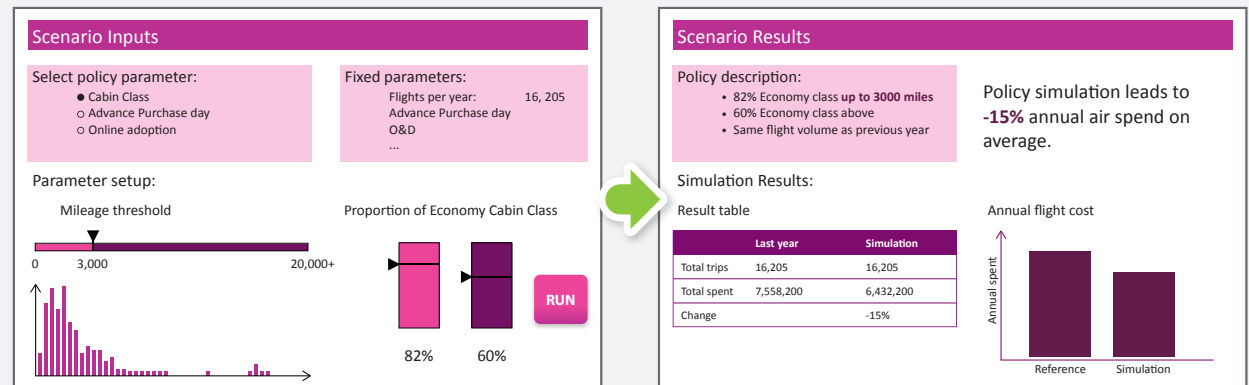
While you'll already have actionable suggestions from your analyses, there are some further—and more elaborate—forms of analytics that you can use to more quickly and accurately achieve your goals: scenario analyses (also called “what-if scenarios”) using predictive and prescriptive analytics.



Predictive analytics

Predictive analytics is the analysis of current and historical facts to forecast what will happen in the future. You can use predictive analytics to better understand your travelers and, therefore, better influence their decisions.

Within predictive analytics, a what-if analysis can quickly show how tweaking your policy might influence your travel budget. For example, what if all travelers had to fly in economy class for trips less than eight hours? Based on historical data, you can find an average price for all trips fitting that variable within one year. That leads you to the potential savings this change in policy will bring. It also pinpoints travelers and business units that will be most affected and might need help in implementing this change—to keep satisfaction levels high and avoid talent attrition.



Predictive analytics can improve travel management in other ways as well:

Reverse yield management

Airlines and hotels have used predictive analytics for many years in the form of yield management. They use historical information about demand every hour, day, week and month to set the highest price they think they can get for each seat or hotel room.

It's now becoming possible for corporate clients to perform reverse yield management to understand the cheapest time to book. Many airlines already encourage reverse yield management among consumer customers by displaying calendars on their websites showing when the cheapest flights are available. In the future, corporate travel buyers will be able to mine their own information, instead of supplier-fed information, to achieve a similar goal.

Disruption management

Predictive analytics can also potentially be used for minimizing disruptions to travelers caused by severe weather. For example, if a snowstorm is expected in a particular area, the travel management company can look at disruption records from similar storms in the past to predict whether travelers should change or cancel their itineraries, and advise accordingly.



Prescriptive analytics

Prescriptive analytics tell you what to do to achieve your goals.

While predictive analytics help you forecast the result of an action or event, the prescriptive analytics model considers what you want to achieve and “prescribes” an action to get you there.

For example, imagine your company has asked you to save 5% on airfares year over year. At the same time, you've been asked to keep the current business class travel policy in place to ensure employee productivity on long-haul routes. The model will compute all last year's air travel, identifying the impact of price, advance booking, class of travel, highly frequented routes and carriers. Using all that information, it will recommend ways to reach your savings goal. This could be booking farther in advance, leveraging highly frequented routes in negotiated deals or moving travel days. Most likely it will be a combination of recommendations you can adjust to fit your needs.



Challenges of business intelligence



Travel manager bandwidth

We believe the majority of travel managers currently use data reporting and analysis according to program maturity and component (air, hotel, rental car, expense management, etc.). While there's a lot of data being collected, there's generally not enough bandwidth for travel managers to take on detailed analysis and analytics of all data available.

A study of about 100 corporate travel managers around the world, conducted by Advito, BCD Travel's independent consulting arm, confirms improvements are needed in business intelligence. Only a handful of participants state their "data requirements are clearly specified and systematically managed." Participants also believe supplier data should be more readily available to supplement transaction data.

How do you even begin to tackle your travel data? From bandwidth to technology, you'll face challenges. Some are quickly resolved; others will take time (and likely require or provoke change in the industry). But remember: regardless of the challenges you encounter, the more knowledge you have the better equipped you'll be to meet them head on.

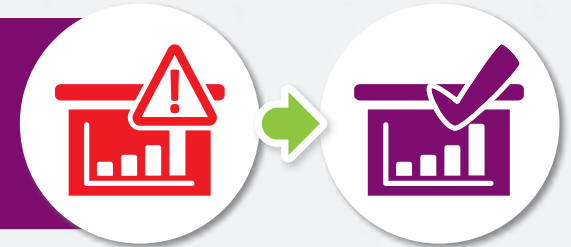




Data standards

To date, no data standards or regulations exist regarding the format of information passed between suppliers, clients and travel management companies or other third parties. This makes working with data extremely difficult. Incorrect data includes invalid and outdated data, often a result of manual data entry or data migration. For example, when benchmarking one company unit to another in a different country, chances are high that field names will not be the same and you'll have to manually adjust. That means you may lose time and risk errors. Without data standards, there's a lot of doubt about data quality.

Data standards challenge: Data normalization



The biggest challenge in data aggregation is normalization: cleaning data to avoid duplications and identify gaps and ensuring apples-to-apples comparisons. But help is on the way.

One of the biggest reporting headaches for travel managers is hotel data inconsistency. For instance, the hotel group Accor has three Amsterdam properties in its Mercure chain: two in the city center and a third at the airport. It's not uncommon for reporting to simply state that a traveler stayed at the "Mercure Amsterdam," making it unclear which of the three properties was used. Even more confusing, the traveler's corporate card provider reporting might describe the hotel only as "Accor Amsterdam." Not only are there 16 different Accor-owned hotels in the city, but the use of yet another name makes matching between data sources even more difficult.

Interim solutions to this problem deploy "fuzzy logic," which matches data through intelligent guesses. Fuzzy logic is based on probabilities rather than fixed and exact information. For example, if a reporting tool knows that Mercure is a brand owned by Accor, it can make the match more easily.

However, in this example, since there are several other Accor brands, "fuzzy logic" can't provide a conclusive match. The problem could be solved if there were a universal system of identification numbers for the world's hotels. Today, no such system exists. What's the solution? Geo-coding is being used to pinpoint a location using latitude and longitude coordinates based on other geographic data, like an address or zip code. With geo-coding, each hotel can be uniquely and precisely identified by its GPS location.

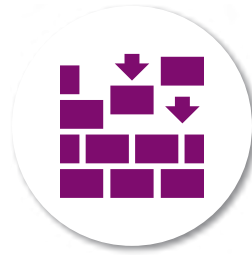




Real-time data

You often have access to historical data. However, when it takes too long to gather, report and use it, you've got a problem. The phrase "nowcasting," originally coined to describe short-term weather forecasting, is being used in business today to describe real-time data gathering that's immediately actionable. This is the "holy grail" for businesses that can customize offers and adjust prices using real-time data.

An excellent example of nowcasting is a study conducted by the MIT Media lab. This study used mobile phone location data to determine the number of people in Macy's parking lot on Black Friday (the start of the Christmas shopping season), to estimate the sales of the day. The resulting estimate had a direct impact on Macy's performance on Wall Street.²



Multiple data sources

The previous challenges apply to any one type of data, be it transactions, credit cards, or expense management systems. But they become more complex when you consolidate multiple sources of data. While third-party data integration is offered by many TMCs today, you might be more comfortable using an independent and specialized firm to do the job. Find out how a big IT company successfully used [Multi-Source Data Consolidation](#) on page 23.



Data safety and security

The travel industry depends on a great deal of personal information—from name, address and date of birth to passport information, emergency contacts and credit card details.

The challenge is to keep your company and traveler data safe and secure. Fortunately, you have support on a number of fronts, from country laws to industry regulations to individual contracts.

When it comes to reporting data, you need to make sure you abide by these laws and regulations. Consider having your legal department take a look to be sure you're in the clear. And do this not only for your in-house data, but also for data you get from external sources.

² Harvard Business Review, "Big Data: the Management Revolution", 2012





The big picture

If you look at your reports in isolation it's easy to miss the big picture and make the wrong decisions. And that means you might miss a chance to drive change.

For instance, while you want to ensure data reliability and standards, you also have to decide how many data iterations you're willing to withstand. You can involve a cadre of stakeholders, but understand they will have their own data standard definition. And multiple revisions of data standards can lead to errors, possibly corrupting data fields. In other words, you can spend a lot of time cleaning and checking data. And at the end of the day, your revisions may actually make the data less reliable.

All this leads not only to frustration but, more importantly, to lost opportunities. For example, suppose your hotel program compliance is 40% in Switzerland. If you consider this result in isolation, you don't know whether this is good or bad, or if and how to change it. Only when you look for the reasons behind the spend will you see the big picture. And then your potential actions suddenly become much clearer.

As you can see, business intelligence comes with challenges, but don't let the challenges bring you down! Start by setting key performance indicators (KPIs). This will help you establish strategic goals and give a structure to your data needs. For a quick KPI refresher, check out our [infographic](#). For more detailed information, download GBTA's Strategic *KPI Resource Tool* (members only) and/or read the white paper *From Numbers to Action: Improving Travel Program Management through Strategic KPIs and Meaningful Savings Measurements*. This white paper was developed by Advito and guides you through developing your own KPIs.



Get the most from your data

Create stories

Business intelligence involves telling highly relevant, persuasive data stories, personalized and delivered in easy-to-understand ways. Finding the most compelling stories also means gathering data from a wider and/or less structured set of sources, including a broader range of booking channels, GPS information, supplier ratings, and even social media (e.g., trip recommendation sites). Telling data stories helps you sell your ideas better and more quickly, which means you can influence your program performance sooner and more effectively.

Go beyond reports

Of course, reports and analyses are part of business intelligence, and using them gives you some benefits. But pushing further into more complex analytics and modeling opens a new door to your travel program. And that door lets you into a whole new world of possibilities: to stay on top of budgets, adjust policy, drive volume, find gaps, compare your program internally or externally and adjust KPIs, all while taking good care of your travelers.

What's ahead

Limitations in technology used to be a roadblock to reliable data. That's rarely the case today. Major strides in technology have made data collection, immediacy, aggregation, personalization and visualization much easier.

Easier data integration

Now that companies are increasingly storing their data in the cloud,³ it's easier to integrate travel data with data from other parts of the enterprise. "When data shifts to the cloud, there are fewer silos," says Susan Hopley, data scientist and founder of The Data Exchange. An example of putting this to use is Multi-Source Data Consolidation. Such integration allows clients to determine things like how and where they should travel, how much it will cost them to complete projects or the value of maintaining client relationships.



³Cloud computing is the practice of using a network of remote servers hosted on the Internet to store, manage, and process data, rather than using a local server or a personal computer.

Multi-Source Data Consolidation case study

IT services and consulting company saves big by consolidating and acting on entire travel-related spend

Grabs rapid, quantifiable savings by quickly spotting and effectively communicating travel purchasing inefficiencies.

This service uses highly proficient technology to consolidate travel data from a wide variety of sources, integrate it, deduce and normalize it and serve it up in easy-to-understand visualizations. Though technologically complex, it requires almost no user training.

You can easily customize data outputs thanks to software configuration instead of hard coding. As a result, you can do a lot on your own without help from data specialists, though you might want to consider them for more complex analytics.

The challenge

An IT company's travel information was fragmented, making visibility across travel spend impossible. Information came from many sources across many regions and was presented through high-level dashboards. Although the company had some visibility into travel behavior, achieving that visibility took considerable time and resources. To make matters worse, the end result often lacked the precise filtering and query capabilities needed for making decisions around changing travel purchasing behavior.

The solution

The organization partnered with PI, a third-party data integrator, to change the way it gathered, integrated and reported multi-source travel data. PI established a trip-level feed from their transactional systems, then cleansed, enriched and validated the data. This enabled the company to easily consolidate trips made on specific routes into one master route to compare travel methods and behavior.

Following the data feed validation phase, PI's service was implemented with ten travel managers who, though based in different parts of Europe, were now able to access the same source system.

The result

The company's agency, card and expense data sources were integrated, normalized and made accessible to all users. The user interface provided live interaction with unlimited filters and drilling. This combination of integrated data and advanced analytics enabled the company's travel management to communicate what was happening across their travel spend. This insight, together with its consequences and the organization's need for change, drove savings and efficiency.

Following is an example of the company's ability to drive savings on frequent routes using Multi-Source Data Consolidation powered by PI.

Paris – Nice

80% of employees flying from Paris to Nice were flying fully flexible tickets with a French carrier. The remaining 20% were using a low-cost carrier. Travel management was not completely unaware of this, but by using PI they were able to engage stakeholders with visualizations that showed the problem. And that drove a decision to change traveler behavior. The mean one-way fare on the French carrier was €265.63 compared to €121.08 on the low-cost carrier. This behavior change impacted 2,250 transactions and drove annual savings of €310,000.⁴

⁴This is based on the difference in mean fare calculated over both 2010–11 and 2011–12 financial years, multiplied by the total travel activity in 2011–12. Note that both flights leave within ten minutes of each other and serve the same airports. Prices also verified as still generally valid using routeRANK. Further significant savings could be achieved if travelers switched to rail, where the mean one-way fare is €43. The rail journey takes around an hour longer—city center to city center—than air.





Geo-coded location data

Perhaps the most significant category of data for the travel industry is geo-coded location data or global positioning. Geo-coding finds the geographic coordinates of a hotel, for example using a street address or a postal code. Generally using latitude and longitude information, it is now possible to pinpoint the hotel on a map (think Google Maps)—without duplication and naming errors.

Geo-coded location data is not only used for mapping, but is also starting to be used in other ways.



Hotel clustering

Geo-coding can help you find hotels near specific locations, like client offices or event venues. For example, perhaps you have multiple clients in one city. You can use the latitude and longitude data of those offices to find the nearest hotels with just one search. And that means you have solid targets for potential hotel negotiations.



Policy management

Geo-coding can also be used to steer travelers towards policy-compliant choices. For instance, if a traveler lands at the Amsterdam airport, an SMS message can be sent advising her to transfer downtown by train, rather than taxi, to save both time and money.

With the advent of mobile payment, geo-coded policy management becomes even more precise. A company could, for example, create a policy that restricts reimbursing meals or drinks bought within 10km of an employee's main workplace. If the employee buys a coffee from a café within that radius and makes the payment through their mobile phone, GPS positioning pinpoints the location of the café. It recognizes that the café is within 10km of the office and automatically creates an alert that the expense is not reimbursable. Likewise, the purchase is not uploaded to the mobile expense report.





Big Data

Big Data comprises “high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making.”⁵ Put another way, the amount and variety of data available to us has increased dramatically. So has its speed of access, quality and value.

Is Big Data here yet? Some industries are on the verge of mastering true Big Data. In retail, companies like Amazon use Big Data to prompt clients with ads for items they've just looked at—even away from their own site. Facebook advertising finds key words in your postings to spoon-feed you products they bet you want. They are harnessing the power of Big Data. They capture historical sales and click-through data (of all clients and of the person targeted at that moment), payment data (paypal, credit and debit cards, and others)

and combine it with personal information like gender, birthday and postal code. All this is pretty straightforward as the data is provided in a structured format. But then they scan social media (Facebook, Twitter, Instagram, etc.) to find out more about the person's behavior, interests and likes. They want to know not only what a customer buys, but when and, more importantly, why.

With Big Data, there's also a need for Big Analytics—the capacity to make sense of the data. Today you likely extract a subset from your database and analyze it on your computer. However, Big Analytics reverses that direction, moving the computation to the data and enabling you to use raw data for on-the-fly analysis. One way to do that is by using Hadoop, an open-source purpose platform for Big Data analytics. With its many ecosystems, like Pig, Hive and MapReduce, huge amounts of data

become scalable and analysis becomes more affordable than was possible before. It's like looking at a high-resolution picture: you see more.

Travel generates a lot of data, mainly from transactions, expense reports and credit cards. These make up the structured part of Big Data. But the unstructured part, like the information we could get from presentations, documents, emails, and social media or internal platforms has not yet found access into travel, nor many other industries. As published in Gartner's *Hype Cycle for Emerging Technologies 2013*, Big Data is about two years away from becoming the norm. It's time to get your house in order and get ready for amazing new capabilities and insights coming your way soon.

⁵Gartner, 2013





Unstructured data

Unstructured data is any kind of information that does not fit neatly into a model. Usually we're talking here about sentiment data from social media networks, but it can also be documents, reports, papers (like this one), presentations or emails. Basically everything that has information in a non-structured form (also referred to as qualitative data) fits this category.



Volume—*the sheer amount of data*

Today: all data connected to a trip

Tomorrow: all data connected to the trip plus data about the person taking the trip



Variety—*more integrated data sources*

Today: transactions, expenses, credit card bills

Tomorrow: all of the above plus personal information, sentiments and anything else you could want



Velocity—*the speed of data access and analysis*

Today: reports with near-real time data

Tomorrow: on-the-fly analysis aligning your travel program with your company's goals



Veracity—*data quality and reliability*

Today: different providers have different standards; errors occur

Tomorrow: cleaning and de-duping data from different sources and integrating all into one analysis platform—without losing quality



Value—*using Big Data for your business needs*

Today: using reporting and dashboards to align business goals

Tomorrow: using Big Data for decision making, aligning business goals, predictive and prescriptive analytics (what-if scenarios) and influencing travel behavior



Get ready for the future: Use BI now

Use the business intelligence you have today to prepare for what it will bring tomorrow. Here are four steps you can take now to make an immediate impact on your program and prepare for Big Data's full arrival in the travel arena in just a couple years.

1. Business intelligence is the backbone of your travel program, so use what you already have: transaction data through your TMC, expense data provided by your expense management system and credit card data.
2. Remember the importance of data quality and the right questions to ask. Look at the results in context and if they seem strange, dive deeper into the transaction that caused the problem. If you can't find a solution within the transaction, chances are your underlying data is not the data you need to answer your question. Or perhaps your question is too narrow or wide to bring meaningful results. Go back, check and amend.
3. Establish reporting standards across your program when analyzing. This will make the quality check and progress much faster and lead to quicker results. If you're part of a travel association, talk to them about industry-wide data standards.
4. You can draw many insights from the data you already have access to, and moving from past to present and future intelligence will unearth them. Speak to your TMC or consulting partner about how you can make better use of this—it will help you prepare for the arrival of Big Data.



For more information please contact

BCD Travel
Six Concourse Parkway NE
Suite 2400
Atlanta, GA 30328

www.bcdtravel.com
research@bcdtravel.co.uk

About BCD Travel

BCD Travel helps companies make the most of what they spend on travel. For travelers, this means keeping them safe and productive, and equipping them to make good choices on the road. For travel and procurement managers, it means advising them on how to grow the value of their travel program. For executives, we ensure that the travel program supports company objectives. In short, we help our clients travel smart and achieve more. We make this happen in nearly 100 countries with 11,000 creative, committed and experienced people. And it's how we maintain an industry-leading client-retention rate of more than 97%, with 2013 sales of US\$22.4 billion. For more information, visit www.bcdtravel.com.

About BCD Group

BCD Group is a market leader in the travel industry. The privately owned company was founded in 1975 by John Fentener van Vlissingen and consists of BCD Travel (global corporate travel management), Travix (online travel: CheapTickets, Vliegwinkel, BudgetAir and Vayama), Park 'N Fly (off-airport parking), Parkmobile International (mobile parking and traffic applications) and joint ventures Airtrade (consolidating and fulfillment) and VakantieXperts (leisure travel). BCD Group employs over 12,000 people and operates in almost 100 countries with total sales, including US\$9.2 billion partner sales, of US\$24 billion. For more information, visit www.bcdgroup.com.

