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Performance management

Emerging technology and travel management

Blockchain, chatbots, machine learning, virtual reality (VR) and the Internet of Things (IoT) are among the emerging technologies capturing the imagination of the business travel community. These innovations have the potential to be truly disruptive forces. But precisely how they will change corporate travel, and how buyers can prepare, isn't yet clear.

This series of *Inform* reports explores how these technologies can interact with six aspects of travel program management: sourcing, policy, communications, duty of care, payment and expense, and performance management.

We'll help you understand how these emerging technologies can deal with some of the challenges you face in managing different parts of your travel programs.

This report takes a closer look at how emerging technologies like machine learning, chatbots *et al* can make performance management – the activities travel managers should already be undertaking to improve their travel programs – more powerful. These technologies are already delivering better and faster business intelligence. But they can do even more. In the future, expect them to continuously monitor and assess program performance, and automatically adjust policy rules and supplier agreements in real time to achieve smarter outcomes.

The result? A better run program, in which travel managers can expect to perform more effectively against key goals like cost reduction, risk management and employee satisfaction.

Performance management – Defining it

Performance management can be simply summed up as tracking and improving the effectiveness of a travel program. If done well, it provides extra support to travel managers as they pursue key objectives including:

Cost control

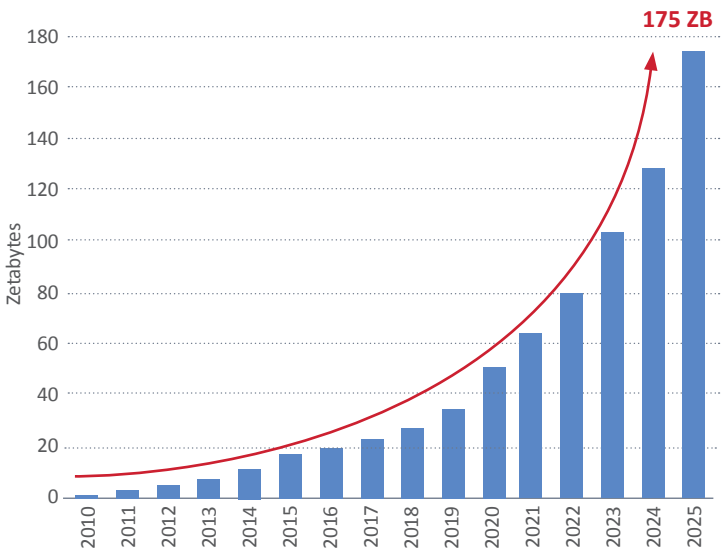
Regulatory compliance

Duty of care

Employee satisfaction

Technology's biggest contribution to improving performance management comes from the exponential rise in data availability it's facilitated over the last decade (Figure 1). If handled correctly, the wealth of data available today will enable travel managers to make better informed decisions. More information means you can measure more; what you can measure, you can manage. The result? A better managed travel program.

Figure 1: The rise of data



Source: Data Age 2025, sponsored by Seagate with data from DataSphere, Nov. 2018

There's not just a greater volume of data; it's better quality data, too. The **Fours Vs of Big Data** show how the business intelligence available to travel managers is improving their options:

1 Volume

More data

More data points enable a more meaningful impact assessment, e.g. when might be the best time to book a room or a flight.

2 Velocity

Faster data

Enables a proactive response when program performance is at risk, e.g. acting quickly to preserve negotiated rates when data shows a lower-than-expected level of bookings.

3 Variety

More types of data

New ways to analyze program performance, such as sentiment analysis of traveler feedback about supplier performance.

4 Veracity

Clearer data

Enabling a better grasp of the total cost of travel.

Emerging technologies like machine learning, blockchain, chatbots, the Internet of Things and virtual/augmented reality are driving advances in all four of these Vs. While such an incremental leap in data offers huge opportunities, it also creates some major challenges. With such a vast array of data now available, travel managers can't possibly analyze all the numbers or even know the first place to start looking for them.

Luckily, these same technologies provide the solution. They can make sense of the information they produce to create meaningful insights and create a fifth, and most important, V: value. Technology no longer just generates data: Technology also analyzes and acts on it. These emerging technologies can transform performance management by:

- Automatically alerting travel managers to problems or opportunities as they occur;
- Independently correcting problems or pursuing opportunities;
- Enhancing the accuracy and scope of "what if?" scenario planning.

Read on to find out how emerging technologies can help you transform the way you manage your travel program's performance.

Machine learning – See more, act smarter

What it all means

Artificial intelligence
When technology performs a human function.

Machine learning
A form of artificial intelligence, where computer software improves its own performance by autonomously learning from the past.

Natural language processing
Artificial intelligence that helps computers understand and analyze human speech and writing.

Customer relationship management
Business systems which manage and measure a company's interactions with current and potential customers.

Among the emerging technologies, machine learning has the most fundamental role to play in advancing performance management, as it:

- Delivers bigger, more varied and cleaner data;
- Identifies opportunities to improve performance;
- Helps travelers understand and take responsibility for their own performance;
- Shows travel managers how to evolve their program;
- Identifies new ways to measure success.

Reliable analysis
needs reliable data

Get the basics right with clean data:

- Using data matching, machine learning automatically removes duplicated data, corrects errors and ensures there are no gaps.
- This makes it easier to combine and compare data from different sources.
- Machine learning can resolve travel manager concerns about data quality.
- In time, it can improve the quality of travel data used by stakeholders in HR, Finance and Security.

Better cost control
from total trip visibility

See how machine learning can improve trip cost comparisons:

- It works out when different pieces of data relate to the same trip.
- This enables it to combine the price of a flight booking (TMC data) with ancillary costs (card data at the airport or inflight) into a single trip cost.
- It's now possible to compare the total price of flying with full-service airlines and low-cost carriers.

Identify new savings
by asking new questions of your data

Here's two examples where machine learning can help:

- Linking TMC and card data reveals checked bag patterns and spending. Use this information to negotiate baggage allowances, offer bundled fares including baggage, or advise employees to travel light.
- Combining data from different sources shows how many refundable tickets are cancelled, and at what cost. Where cancellations rates are low, encourage travelers to book non-refundable tickets.

Guarantee contracted rates
with better tracking

Make sure hotels offer agreed rates:

- Track availability of the negotiated corporate rate. When not offered, compare to published room availability.
- Automatically audit to identify if and when hotels display the correct contracted rate.
- Present analysis to hotels to secure improved rate availability.

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Increase savings and compliance
by boosting traveler satisfaction

Find out what travelers really like/dislike:

- Use social media, email and instant messaging to measure what travelers say and the choices they make.
- Deploy natural language processing and machine learning to analyze traveler sentiment.
- Adjust policy, booking processes, supplier choice etc. to boost traveler satisfaction and improve compliance.

Increase compliance
by improving supplier performance

Sentiment analysis can:

- Show suppliers what travelers think of them.
- Target improvements needed to discourage travelers from switching to non-preferred suppliers.
- Secure savings from under-performing suppliers, until standards improve.
- Keep compliance high by removing poor performing suppliers from the program.

Identify new savings
using predictive analytics

Create "what if?" scenarios to deliver the desired result:

- Machine learning supports more complex analysis, using multiple data sources.
- This makes it possible to explore different options – "what if" scenarios.
- The outcome of a range of scenarios can now be investigated – with a higher degree of confidence – identifying new ways to make savings.

Save money
by getting the most from supplier targets

Automatically optimize supplier deals:

- Machine learning tracks how you're doing against the spend or market share targets you've agreed upon with a supplier.
- Once you've hit your target, travelers will be automatically redirected to booking choices that help meet targets agreed upon with other suppliers.

Four hotel pricing problems exposed by rate audit

Negotiating the best rates for your corporate hotel program may not deliver the savings you expect, unless you regularly check on preferred hoteliers' rates. An article in travel publication Skift outlines four pricing problems that rate audits can help expose:

- Preferred rates aren't properly loaded into the distribution system.
- Hotels limit how many rooms are eligible for discounts, so companies don't get the deals they're due at all times.
- Hotel booking costs vary from source to source. A single room may be listed under different prices, depending on where the traveler looks.
- Hotel rates fluctuate frequently. New technologies are helping hotels refine their yield management strategies and pricing systems, causing room rates to go up and down regularly.

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Promote travel
by showing it adds value

Measure travel spend against sales and CRM data

- By cross-analyzing travel spend and new revenue, machine learning can work out the travel cost of winning new business.
- It can work out when travel is and isn't productive for the business and compare success rates for different trips.

Promote travel
with productive initiatives

Confirm initiatives deliver value; here's how:

- Machine learning helps you track the impact on savings or compliance of any initiatives you introduce.
- It can help answer key questions like:
  - How often travelers used the initiative?
  - What was the impact of the initiative across a range of metrics?

Travel sustainably
with personalized reporting, recommendations and action

Help travelers understand how to travel more responsibly:

- Machine learning compiles customized spend information for each traveler.
- It generates reports showing travelers the financial cost and environmental impact of their trips.
- It recommends improvements they can make: "If you'd taken the train in the middle of the day on your last five trips to Paris instead of the early morning flight, you would have saved xxx euros and yyy tons of CO_2."

Blockchain – The ultimate performance manager?

What it all means

Blockchain
A shared ledger, or distributed database, in which information is verified and permanently stored by a large number of independent people (called miners).

Cryptocurrency
A digital currency that is generated and transferred using cryptography, a technique for transforming transmitted data that makes it hard for unauthorized users to decipher.

Smart contract
A self-executing contract triggered by a set condition.

As a technology that records and checks data, blockchain has the potential to guarantee an outcome, offering an increased level of certainty when managing a program's performance.

Save money
with smart contracts that deliver on your commitments

Help travelers understand how to travel more responsibly:

- Once thresholds written into the smart contract are reached, discounts are triggered and paid automatically.
- Buyers and suppliers can be confident of getting exactly what they agreed to – there's no need to renegotiate.
- Buyers and suppliers save time, as the contract is monitored and acted upon automatically.
- Everything happens in real-time with no scope for human error.

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Bots and chatbots – Ask for whatever data you want

What it all means

Bot
Software fulfilling an automated task.

Chatbot
A messenger app or a virtual assistant programmed to provide personalized responses and perform a variety of other tasks based on machine learning, thus substituting a human.

Natural language processing
The area of artificial intelligence that helps computers understand and analyze human speech.

Analyzing and acting on data are critical parts of performance management. While data analysis used to be a highly specialized job, bots powered by natural language processing are making it available to everyone. Travel managers can now focus on making productive use of the data and leave the data science to the bots.

Be smarter
with your travel program

Use a bot to interrogate your data:

- All you need to do is ask a question.
- Ask for what you need using everyday language; there's no longer a need to be conversant in database queries.
- The bot will interrogate the database for you.
- It will return an answer that's visually attractive and easy to understand.

Be smarter
with automated alerts

A bot can automatically:

- Warn you if average spend is heading above budget.
- Make recommendations to get spend back on budget.

Be even smarter
by solving problems as they occur

Here's how a bot automates program changes:

- It identifies that a rate with a particular hotel has become too high.
- It automatically switches to another approved hotel with lower rates.
- It alerts the travel manager, who can confirm or override the change.

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Virtual and augmented reality – Explore the data landscape

What it all means

Augmented reality
Using virtual information, like holograms or GPS information, to enhance the real world.

Virtual reality
An immersive computer-generated environment, which can be experienced by a person as if they are really there.

Virtual and augmented reality offer travel managers the ability both to manage the performance of and even replace business travel. In the future they'll be able to use these technologies to analyze their program data at a much deeper level. Using them to enter the "mind palace" familiar to viewers of TV detective Sherlock, they'll more easily explore the entire travel data landscape, spotting new connections within their data, producing new actionable insights.

Evolve travel management
into interaction management

Manage virtual meetings alongside actual travel:

- Expand the role of the travel manager.
- Understand and manage your organization's entire interaction spend.
- Help reduce your company's carbon footprint by providing a viable alternative to travel.

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Internet of Things – A new data frontier

What it all means

Internet of Things (IoT)
A network of connected intelligent devices using the Internet to communicate and share data.

Telemetric systems
The systems that remotely collect and transmit data.

The Internet of Things (IoT) offers real potential by enabling links between an enabled environment or object and a smartphone or other computer. It can confirm that a traveler has been at a certain location or used a particular service. Travel managers have a new source of data about what travelers are doing and how much they are spending.

Manage spend
on ground transportation

Ride-hailing apps can help:

- Location data provided by a ride-hailing company provides a more accurate picture of your travelers' ground transportation activity.
- Use this information to assess the best way to move travelers around on the ground: ride-hailing, black car, taxi, rental car or public transport?

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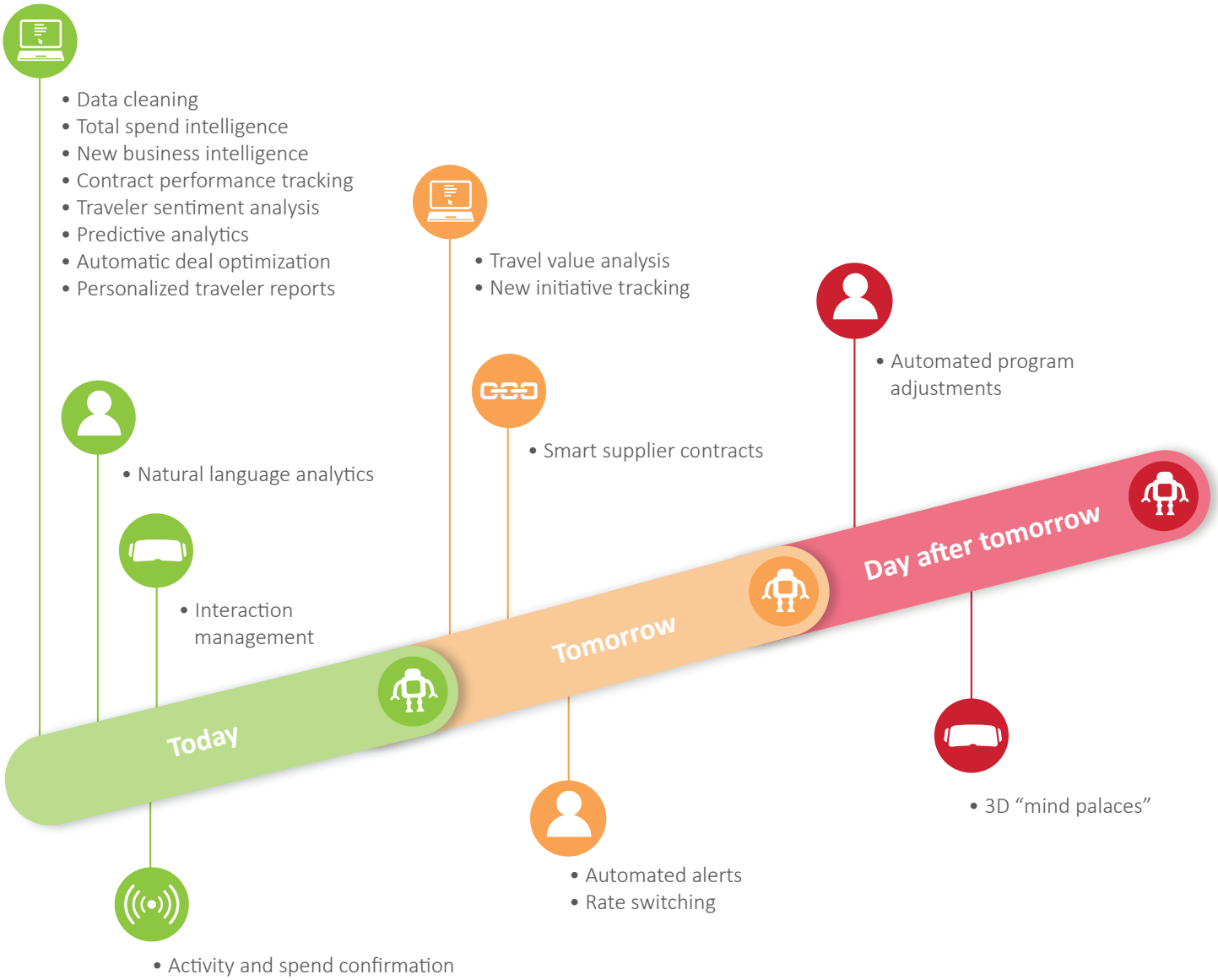
How emerging technology can transform performance management



- Augmented and virtual reality
- Blockchain
- Bots and virtual assistants
- Internet of Things
- Machine learning

Considerations

The five emerging technologies can really help travel managers improve the performance of their programs. But there are some things worth remembering as you introduce them.

Resourcing technological change

Solutions based on any new technology need to be correctly set up. That means employing the people with the right skills to configure them properly. Writing the necessary algorithms and performing other related tasks can be time-consuming and technically complex – even if, ultimately, it should prove a time-saver. Don't expect the solution to alert you to a problem unless you've invested in accurately defining the data parameters that describe it.

Choose the right performance measures

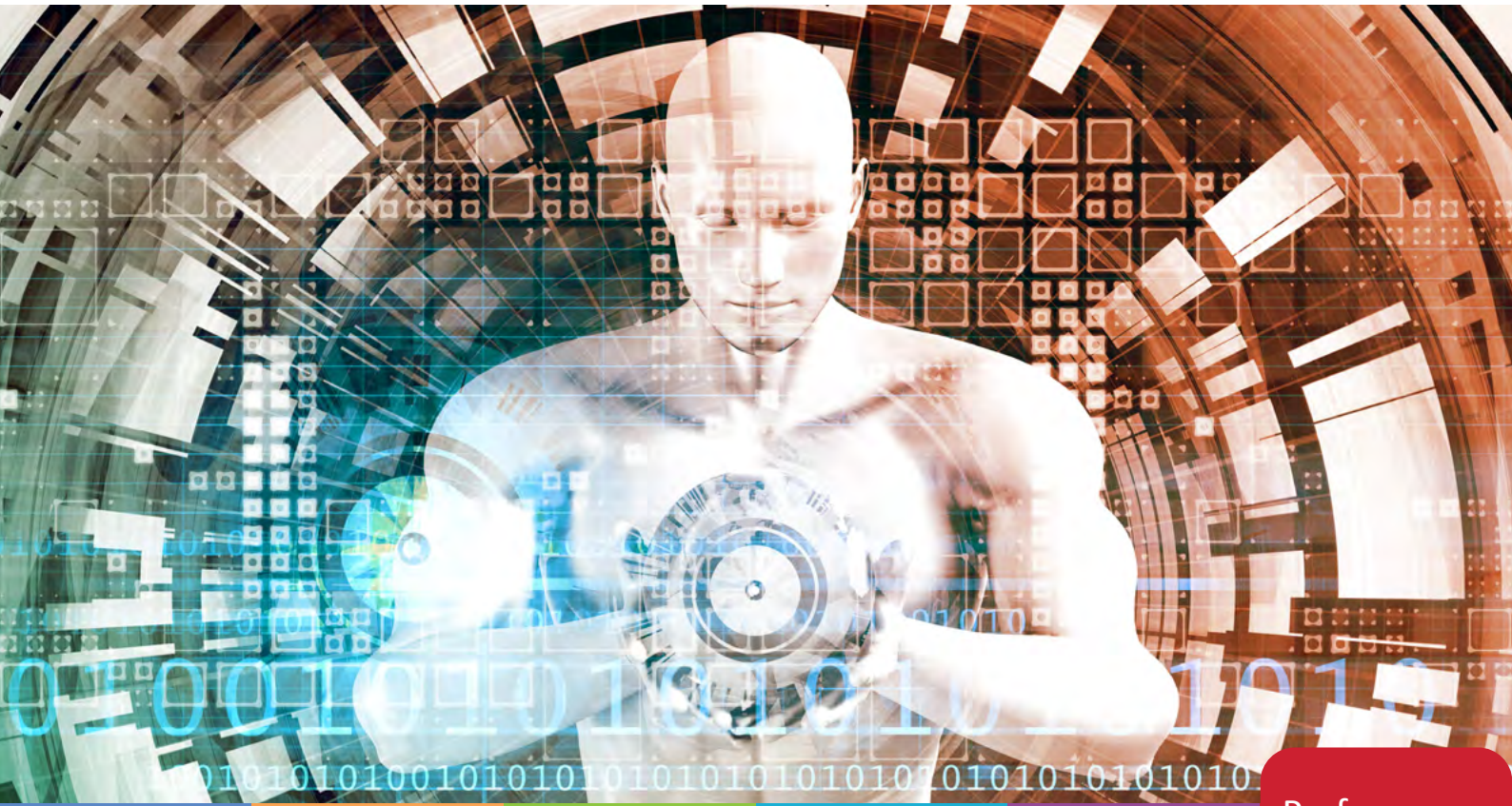
Don't just invest the time in introducing these technologies; put some serious thought into what you want them to do. They won't deliver the answers you're looking for unless you set them up to receive the right data questions.

Don't rely solely on the data

Data gives travel managers something tangible to measure when managing their programs. But performance management isn't just about the numbers. It's important to remember the value of qualitative information, too; there's a lot a travel manager can learn simply by talking to travelers on a regular basis and asking them what's right and what's wrong with the program.

Remember, technology is an enabler, not the solution

Applying these emerging technologies will definitely **improve** your travel program – but it can't **be** your program. Start by getting the fundamentals right: Match the program's goals to your company's strategic goals; find suitable suppliers and service providers; review and build your policy. Once you have the basic building blocks in place, you're ready to think about how technology can enable the program.



Getting the best from technology

Investigate

- Program performance management technology is evolving so fast that it's crucial first to research how you could update what you have today.

Bring in some expertise

- Deploying these emerging technologies means it's no longer necessary to be a data scientist to extract meaningful value from travel data.
- Travel managers may still need help configuring alerts, building "what if?" scenarios and so on. Get help from your IT department or talk to your TMC for advice.

Consider how your role will change

- Technology-driven performance management will change the travel manager role.
- Expect to spend less time extracting data and more time using it to make decisions.

Review your goals

- The promise of new types of data and insights presents the perfect opportunity to radically reassess your travel management goals.
- Think about what really defines success for your travel program and what you must measure to verify that success.
- Review your key performance indicators and the data sources which feed each one.

Revisit your processes

- Traditionally, travel sourcing relied on annual RFPs (requests for proposal) based on analysis of historic data.
- Today's performance management is underpinned by constant data monitoring. It may be time to switch to more dynamic, continuous sourcing to take advantage of the real-time information that's now available.

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About BCD Travel

BCD Travel helps companies make the most of what they spend on travel. We give travelers innovative tools that keep them safe and productive, and help them make good choices on the road. We partner with travel and procurement leaders to simplify the complexities of business travel, drive savings and satisfaction, and move whole companies toward their goals. In short, we help our clients travel smart and achieve more. We make this happen in 109 countries with almost 13,800 creative, committed and experienced people. And it's how we maintain the industry's most consistent client retention rate, with 2018 sales of US$27.1 billion. For more information, visit www.bcdtravel.com.