

# Sourcing

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 travel 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 technologies like machine learning, chatbots *et al* can transform sourcing by making it more dynamic and enabling real-time engagement with traveler management.

By sourcing, we mean:

- Identifying and selecting suppliers
- Specifying products and services
- Pricing and contracting
- Presenting choices to travelers
- Payment
- Supplier performance management

**Emerging technologies promise many improvements, which together can make sourcing more dynamic and support smarter, more compliant booking by travelers.**



## Machine learning – Audit, analyze, act

<b>What it all means</b>	<b>Artificial intelligence</b> When technology performs a human function.	<b>Customer identity and access management</b> Enables companies to securely manage user identities and control access to data and applications.	<b>Machine learning</b> A form of artificial intelligence, where computers predict the future by autonomously learning from the past.
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The use of algorithms driven by rapid, cloud-based processing of huge data sets, already allows buyers to analyze spend and supplier pricing faster and smarter than a few years ago.

Machine learning is now taking these intelligent sourcing processes to the next level.

It doesn't just USE algorithms – it BUILDS them to pick out patterns from data and provide recommendations within pre-defined parameters. And by identifying irregular booking patterns, it can help to prevent fraud, too.

Essentially, machine learning enables a system to audit, analyze and act.

Machine learning will also combine with CIAM (customer identity and access management) technology to provide new insights into traveler preferences and buying habits. These can be used to develop smarter personalization, making it easier to influence traveler behavior.

**Improve compliance with personalized messaging**

**Engage travelers by:**

- Sending personalized messages to steer them to decisions that meet their needs and are within policy, too.
- Directing them to hotels close to clients or to those highly rated by colleagues.

**Improve compliance with the hotels travelers like**

**An alternative hotel? Why not?**

- Machine learning alerts you that travelers are regularly using an alternative to a preferred hotel.
- Using sentiment analysis, work out why they dislike the preferred hotel.
- Keep travelers happy and make savings by negotiating a rate with the alternative hotel.
- Use machine learning to check how often the negotiated rate is available at the preferred hotel, and ensure it's offered at the new hotel, too.

**Save money by capping hotel rates**

**Here's an idea:**

- Machine learning shows travelers regularly booking a hotel below the company's rate cap.
- Traveler sentiment analysis about this hotel on social media is positive.
- The rate cap is automatically lowered to the level charged by the popular hotel.
- Hotels charging above this rate are "de-preferenced" from the online booking tool.

**Save money by making sourcing dynamic**

**Machine learning can help by:**

- Constantly monitoring contract performance and automatically advising if there are better suppliers or pricing in the market.
- Triggering automated request for proposals for new suppliers when better options are identified.
- Advising travelers on the best booking behaviors, so they can help control costs too.

Today
 Tomorrow
 Day after tomorrow

## Blockchain – Better payments, better contracts?

### 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).

#### Interoperable loyalty program

A blockchain-enabled reward program that allows redemption and exchange of reward points across vendors, industries and programs.

#### Smart contract

A self-executing contract triggered by a set condition.

There are few examples of blockchain being used in travel today. However, it's widely expected to be the next big travel disruptor.

For a start, blockchain can offer an alternative to card-based payments, which are expensive and sometimes inefficient for hotels, airlines and other merchants to accept.

It could also power interoperable loyalty programs, avoid overbooking, or store supplier information to address traveler risk concerns.

But where blockchain could really transform travel sourcing is by making supplier agreements much more meaningful – for both parties. It can do this by facilitating smart contracts.

### Be more effective with smart hotel contracts



#### The problem:

- Negotiated rate discounts are rarely affected if corporate clients fall short of their room night commitments.
- Hotels often fail to make enough rooms available at the client's negotiated rate.

#### The future:

- Blockchain-based self-regulating "smart" contracts make both parties truly accountable.
- Clients will only get discounted rates once they've booked enough room nights.
- Discounts will automatically be removed, if not enough rooms are booked.
- Hotels will be automatically penalized for missing corporate rate availability targets.



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## Bots – Don't just think chatbots

What it all means	Bot	Chatbot	Robot
	Software fulfilling an automated task.	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.	A device capable of automatically carrying out certain human functions.

Mention robotic services and travel, and everyone typically thinks of chatbots and virtual assistants that automatically book trips within policy, or rebook them based on an employee's schedule. But there are many less glamorous types of bot, which can help in automating routine sourcing tasks.

Accenture, a leading global professionals services firm specializing in digital solutions, believes companies can halve their sourcing costs by using bots to automate tasks, including spend analysis, catalog management, purchase order creation, invoicing and payment processing. This will free up buyers to increase the time spent on true strategic supplier management and innovation from 8% today to as much as 50%.<sup>1</sup>

### Save time with contract bots



**No effort needed:**

- Use a simple bot to search your company's existing contracts to find one you can re-use for a new agreement.
- Deploy a bot to look through a contract proposal. It will do a better job than most humans confirming that the terms and conditions meet company policy.

### Save time by automating the tendering process



**When arranging a staff meeting:**

- A bot requests bids from airlines and hotels – or from a digital marketplace - based on the geographic location of attendees.
- Helped by machine learning, the bot analyzes supplier responses to determine the best location for the meeting and recommend suppliers.

<sup>1</sup>When bots do the buying – Procurement at half the cost, Accenture Strategy, 2017



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## Virtual and augmented reality – A new view of everything

**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 reality (VR) is already a reality, especially for entertainment.

Early travel applications are aimed at leisure travelers. Some hotels have launched VR features, enabling travelers to take a tour of a hotel and its rooms. Airlines will soon offer a similar experience to their travelers. Incorporating such a feature into booking tools would enhance the traveler experience and give them the confidence that they're making an informed decision about their accommodation and flight.

Travel buyers could also use VR when arranging meetings and conferences. They could virtually try out different conference rooms, experiment with different seating arrangements, or evaluate accessibility. Of course, VR is already making some face-to-face meetings unnecessary.

Thinking ahead, VR could play a much more advanced role, enabling a truly "deep dive" into 3D data simulation. Think of the mind maps created by fictional TV detectives and scientists to solve complex problems. This may be less far-fetched than it sounds.

## Internet of Things

**What  
it all  
means**

**Internet of Things (IoT)**

A network of connected intelligent devices using the Internet to communicate and share data.

The Internet of Things (IoT) uses sensors attached to physical objects to measure activity and communicate information. While this may be of limited use when sourcing and buying travel services, the IoT can help measure the use and delivery of these services, and trigger payment for them. Future papers will explore the Internet of Things in more detail.



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## How emerging technology can transform travel sourcing



**Augmented and virtual reality**

**Blockchain**

**Bots and virtual assistants**

**Internet of Things**

**Machine learning**

This is how we see the application of these emerging technologies to travel sourcing. But things are changing fast, and some developments may happen more quickly than we expect.

## Challenges remain

The emerging technologies we've reviewed can make corporate travel sourcing faster and smarter. But innovation is not without risks and practical obstacles. Here are three challenges.

### Technology inertia



Updating technology can be costly and time consuming. Parts of the travel industry still use very old technology. Even today, travelers may need to confirm a hotel room by phone or fax. Many hotels also continue to depend on a broad range of (often aging) property management systems. These simply wouldn't be able to feed data into a smart contract sitting on a blockchain. Buyers will therefore have to run any new technologies they introduce in parallel with the much older processes still used by some suppliers. This will cause more fragmentation and less consistency.

### Data security



Emerging technologies offer improved security to individual users. For example, blockchain will make payment more secure, as travelers will no longer need to carry credit cards. But an increased overall reliance on machines and digitization increases systemic risk. The more data stored in one place- particularly personal information- the greater the risk for catastrophic data security breaches and the heavier the protection measures needed.

### Data protection legislation



Companies risk breaching data protection laws if they lose or leak personal data. The European Union's General Data Protection Regulation (GDPR) has substantially increased the penalties for companies anywhere in the world, if their actions (or negligence) result in breaches of personal data of EU citizens. But there are two other ways that GDPR presents challenges for new sourcing technologies.

#### Profiling travelers

##### The problem:

- Using machine-learning personalization techniques to target travelers and predict their behavior could violate GDPR restrictions on "profiling".<sup>2</sup>
- In some cases, profiling should only happen if the traveler has freely given informed consent.
- Defining profiling is complex.
- Expert advice is essential to ensure any use of personalization in travel sourcing is GDPR-compliant.

#### Blockchain and the right to be forgotten

##### The GDPR conundrum:

- Under GDPR, data subjects have the right to be forgotten.
- This means they have the right to have their personal data deleted, forever.
- Blockchain creates permanent records which can never be erased.
- Blockchain-based developments need a solution that satisfies GDPR.



### Other blockchain challenges

Blockchain promotes such a radically different way of working that companies need to be prepared for almost every aspect of sourcing to change. As well as the opportunities, there are some extra challenges that blockchain presents:

#### Instant settlement

Blockchain enables instant financial settlement upon contract fulfillment. This could affect the cashflow of companies which pay for travel using credit cards.

#### Unstable virtual currencies

Blockchain settlement is made using virtual currencies, but the value of these traded cryptocurrencies has been highly volatile. This makes it difficult for companies to know how much they will end up paying in hard currency.

#### No flexibility

Smart contracting ensures suppliers deliver what they promise. But the same is also true for buyers. If they fall short of booking an agreed volume, they'll lose a negotiated discount. Buyers must be sure they are both willing and able to deliver on their agreements.

<sup>2</sup>EUR-Lex

## Getting the best from emerging technology

Emerging technologies can help to restore sourcing as a highly effective way of managing travel costs. The five technologies will make the travel buyer-supplier relationship much more dynamic. Tools using these technologies will:

- Constantly assess and activate new buying opportunities.
- Monitor and fix potential problems as they occur.
- Deliver the best, most compliant pricing options to travelers, so they won't want to look elsewhere.

### Travel manager checklist

To make the best of the opportunities these new technologies present, we recommend you:



- Talk to suppliers, travel service providers and other travel buyers.
- Read the relevant trade press.
- Find out how these technologies are being applied elsewhere in your business, especially in other procurement categories.



- Get involved in beta-testing or piloting new tools with service providers.
- Get input from a select group of frequent travelers.
- Find out what the technology can and cannot do.
- Review and compare multiple tools and software.



- Declutter and consolidate data and systems before introducing new technologies.
- Make sure all travel contracts are gathered on a single platform.
- Get an analysis bot to scan and compare existing contracts.



- To work with data tools, ensure you have a working knowledge of GDPR and other data protection laws.
- Beware: Such legislation can be difficult to understand in detail.
- Consult internal or external experts for advice.

### Get to know the BCD Travel Research & Innovation team



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#### 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. In short, we help our clients travel smart and achieve more. We make this happen in 109 countries with almost 13,500 creative, committed and experienced people. And it's how we maintain the industry's most consistent client retention rate (95% over the past 10 years), with 2017 sales of US\$25.7 billion. For more information, visit [www.bcdtravel.com](http://www.bcdtravel.com).