Policy

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 travel policy. The days of using it as a blunt instrument to ensure travelers book cost-effectively and stay safe are numbered. Today, technology is already steering travelers towards the right choices without their even realizing it.

Technology is consigning travel policy to history:

The arbitrary, static, pre-defined policies of today, which pay little heed to the voice of the traveler, are losing their relevance. Technology is helping them to evolve and become dynamic, intuitive, market-sensitive and intelligent.

Policy is losing its appeal:

- Today's business travelers don't read policy documents.
- Compliance is hard to enforce when travelers have so many different ways to book.
- Fixed rules - like which suppliers to book - quickly become irrelevant in today's fast-changing travel pricing environment.
- Travelers don't see how the policy benefits them as individuals.

Policy will never go away completely. In some markets, it supports a company's legal or regulatory obligations, or its duty of care.

Technology wins by:

- Giving travelers personalized booking options, so they won't look or book elsewhere.
- Refining the options with rules, but making them invisible, so travelers don't feel they are being forcibly steered towards "compliance."
- Offering travelers more flexibility of choice than in the past – but these choices still invisibly follow the rules.
- Constantly updating the options to deliver what's best in the marketplace.
- Applying invisible controls pre-trip, on-trip and post-trip.

Policy no longer starts with a capital P. It starts with adjectives like dynamic, flexible, sensitive, personalized.

The idea of personalized behavior management is well-established. Emerging technologies using machine learning are finally converting theory into reality. They deliver customized but compliant budgets and trip options much more powerfully than even a couple of years ago. And they're improving all the time. While their initial focus is on savings and security, these technologies can also work within the policy environment to promote quality service, consistency and even traveler wellness.

Read on to find out how machine learning, blockchain, chatbots, virtual/augmented reality and the Internet of Things can revolutionize how policy is approached.

Machine learning – Personalization replacing control

What it all means	**Artificial intelligence** When technology performs a human function.	**Machine learning** A form of artificial intelligence, where computer software predicts the future by autonomously learning from the past.

Thanks to artificial intelligence, it will no longer be necessary to instruct employees to follow a set of rules when booking travel. Instead, machine learning can be used to build and integrate those rules invisibly into a booking tool. And by learning from traveler behavior, it will ensure that the options offered stay relevant, too. Travelers will no longer see policy as a set of arbitrary rules or restrictions on their booking behavior. As the options presented to them become increasingly relevant, they'll realize their needs are being considered, too.

Recommendations developed using machine learning techniques won't be based solely on an evolution of existing company rules. This approach would simply promote the status quo, where travel offers reflect the goals of the employer rather than the needs of the traveler.

As is the case with a consumer retail website, in the corporate environment machine learning can be left alone to develop and apply other sets of "rules" to dynamically and intelligently produce precisely targeted options, which suit both the employer and traveler:

Transforming the policy landscape

Rules of the employer
the policy

Rules of the marketplace
trends in supply, demand and pricing

Rules of the traveler
profile, preferences and previous booking behavior

Traditional rules
Reinforce employer policies
They are:

Inflexible	
Counter-productive	
Confrontational	

Machine learning-driven behavior management
Reinforces employer rules, market realities and travel needs
Policy becomes:

Dynamic
Personalized
Invisible

Improve compliance
with personalized offers

Machine learning makes travelers and travel managers happy with:

- Personalized offers at acceptable prices.

- Price assurance/re-booking tools like FairFly, Yapta or TripBam. Travelers no longer need to look elsewhere for a better deal.

- No more "compliant" options that are more expensive than "non-compliant" ones.

- An end to the enforcement of advance booking rules, with tools automatically advising travelers when it's best to book.

Save money
by setting a trip budget

With machine learning, automatically:

- Analyze thousands of trips and pricing points to set an accurate trip budget.

- Advise travelers on the best booking behaviors, so they can help control costs, too.

- Provide guidance to travelers on whether the money is worth spending on a trip.

- Empower travelers to make their own travel choices, within budget.

Today   Tomorrow   Day after tomorrow

Machine learning – Personalization replacing control

Save money
by taking trip budgets to the next level

Get smart with trip budgets:

• Use a platform like Rocketrip to set travelers a "budget to beat," rewarding them when they do.

• Automatically propose trip packages within an allocated budget.

• Let travelers provide their budget for a trip, and offer them a flight and hotel package that meets or beats this budget.

Win back the hearts of your travelers

• Non-preferred travel suppliers and online travel agents are using machine learning techniques to tempt your travelers with personalized offers.

• They're getting better at this every day.

• You need to compete using the same technology.

• Start by reinforcing your compliance efforts and steering booking behaviors with star ratings and peer endorsements.

"23 of your colleagues have booked this hotel since Saturday."

Be confident of getting the lowest hotel rates

• Dynamic pricing of hotel rooms provides great savings opportunities for travel buyers, as long as they have the tools in place to exploit rate fluctuations.

• BCD Travel has teamed up with TRIPBAM™ to offer Hotel Price Assurance as a standard feature to all clients. Ask your TMC about similar offerings.

• Using machine learning techniques, TRIPBAM monitors hotel prices and, after accounting for cancellation policies, it automatically rebooks rooms when rates fall below the level needed to produce net savings.

This simple path to lower costs will counter claims of lower rates outside the program, keeping travelers booking to policy.

BCD travel

Lower risk
by reducing fraud

Identify suspicious patterns:

• Which travelers only submit card receipts instead of detailed supplier receipts?

• Who repeatedly submits claims for upgrades at the airport or hotel?

• Who regularly submits expenses just below the predefined limits?

Save money
by establishing a rate floor

• Rate caps put an **upper** limit on how much travelers can pay for a hotel room.

• Machine learning can help establish a rate **floor** - how little are travelers prepared to spend on a room?

• It identifies bookings made below the cap and confirms positive traveler sentiment about these hotels.

• The rate cap can then be lowered automatically, saving money without eroding traveler satisfaction.

Today   Tomorrow   Day after tomorrow

Blockchain – A radical future?

What it all means	Blockchain	Cryptocurrency	Interoperable loyalty programs	Smart contract
	A shared ledger, or distributed database, in which information is verified and permanently stored by a large number of independent people (called miners).	A digital currency that is generated and transferred using cryptography.	Blockchain powered reward programs that allow using points across suppliers and industries.	A self-executing contract triggered by a set condition.

Unlike machine learning, which is already in use today, blockchain has yet to reach the stage where it can be rolled out for travel policy and behavior management. But the shared database technology it uses presents some exciting opportunities for the future.

Save money
with invisible, personalized rules

Use blockchain to set individual rules:

- Allow only C-suite executives to book less than 10 days in advance (without generating an exception report).

- Increase the limit to 15 days in advance during September and October.

Save money
by eliminating extravagance

Try some peer pressure:

- Use transparency to keep expense claims modest and reasonable.

- Make all employees' expenses visible to others on a public blockchain.

- Get a wider group of employees to confirm individual travel expense claims.

Improve compliance
by reducing the influence of loyalty

Prevent loyalty program bias:

- Convert loyalty points into cryptocurrencies stored and exchanged on blockchain.

- Ensure the cryptocurrencies can be used across different loyalty programs.

- Suppliers lose their influence over travelers, who can redeem their loyalty points across multiple interoperable programs.

Today   Tomorrow   Day after tomorrow

Sourcing | Policy | Comms | Duty of care | Payment | Performance

Bots and chatbots – Automated behavior management

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.

Chatbots get most of the attention. Travelers can have a conversation with voice-controlled digital assistants like Alexa that use natural language processing, or text with less sophisticated chatbots on their phones, tablets or laptops. Chatbots offer an additional and convenient channel for accessing policy. Simple bots operate in the background, automating routine, repetitive tasks. Both bots and chatbots are already helping to advance the cause of traveler behavior management.

Mandate chatbots to reduce program costs

- By shifting low-value, simple tasks from humans to chatbots, you can save on your program costs.
- Recommend travelers use a chatbot for policy questions, adding a hotel night, checking itineraries and simple air and hotel bookings.
- Instruct your online booking tool to automatically shift some activities to a chatbot.

Save money
with chatbot bookings

Seduce your travelers:

- There's a new, simple-to-use digital channel around, which is lower cost and can deliver more accurate results than travelers are used to.
- Show travelers how easy it is to use a chatbot to book or rebook their travel.
- Machine learning ensures the chatbot offers travelers attractive choices, reflecting their individual preferences and policy allowances.
- Travelers have a new way to book, quickly and compliantly.

Save time
on routine tasks

Think about a bot that:

- Chases travelers who have booked their flight but not their hotel.
- Reminds travelers to pay their card bills.
- Answers simple questions from travelers about policy.

Today   Tomorrow   Day after tomorrow

Virtual and augmented reality – An extra layer of realism

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 can play a role in managing traveler behavior. But its real value lies in its potential to become and not simply change the behavior of travelers – it will emerge as a genuine policy alternative to traveling. Now that virtual reality is here, it's time to encourage its use, particularly for internal meetings.

Save money
stay at home

Virtual is almost reality

- Virtual meetings are already a reality, but lack the realism most travelers look for.
- Many people still prefer to travel and meet face-to-face, for that true three dimensional experience.
- Virtual reality (VR) adds in those extra dimensions, to make meeting participants feel as if they are in the same room together.
- The extra realism that VR offers will encourage businesses to switch more travel to virtual-only meetings.

Improve compliance
test out travel suppliers virtually

Try before you buy

- Offer travelers virtual reality tours of preferred suppliers' products.
- Walk them around the hotels with whom you have preferred rates.
- Entice them away from business class travel, by showing them what a great lower-priced alternative premium economy can be.

Internet of Things – Promoting on-trip compliance

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 could prove to be most relevant for ensuring compliant behavior while travelers are actually on their trips.

Improve compliance
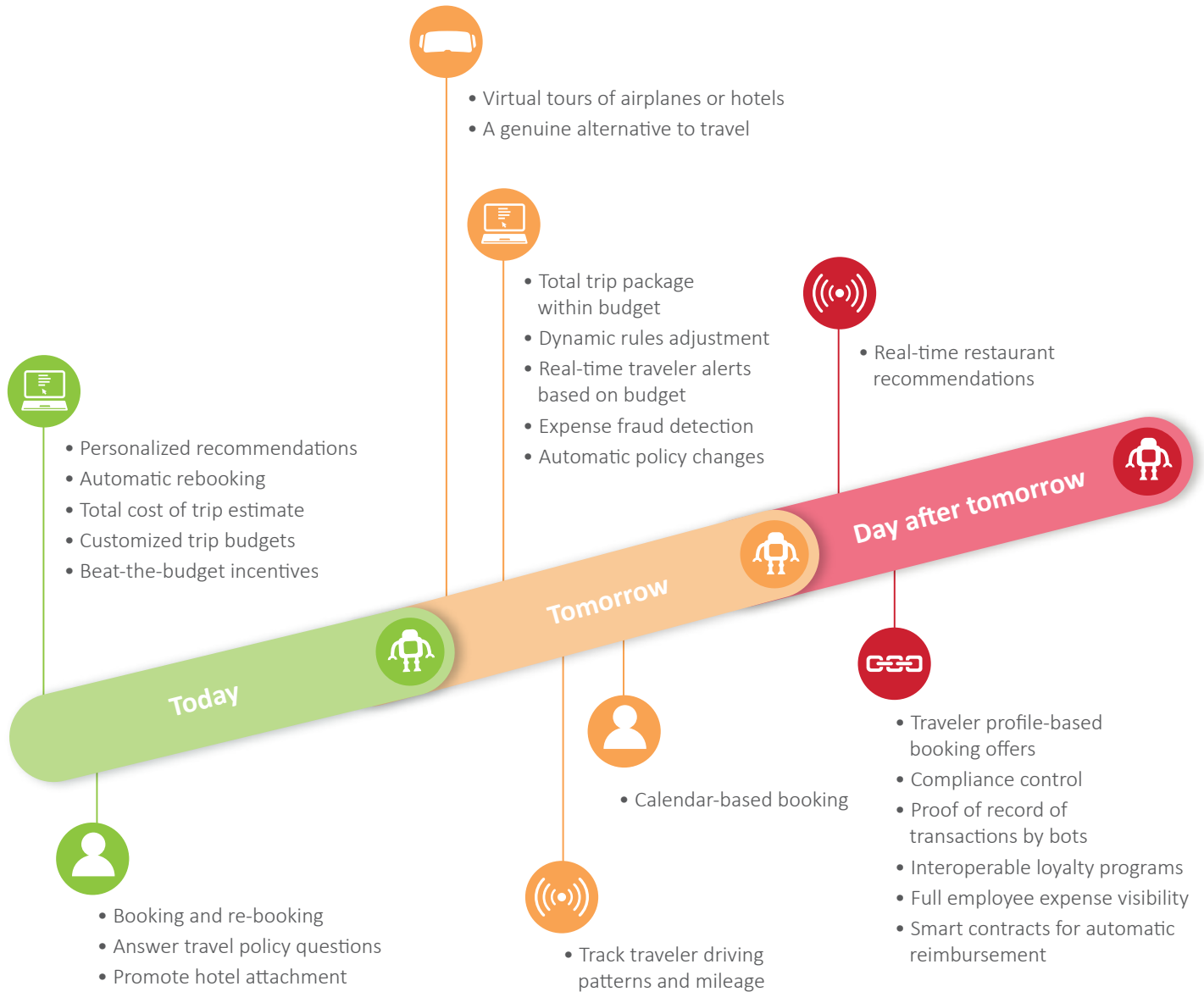### through alerts and monitoring

Here's three ideas:

- As travelers pass by a restaurant, send them an alert, letting them know that it's within their budget and has positive reviews.
- Use telemetric systems already fitted in most rental cars to ensure travelers are driving safely, are where you expect them to be, and are claiming the correct mileage for their trip.

- When a traveler checks in at a hotel, automatically remind them of what's included in the rate. That way they'll know which amenities are out of policy and incur extra costs.

Today Tomorrow Day after tomorrow

Sourcing	Policy	Comms	Duty of care	Payment	Performance

How emerging technology can transform travel policy

- Virtual tours of airplanes or hotels
- A genuine alternative to travel

- Total trip package within budget
- Dynamic rules adjustment
- Real-time traveler alerts based on budget
- Expense fraud detection
- Automatic policy changes

- Real-time restaurant recommendations

- Personalized recommendations
- Automatic rebooking
- Total cost of trip estimate
- Customized trip budgets
- Beat-the-budget incentives

Day after tomorrow

Tomorrow

Today

- Traveler profile-based booking offers
- Compliance control
- Proof of record of transactions by bots
- Interoperable loyalty programs
- Full employee expense visibility
- Smart contracts for automatic reimbursement

- Calendar-based booking

- Booking and re-booking
- Answer travel policy questions
- Promote hotel attachment

- Track traveler driving patterns and mileage

Legend

- 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 policy. But things are changing fast, and some developments may happen more quickly than we expect.

Challenges

Emerging technologies have the potential to radically change the way travel policy operates. But they will need to overcome a number of challenges on the way.

Does the technology work?

- It is expecting a lot of technology to present personalized options to travelers, which are consistently compliant.

- Machine learning must enable the automated delivery of correct budgets for travelers to follow or beat. If budgets are consistently set too low, travelers may become disenchanted and disengaged. And if they are always set too high, money will be lost, as travelers spend excessively.

- Artificial intelligence can't figure out everything. For example, policy rules will limit the options that chatbots can offer. They will be unable to suggest something outside the rules, but which might be better for the traveler anyway.

- Chatbots are still in their infancy with natural language processing. They don't always understand travelers' requests and may not always give appropriate responses.

Delivering a total travel strategy

As you embrace these technologies to enhance policy, you'll also need to rethink other parts of your travel strategy. For example, personalization may mean no longer obliging travelers to use preferred suppliers when they aren't a good fit. That could change your relationship with preferred suppliers, and how you negotiate agreements with them.

The problem with profiling

The new technologies we've looked at will need to profile individual travelers if they are to deliver a personalized offering. But this presents a problem. Using machine-learning personalization techniques to target travelers and predict their behavior could fall under the European Union's General Data Protection Regulation (GDPR) definition of "profiling".[1] A traveler may first need to freely give formal consent for a profile to be created. But defining consent can be difficult. If in any doubt, seek expert advice to ensure GDPR compliance when applying personalization to travel policies.

The right to be forgotten

As well as the profiling issue, GDPR presents a problem for any policy advances that rely on blockchain technology. Under GDPR:

- Data subjects now have the right to be forgotten.

- This means they have the right to have their personal data deleted, forever.

- But blockchain creates permanent records, which can never be erased.

- Blockchain-based developments need a solution that satisfies GDPR.

[1] EUR-Lex

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Getting the best from emerging technology

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

Think technology

- Change your approach to policy from one based on rigid rules to a greater use of technology to manage traveler behavior.
- Make sure any technology innovations fit your company culture and its different employee demographics. Not everyone will be comfortable sharing expense claims via blockchain.

Keep informed

- Keep an eye on what's going on in the marketplace. New uses of technology to manage behavior come along almost every day.
- Look at what is being offered by new as well as established players. The marketplace is much more diverse than a few years ago.

Do it!

- Online travel agencies, suppliers and others are already using technologies like machine learning to manage your travelers' behavior.
- Start introducing similar technology to compete with these other channels and get those travelers back inside your program.
- Make sure your booking solution is not driven by a static policy, but takes account of the traveler and the dynamic realities of the marketplace.

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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.