

sabre labs

AIRLINE EXECUTIVE SUMMARY

2018 EMERGING TECHNOLOGY
IN TRAVEL REPORT

Sabre



NOTE FROM LABS

There are countless ways to segment the digital landscape, but for 2018 Sabre Labs has chosen automation, authenticity and blockchain as three threads which, when woven together, give us a way to talk about a broad array of technologies.

In addition to the full [Emerging Technology in Travel](#) report, we've prepared executive summaries distilling core concepts and content targeted for three key industry segments: airlines, hotels and agencies.

Airlines face an incredibly complex distribution landscape, but new technologies are providing increasingly sophisticated tools to provide flexibility for personalized offerings and to intelligently connect with travelers. Airlines are well positioned to leverage emerging technologies to streamline the customer journey to minimize traveler friction and maximize memorable experiences.

This executive summary provides airlines recommendations for action now and over the next few years. But the summary and full report are not intended to be the final word on any of these trends; rather, this is a starting point for discussion. Please reach out to the Sabre Labs team to begin a conversation about how new technologies can be used to improve how we enable people to move through and experience the world.



Philip Likens, Sabre Labs Director
and the rest of the Sabre Labs team



AUTOMATION

For most of history, automation focused on physical tasks. Today, new technologies spurred by advances in artificial intelligence have expanded automation to include mental tasks, changing the landscape of employment and the future of work in dramatic ways. Human connection itself is essential to the travel experience and appears virtually impossible to automate, creating exciting opportunities for people-first industries like airlines.

TOP KEY TAKEAWAYS FROM THE FULL REPORT

1 ADAPTABILITY IS ESSENTIAL TO THRIVE ALONGSIDE AUTOMATION. *Businesses need to shift their focus from jobs and roles to tasks and skills. Studies on the near-term effects of automation (by [McKinsey Global Institute](#) and [PwC Global](#), among others) forecast massive change in the tasks that make up present day jobs, predicting half of all current tasks could be automated by 2030. The focus on task automation is important—in most cases, the same set of skills can be applied to accomplish a wide variety of tasks.*

❑ **Airlines should hire for adaptability and human connection.** The ability to use current skills to complete new tasks and an ability to embrace change are essential to increasing tenure and job satisfaction. Soft skills, such as the ability to interact well and build connections with other humans are some of the hardest skills to automate and should be increasingly prioritized in hiring decisions.

❑ **Human intuition works where data is sparse.** Human staff can be trained to provide excellent, personalized service without needing a lot of advance context. This is in contrast with algorithms which rely on having extensive data to customize recommendations. Human engagement skills are especially valuable in addressing complicated situations arising from weather, missed connections, or other urgent, high-stress issues.

❑ **Physical automation is here for some things, but not everything.** Moving objects around—whether traveler bags or planes on a runway—is relatively easy to automate. In contrast, variable tasks requiring high adaptability will be very slow to automate, including tasks like cleaning an airplane. With current battery technology, airlines will need clear policies to ensure safety of consumer-focused devices like autonomous luggage.

2 EMBRACE THE STRENGTHS AND LIMITATIONS OF ARTIFICIAL INTELLIGENCE. *Today, most automation of mental tasks uses an AI technique called "machine learning," where an algorithm applies a data set or rules to iteratively improve its performance at an explicit task. Data-driven tasks like image recognition and optimizing pricing are ideal for machine learning. The flexibility of creative tasks and some types of human engagement tasks remain outside the optimal scope of current AI.*

❑ **Real-time translation expands the reach of guest service.** Automation can help flatten global access to service and support. For instance, as real-time text and voice translation improves, knowledgeable support staff can increasingly be located anywhere in the world to help with bookings and guest requests without concern for accents or language barriers. Real-time translation is also being tested for face-to-face engagement.

❑ **Make use of existing AI platforms to streamline business processes.** Airlines don't necessarily need to build custom AI tools to take advantage of AI innovation. Companies like [Narrative Science](#) can help automate turning data points into stories to help make quantitative trends more accessible. [Cogito](#) augments emotional intelligence for service interactions. A host of other AI-driven business tools are coming available to augment humans to improve decision making and customer engagement.

❑ **Chatbots offer near-term, high-efficiency solutions to augment existing human expertise.** Airlines can incorporate chatbots in various ways, whether as part of a booking tool, or as service and support. In the most effective scenarios, the chatbot responds to basic user requests and hands off to the human when higher expertise or customization is required. Applying chatbots to employee-facing processes can also be a lower-risk place to start.

❑ **Sentiment analysis algorithms can improve service.** AIs are being used to analyze peoples' moods based on both spoken and written language. Sentiment analysis can alert a staff member when a traveler is frustrated, upset, excited, pleased, etc., helping provide additional context to anticipate and meet travelers' needs. It can also help provide transparency for managers around the efficacy and challenges of customer service.

3 EXPLOSIVE GROWTH OF SENSORS AND DATA HAS LONG-TERM OPPORTUNITIES AND CHALLENGES. *Data fuels most current machine learning algorithms, but there's not yet a clear understanding of what we may learn from the data, or how to adequately secure individual devices and data streams for the long-term. Prioritization of security and privacy issues varies by region, but it's essential to be planning now for long-term effects.*

❑ **Scale of IoT data can improve efficiency and decrease downtime.** Airplane sensors are among the most robust and evolved sources of data being generated within the Internet of Things, but the sheer scale of data can be daunting to store and transmit, much less analyze. Faster in-flight data transmission coming in the next few years will increase the ability to move real-time data processing to the cloud. Improved predictive analytics for maintenance and operation of planes is producing real-world efficiency gains. Predictive maintenance can also reduce delays, as airlines are able to increasingly centralize parts and maintenance to a handful of key airports.



AUTHENTICITY

“Authenticity” has emerged as a buzzword across culture; in travel, it translates to a desire for trusted, reliable experiences and a more personal connection with people and places. In the digital age, the rise of information overload, fake content and intangible assets are increasing the premium placed on simplicity, certainty and trust.

TOP KEY TAKEAWAYS FROM THE FULL REPORT

1 **THERE'S NO SHORTCUT TO PHYSICAL PRESENCE.** *Travel has a tremendous authenticity advantage over most industries because in the end, it's all about the physical world—about experiencing places and engaging with people firsthand.*

❑ **New technologies can improve comfort and reduce fatigue for travelers.** Whether in middle-seat, last row of economy or a suite in first class, every traveler is on the same plane, experiencing the same environment. Technologies on newer planes to simulate air at lower elevations, increase in-plane humidity, optimize diet provisions and adjust ambient lighting to help regulate circadian rhythms all contribute to improving passenger comfort and reducing jet lag, particularly on long-haul flights. Every effort to reduce discomfort is a win for passengers and crew and helps build trust and loyalty.

❑ **Context is essential for personalization to be effective.** The same traveler will have different goals and engagement expectations for the same flight if it's a direct trip vs. the first leg of an international journey; or if it's a flight after a weather delay or long layover; or whether they are leaving town or returning home; whether they are well or sick; or countless other variables. Provide staff with as much context as possible while empowering them to be flexible to engage appropriately for each traveler, depending on where they are in their travel journey.

2 TRUSTED BRANDS ARE MORE IMPORTANT THAN EVER. *Gartner predicts* that by 2022, “the majority of individuals in mature economies will consume more false information than true information.” To combat this rise, consumer’s personal filters are increasingly rigorous. Trusted brands and safe spaces provide people the luxury of mental rest and time off from constant skepticism.

❑ **Social media influencers are a viable option for authentic visibility.** Alongside enabling embedded connections, social platforms enable sharing broadly. Personal experience is the highest commodity in travel, and an increasing use of key influencers on platforms like WeChat, Instagram and Snapchat is a way for airlines to highlight exciting destinations and reach key audiences, especially younger guests. Unfiltered reviews—from both travel celebrities and non-professionals—are the validation of success or failure and a strong driver of brand impressions and future potentially bookings.

❑ **Brands that maintain robust traveler profiles will have an advantage.** Algorithmic analysis of travel history, ancillary spending, preferences and other background data can consolidate quick insights to improve personalized offerings for each traveler. A fully-integrated, unified view

of each traveler, available across all systems and touch-points internationally, maximizes the opportunity to provide a personalized customer experience.

❑ **Rapid response and transparency are essential.** The digital age accelerates the realization of risks and rewards. Negative press is often viral and almost always separated from context. This makes it especially important for airlines to address both opportunities and potential problems quickly, proactively and transparently. Responding in person to a traveler who’s posting on Twitter or Instagram is an opportunity to create a positive experience while they are still aboard, and before lasting impressions are widely shared. Cultivating a public presence as open, honest and always ready to change for the better can become self-reinforcing; it will benefit the brand, its employees and its travelers.

3 NOVELTY CANNOT BE OVERVALUED. *The claim “experiences matter more than products” plays out throughout the travel ecosystem, especially for Millennials and Gen Z travelers. We’re seeing a continued growth of exclusive experiences, made more desirable by their scarcity. There’s also a parallel opportunity to embrace local uniqueness.*

❑ **In-flight VR is an opportunity for guest engagement.** Airplanes offer a block of uninterrupted time when travelers are in a safe, trusted space and open to distraction; this is an ideal opportunity for experiencing virtual reality content—either as an upsell or as a status benefit. In addition to [SkyLights](#), an airline-specific VR offering, stand-alone VR headsets debuting this year, notably the [Oculus Go](#) and the [Lenovo Mirage Solo](#), reduce costs and simplify barriers to entry. Headsets are also an opportunity for airlines to feature partner destination content as well as self-generated content with a focus on premium offerings like first class or lounge access. VR gives the viewer autonomy to control their experience (where to look and for how long), which instills authenticity and builds trust.

❑ **Be aware of local experience offerings on new technology platforms.** [EatWith](#), [Vayable](#), [Triple](#), and [Airbnb Experiences](#) (among many others), are platforms helping connect travelers to locals who are passionate experts in niche areas. Most of these platforms (for now) focus their operations on a handful of carefully chosen cities. The diversity of local offerings goes way beyond what’s in the tour books, often focusing on interests like lifestyle diets, cultural movements, social activism and hobbyist communities. Airlines can look for opportunities to partner with platforms operating in hub cities or promoted destinations to help create rich traveler opportunities.



BLOCKCHAIN

Blockchain headlines have been focused on the rollercoaster rise of Bitcoin and other cryptocurrencies, but the real world use cases are much broader. And it's the broader use cases for blockchain as a technology which have the greatest potential impact on airlines and travel industry at large.

TOP KEY TAKEAWAYS FROM THE FULL REPORT

1 SABRE LABS EXPLAINS BLOCKCHAIN. *Blockchains are a way of storing a record of any kind of value—a monetary unit, a deed, a vote, an image, an airline ticket, a hotel room, a biometric identity, etc. And for those values, blockchains create scarcity, allow shared oversight, and instill permanence.*

❑ **Invest the time necessary to understand why blockchain may be important.** There's a lot of hype and misinformation around blockchain, but the best antidote to being caught up in hype is knowledge and experience. Understanding blockchain can be a steep learning curve, so it's important for airlines to start now. Being informed is being prepared to make wise strategic decisions. If you need a solid, accessible primer the blockchain section of the [Emerging Technology in Travel](#) report is worthwhile reading.

❑ **Be thinking now about use cases** where your business could benefit from data that should be scarce, shared and permanent. Blockchain isn't magic, it's just a new tool to put in the toolbox of transaction and data storage solutions. That said, as a tool, it's distinct from other tools, so it makes new kinds of solutions possible. Once you understand the core features of blockchain it's possible to start to strategize about how it might be useful in the future for your business.

2 **BLOCKCHAIN IS VERY EARLY IN ITS DEVELOPMENT**, but regulation is beginning to ramp up. It's widely agreed blockchain is in its infancy; community support for blockchain protocols is not as robust as it is in more traditional areas of programming (limited developer support, content libraries, FAQs, etc.) It's also unclear which protocols will have lasting viability. However, blockchain is at a turning point where it's moving into the mainstream and receiving heightened visibility, including by governments. Prediction: in 2018, the hype and headlines will remain dominated by cryptocurrencies but the discussion will shift to focus on regulation on applications of blockchain and the role of regulation in long-term growth and adoption.

❑ **Assign a specific person in your organization to follow blockchain-related news.** The environment around blockchain is fast-moving and volatile, so rather than piecemeal headlines from many sources, it may be worth tasking one or two specific, tech-savvy individuals in your organization to follow blockchain and think about its potential effects. Over the last year, government regulation has been almost as volatile as the cryptocurrency market itself, with governments taking very different positions on blockchain (some banning cryptocurrencies entirely, some embracing blockchain development, and many in the middle). And governments are daily changing their positions as the technology evolves.

❑ **Be wise in where and how and with whom you partner and share and data.** If you choose to experiment or participate in a blockchain project, do due diligence on the partner organizations. Blockchain doesn't eliminate the need to trust people; it just shifts where trust is placed. In many cases, the permanence of blockchain records and the difficulty in changing underlying structures once implemented could be a challenge and a liability, especially until we have a deeper understanding of how regulatory issues will evolve.

3 **BLOCKCHAIN IS NOT A ONE-SIZE-FITS ALL TECHNOLOGY**; public, permissioned and private blockchains each have their uses. Appropriately scoping a problem to be solved by blockchain requires an understanding of the various options. Within those broad structures, the need to trust and collaborate with humans remains essential.

❑ **Ethereum and Hyperledger are the most viable platforms for experimentation.** There are many different blockchain platforms, each with different underlying features. And any blockchain is only as useful as the community that supports it. Right now, [Ethereum](#) and [Hyperledger](#) are the two open platforms with the highest community investment of people, time, ideas and resources. Many of the world's largest businesses across many industries are supporting and experimenting with both. Any business wanting to experiment with blockchain should look into these two platforms as a starting point for exploration. Even just learning the differences between these two platforms is an education in the breadth of how blockchains can be structured. Sabre Labs has experimented with both Ethereum and Hyperledger and continues to explore these and other blockchain platforms.

❑ **Understand the differences in how blockchains can be structured.** Public blockchain solutions have shared infrastructure open to all participants: anyone who wants to can run a node (hosting a copy of the blockchain and validating transactions), anyone can use the blockchain, and anyone can read values from it. But there are real-world challenges to using public blockchains for enterprise solutions. Permissioned and private blockchains retain many of the core features of public blockchains but can be applied to enterprise level solutions while avoiding many of the current drawbacks of public blockchains.