



THOUGHT LEADERSHIP

# Planes, Trains, and Large Language Models

Will conversational AI revolutionize the travel experience?

# Are you ready to let an AI plan your next vacation?

Over the past few months, rapid advancements in the fields of generative and conversational AI have put these technologies front and center in the public and media consciousness. Across the global economy, from online retail to video games, AI looks set to have a profound impact on the consumer experience.

And the travel industry is no exception. Journalists are using AI to write online travel guides<sup>1</sup>; influencers are showing their followers how to plan vacations with ChatGPT<sup>2</sup>; and everyone from small travel agencies to industry giants are actively exploring how to use these technologies to provide a smoother, safer, and more interactive digital experience for their customers<sup>3</sup>.

In theory, AI-powered travel tools could be enormously helpful to consumers, helping to take the hassle out of vacation planning while offering the kind of personalized advice previously available only to those who could afford the services of a human travel agent.

But are travelers really ready to put their faith in AI when it comes to complex tasks like booking flights and accommodation, making an itinerary, or planning a budget? And what can travel companies do to ensure that the tools they're building today are more than just a novelty—and instead have a real impact on the travel experiences of their users?



**This report unpacks the emerging consumer-facing use cases for AI within the context of the travel industry. It covers:**



How consumers have already started using AIs like ChatGPT to assist with their travel planning.



The use cases for AI that travelers are most excited about.

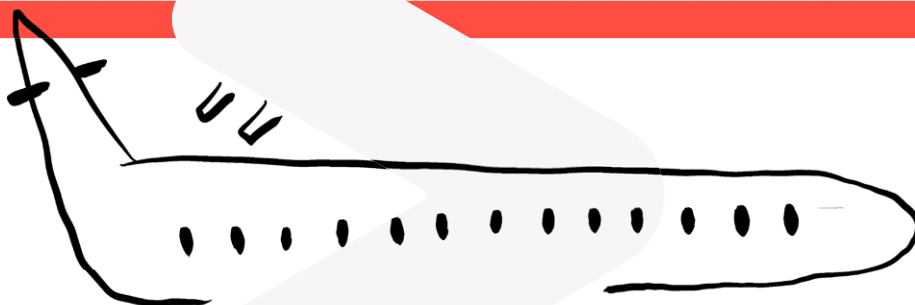


The key challenges that travel brands will need to overcome to create a sustainable market for virtual travel assistants and AI-powered travel tools.

<sup>1</sup>Jay Peters, "BuzzFeed is using AI to write SEO-bait travel guides", The Verge, March 30, 2023

<sup>2</sup>Nicola Roy, "Woman shares 'game-changing' travel hack that uses AI to plan out entire holiday", The Daily Record, April 25, 2023

<sup>3</sup>Julie Weed, "Can ChatGPT Plan Your Vacation? Here's What to Know About A.I. and Travel", The New York Times, March 16, 2023



# Some high-frequency travelers have already started using AI to plan their trips—with promising early results

Generative and conversational AIs may still be relatively nascent technologies—at least, in a commercial sense—but consumers are already excited about the potential applications they could have for the travel industry. **Forty-six percent of US consumers expect AI to have an overall positive impact on the travel experience, while fewer than half that number (18%) expect that it will be a net negative for travelers.**



Hotels, tour operators, booking sites, and other industry stakeholders have already begun exploring a wide range of travel-related use cases for AI—building more intelligent baggage handling systems, creating facial recognition tools to streamline customer journeys, and implementing more effective dynamic pricing systems, to name just a few.

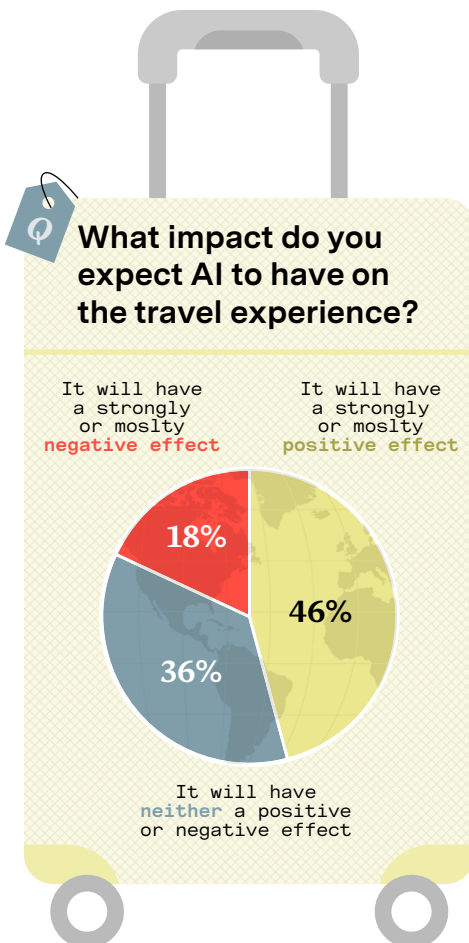
But perhaps the most relevant and exciting application of the technology, from a consumer perspective, is the possibility of using conversational AI as a kind of virtual travel agent or concierge. Before a trip, consumers could ask an AI for personalized recommendations about which sites to visit, where to eat and stay, or how to get the most out of their budgets. And then, while traveling, AI could help provide real-time updates about events,

attractions and potential disruptions, while also acting as an “always-on” customer service agent, helping users to find immediate solutions to whatever unforeseen problems might arise on their vacations or work trips.

In fact, a small number of early adopters have already started using conversational AI in precisely this way:

**6% of US travelers say that they’ve already used an AI to help them plan a trip.**

While still, for now, a niche option among travel-planning tools, it’s clearly one that has room to grow in popularity—especially considering the fact that many of the most popular conversational AI platforms have been available to the general public for less than a year at this point.

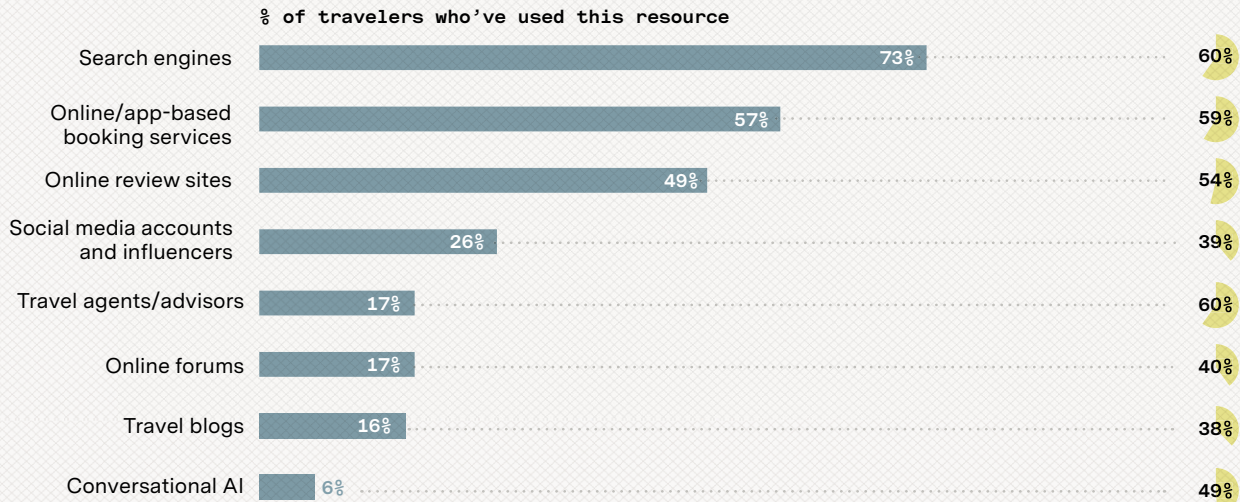






## What resources have you used to plan vacations or business trips?

% of users who've found this resource "very effective" for planning trips



While male travelers (9%) and millennials (9%) are among the demographics most likely to have already used an AI for this purpose, it's business travelers (11%) and high-frequency travelers (13%) that have been the fastest to embrace AI as a travel-planning tool. These users, understandably, have begun to see AI as a powerful tool to make the planning process more efficient and convenient, without incurring the costs associated with going through a human travel agent.

These kinds of applications could be particularly relevant for freelancers and small business owners; in other words, people who have to travel frequently for work, but don't have access to a corporate travel agent or in-house support team to make arrangements on their behalf.

In general, these early-adopters of AI have been mostly satisfied with their experiences. Among consumers who've used an AI to help plan a trip, about half (49%) said that they found it to be a "very effective" tool—meaning that, in the eyes of users, AI is a more useful resource than online travel forums and blogs, and only slightly less effective than review sites like TripAdvisor and Yelp.

This is particularly remarkable when considering the fact that existing conversational AIs have not been fully optimized for travel-related use cases. Travel companies like Expedia have only recently begun rolling out conversational AI functionality within their planning apps.<sup>4</sup> So, for the most part, these early adopters have been interfacing directly with general-purpose AI platforms like ChatGPT and Bing AI.



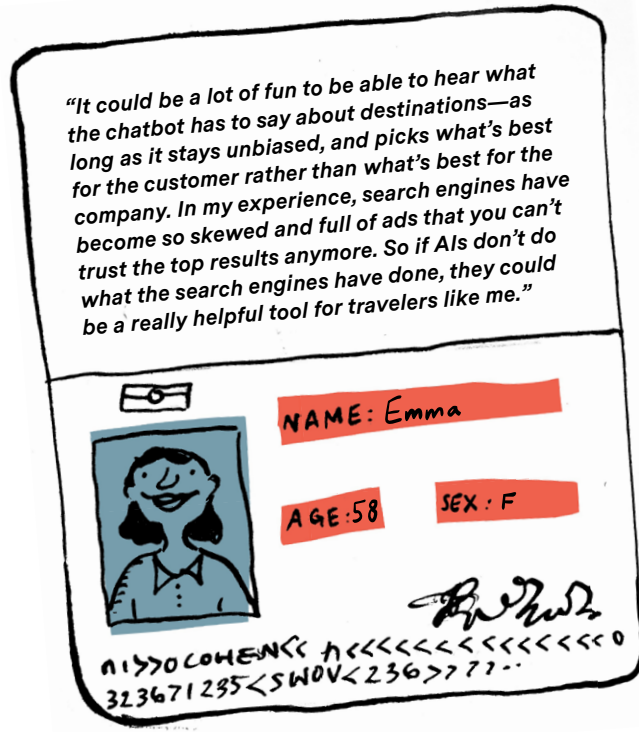
While these tools are undeniably powerful, they also have their limitations. The training data for ChatGPT, for example, only runs up to 2021, meaning that it is unable to provide travelers with fully up to date information about potential destinations and attractions.

As more bespoke tools designed specifically for travel planning start to emerge, we should expect the range of relevant use cases to expand considerably.

The newness of the technology does have its advantages, however. The most common complaints that consumers have about existing online travel tools are, firstly, the presence of hidden costs or fees (39%) and, secondly, that there are too many unwanted and intrusive ads (34%). Right now, conversational AI platforms don't suffer from these issues. When a user asks ChatGPT for recommendations, for example, they don't have to wade through sponsored listings in the way they would if they were looking on a dedicated travel review site or even doing a simple Google search.

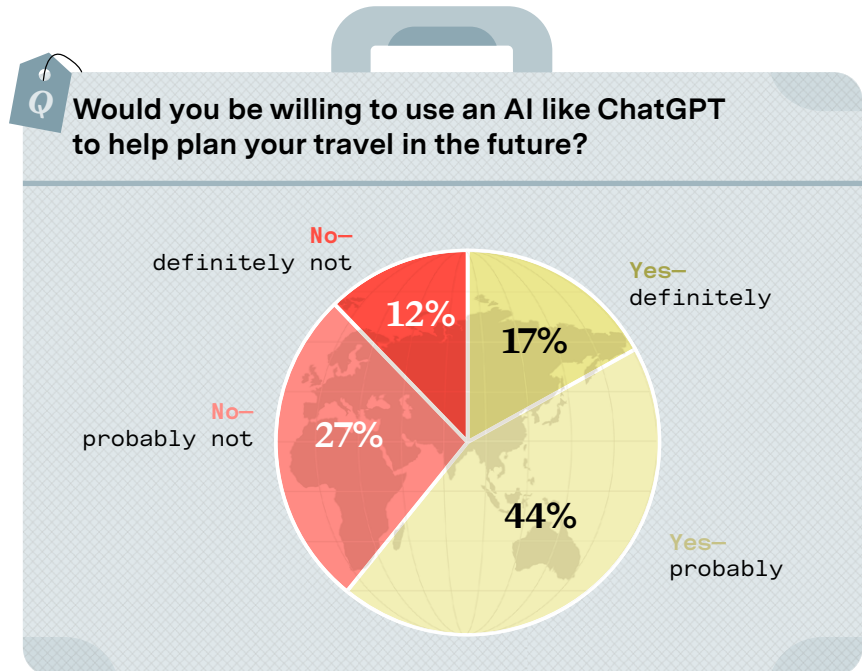
This may create a challenge, in the longer-term, for travel companies and tech platforms:

## How do you successfully commercialize and scale this technology without compromising what makes it attractive to travelers?



In part, the answer may be to invest in educating consumers about the range of potential use cases for conversational AI. In marketing these tools, providers ought to focus on some of the unique functionality of AI relative to existing tools such as search engines and review sites: the ability to, for example, create a

tailored packing list, communicate with hotels on your behalf, draft an itinerary, or make a detailed budget for a trip. By focusing on these sorts of use cases, providers can help their users to realize that AI can be more than just "Google without the ads"; not just a source of information, but a true partner at every stage of the journey.



# For consumers, it's important that AI doesn't take the joy out of planning a vacation



**Q** **WHY HAVEN'T YOU USED AN AI TO HELP PLAN YOUR TRAVEL YET?**

- It's never come to mind to use this technology for travel planning* 34%
- I prefer to plan my trips myself* 31%
- I don't know enough about AI technology* 30%
- I don't know which AIs are the best to use for travel planning* 22%
- I don't know where to get started with AI* 21%
- I don't know the best way of using an AI for travel planning* 19%

While only around 1 in 20 travelers have already used AI as a travel-planning tool, many more are open to the idea of doing so under the right circumstances.

**61% of consumers say that they'd be willing to use a conversational AI to help plan a future trip.**

So, if the majority of travelers are open to the idea of using AI, why haven't more of them taken the plunge and started doing so?



The biggest barrier to adoption, to date, has been a straightforward lack of awareness. Among consumers who haven't yet experimented with using AI as a travel-planning tool, the most commonly cited reason was that it simply hadn't crossed their mind to do so. And many consumers who were interested in the travel applications of AI felt that they didn't know enough about the technology to feel confident in exploring those applications for themselves; they just didn't know which platforms to trust, where to get started, or how to write prompts that would get them the information they were looking for.



But there's another, less obvious reason that many consumers have been hesitant to ask conversational AIs for travel advice. For many travelers, the research and planning stage of a trip is a core part of the travel experience—one that can be almost as much fun as the vacation itself. **Seventy-six percent of travelers say that they actively enjoy planning out their trips, while just 7% dislike the experience.**

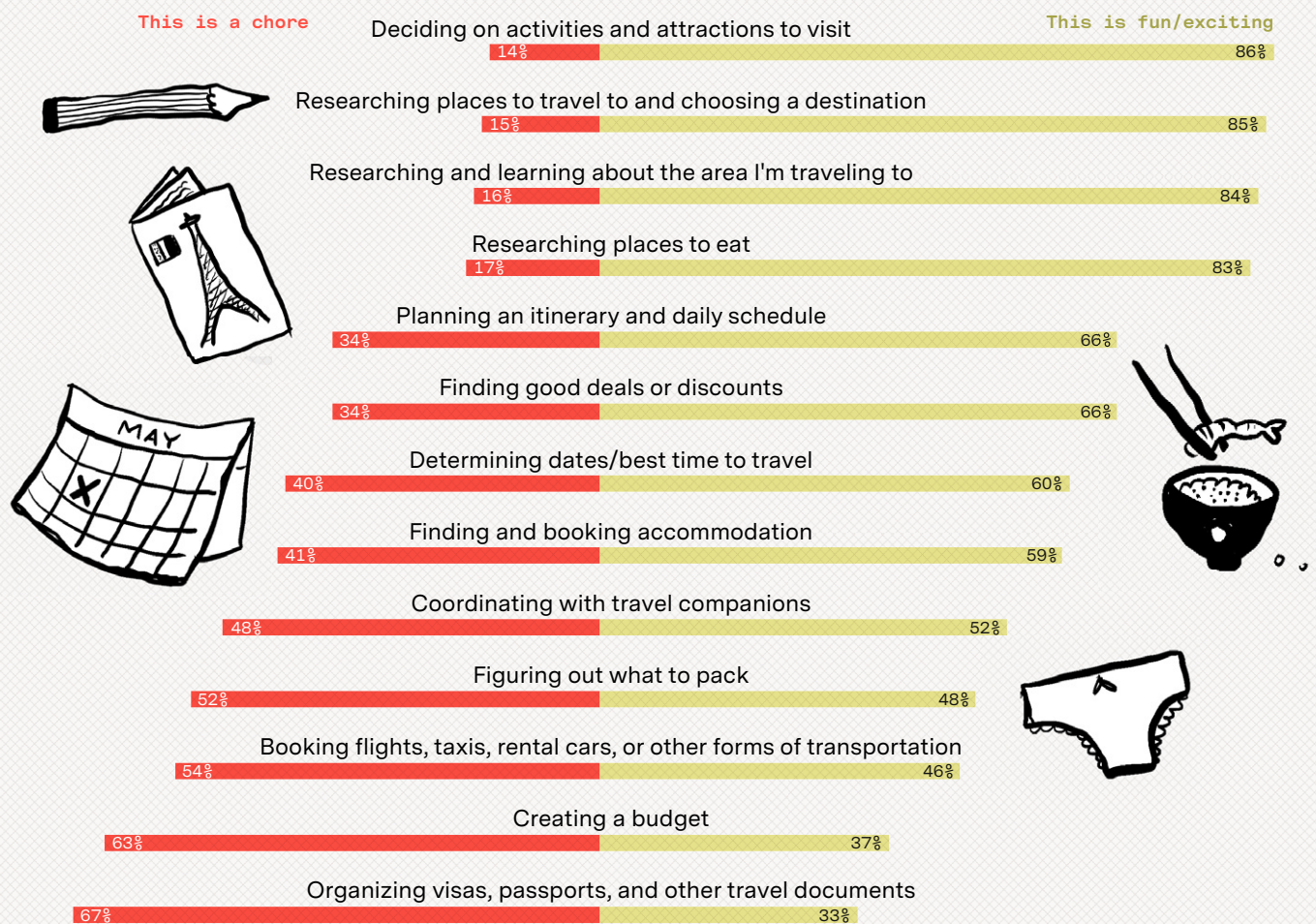
So there's an understandable fear among some consumers that using an AI to plan a trip might automate

away some of the inherent joy of vacation planning. **Among travelers who haven't yet used an AI for this purpose, almost a third (31%) say that it's because they prefer to plan their trips themselves.** In other words, there's a feeling among some travelers that asking an AI for travel advice would involve an inherent surrender of control; or, at least, more so than using a search engine or browsing listings on a travel site.

This concern is more pertinent for some aspects of the process than for others. Certain planning tasks—such

as choosing a destination, researching attractions and dining options, and finding deals and discounts—are seen by the majority of travelers as a core part of the travel experience; a chance to vicariously experience the thrills of a vacation before even setting off. Conversely, other activities—such as making a budget, booking transportation, and organizing visas and other travel documents—are seen as something more akin to a necessary evil; an important but tedious part of the travel process that must be endured to get to the good parts.

## How consumers think about preparing for a trip



This does not mean that consumers are only going to be interested in using AI to assist with activities they consider to be unpleasant chores. But it does suggest that companies building AI-powered travel tools ought to be approaching the challenge in terms of two distinct categories of use cases.

Consumers are certainly open to using AI to help with activities they see as a fun part of the travel experience; 39%, for example, say that they'd be interested in getting recommendations for attractions to visit from an AI, while 36% would consider using an AI to find out about local dining options. But with these sorts of use cases, it's important that consumers feel as if they're still in the metaphorical driving seat.

**They might want an AI to provide recommendations or act as a sort of brainstorming partner but, at the end of the day, they still want to feel a sense of control over the process.** In other words, they want the process of interacting with an AI to be an engaging and interactive back-and-forth experience.

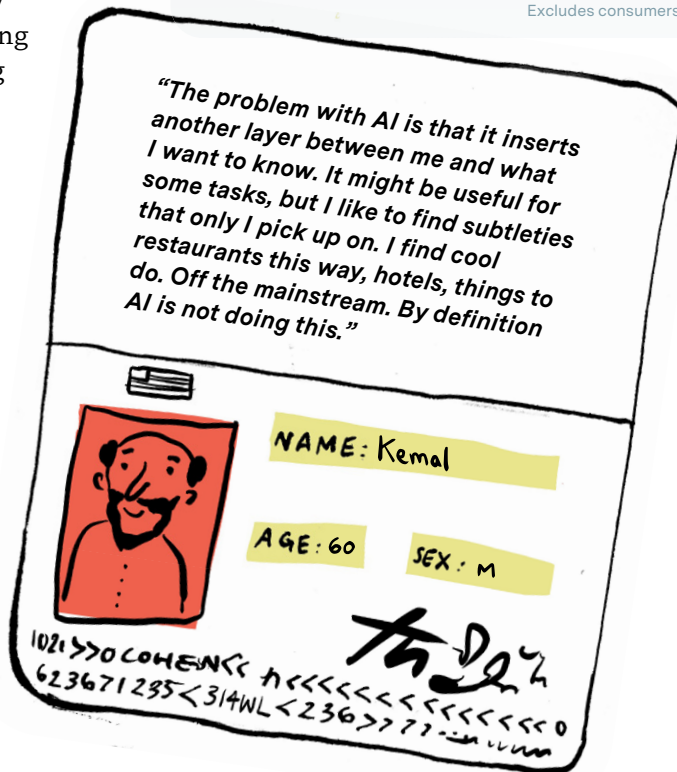
When it comes to the more tedious and boring aspects of the planning process, however, consumers might be more willing to hand over a greater degree of control to a conversational AI. For activities like booking flights, making a packing list, or creating a daily budget, consumers are more

### The use cases for AI consumers are most interested in

Q: Which of these would you consider using an AI for?



Excludes consumers with no interest in using AI for any travel-planning tasks.



likely to embrace a “hands-off” approach to AI; instead of an engaging two-way conversation, they’ll be looking to AIs to take as much hassle as possible out of the process.

Travel companies looking to launch their own AI-powered products will need, therefore, to be sensitive to these two different sets of use cases—and ought to embrace different design principles depending on the specific consumer needs they’re trying to solve for.



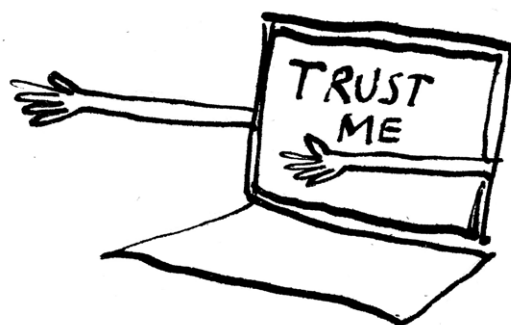
# Many of the most impactful travel-related use cases for AI will require a level of trust in the technology that does not exist yet



There is, however, at least one major challenge standing in the way of travel companies seeking to build AI-powered tools to address these various use cases: the problem of trust.

This is, in many respects, the central paradox of AI when it comes to the travel industry. Before AIs can provide fully personalized recommendations or meaningfully reduce the administrative burden

of planning a trip, consumers will need to share a significant amount of personal data with them. And most consumers aren't yet at the point where they feel comfortable sharing that sort of information with a conversational AI. **In fact, more than half (51%) of travelers say that they're worried AI-powered travel tools will fail to adequately protect their personal data.**



## WHAT CONCERNS DO YOU HAVE ABOUT USING AI FOR TRAVEL PLANNING?

*The AI might not protect my personal data*

51%

*The AI might be limited or biased in its recommendations*

34%

*The AI might not understand my preferences or needs*

33%

*The AI might provide inaccurate information*

33%

*I might miss out on things that I would have been able to find myself*

30%



To be more precise, there are two specific dimensions of trust that need to be considered when building AI-powered travel tools. Firstly, there's the question of *data trust*. Consumers want to know that, if they give their personal information to an AI—especially information from sensitive documents like their passports—then that AI is going to treat that information with the requisite level of respect and sensitivity. That means that there need to be safeguards in place to ensure travelers won't be exposed to hacks, and that their data won't be used to upsell them unnecessary products or to promote sponsored content that isn't clearly labeled as such.

Most consumers say that they wouldn't have a problem sharing information about their preferences or travel budgets with an AI—but beyond that, they're not so sure. **Fewer than a quarter of travelers, for example, say that they'd feel comfortable letting an AI access information from key travel documents like visas and passports; and fewer than 1 in 5 would be willing to share with an AI any information about their children and their travel needs.** This represents a major problem for the more “hands off” applications of AI in the travel industry; if consumers aren't willing to share this sort of information, it will be difficult, if not impossible, for conversational AIs to assist with key tasks like making hotel reservations or booking transportation.

Then there's the issue of *recommendation trust*: can I trust that the information an AI provides me is going to be both accurate and reflective of my specific needs, wants, and preferences?

This is a particularly relevant concern given growing public awareness of the phenomenon of so-called “AI Hallucination<sup>57</sup>”; the propensity for conversational AIs like ChatGPT to confidently assert plausible sounding but inaccurate information not present in their training data. So it's hardly surprising that **81% of travelers say that, if they were using AI to help plan a trip, they'd want to double check all the information given to them by the AI before making any decisions based on it.**

**What types of personal information would you feel comfortable sharing with a travel-planning AI?**



<sup>57</sup>Bernard Marr, “ChatGPT: What Are Hallucinations And Why Are They A Problem For AI Systems”, Bernard Marr & Co., March 22, 2023

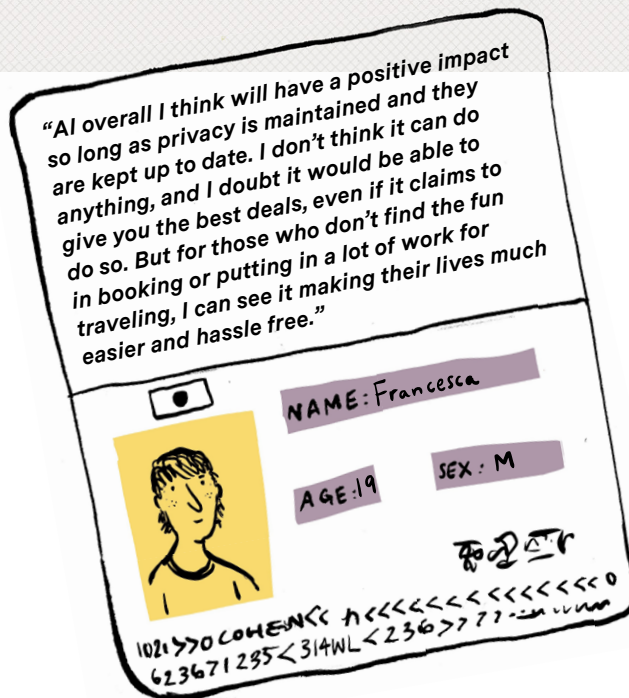


Relative to other potential use cases for AI, these issues of trust and accuracy are particularly acute in the context of travel planning. When buying a physical product based on an AI’s recommendation, it’s easy enough to return it if it fails to live up to expectations. But given the realities of vacation days and budgets—particularly amidst the current cost-of-living crisis—a poor travel experience can be a much more costly endeavor, both financially and emotionally. Moreover, traveling to an unfamiliar place or a foreign country can be intimidating, especially for solo travelers. Users of AI travel-planning tools will be putting their own personal safety into the hands of these solutions—so it’s absolutely critical that they can trust their recommendations to be accurate.

It’s possible that some of these trust issues will naturally resolve themselves as consumers become more familiar and comfortable with the concept of conversational AI. **Among consumers who’ve already used a conversational AI platform like ChatGPT, the percentage who express concerns about data privacy and security drops from 51% to just 42%.**

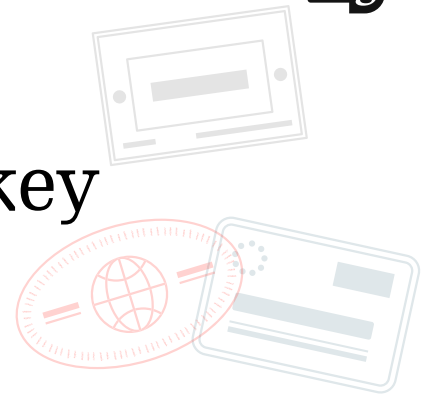
Nevertheless, travel brands looking to develop AI-powered tools for their customers still ought to be making the building and maintenance of trust a key priority. Right now, we’re at a crucial moment in the consumer adoption process for these technologies. The quality of these early experiences will play a crucial role in determining whether or not customers are willing to invest the same level of confidence in conversational AI that they’ve been willing to place in other categories of travel tools.

<h3>HANDS-OFF AI</h3>	<h3>HANDS-ON AI</h3>
<p>“Do the boring bits for me.”</p>	<p>“Give me ideas and suggestions that I can act on myself.”</p>
<h4>EXAMPLES</h4>	
<ul style="list-style-type: none"> <li>• Booking flights</li> <li>• Processing visas</li> <li>• Budgeting</li> <li>• Making a packing list</li> </ul>	<ul style="list-style-type: none"> <li>• Choosing a destination</li> <li>• Finding attractions</li> <li>• Finding local restaurants</li> <li>• Researching the local area</li> </ul>
<h4>TRUST CHALLENGE</h4>	
<p>“Are you going to protect my personal data and not misuse it?”</p>	<p>“Can I trust that the recommendations you give me are accurate and relevant?”</p>





# This emerging market for AI travel solutions represents a key opportunity for travel brands



While some consumers may have already found success using general purpose AI platforms like ChatGPT for travel assistance, we're now starting to see the emergence of a new generation of bespoke AI-powered travel

solutions—and many brands with existing credibility in the industry have made plans to add conversational functionality to their existing apps and websites or roll-out entirely new products altogether.

The brands that are most likely to succeed in the race to own the market for AI travel solutions will be those that keep **three key principles** in mind:



1

## Prioritize the needs of key early adopters



High-frequency travelers and business travelers have already started to explore how conversational AI can support the travel experience. These sorts of consumers are likely to form the core of the initial user base for any travel-related AI products, and their needs ought to be prioritized accordingly.

2

## Focus on building trust in the technology before rolling out to the mass market



Trust challenges will be the biggest barrier to reaching out beyond those early adopters. To address these issues, travel companies should invest in high standards of data security for any AI-powered products, and should be transparent with consumers about what their data will and will not be used for. At the same time, they also need to be honest with their users about the limitations of conversational AI, and put safeguards in place to minimize the risk of hallucinations.

3

## Understand the two distinct types of use cases travelers are likely to be interested in



For some tasks, consumers may want AIs to “do the thinking for them”; for others, they’ll want them to act as engaging conversation partners. These two types of need states are drastically different from one another, and travel companies should consider launching separate AI-powered products to address them—or, at the very least, ensuring that their products function differently depending on the problem the consumer is trying to solve.

Of course, building products with staying power will require significant financial commitments. Sophisticated language models can be highly expensive to build and to run at scale—which means that brands investing in this space will inevitably run into the eventual question of monetization. Adding AI functionality might help raise the profile of your existing solutions, but can it become a free-standing revenue source in its own right?

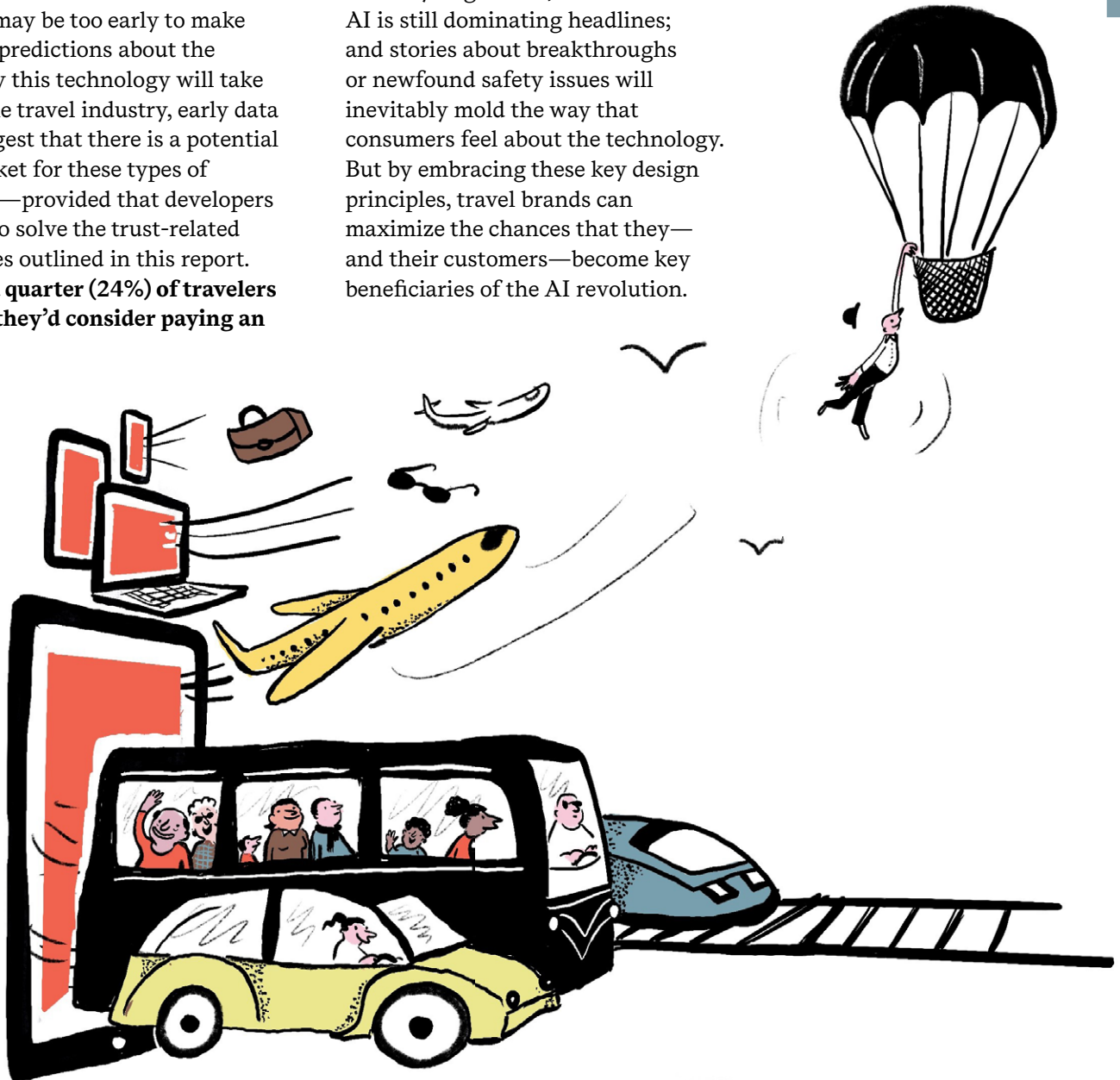
While it may be too early to make concrete predictions about the trajectory this technology will take within the travel industry, early data does suggest that there is a potential paid market for these types of solutions—provided that developers are able to solve the trust-related challenges outlined in this report. **Almost a quarter (24%) of travelers say that they'd consider paying an**

**annual or monthly subscription fee for access to a conversational AI that was designed to assist with travel planning.** On average, these consumers say they'd be willing to spend \$110 per year—or just over \$9 per month—on such a product.

Whether that interest can be converted into a sustainable market will depend, undoubtedly, on a number of factors—many of which are beyond the control of the travel industry. Right now, conversational AI is still dominating headlines; and stories about breakthroughs or newfound safety issues will inevitably mold the way that consumers feel about the technology. But by embracing these key design principles, travel brands can maximize the chances that they—and their customers—become key beneficiaries of the AI revolution.

# \$110

The maximum amount, per year, that potential users would be willing to spend on a subscription to an AI-powered travel assistance platform.





For more on how generative and conversational AI are reshaping the consumer experience across industries, download NRG’s recent reports:



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**WORDS AND ANALYSIS BY**



Fergus  
Navaratnam-Blair



Lucy Murrey



Fotoulla  
Damaskos



Grady Miller



Mary Moczula

**DESIGN AND  
ILLUSTRATIONS BY**



Creative  
direction by  
Grace Stees



Design by  
Olivia Reaney-Hall



Illustrations  
by Hannah  
Robinson

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**METHODOLOGY**

Data in this report is based on a study of 1,001 US consumers intending to travel for business and/or for leisure within the next 12 months, ages 18 to 64. This study was conducted online in April 2023. Participants were selected and weighted to be representative of national demographics in terms of age, race and gender. Names and citizenship of quoted consumers have been changed to protect anonymity.

