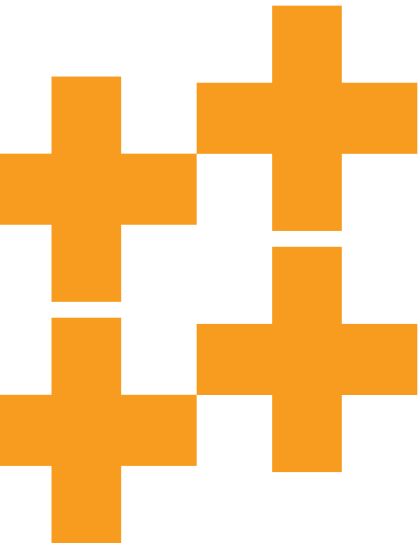


Travel and Hospitality Industry



This solution brief outlines how Couchbase can help travel and hospitality companies overcome key challenges, deliver better customer experiences, and reduce operational complexity, ultimately driving higher profitability.

As the travel and hospitality industry becomes increasingly reliant on digital platforms, mobile apps, and real-time engagement data, companies in this sector face unique challenges related to scaling their applications, providing seamless customer experiences, and managing global operations. Couchbase, with its flexible and high-performance database solutions, can help travel and hospitality companies build or enhance their customer-facing applications to meet these demands.

What Couchbase Does

Couchbase is a versatile NoSQL database that provides fast, scalable, and flexible data solutions tailored for modern, often mobile, applications. With Couchbase, travel and hospitality companies can develop customer-facing apps that support high traffic, real-time transactions, and personalized experiences, while ensuring data availability across geographically distributed locations. Whether you're creating a new app or enhancing an existing one, Couchbase provides the data foundation needed to handle large volumes of travelers, booking systems, and customer queries.

What Travel and Hospitality Companies Need

Before diving into Couchbase's capabilities, consider these key needs in travel and hospitality:

- **Fast, Reliable Apps:** Applications that remain responsive and available, even during high-traffic periods or network disruptions.



"Couchbase provides a seamless customer experience, which you can't put a price on. We have no downtime and the performance is very good."

— Rasheed Kazmi
IT Delivery Manager,
United Airlines

- **Scalability for Global Operations:** Seamless scaling capabilities to handle large volumes of data and users without negatively impacting performance.
- **Real-Time Personalization:** Ability to offer personalized recommendations and services based on up-to-the-minute data insights.
- **Offline and Global Availability:** Robust offline functionality and synchronization capabilities for travelers who are often disconnected.
- **Cost Efficiency:** Lower total cost of ownership (TCO) through a streamlined infrastructure that replaces multiple data access systems with a single, high-performing platform.

Problems Faced by Travel and Hospitality Companies

Understanding these challenges will help you evaluate whether your current infrastructure is keeping pace with business needs:

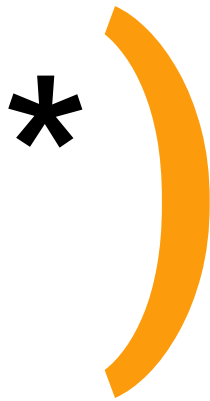
- **High Expectations for Seamless User Experience:**
Travelers expect fast, responsive, and always-available apps for managing bookings, check-ins, and travel itineraries. When apps crash or are slow during critical moments, such as checking in or booking a last-minute flight, passengers are left frustrated and anxious. This means flights get delayed, passengers miss connections, and customer satisfaction drops. In the worst cases, customers may abandon your services entirely, leading to a loss of revenue and reputation damage.
- **Scalability During Peak Times:**
During peak travel seasons, promotions, or unexpected emergencies like flight cancellations, systems must be able to scale rapidly to handle surges in traffic. When systems can't scale properly, they crash, causing chaos and inducing stress. This can mean delays in flight schedules, long lines at airport counters, and overwhelmed customer service agents trying to rebook passengers. The longer it takes to resolve the issue, the more passengers must be compensated with meal vouchers or hotel stays, further increasing operational costs. These delays spiral out of control, causing a ripple effect that impacts not only one flight but entire networks.
- **Managing Distributed Data:**
Global travel companies must manage vast amounts of data across different regions and time zones. If this data isn't easily accessible or compliant with regional regulations like GDPR, it can lead to serious legal issues and operational inefficiencies. This means that passengers in different parts of the world may experience delays in receiving critical information, such as flight status or booking confirmations, leaving them stranded without the ability to make changes or access needed services. Data discrepancies or delays can leave customers feeling abandoned by their travel providers.



aMADEUS

"What we value a lot is that Couchbase was able to embrace with us our vision to the cloud, and the fact that we wanted to operate data stores directly on PaaS."

— Vincent Bersin
Unit Manager, NoSQL
Solutions, Amadeus



- **Need for Personalization:**

Today's travelers demand highly personalized experiences, whether it's tailored hotel offers, seat upgrades, or custom travel packages. Without the ability to access and process real-time data quickly, travel companies struggle to offer these personalized services. The result is generic offers that don't resonate with travelers, leading to missed opportunities for upselling or providing value-added services. Customers may feel ignored or underappreciated, causing them to seek out competitors who can provide the level of personalization they expect.

- **Mobile and Offline Functionality:**

Many travelers rely heavily on their mobile devices during their journey, especially in situations where connectivity is limited, such as during a flight, in remote locations, or when traveling internationally. If travelers can't access boarding passes, flight details, or itinerary information offline, they can miss flights or experience significant delays. Long lines form as passengers scramble for assistance at service desks, causing further delays and dissatisfaction. With Couchbase's offline-first functionality, travel companies can eliminate these problems by ensuring travelers have access to critical information, even without internet connectivity.

- **Legacy Systems and High Operational Costs:**

Many travel companies still rely on outdated systems that can't keep up with modern demands for speed, scalability, and innovation. These legacy systems are expensive to maintain and make it difficult to innovate quickly, leading to slow adoption of new features like cloud deployment or real-time updates. Companies are stuck in reactive mode, constantly fixing problems rather than focusing on improving the customer experience or offering new services. As a result, operational costs balloon, and customer loyalty suffers as modern competitors offer faster, more reliable experiences.

How Couchbase Helps Address These Problems

Couchbase offers a suite of capabilities designed to address these specific challenges. As you review these, consider how Couchbase's features align with current pain points:

- **High Performance:** Couchbase's in-memory caching and distributed architecture ensure that apps deliver the sub-millisecond responsiveness, even during high-traffic periods. Amadeus books over 20M transactions per second at peak times with Couchbase.
- **Scalability:** Couchbase auto-scales to handle spikes in traffic during peak seasons, ensuring smooth user experiences and high availability.
- **Distributed Architecture:** Couchbase's ability to replicate data across multiple regions ensures that travelers and crew can access their data quickly, no matter where they are, while complying with local regulations. Carnival Cruise Lines synchronizes its city-at-sea data from Couchbase in every port of call.





"All the intelligence has to be processed on the edge so it can be invested back into the guest experience in real time."

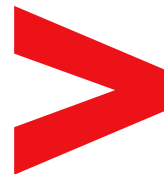
— John Padgett
President, Carnival

- **Offline Access:** Couchbase Mobile enables offline access and local peer-to-peer synchronization with automatic sync once the internet is available again.
- **Personalization at Scale:** Couchbase's support for JSON and its flexible data model allows for real-time querying and personalization, helping travel companies provide tailored offers and services to individual customers.
- **Reduced Operational Costs:** By consolidating multiple functions (e.g., JSON and key-value access, search – AI, geographic and text, and analytics) into a single platform, Couchbase helps companies lower complexity and costs by eliminating the need for multiple databases and reduces database management – which frees them up to focus on their core business.

The Value Couchbase Provides

In this section, consider the direct value Couchbase could bring to a prospect or customers business. What customer complaints could be addressed? What inefficiencies could be improved?

- **Improved Customer Experience:** Couchbase enables faster, more responsive apps, leading to increased customer satisfaction and loyalty.
- **Higher Revenue:** With scalable infrastructure and personalized services, travel and hospitality companies can handle more bookings, reduce downtime, and offer services that improve "look to book" ratios.
- **Lower Costs:** Couchbase reduces operational complexity by providing a multi-model database that replaces the need for several different databases, leading to cost savings on infrastructure and maintenance.
- **Global Compliance:** Couchbase supports data replication and filtering across geographies, helping travel companies meet local compliance and data sovereignty regulations.
- **Developer Agility:** With support for JSON, SQL syntax (SQL++ is SQL for JSON), and flexible data access patterns, Couchbase allows developers to build, test, and deploy new features faster.



Couchbase Features for the Travel and Hospitality Industry

Root Cause (Technical)	Couchbase Feature/Function	Couchbase Capability
High traffic leads to app slowdown during peak periods	In-memory caching and distributed architecture	Fast data access and ability to handle large volumes of simultaneous requests without crashing
Data latency for travelers and flight crew	Cross Data Center Replication (XDCR)	Ensures low-latency, provides protection against data-center failure
Poor personalization and user experience	JSON data model and real-time querying	Dynamic personalization based on real-time user data, improving customer experience
Offline access issues for travelers in poor connectivity areas	Couchbase Lite and Sync Gateway	Ensures apps work offline and sync automatically when connectivity returns
Legacy systems that can't scale	Flexible, cloud-native NoSQL database	Cost-effective migration from legacy systems, lower infrastructure costs
High operational costs due to multiple database systems	Multi-model database	Consolidate the functionality of several databases into one, reducing infrastructure complexity and cost

AI Applications and Examples

AI is becoming an essential tool in travel and hospitality. In this section, think about how AI can improve business operations, customer experiences, and decision-making processes. Here are a couple examples:

AI is transforming the travel and hospitality industry by delivering personalized, adaptive experiences in real time to enhance the overall customer experience. Imagine an AI-powered app that seamlessly integrates all aspects of your travel, from booking to final destination. The app could remember your preferences and offer personalized suggestions for flights, hotels, or activities based on your past trips. It might even blend in real-time contextual information like the weather, traffic or the status of your upgrade request. Upon arrival at the airport, an AI-based app might guide you to the fastest security lane, reroute you to a different terminal based on real-time airport conditions, or suggest a lounge to relax in if your flight is delayed. During your journey, the app could anticipate disruptions like weather delays or traffic issues and instantly offer you alternative options, whether it's booking a new flight on a different airline or finding a hotel nearby.





"For many many years, we said, 'Wouldn't it be nice to have a data store where we could go from the Java object right into the database and back without a big translation and lots of overhead?' Well, this is it."

— Thomas Vidnovic
Solutions Architect,
Marriott International

Questions to Ask Yourself

Use these questions as a checklist to evaluate whether your current infrastructure is delivering the performance, flexibility, and scalability your business needs:

1. How are slow app performance or downtime affecting your bookings and revenue?
2. Are your customers frequently complaining about poor experiences when using your app, such as slow loading times or crashes?
3. What is your current or future plan to incorporate artificial intelligence into your applications and customer interactions?
4. Do your current systems scale efficiently during high-traffic periods or seasonal spikes?
5. What are your current strategies for ensuring data compliance across multiple regions?
6. Is mobile or offline access important to your travelers, and do you currently offer this functionality in your app?
7. How many different database systems are you using to manage your application, and are the operational costs higher than expected?
8. How much time/resources are you dedicating to managing your infrastructure yourself?

Customers Case Studies

1. **Amadeus** – Using Couchbase, Amadeus processes an impressive 20 million operations per second, with 99% completed in under 2.5 milliseconds. This lightning-fast speed delivers the responsiveness customers expect. Couchbase's Cross Data Center Replication (XDCR) ensures high availability, guaranteeing a reliable user experience.
2. **Marriott (AWS)** – Marriott's goal was to create a superior digital experience for its customers, which included personalized interactions, reliable online platforms, and being able to release new apps faster. Couchbase's ability to handle 30 million documents with 4,000 transactions per second proved to be instrumental in achieving these objectives.
3. **United (AWS)** – United Airlines, with its fleet of over 1.5 million annual flights, relies on a dedicated team of 41,000+ pilots, flight attendants and flight schedulers. The company adopted Couchbase to modernize its technology, streamline operations and simplify data management for its mission-critical applications.
4. **Carnival** – Carnival's goal was to deliver a customized, personalized experience for every passenger – even while disconnected from the internet. Within their city-at-sea, they've deployed fifteen thousand sensors on board. They rely on Couchbase to handle the massive amounts of data coming in real time from the OceanMedallion devices. This level of personalization helps Carnival build brand loyalty and generate additional upsell revenue from passengers.

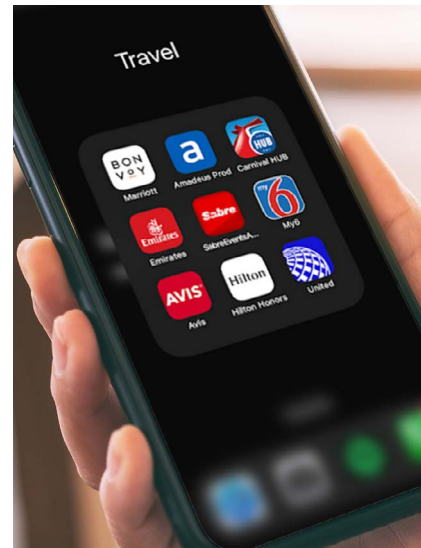
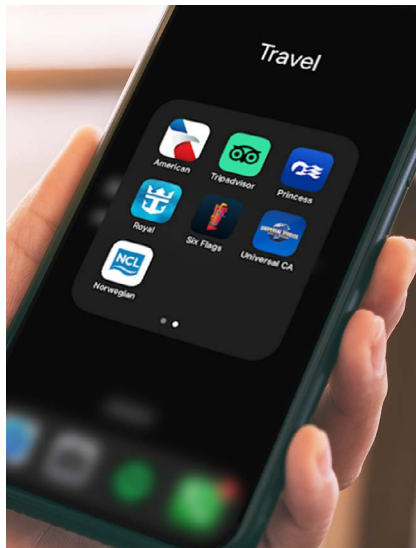


5. Emirates – Emirates, the largest airline in the Middle East, operates over 3,600 flights per week out of 154 airports in 82 countries. To streamline their paper-based pre-flight checks, Emirates sought a digital solution powered by Couchbase Lite. This offline-first mobile app ensures 100% availability, even in areas with unreliable internet, providing pilots and crew with seamless access to critical information.

Conclusion

In the highly competitive travel and hospitality industry, success hinges on delivering exceptional customer experiences at every touchpoint. By leveraging Couchbase, companies can build applications that are faster, more reliable, and tailored to the needs of today's modern travelers, while simultaneously reducing operational complexities and costs. Let Couchbase power your digital transformation and help you meet the future of travel.

Companies Using Couchbase



Modern customer experiences need a flexible database platform that can power applications spanning from cloud to edge and everything in between. Couchbase's mission is to simplify how developers and architects develop, deploy and run modern applications wherever they are. We have reimagined the database with our fast, flexible and affordable cloud database platform Capella, allowing organizations to quickly build applications that deliver premium experiences to their customers – all with best-in-class price performance. More than 30% of the Fortune 100 trust Couchbase to power their modern applications. For more information, visit www.couchbase.com and follow us on X (formerly Twitter) @couchbase.

