

All-in on Couchbase for easy-to-manage performance and scalability

## Industry

- [Media & Entertainment](#)

## Customer application

- Promotions platform

## Use case

- Session store
- User profile database
- Entitlement management

## Product

- [Couchbase Server](#)

## Key features

- [Multi-dimensional scaling](#)
- [Cross data center replication](#)

## Cloud partner

- [AWS](#)



[Flutter Entertainment plc](#) (formerly Paddy Power Betfair plc) is a global sports betting, gaming, and entertainment provider for over 18 million customers worldwide. The company was created by the merger of Paddy Power and Betfair, and the later acquisition of The Stars Group.

Paddy Power Betfair switched to Couchbase for the scalability, high performance, easy integration, and continuous delivery they needed to process 500K events every 3 minutes for more than 7 million active customers.

### CHALLENGES

- Oracle was difficult and expensive to adapt for object-oriented languages, scalability, and continuous deliverability
- Needed to consolidate numerous NoSQL solutions that weren't optimal for their use cases
- Had to process volatile datasets for real-time betting for millions of users

### OUTCOMES

- Couchbase provides an easy-to-use database for developers and operations, and is the ideal infrastructure for virtualization and cloud
- Improved performance, flexibility, and scalability of NoSQL deployments
- Processes over 500K events in 3 minutes for more than 7 million active customers
- Processes over 1 million replication transactions per second

“Couchbase Server is designed for massively concurrent data use and consistently high throughput. It provides consistent sub-millisecond response times, which help ensure an enjoyable experience for application users.”

— **Alexandru Objelean**

Senior Software Engineer, Paddy Power Betfair

Paddy Power Betfair is one of the world's largest global sports betting, gaming, and entertainment providers, with over 18 million customers worldwide. The company built a system for creating promotions with the goal of taking personalization and real-time experiences to the next level for over 7 million active customers. Today the platform powers three brands: Paddy Power, Betfair, and FanDuel, and it will be extended to additional brands in the near future.

## **THE CHALLENGE: PROVIDING A PERSONALIZED REAL-TIME EXPERIENCE FOR USERS**

Customers today expect a responsive and personalized experience across all their devices, and they have little patience for delays when gaming or using mobile apps. Paddy Power Betfair knew that designing an application with a better real-time experience would improve customer satisfaction and increase acquisition and retention rates.

The primary challenge was that their platform regularly experienced massive traffic spikes from millions of users, especially during popular sports events. For example, their Bettor Exchange product alone generates more daily transactions than all the European stock exchanges combined.

Another challenge was operating across many markets, each with unique requirements. Different teams need to be able to control their own development, deployment, and scaling without having to coordinate their changes with the teams in the other markets.

Paddy Power Betfair previously used Oracle for their platform, but adapting it to work for object-oriented languages, high scalability, and continuous deliverability was too complicated and expensive. The company moved many applications to Cassandra and Memcached for the benefits of NoSQL, but those two databases failed to meet expectations. The company pivoted once again, and this time successfully consolidated their NoSQL on Couchbase.



## THE SOLUTION: TAKING A HYBRID APPROACH TO DATA PROCESSING

While the Couchbase use case at Paddy Power Betfair started small, it has now grown into a full-blown dual data center that powers a “hybrid” approach to delivering superior customer experiences.

For example, a single sports competition often triggers a payout to hundreds of thousands of customers in a short time. Before adopting Couchbase, a massive spike in events would overtax the processing power of the database and slow down the payouts. Now when a spike is detected, a large number of the transactions are transferred from one Couchbase data center to the other, taking advantage of all of Couchbase’s processing power at once.

“Designing a real-time application like this is challenging, but the right technologies make it a lot easier,” said Alexandru Objelean, a senior software engineer at Paddy Power Betfair. “Couchbase’s NoSQL database combined with Kafka messaging fits very well together. Now we have billions of messages flowing daily. By designing our hybrid solution, we can handle massive spikes and create a better customer experience, even during high-traffic sports events.”

Paddy Power Betfair also uses the hybrid approach to shorten customer waiting times for events. When waiting times hit a specific threshold, a secondary mechanism is activated, and some processing is pushed from one Couchbase data center to the other. With all the Couchbase nodes sharing the load, queue times become much shorter – less than one second during non-peak hours. The platform keeps costs lower during non-peak times by waiting for traffic spikes or long wait times before using the entire cluster.



## Powering customer rewards

Couchbase's flexible NoSQL modeling has also made it easier for Paddy Power to track activity - including deposits, bets, and other interactions - across the promotional platform to help provide a superior user experience.

Some of the more complex interactions supported include prize ladders (increased rewards for additional bets) and the awarding of prize-drawing tickets based on participation in promotions.

## THE RESULTS: IMPROVED PERFORMANCE, FLEXIBILITY, AND SCALABILITY

Since adopting Couchbase, Paddy Power Betfair has seen improved performance, flexibility, and scalability of its NoSQL deployments while gaining the ability to process over 500K events in 3 minutes for more than 7 million active customers. The data replication features keep data integrity and performance top notch, processing over 1 million transactions per second.

Couchbase provides an ideal virtualization and cloud computing infrastructure, and both the developer and operations teams find it easy to use. Developers easily model and incorporate many new interactions on top of the platform's core services. The operations team uses Couchbase's out-of-the-box dashboards and metrics to monitor system behavior, including data integrity between the two data centers. They can see the status of ongoing replication at any time, and if there's an error, Couchbase immediately triggers a call or email alert.



At Couchbase, we believe data is at the heart of the enterprise. We empower developers and architects to build, deploy, and run their mission-critical applications. Couchbase delivers a high-performance, flexible and scalable modern database that runs across the data center and any cloud. Many of the world's largest enterprises rely on Couchbase to power the core applications their businesses depend on. For more information, visit [www.couchbase.com](http://www.couchbase.com).