

3 Secrets of Online Gaming Performance

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Introduction

In just under a decade, online gaming has become a large piece of the overall European gambling and betting industry. The [European Betting and Gaming Association](#) states that online (GGR) is expected to rise from €10.9 billion in 2013 to €13.27 billion in 2015. [Juniper Research](#) expects the number of people playing online casino games worldwide will jump from 64 million users in 2013 to 164 million by 2018.

Mobile apps in particular promise to transform the overall gaming market, as more people use mobile devices as their go-to way to access online content. Specialized apps offer substantial benefits in user experience by offering alerts and reminders, as well as social gaming features, such as the ability to bet against other users online in real time.

A 2014 Juniper Research survey reports that mobile betting at major European gambling companies, including Paddy Power (featured in this ebook), made up 20% of total bets (both online and offline), a number that is expected to double by the end of 2015. Juniper also has predicted the mobile gambling industry specifically is set to be worth \$100 billion by 2017.

Online gaming is a profitable business, one that is only starting to realize its potential as technologies catch up with the ways in which people wish to participate. But to be successful, gaming companies need applications and technologies that keep up with the level of play out there. Odds on sporting events change constantly, even during the course of a game. Roulette wheels need only seconds to let punters know whether betting on 23 Red will score big money. Blackjack players don't want to wait indefinitely for a virtual dealer to reveal the house's cards.

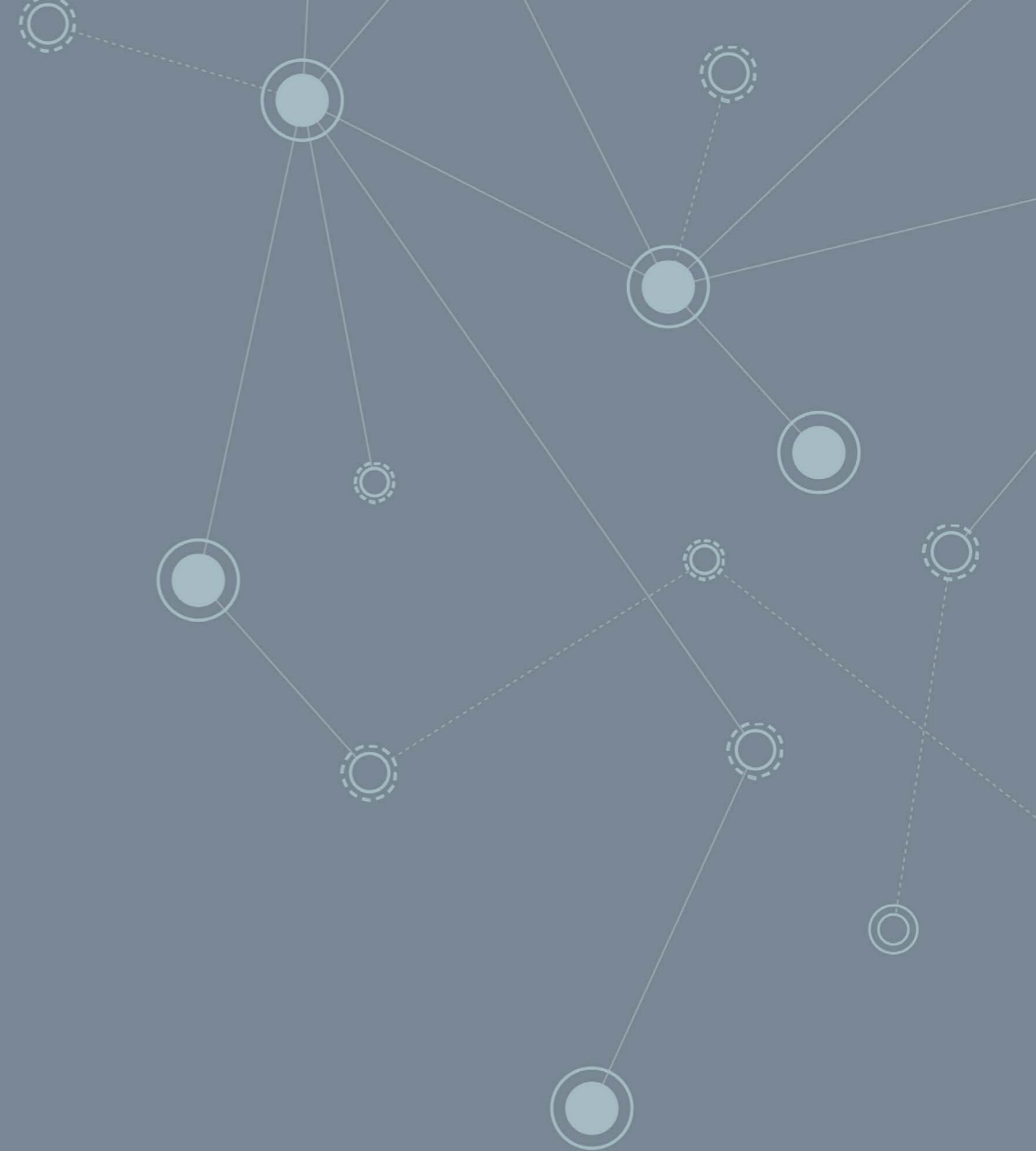
Your gaming company can't afford to test the odds on your application

performance. You need the ability to see how your infrastructure is working within your IT environment and interacting with customer apps, act quickly to fix a performance problem before it impacts your customers, and know the ways in which your apps are working over time to optimize performance—and keep your customers coming back for more.

Only AppDynamics provides you with the application intelligence tools to protect and improve your business. We hope these three well-known gaming companies give you a deeper understanding as to why AppDynamics is your best bet for ensuring great application performance and overall intelligence into your entire infrastructure.

Chapter 1

How Betfair Stopped Gambling
on Database Performance



How Betfair Stopped Gambling on Database Performance

UK-based Betfair is the world's leading online betting exchange, a concept it pioneered just a year after its founding back in 1999. With the help of cutting-edge technology, Betfair enables customers to set their own odds and bet against one another—even after an event has started. Currently this gaming colossus processes over 7 million transactions a day, 99.9% of which are completed in less than a second, and handles over 1.2 billion bets per year, more than all European stock exchanges combined.

“Betfair has seen customer usage almost doubling for four years and now needs to deal with more than 25,000 dynamic page impressions per second,” says Oliver Cook, engineering services manager at Betfair. “It is essential that we load test all of our applications thoroughly prior to release, because if we get it wrong, even a seemingly innocuous change can have a significant impact on the customer experience.”

This massive numbers of transactions, combined with the speed at which most of these transactions take, meant that Betfair needed a database-monitoring tool that could deliver on four key attributes:

1. Supply a fine level of detail to capture performance glitches that lasted 15 seconds or less
2. Handle monitoring Betfair's huge transaction volumes on various Oracle database platforms without adding significant overhead
3. Profile performance during load tests so that the team could quickly and easily highlight bottlenecks and compare differences between multiple tests
4. Provide support for SQL Server and MySQL databases, in addition to Oracle.

Improving visibility was especially critical because many of the performance problems Betfair experience were of short duration, says Nigel Noble, senior performance DBA at Betfair.

“In the past, we've seen performance problems in production that affect our customers for no longer than 15 seconds and then go away. But they always return at a later date because we haven't been able to see why they happened or do anything about them,” Noble explains. “Having a problem that only lasts 15 seconds may not sound that serious, but, if it's the wrong 15 seconds, it could seriously impact both our customers and the business.”

The database monitoring tools Betfair had previously reviewed were not equipped to handle such fleeting errors; at best, they could only offer a 15-minute time slice in a production environment. These solutions completely missed the information Betfair needed and would “effectively leave us blind,” says Noble.

In contrast, AppDynamics' database monitoring tool provided visibility into the sort of short duration time slices Betfair needed to find root causes of these transient errors. AppDynamics' agentless technology was easy to deploy because it did not require installation or any changes to the many database platforms that needed to be monitored.

Moreover, AppDynamics automated Betfair's approach to performance tuning, relieving Betfair's database team of the need to manually review and correlate data from multiple point tools that could not be coordinated.

AppDynamics also excelled in the ability to take the complicated task of comparing two database loads over countless scenarios in Betfair's load-testing environments to evaluate for performance and scalability. AppDynamics' load test comparison reports immediately highlighted areas where performance changed, either positively or negatively, thus saving Betfair valuable analysis time.

In addition, Betfair's database team could generate reports comparing any two scenarios, in addition to load testing ones. For example, the Betfair team has used this unique AppDynamics feature to compare a QA load with a production one, two nodes of a given cluster, and performance before and after a production change, such as the addition of a new index.

All of AppDynamics' aforementioned granular capabilities, however, would be useless if the tool incurred significant overhead. “It's the last thing you want from your performance monitoring tool, particularly when it's being implemented on production or highly-stressed load-testing servers,” Noble says.

During the testing phase, Noble's team routinely set time slices at 10 seconds to see how AppDynamics could handle such heavy loads. Even at the level of detail, total overhead used less than 1% of CPU resources. “This overhead was well within acceptable limits, and has enabled us to deploy AppDynamics on even our most heavily loaded Oracle servers, which are among the busiest in the world,” Noble says.

Betfair now uses AppDynamics throughout all stages of application development as well as in production at Betfair, helping everyone to communicate internally about database performance issues. AppDynamics' intuitive web-based GUI helped different teams share information quickly and painlessly.

“AppDynamics has helped us to significantly reduce the time it takes to isolate and resolve performance problems during development and pre-production load testing. The result is that we can release new functionality faster without having to compromise on quality,” Cook adds.

How Betfair Stopped Gambling on Database Performance cont'd

In addition to all the functionality AppDynamics provides Betfair, Noble found AppDynamics' responsiveness to his questions and requests for enhancements to be "nothing less than superb."

Says Noble: "The best thing about AppDynamics in production is the amount of time it saves us when investigating performance problems. This means we fix problems faster and keep our customers happy."

How Paddy Power Improved Its Stake in Its Mobile Growth Strategy

Paddy Power has been Ireland's largest bookmaker since its founding in 1988, with over 500 licensed retail betting shops across Ireland, Northern Ireland, and Great Britain as of 2015. Although its offline presence is formidable, online betting is increasingly becoming its core business. Paddy Power currently offers a wide range of services, including sports betting, bingo, poker, and general casino gaming.

In May 2010 Paddy Power released its first iPhone app, the first of its kind for mobile betting and soon followed that app with one for Android and for iPad. Now the company's mobile revenues constitute over 50% of its total online revenue, up from just 22% in 2011. Given that most of its customer acquisition over the past few years has come through its mobile channels, the percentage is expected to grow significantly in the future.

In early 2015, CEO Andy McCue [said](#) that already three-quarters of Paddy Power's profits comes from online gaming, adding that future growth lies almost exclusively in mobile gaming. In fact, mobile has become such a big part of Paddy Power's overall growth strategy that the company is committed to innovating on more mobile platforms, using either existing platforms or new technologies. McCue says Paddy Power is aligning its business plans with its customer's "hierarchy of needs," noting that:

We have developed and are working on enhancements throughout the journey to improve customer navigation, as well as making the product increasingly personalized to individual preferences and richer in relevant content...[to provide] the best possible intuitive customer experience.

To achieve these goals of making Paddy Power "distinctive from the competition... and creat[ing] clear blue water between our products and those of the competition," McCue says the company needs "to operate at pace and flexibly, and so we will further expand our in-house development capabilities." In other words, he understands the direct link between application performance and business growth.

Of course, delivering on McCue's (and Paddy Power's) goals for a great customer experience is easier said than done. The infrastructure needed to deliver great mobile apps is more complex and diverse than the infrastructure needed to deliver web-based applications. "Delivering mobile applications means that we're delivering something to a customer device, and those devices can be diverse in nature and multiple form factors make it difficult to build applications that are suitable for each of those form factors," explains John Turner, software development manager at Paddy Power. In addition to using multiple versions of a given app, customers may be betting against other punters using yet a different version of that same app. And those differences among apps can range from differences among mobile operating systems to differences among versions of an app of a given OS.

Turner leads the management, building, and development of continuous delivery pipelines and PaaS (Platform-as-a-Service) capabilities for the hundreds of applications in Paddy Power's portfolio. These apps are built and delivered using a wide range of technical frameworks, including those based on Java, .NET, Ruby, and PHP. Each of these apps has its own unique lifecycle and release schedule that vary from monthly, weekly, and even daily updates and release schedules, reflecting the pace and flexibility CEO McCue expects.

Therefore, Paddy Power needed an APM (Application Performance Management) solution that could manage Paddy Power's large portfolio of mobile apps and provide the visibility needed to ensure that each and every one of these apps perform to customer expectations.

Paddy Power also wanted an APM solution that offered:

- Easy implementation and deployment that didn't require Paddy Power to change any part of its IT environment
- Single pane intuitive interface that everyone in the organization could use
- Support on Java, .NET, PHP, and mobile platforms
- Visibility into end-user experience
- Real insight into the company's distributed business transactions

For his part, Noble has been extremely pleased with AppDynamics' power, flexibility, and ease-of-use. "I would recommend AppDynamics to any organization that has a need to understand how their end users are interacting with their application," Noble concludes. With AppDynamics Paddy Power has puts its money on the right solution to realize McCue's objectives with ease.

How Bwin.party Bet on One Tool To Create Visibility For Its DevOps

Gibraltar-based Bwin.party (originally short for betandwin) is arguably the largest publicly traded online real money gaming companies in the world. While sports betting is its core business, Bwin.party boasts several gaming sites, including partycasino and partypoker, UK's Foxy Bingo, and Italian casino and gaming site Gioco Digitale. It also offers several B2B solutions, including payment services provider Kalixa and financial markets solution provider InterTrader.

Bwin.party is the product of a 2011 merger between PartyGaming plc and Bwin Interactive Entertainment AG. Kelly Looney, head of DevOps at Bwin.party, is responsible for steering the resulting conglomerate towards DevOps principles to improve agility and shepherd more frequent releases and updates to its many apps. But Looney inherited a system with widely divergent technology stacks. "There were large parts of our system that weren't well understood, especially by any one group in the organization," he says.

Bwin.party needed an application intelligence tool that could replace the many different monitoring systems the company previously had in place and help Bwin.party unify PartyGaming's and Bwin Interactive's platforms. This tool also had to provide visibility into application performance that let developers, engineers, and system admins check, understand, and communicate issues with one another, a mandatory condition in any DevOps environment.

"We wanted something with an advanced user interface and something also that could do data aggregation. We generate a tremendous amount of data and it would have been very costly to store it all," Looney explains.

Bwin.party evaluated a plethora of tools in a rigorous, technical manner. Only AppDynamics met all of Bwin.party's technical criteria and gave Looney's team the sort of state-of-the-art capabilities the company needed to meet their challenges. Among its many features, AppDynamics gives Looney's team:

- Visibility into production and test environments
- A single console that provided the advanced user interface needed to facilitate understanding and communication among its development and operations groups
- Automatic configuration that enabled Bwin.party to keep up with their ambitious release schedules
- Improved MTTR (Mean Time To Resolution)

"We've been able to track down root cause much faster, or in some cases find it when we couldn't have found it at all before. It's been like a giant debugger for our production environment to allow us to find problems and do something about them," says Looney.

In addition, AppDynamics has helped Bwin.party figure out availability problems that previously could only be fixed by having to quickly restart a part of its infrastructure. "For us, availability has a direct monetary value," Looney says. "With AppDynamics, we've been able to look and see what the problem was and make fixes to keep it from happening the next time."

Looney especially appreciates the ways in which AppDynamics allows him to investigate Bwin.party's IT environment and "cross boundaries that we had real difficulty in crossing before."

Adds Looney: "With AppDynamics, we get state of the art capability, excellent support, and it met all of our criteria. And AppDynamics has been a big part of... helping the whole organization evolve in some new directions."

The Need for Fast, Reliable Application Intelligence Across the BoardTeams

Large gaming companies, such as the three discussed in this ebook, rely on the quality of their customer experience to stay in the money. People may be willing to gamble on horse races and bingo tables, but they don't want to wonder whether their wagers were scratched or their moves ignored. Given the competition in this space, even a slight lag in performance could 86 a customer in favor of a competitor.

Therefore, you need an application intelligence platform that can alert you when your databases experience fleeting errors that could prevent customers from interacting with other users (Betfair); ensure the countless microservices that comprise its mobile gaming platform run as smoothly as American Pharoah (Paddy Power); or enable two companies to merge its IT environments into one that provides its customers with nonstop action (Bwin.party).

Only AppDynamics provides you with the application intelligence platform that can handle these challenges and the many others your organization may experience. Leave the gaming to your customers, and let AppDynamics help you protect and build your business—because winning is fun!

A network diagram in the top right corner of the page. It features several nodes, some represented by solid light blue circles and others by dashed light blue circles. These nodes are interconnected by thin, light blue lines, forming a complex web of connections. The lines vary in thickness and some are solid while others are dashed, suggesting different types of relationships or data flows between the nodes.

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