# Harnessing AI to Benefit Lotteries

**If you don't plan to implement some form of Artificial Intelligence in the next three years, you might be left behind. AI has arrived, and here's how lotteries can benefit.**

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**J**ust as the steam engine and electrification once revolutionized whole sectors of the global economy, so are the internet, robotics, data analytics, and Artificial Intelligence (AI) beginning to dramatically alter today's industries.

Once merely a buzzword, AI now offers the powerful means to solve real-world problems, resulting in an array of enterprise-level tools and processes. Globally, as many as three-quarters of businesses expect to implement some type of AI within the next three years. Will the same hold true for lotteries? Let's take a closer look.

## What is AI?

Simply put, AI is a collection of technologies that, when brought together, allow computers to compile and analyze digital data and make automated decisions or provide insights that previously only human intelligence could perform.

While computers are still a long way from "thinking" at the level of a human being, the enormous amount of data and computing power now available has made it possible for machine learning and AI capabilities to excel, particularly in the areas of pattern-detection and problem-solving.

# Applying AI in the Lottery Space

Humans learn from experience, but computers learn from data, so data is where AI starts and finishes. Today, our industry relies on human experts to analyze lottery data and produce meaningful insights. AI harnesses technology to automate this process for massive amounts of data. AI can do it faster and more efficiently, and can recognize and highlight correlations that humans might not be able to find.

IGT's exploration of AI began with a goal of helping lotteries **gain deeper insights into player preferences and behaviors** — for instance, how players react to the content offered, how frequently they play, why they play, and how to personalize offerings to them while maintaining a responsible and safe gaming environment. In fact, AI can play a central role in **improving responsible gaming efforts, as well as security and fraud protection.** IGT's solution, Play.AI, is focused on these major areas *(see sidebar: Taking the Difficulty Out of AI Implementation).*

There are countless potential AI applications for lottery. Wherever there's a spreadsheet and analysts looking at data today, there's potential for AI to help advance our understanding. In the United States, for instance, a lot of time and effort is spent on plannogramming the allotment of instant tickets. What if there were an AI application for that? AI can constantly monitor activities like sales or even the number of requests for sold-out items, and then provide data suggestions to improve how and what is offered.

AI offers the potential to help with less obvious applications as well. For example, when there are rolling jackpots, the demand for play slips and ticket stock increases considerably. Today, humans source, plot, and manage the data to maintain those paper-supply lines. A current IGT trial is using AI and our own data to map this process in parallel with traditional, manual processes, making it possible to correlate the accuracy of the two and create a practical, proven application for lotteries that manage consumables at a large scale – for example, in Europe – to optimize the process and save money.

**72%** of businesses that have implemented AI say it will be the **business advantage of the future.** (PWC.com)

**Approximately 75% of businesses plan to implement AI in the next 3 years.** (Accenture)

Worldwide spending on AI systems was forecast to reach $35.8 billion in 2019 and double to $79.2 billion in 2022. **Most of this investment will be in Decision Support/ Augmentation** to maximize profits. (Gartner)

# Uses of AI Across Industries

Many of us already experience forms of AI today in applications such as virtual assistants (e.g., Alexa and Siri). Amazon's product pricing system updates as many as 2.5 million times per day using AI to analyze customers' shopping patterns, competitors' prices, profit margins, inventory, and a dizzying array of other factors, and to choose new, competitive prices that maximize profits. Travel agencies, insurance companies, and other retailers also use AI for dynamic pricing. In the health care industry, AI is involved in everything from pharmaceutical research to medical imaging analysis to suggest the best treatment. Common business uses include:

**Sales forecasting**

**Credit scoring**

**Optimizing marketing campaigns**

**Predictive maintenance**

**Identifying new market opportunities**

**Enhancing the customer experience**

**Optimizing processes**

**Reducing operational costs**

**Mitigating risk**

**Fraud detection**

# AI Applications for Lottery

**Content Strategy**

**Player Behavior**

**Player Security**

**Business Efficiency**

AI can also track player choices in the digital and retail realms and look for patterns — whether related to the time of day people play, or the topic of games they choose — to enable better overall marketing and game-offering decisions in retail and digital. The two worlds are no longer separate.

## How AI Can Benefit Lotteries

Here are some of the ways IGT's Play.AI solution can be applied to benefit lotteries, based on trials with IGT's Lottomatica over the past three years in a highly competitive gaming market with more than 260 operators.

### 1. Better Understand Your Players and Their Engagement

It's difficult to acquire players, and it's even more difficult to keep them. IGT built a model to make it possible to look at players' **Play Characteristics** and, combined with responsible gaming models, identify appropriate offers to send to individual players. In effect, **AI enables personalized 1:1 campaigns.** Personalization is the holy grail for any marketer, because relevant content most often generates the best user engagement.

AI can also be used to build a content transactions matrix, enabling lotteries to **predict the propensity of consumption for different types of content.** The probability of players moving from one kind of game to another is different for different kinds of games. Therefore, if a player favors one type of game, there's an opportunity to suggest other games that the player might like to try.

### 2. Improve Your Content Offering

To learn more about how our own content was performing, IGT began feeding content data to our Play.AI system and taught it how players were consuming the games. We first created a model to predict consumption based on 150 days of performance — nearly six months. We then reduced the period to 90 days, then 30 days. Now, with 15 days of game activity, we can predict with up to 97% accuracy **how a game will perform.** In addition to allowing lotteries to improve their content offering, this application of AI **gives lotteries great insight into their potential revenues** for the next three months. AI can be used for retail games, too, provided they can access the data to support the AI models. This is possible particularly if

a lottery uses a platform like IGT PlayCommand, which tracks, aggregates, and links data transactions for both digital and retail businesses.

### 3. Improve Player Security – Responsible Gaming

How can the industry maintain a safe environment for players? Responsible gaming (RG) is an important focus for IGT, and we provide various self-management tools to limit spending and time in support of RG efforts. A critical question, however, is how to identify high-risk and medium-risk players and offer relevant content. Artificial Intelligence and machine learning can help to **categorize players in potential risk categories** and create a hyper-personalized recommendation engine to help the player make better decisions and maintain a safe environment for gaming entertainment.

Artificial Intelligence may just be getting started, but it's here to stay. It will become the standard way operators predict and adjust their business models, and more. ◼

To learn how you can apply AI today, **contact your IGT Account Manager.**

For more on the rise of AI, watch a video of Srini Nedunuri's recent PGRI Expo presentation at **pgritalks.com.**

# Play.AI

## Taking the Difficulty Out of AI Implementation

AI implementations are complex. Four years ago, IGT invested in building AI capabilities with a goal of **harnessing greater player understanding** to create **practical applications that serve our lottery and gaming customers' business needs** and make it easier for them to adopt AI.

The steps to AI implementation include the following:

1. Define what you want to achieve. What decisions do you want AI to help you make, and why?

2. Ensure that the right data is available in the right format to enable machines to learn from it and make decisions. How can you be certain the data isn't skewed around the topic or presenting a bias?

3. Consider how to find, grow, and label relevant data, and how to store and protect the growing data sets.

4. Assemble the right technology tools, software, and skilled human resources.

**IGT removes the complexity for lotteries by providing a purpose-built Artificial Intelligence platform, Play.AI.** The Play.AI solution outperforms traditional business intelligence tools that rely on historical data, and compared to them, it can predict what might happen in a given situation with a level of certainty not previously seen.

This field-tested solution – live in the market for more than three years – processes vast amounts of data in minutes and relays easy-to-understand reports that help operators determine **how to retain players, which players to prioritize, what games to promote,** and much more.

## IGT PlayDigital