



# Impact of Artificial Intelligence (AI) in Gambling

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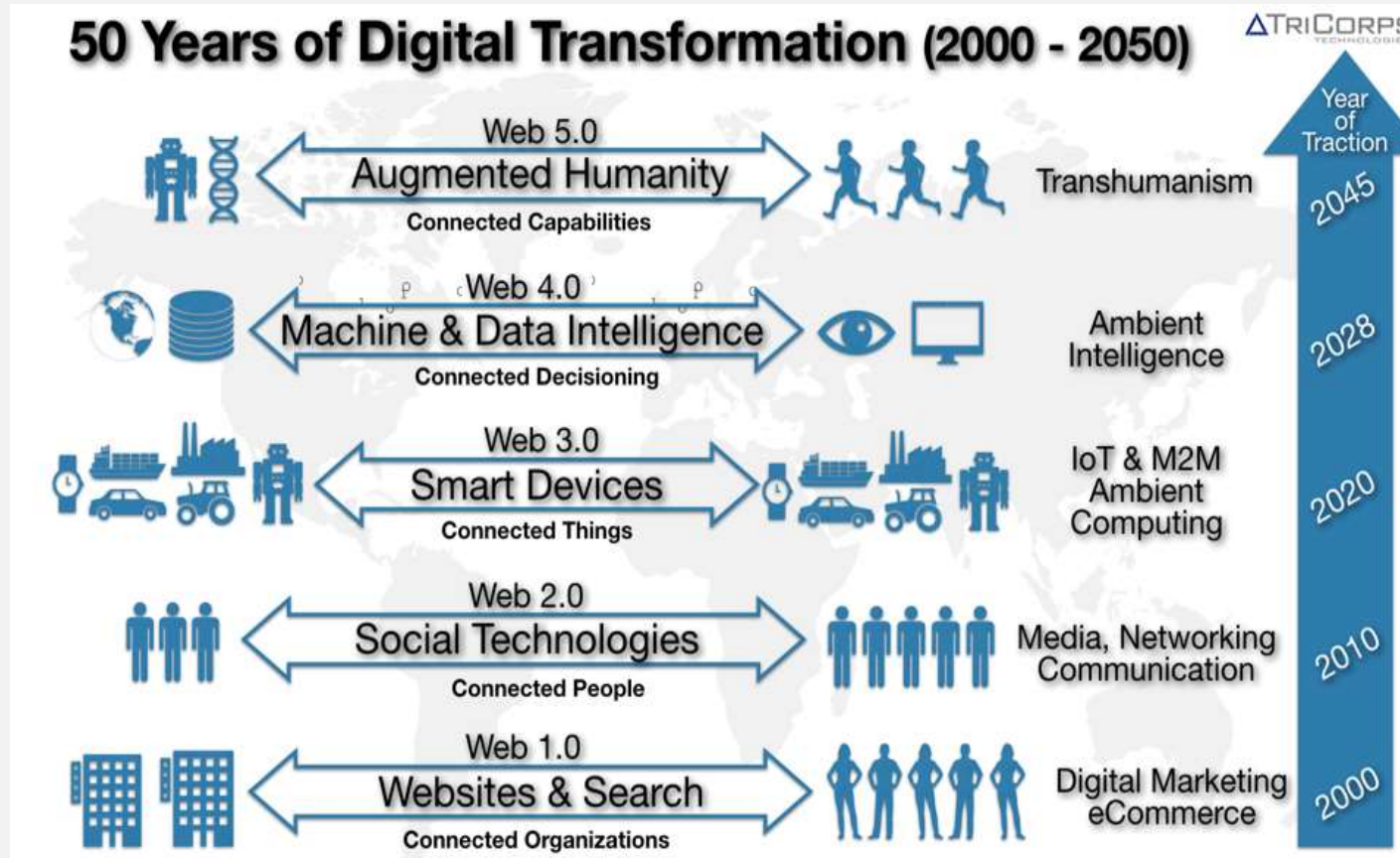


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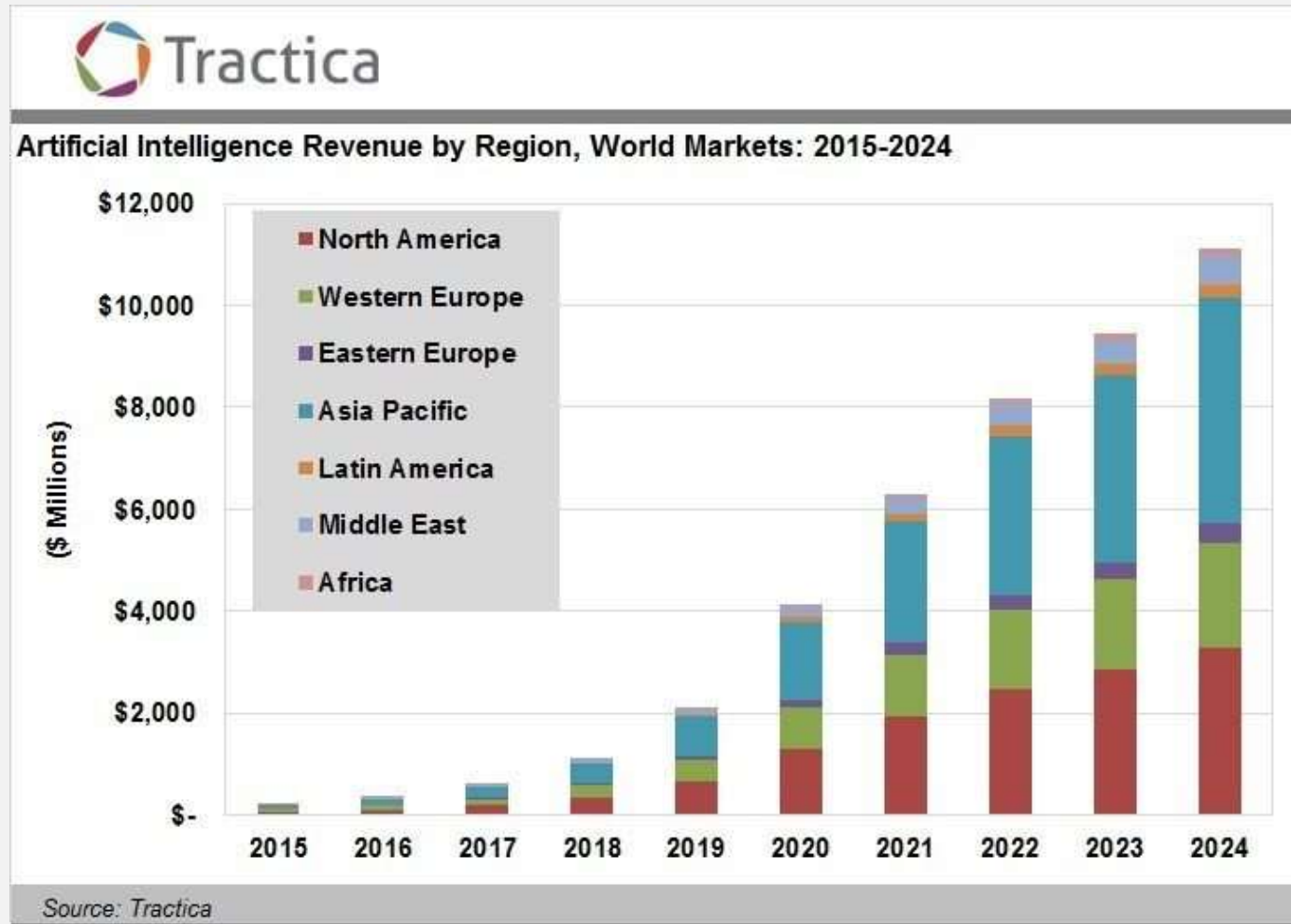
# What is AI?

- **Broad definition: Digital technology mimicking human intelligence, behaviour and characteristics**
- **Distinguish between three types of AI:**
  - **Artificial Narrow Intelligence (ANI):**
    - The ability to mimic human intelligence is restricted to a limited range of parameters
    - Known as 'weak' or 'narrow' AI
    - Example: The AI that Google uses to rank is not stupid. It's sophisticated, expensive but it can't do much more.
  - **Artificial General Intelligence (AGI)**
    - AI's ability to mimic human intelligence and behaviour is indistinguishable from that of a human
    - Called strong or deep AI
    - Not in foreseeable future
  - **Artificial Super Intelligence (ASI)**
    - When AI doesn't merely mimic human intelligence or behaviour but surpasses it
    - Very speculative
    - Great doubt that AI would ever be capable of doing certain things better than human i.e. relationships and art.

# Digital Transformation (2000 – 2050)



# World Picture – AI Revenues (\$ Millions)



# History of AI and Gaming

- Today AI is mainstream technology (e.g. Google ranks pages; Amazon knows what we like; Bots like Siri chat with us; Computers play Chess and AlphaGo)
- Gaming offers fertile ground for machine-learning systems
- 20 years ago IBM's Deep Blue computer defeated chess master Garry Kasparov
- Since then machine learning based AI gambling systems have overtaken human skills in gaming
- Today AI is better at gambling and bluffing than professional skill based gamblers
- There is overwhelming evidence that AI is capable of beating humans at their own gambling games
- In 2017 the Liberatus system from Carnegie Mellon University won a poker tournament against three professional poker players
- After 20 days and 120,000 hands of no limit Texas Hold'em they lost more than \$1.76 million.

# AI's role in predicting event based outcomes

- The scope of data collection in all sports has no end
- In 2017 the value of the big data market was \$35 billion and is expected to triple by 2027
- Big data leads to impossible feats of predictive sports analysis
- Enabling AI to extract patterns from matches and use the data to make better bets
- In 2016 Unanimous AI released its 'swarm intelligence' platform UNU
- 'Swarm intelligence' is using the combined real-time knowledge, wisdom, insights and intuition to predict certain outcomes
- The company managed a superfecta at that year's Kentucky Derby - correctly predicted which four horses would cross the line first, in order, beating the 540-to-1 odds
- There are still limitations on what these systems can accomplish – i.e. a team's mojo on the day or a good player's intuitive play

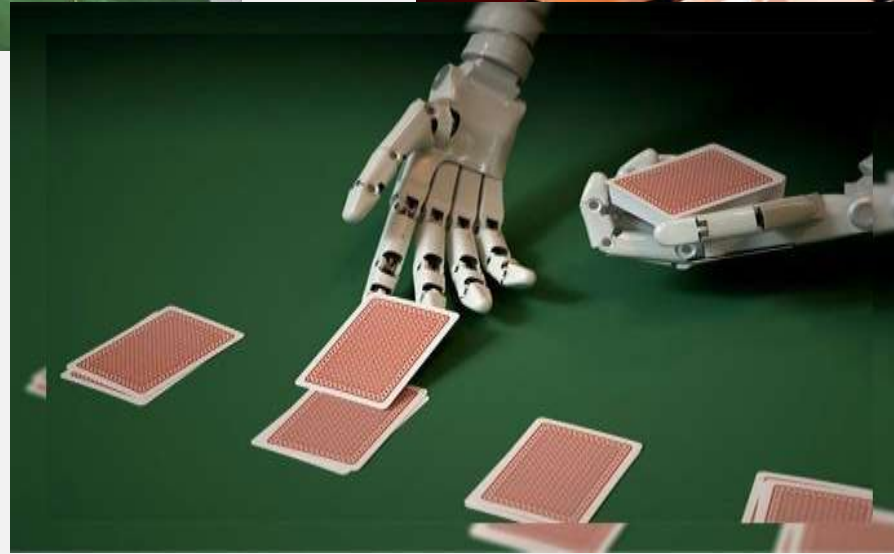
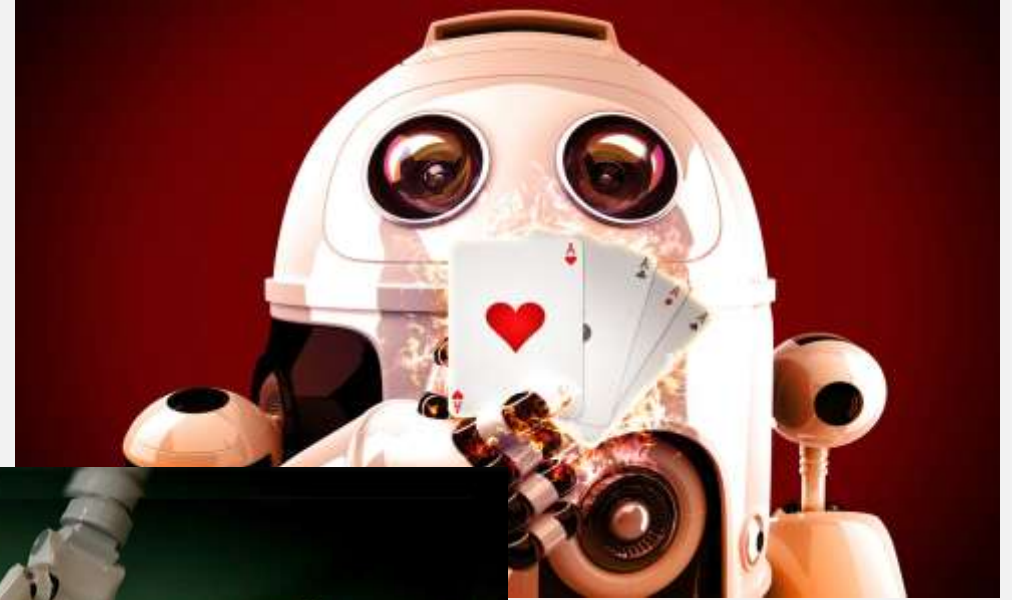


# AI and sports trading

- 10 years ago, everything was priced manually by traders working different markets and events
- Today you have a single trader managing scores of events offering hundreds of markets without much if any input
- An AI odds maker can make thousands of calculations per second which no human counterpart can do
- Resulting in the human odds maker's role changing to one of risk management (i.e. ensuring system remains free from potential corruption and problem gamblers are identified)
- Aside from setting odds, AI can make enormous contributions to player analysis and risk management
- There will always be a place for human traders in pricing unique markets and pricing events early before strong markets has formed
- Human traders have decades of experience in reading body language, something AI can't do
- Also, there is a big incentive for manipulating the market with disinformation introducing a trust component, something AI would struggle to learn
- The relationship between the human sport trader and AI algorithm remains an ever evolving one



# AI and Casino Gambling



# AI and Casino Gambling

- Brick-and-mortar casinos have been the vanguard of analysing player behaviour (i.e. through the use of club cards and loyalty programs to collect player data)
- Sophisticated systems have been employed to understanding player choices (i.e. which game are popular; why do players stop playing a game or switching games; etc)
- Today, casinos can identify what elements of a game makes it more popular than others or how to physically arrange games on the floor to have the maximum player selection
- There are multiple factors that influence customer spending patterns i.e. game type, volatility, minimum bet, maximum bet, maximum prize, return to player percentages, location, lighting, cabinet style
- AI can predict how the slot floor will perform if no changes are made or how revenues can be maximised by relocating or changing slot machines on the floor – there's never been a better time to be a slot manager!
- With the help of AI players can be offered a tailored gaming experience and generous promotional offers
- These highly dynamic technologies bring together individual gambling histories, demographic data, social media content, virtual personal online identities to drive smarter highly effective marketing outreach
- AI is a way of identifying most valuable customers more accurately – not only which customers are likely to lose the most but also which customers are likely to win big

# AI and Online Gambling



# AI and Online Gambling

- **Smart Data:**

- Casinos have always collected data to offer their clients better deals
- They collect player data and use it to offer personalized gaming experiences, ads and special offers.
- Where the human brain fails, AI pulls out patterns, trends and gives predictions flawlessly.

- **Customer services and customer influencing:**

- According to a recent study by Oracle, 78% of brands say they, “have already implemented or are planning to implement Artificial Intelligence and virtual reality by 2020 to better serve customers.”
- Today almost all online gambling operators use player data to provide customers a personalized services and responses to their gambling needs.
- AI driven VR games could allow operators to move younger players into the digital world with limitless possibilities.

- **Prevent cheating:**

- Online casinos are usually at a disadvantage compared to their land-based counterparts when it comes to security. There are no cameras or broad-shouldered security staff to keep an eye on cheating players in an online casino.
- This means that cheaters can use their own AI technology to outsmart the operators. Luckily, most online casinos use the same tricks to weed out gamblers that like to play unfair.

- **Future prospects:**

- Online gambling will become so personalized that you’ll start to feel like owning your own custom-made casino.
- The rise of robot croupiers in live dealer games will become common place.



# AI and Responsible Gambling



# AI and Responsible Gambling

- Thanks to AI, early addiction detection and prevention are now possible.
- By analysing player data for problematic behaviour, AI can spot suspicious players and notify online casino operators.
- The identified account can be suspended while the player is offered help.
- Online operators are increasingly using AI to capture a player's digital footprints and identify high-risk gamblers.
- BetBuddy is a known example of using player data, algorithms, neural networks and other methods to spot irresponsible gambling behaviour in real-time and then deliver messages to both the player and operator.
- *“It comes down to the use of big data. If we look at a casino player as an example it is straightforward for the AI to identify problem gamblers from setting the initial parameters like player stake, deposit frequency, type of game and playing time for the AI to look at. Alongside that you let the AI have access to all the players that have self-excluded so the AI can learn the patterns and compare with new and current players. The AI would then flag players that are showing signs of addictive behaviour and the operator would then follow their social responsibility policies and intervene with those players.”* Betbuddy

# AI and Gambling Regulation

- The role of AI in promoting, advertising and growing the gaming business will become the big issue for gaming regulators
- The industry is using AI to profile customers and predict behaviour often in frightening ways
- According to one analyst ***“Every click is scrutinised to optimise profit, not to enhance a user’s experience.”***
- Another said ***“Publicly, gambling executives boast of increasing sophisticated advertising keeping people betting while privately conceding that some are more susceptible to gambling addiction when bombarded with these types of bespoke ads and incentives.”***
- Advertising has become a science, it’s no longer using general advertising messages, it is personalised based on data driven customer profiles, constructed from real gamblers behaviour
- Players unwittingly consent to the use of their data in ways they aren’t aware of due to lengthy T&C’s
- In August of 2018 the Guardian revealed the gambling industry in the UK is using third party companies to harvest people’s data, helping bookmakers and online casinos to target low incomes and those who have stopped gambling
- Gambling companies and advertisers create detailed customer profiles including data about their interests, earnings, personal details and credit history
- There are even plans to geolocate customers to identify when they arrive at stadiums so they can be prompted via texts to bet on the game they are about to watch
- The UK Campaign for Fairer Gambling said: ***“Big data is being cynically exploited by gambling industry to target vulnerable consumers. The Gambling Commission’s trust in operators to use customer data for social responsibility purposes is naïve at best.”***



## Macau's regulator restricts use of AI technology that could boost casinos' profit

A July 30<sup>th</sup> 2019 directive follows a Bloomberg report in June that showed operators starting to use hidden cameras, face recognition technologies, digitally-enabled poker chips and baccarat tables to track gamblers likely to lose the most money. Any video or data used or obtained from these high-surveillance tools is to be kept only by the casino operators.



# The Facebook Case: Self-Regulation or Independent Regulation

- March 17<sup>th</sup>, 2018 The Guardian and other media reported that Cambridge Analytica (CA) was exploiting the private data of millions of people
- CA was described by its own former research director, Christopher Wylie, as ***“a powerful full service propaganda machine”*** that would have used the science of data and algorithms to influence voting processes around the world ***“playing with the psychology of an entire nation.”***
- In a nutshell, Facebook used data scraping programs for their advertising space to show relevant ads to its users.
- A massive Internet platform of this nature not only knows who the friends and family of its users are, but also what they like to read, to eat, what their hobbies are, what their relationship status is, which events they attend, which places they visit regularly, and even how they feel emotionally, as well as their physical location at any moment.
- U.S. Senate tried to force Zuckerberg to commit, both personally and on behalf of Facebook, to assist in drafting these new regulations.
- The only measure that Zuckerberg insisted upon for the enforcement of privacy and content policies was the use of more and improved AI.
- Recent research article titled **Artificial Intelligence, Privacy, and Gaming: An Equation with Almost no Regulation**, Alfredo Lazcano, a gaming lawyer based in Mexico, wrote ***“Throughout our research, we observed that most people believe that the use of AI through massive platforms such as Amazon, Google, Facebook, WhatsApp, and many others, would be limited to the use of private data for traditional marketing (i.e., analysing consumer trends to boost sales). However, everything seems to indicate that AI is also processing people’s data to predict future acts based on psychological and emotional profiles.”*** (Gaming Law Review, Vol 22 No 6, 2018).

## Conclusion

- AI is no doubt one of the most sophisticated technological developments available to present and future generations.
- Due to its complexity and the absence of regulation, its effects on mankind will no doubt impact consumers negatively.
- Regulatory bodies must establish trustworthy certification and other risk control practices to guarantee the safe use of AI.
- Trust is a crucial element for the proper development and reputation of our industry, which in part is generated through ethical and lawful use of technology.





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