



AI, let's go,
AI, let's go



/ 15

Cover feature
AI sports betting



"Start
here"

EGR Technology explores how artificial intelligence has the potential to revolutionise sports betting, opening up the route to true personalisation and leading to a wholesale change in the way consumers view betting

Words | **Scott Longley**

US Treasury Secretary Steve Mnuchin caused a stir within the tech community at the end of March when he was questioned over the degree to which he thought AI-powered robots were a threat to American jobs. "Not at all," he told his interviewer.

"In terms of artificial intelligence taking over American jobs, I think we're so far away from that that it's not even on my radar screen," he said at an event, hosted by online news service Axios. "I think it's 50 or 100 more years."

His comments drew a predictable response from the US tech sector which was quick to point out that artificial intelligence was already replacing jobs in key areas of the US economy.

Similar sentiments might be expressed by those involved in the sports betting sector who would likely take up a bet on Mnuchin's 50 year-plus estimate.

"The industrial revolution is coming to sports betting," says David McDowell, chief executive and co-founder at challenger sports betting backend provider FSB Technology. "There is no doubt that jobs are being changed. We're running 15 different sportsbooks, for instance, with average bets per day now at the 100,000 in a day level, and we've just hired our thirteenth trader."

The changes to date at FSB and else-

where may not be driven by AI quite yet – McDowell himself says the industry is likely at the stage of clever algorithms right now – but he still feels that the broad theme of AI-driven disruption will hit the sports betting world soon enough.

From financial trading and regulatory infrastructure to search functionality and on to medical diagnosis, via of course Siri, Alexa and the other automatons of the internet of things, AI is already here and driving huge changes in the way we view our relationship with technology.

"It's happening in every sector; that part of the story is undeniable," says McDowell. "But if you look at the sports betting sector, the biggest challenge is that you have the theory of AI and then you have the reality of legacy technology. At some point you either marry those things up or you throw away the legacy technology."

Ten years after

In his 5,500-word state-of-the-social-nation address (*see sidebar*), Facebook's Mark Zuckerberg repeated what he said was his favourite saying about technology. "We always overestimate what we can do in two years, and we underestimate what we can do in 10 years."

It is an observation that would certainly seem to hold true for sports bet-



16 \

Cover feature

AI sports betting

"We always overestimate what we can do in two years, and we underestimate what we can do in 10 years"

Mark Zuckerberg, Facebook

ting. Christopher Langeland, managing director at Gaming Innovation Group's sports betting backend development arm Betting Cloud, says the introduction of increased automation in the area of sportsbook provision will be an evolutionary process.

"There will be some people who are going to be disappointed that the utopia of a fully-automated way of working doesn't quite work out as well as they hoped," he says. "Having said that, there is absolutely no question that automation can deliver huge gains in efficiency, accuracy and coverage."

Under a strict definition of AI – and accepting there are many definitions of what exactly AI and machine learning represents – the industry is a long way away from implementing the full ticket. But machine-learning approaches are being used even if they are not as yet replacing elements of the core betting engine, says Michael Maibaum, chief architect at Sky Betting & Gaming. "I would suspect that most operators are using machine learning in some sense," he says. "It's just that it's around the edges."

Most obviously gains have been made towards automation in the realm of odds compilation and in-play services. Paolo Personeni, managing director of managed trading services (MTS) at Betradar, points out that its APIs are reducing the operational burden in all aspects of the sports betting business from event creation to result. This might not be AI but it certainly matches the description of clever algorithms. "Our managed services are taking what was started with algorithms and automation of data into pricing and applying similar automation across other areas of sportsbook and risk management," he says.

These tools cover much of the ground for any sports betting backend including liabilities, bet limits, market factors, customer confidence, event and tournament-level confidence, and bet type, all achieved with little recourse to any real-time intervention.

"Automation's next steps will be in the risk-management process, customer profiling and clustering, automatic risk-assessment and liability management," says Personeni. "Having said that, this evolution probably won't be swift as a sensitive approach to each customer is critical. The industry needs to get comfortable with trusting the numbers completely."

Siri, build me a new sportsbook

It should, by rights, not be the biggest leap of faith. The industry has fully exploited the opportunities offered by in-play product, for instance, and it stands as perhaps the last major innovation that was embraced by the sports betting industry and, crucially, the consumers.

Yet as McDowell points out, the innovations of in-play – particularly as far as the customer experience is concerned – has now solidified into a static and interchangeable proposition.

"We do a lot of sports betting sites and the problem is that you have such a rigid structure of sports, competitions, events, markets, selection, price, add it to the bet slip and away you go," he says.

"A lot of this stuff goes back to the processes of the betting shop, even the mobile offerings."

Yet consumer behaviour can change with rapidity, encouraged by disruptive trends in the consumer technology space. Here we can look at the advances made in terms of music streaming, transpor- ➔

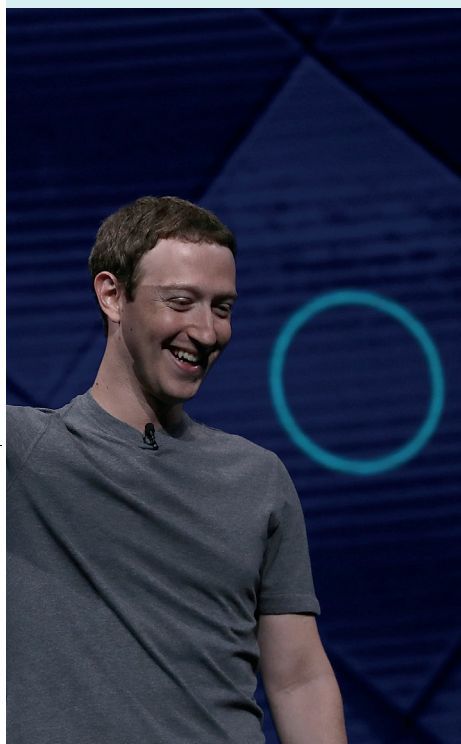
Caffe2 culture



Mark Zuckerberg started off his 5,500-word essay featuring his thoughts on "building global community" by asking the question "are we building the world we all want?"

The essay was a response to the furore regarding Facebook's role in the spread of fake news and Zuckerberg made it plain he sees the deployment of further advances in artificial intelligence as part of the company's answer.

He wrote that Facebook was working on AI solutions that in time will be able to understand



and judge text, photos and videos. He said the company wasn't there yet but that some of the work being done by its researchers would bear fruit later this year.

This was backed up by the recent F8 Facebook developers conference where AI was also a feature of almost all the developments spoken about from the company's AR plans to its specific open source deep-learning framework, Caffe2, which is aimed at "industrial-strength applications with a heavy focus on mobile".

tation, food delivery and many other aspects of our daily lives. Looked at in this way, it is easy to believe that new consumer behaviours from outside the sector will drive innovation within it.

"Many of the improvements made with respect to interactions online, particularly in the online retail space, will help sportsbooks evolve their own customer experience," says Personeni.

"Some of these developments will include technology like chatbots and smart-product filtration of web and mobile interfaces, leading to fast bet-identification and subsequently quicker overall transaction times. Products like Alexa/Echo and Siri are moving the general consumer to interact differently with everyday routines and purchasing: there is a lot to be learnt from these trends."

Routes to marketing

The moves being made in ecommerce to provide customers with the product that they want, when they want it – and potentially before they have even thought of it themselves – is where we are likely to first see the fruits of the sports betting industry's forays into machine learning.

Crucially, it is also an area of development where operators don't have to delve too deep into their legacy systems to come up with some answers.

"It's the recommendation stuff," Maibaum says. "How do you find the right people to market to and what do you market to them? It's an obvious area for sportsbooks to use. And it's not really limited by the backend. While you can't

really do everything you want, this is about what you offer the customer and that's not really limited."

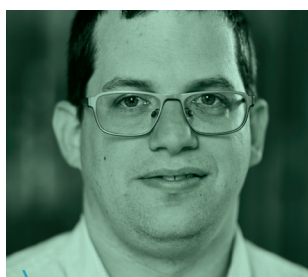
Indeed, the most obvious outward manifestation of how machine-learning techniques will affect what the end user will experience is already visible from the advances being made in marketing. The moves towards recommendation engines and personalised marketing efforts is also (maybe not coincidentally) well-timed given the continued march of ad-blocking and from what we know about the concerns on the part of the regulatory authorities over the terms and conditions attached to current, untargeted, bonusing and free-bets marketing.

Moves being made by the likes of adtech providers Fresh8 and Optimove are shifting the industry's marketing efforts away from rinse-and-repeat manual campaigns towards a bright new dawn of targeted marketing. It offers the potential of a whole new model in online gambling, one where the data about a customer's previous activity will be utilised to provide pinpoint-accurate messages designed to entice punters back to their bookmaker of choice.

"Our modelling is highly disruptive to marketing in the sense that marketers using it can truly achieve the holy grail of 100% relevant player interactions," says Amit Bavas, head of marketing at Optimove. "Players have no idea what is happening behind the scenes, but their gaming experience is vastly different when they are being communicated with in an emotionally intelligent fashion. Players won't be able to go back to the outdated gaming experience provided by older marketing strategies."

The most forward-thinking marketing strategies in online gambling are moving towards hyper-segmentation. "Only by heavily relying on data to understand each player in 360 degree, and communicating with them according to their unique preferences, can you achieve personalisation that really works," says Bavas. "Otherwise you are paying the price of generalisation."

Nathan Rothschild, co-founder and partner at iSport Genius, which provides consumer-facing data services to the likes of Ladbrokes Australia and Unibet, points out that the true personalisation along



Michael Maibaum, Sky Betting & Gaming



18 \

Cover feature
AI sports betting

these lines offers the prospect of much more efficient marketing spend.

"Instead of broad offerings, there will be no wastage," he says. "You will be serving up relevant marketing messages to each of your consumers. A different message tailored to each user and their preferences. And when you have a highly-efficient marketing strategy, it will naturally convert better. And then there will be greater investment because there will be a return on it."

Advances in personalisation

Quite how far personalisation can go is a

matter of debate and it is where the biggest questions about the application of AI become clearer.

"There is no doubt that users will have a completely personalised experience in the future," says Rothschild. "The question mark is when?"

The better the data, the better the result, says Bavas. "Machine learning is also becoming more robust, with continuously better results. As technology advances and more communication channels are added, we will see players shifting towards experiences providing them with the best sense of personalisation."

"Players have no idea what is happening behind the scenes, but their gaming experience is vastly different when they are being communicated with"

Amit Bavas, Optimove



Wheel of fortune

David McDowell of FSB Technology says sportsbook CRM is more complex than casino

"Sports-betting CRM is fundamentally different from casino CRM," according to Dave McDowell from FSB Technology.

In the latter, to know a customer's value is relatively simple; know their turnover and the game they are playing and you will know the theoretical margin. Add in a bit of information about the credit card they are using, the size of the initial deposit and of the first stake, and it will be possible to know how much they are likely to be worth over their player lifetime and hence how much you should be



bonusing them.

But in sports betting an operator needs to know much more information about the context of a bet. "It's the context that has to be applied to the turnover before you can understand how much the customer is worth, and right there is where every sports betting platform I know about falls short.

"There is a big problem in the industry right now regarding CRM tools in that they are non-existent," says McDowell, who adds that there is the potential for AI to sweep all before it.

The system is highly dependent on operators' data. "That's why its accuracy is so high," he says. "More data means a better, more layered and more accurate player model."

But the key for personalisation will be how a betting operator utilises more than just the past betting behaviour of its consumers. "The main driver for personalisation will be around the user experience and speed of that experience, based on not only user information and preferences, but also on more detailed information, such as bet identification, of channel and even location," Personeni says.

The advances being made will result in far greater improvement beyond just the targeting element of personalisation. "As a result of the power afforded by modern technology, we are now producing bet-stimulating insights and user-experience tools which simply weren't possible a decade ago," says Rothschild.

Machine learning is destined to be at the heart of these moves. Andreas Koukorinis is the founder of Stratagem, a company built with the purpose of at-

tempting to "reimagine" sports betting, as it says on its website, by leveraging the science of machine learning to potentially evolve sports betting into a new asset class.

Looking at how the sports betting operators will have to change to survive in the future, he predicts more efforts to push for machine learning to be used as a central component of the product.

"Particular areas of machine learning, such as reinforcement learning, can allow corporate margins to gain uplift by reducing human trading and increase smart, flow-adjustable automated trading that continues to learn from every decision it makes," he says. "From the consumer perspective, the results are broader and tighter markets."

His thoughts are echoed by Sky Betting & Gaming's Maibaum who points out that the explosion of data coming from real-time feeds – such as the position of players on the pitch, the number of shots, how far players have run – could feed a far more sophisticated set of models in the future.

"It's plausible in the future that the data will become ever richer and more real-time," he says.

In a galaxy far, far away

Further out, genuinely sector-defining transformations might be on the horizon. One idea that might yet have its time is personalised odds. "When it comes to personalisation, AI gives potential for quite significant change in the relatively short term," says Will Mace, head of Kindred Futures, the operator's innovation hub.

"Every consumer will see a unique website with unique content and unique odds created exclusively for them.



**"When it comes to personalisation,
AI gives potential for quite significant
change in the relatively short term"**

Will Mace, Kindred Futures



20 \

Cover feature

AI sports betting

"What people see on their sites will be constantly changing – automatically and instantly – delivering the best and most relevant experience for an individual customer at any particular point in time. That's the concept at least."

The degree to which that concept is translatable into actual reality – and how long that transfer will take – is very much open to debate. Langeland from Betting Cloud points out that sports events are massively complex and multi-faceted structures where the whims and decisions of ultimately unpredictable human behaviour can be a huge influence on the end result.

"Algorithms just aren't good enough to compute all of the potential variables, and take into account contextual changes like changing weather conditions, or psychological factors that influence players," he argues. "For the foreseeable future, a mix of increasing automation with a bit of skilful human steering is going to be the best way to go."

McDowell tends to agree. "The computers are great at saying here is the line, but it is the human who should be sitting there, keeping their eye on the machine, looking at the complexities," he suggests. "So, more machines to do the grunt work, and with humans adding the value."

Looking at the issue of personalised odds, McDowell says he is "not a fan." "The odds should be the odds," he adds. "The future is about how you evolve bonus. In casino, you get a bonus and you churn it. In sports, people take bonuses and go to Betfair and lay them off. Free bets are such a blunt instrument."

But arguably a looming battle lies ahead that will have a huge effect across the sector. "There are some very sophisticated punters out there," says Rothschild. "They are predicting results with complex machine learning – that exists. If it becomes an issue – if in the long term punters are winning using these insights, then that's a trading issue and odds can be personalised to reflect that."

The talk of AI often moves into the area of science fiction, with talk of the upcoming 'singularity' when computer AI overtakes human intelligence, but you don't have to be a Hollywood producer to see that the shape of things to come – even in the prosaic world of sports betting –



"Automation's next steps will be in the risk-management process, customer profiling and clustering, automatic risk-assessment and liability management"

Paolo Personeni, Betradar

could be very different indeed to what we know.

"The introduction of AI to the sports betting industry will be as impactful as the electrification of things that took place during the industrial revolution," says Koukorinis.

"AI is all about harnessing the power of multiple artificial brains. The same way we are building self-driving cars, we think of artificial agents that derive information from live video and can adjust probabilities of events in real time. It's signif-

icant change for the industry to undertake, but betting operators will be able to provide better pricing across the spectrum of clients, inclusive of insights that make the product more engaging, and ultimately drive greater revenues."

That is probably the clinching argument and the single most important reason why the further adoption of machine learning and AI is inevitable.

As Rothschild says, "In the big wide world of technology, this isn't that complex compared with self-driving cars." ■